

## Food and COVID-19 Lit Review: Weeks ending 7/01/22 and 7/08/22

### DNPAO

- Experiences participating in federal nutrition assistance programs during the early months of the COVID-19 pandemic: A mixed methods study in Vermont (preprint) <https://doi.org/10.21203/rs.3.rs-1754407/v1>
- Social safety net programs and food sufficiency during COVID-19 pandemic in the USA <https://doi.org/10.1108/IJDI-11-2021-0238>
- Public Food Procurement: A Transformative Instrument for Sustainable Food Systems <https://doi.org/10.3390/su14116766>
- A Trade War and a Pandemic: Disruption and Resilience in the Food Bank Supply Chain (preprint) <https://doi.org/10.1016/j.indmarman.2022.01.002>
- The Effect of State Earned Income Tax Credit (EITC) Eligibility on Food Insufficiency during the COVID-19 Pandemic (preprint) <https://dx.doi.org/10.2139/ssrn.4149892>

### DFWED

- Persistence of Coronavirus Surrogates on Meat and Fish Products during Long-Term Storage. <https://dx.doi.org/10.1128/aem.00504-22>
- Efficacy of Washing Produce in Removing Human Coronavirus OC43 and Murine Norovirus. <https://dx.doi.org/10.1111/jam.15667>

### NIOSH and FARMWORKER HEALTH

- Ventilation Requirements and Recommendations for Controlling SARS-CoV-2 and Variants Outbreaks in Indoor Gathering Places with Close Contact (preprint) <https://doi.org/10.1101/2022.06.15.22276447>
- Restaurant frontline employees' turnover intentions: three-way interactions between job stress, fear of COVID-19, and resilience <https://doi.org/10.1108/IJCHM-08-2021-1016>

### NCEH

- Inactivation of SARS-CoV-2 and influenza A virus by dry fogging hypochlorous acid solution and hydrogen peroxide solution. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8989197>

### OTHER: CROSS CUTTING FOOD SYSTEM

- The impact of crowd gatherings on the spread of COVID-19. <https://dx.doi.org/10.1016/j.envres.2022.113604>
- Meals and Room Temperature Storage do not Significantly Affect Feasibility of Direct RT-PCR Tests for SARS-CoV-2 Using Saliva. <https://dx.doi.org/10.7754/Clin.Lab.2021.210451>

### OTHER: GENERAL

- COVID and the club: conversations with Boys & Girls Club leaders on providing services during the COVID-19 pandemic <https://doi.org/10.1108/jcs-10-2021-0039>
- Social Class and Emotional Well-Being: Lessons From a Daily Diary Study of Families Engaged in Virtual Elementary School During COVID-19 <https://doi.org/10.1177/23328584221095854>
- Buying Access One Trip at a Time Lower-Income Households and Ride-Hail <https://doi.org/10.1080/01944363.2022.2027262>

**Experiences participating in federal nutrition assistance programs during the early months of the COVID-19 pandemic: A mixed methods study in Vermont (preprint) <https://doi.org/10.21203/rs.3.rs-1754407/v1>**

Background: Federal nutrition assistance programs serve as safety nets for many American households, and participation has been linked to increased food security and, in some instances, improved diet quality and mental health outcomes. The COVID-19 pandemic brought new and increased economic, social, and psychological challenges, necessitating inquiry into how nutrition assistance programs are functioning and associated public health outcomes. Methods Using data from a representative statewide survey administered in Vermont ( $n = 600$ ) during the early months of the COVID-19 pandemic, we examine participant experiences with the 3 major federal nutrition assistance programs: the Supplemental Nutrition Assistance Program (SNAP), the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and school meal programs. We explore quantitative and qualitative responses regarding perceptions of program utility, and use nearest neighbors matching analyses in combination with bivariate statistical tests to assess associations between program participation and food insecurity, perceived stress, and fruit and vegetable intake as indicators of dietary quality. Results One in four respondents (27.3%) used at least one federal nutrition assistance program. As compared to non-participants, we find higher rates of food insecurity among program participants (57.5% vs. 18.1%;  $p < .001$ ), an association that persists even when we compare similar households using matching techniques ( $p \leq .001$ ). From matched analyses, we find that, compared to low-income non-participants, low-income program participants are less likely to meet fruit intake recommendations ( $p = 0.048$ ) and that low-income SNAP and WIC participants are less likely to meet vegetable intake recommendations ( $p = 0.035$ ). We also find lower rates of perceived stress among low-income school meal participant households compared to low-income nonparticipants ( $p = 0.039$ ). Despite these mixed outcomes, participants broadly valued federal nutrition assistance programs, characterizing them as helpful or easy to use. Conclusions We find that federal nutrition assistance programs as a group were not sufficient to address food insecurity and stress or increase fruit and vegetable intake in the state of Vermont during the early months of the COVID-19 pandemic. Nonetheless, participants perceived benefits from participation in these programs. Optimizing the utility of nutrition assistance programs depends on critical examination of their functioning under conditions of great stress.

**Social safety net programs and food sufficiency during COVID-19 pandemic in the USA**

<https://doi.org/10.1108/IJDI-11-2021-0238>

Purpose&gt;The COVID-19 pandemic has caused many households to experience income shocks because of the unprecedented job loss, resulting in the demand for public and private food assistance programs and a surge in unemployment insurance filing in the USA. This study aims to investigate the association between social safety programs (e.g. supplementary nutritional assistance programs (SNAP), unemployment insurance and charitable food assistance) and household food sufficiency during the COVID-19 pandemic in the country.Design/methodology/approach&gt;The authors used the Household Pulse Surveys (HPS) conducted by the US Census Bureau from August 2020 to March 2021. And, the authors used an ordered probit model for the empirical analysis because the indicator of food sufficiency constructed from the HPS is an ordinal variable with four categories. The indicator identifies four groups of households: severe food insufficiency, moderate food insufficiency, mild food sufficiency and food sufficiency.Findings&gt;The results show that food sufficiency is significantly higher among the SNAP, unemployment insurance and charitable food assistance recipients than non-recipients. Furthermore, the results indicate that food sufficiency is significantly lower among black, Asian, Hispanic and other races than white households. Concerning the intersectional effect of social safety net programs and race/ethnicity on household food sufficiency, the authors find that the household food

sufficiency is significantly higher among white, black and Asian households who benefited from SNAP, compared with non-beneficiary households. On the other hand, the authors find no evidence that participation in SNAP increases food sufficiency significantly among Hispanics and other races. In addition, the likelihood of food sufficiency increases significantly among white, black, Asian, Hispanic and other races that received unemployment insurance and charitable food assistance during the COVID-19 pandemic compared with those who did not benefit from the programs. Practical implications&gt;These results underscore the critical role collective America's social safety net programs played in increasing food sufficiency among Americans during the COVID-19 pandemic. Specifically, the results suggest that families' basic needs (food sufficiency) would have been at risk if these safety net programs were not available to households during the pandemic. This, therefore, highlights the important role that government- and non-government-supported food emergency assistance programs can play in preventing people from facing food insufficiency problems in a tough time or during a crisis in the USA. Originality/value&gt;This study highlights the dynamic relationship between Americans' social safety net programs and household food sufficiency during the COVID-19 pandemic.

### **Public Food Procurement: A Transformative Instrument for Sustainable Food Systems**

<https://doi.org/10.3390/su14116766>

A key characteristic of public food procurement is that it offers the opportunity to determine the way food is procured in addition to what type of food is purchased (local, diverse, nutritious, healthy, culturally appropriate, etc.), from whom (smallholder farmers, small and medium food enterprises, women, youth, and/or other vulnerable groups), and from which type of production (from agroecology or organic or other modes of agricultural production that ensure environmental sustainability as well as biodiversity). The outcomes framework highlighted multilevel governance, a sustainable food supply system, and healthy and sustainable food services as the main action areas for a sustainable food procurement strategy, along with six transversal features: long-term commitment, investment, evaluation, communication, gender, and a holistic approach. Elena Pagliarino, Elena Santanera, and Greta Falavigna of the Italian Research Institute on Sustainable Economic Growth discuss a case study of an Italian school where researchers examined the extent to which parents were willing to participate in food procurement decisions, as well as their ability to predict what foods children would pick at school lunch and their willingness to support sustainable food choices made by the school.

### **A Trade War and a Pandemic: Disruption and Resilience in the Food Bank Supply Chain (preprint)**

<https://doi.org/10.1016/j.indmarman.2022.01.002>

Supply chain turbulence has become the new normal and understanding supply chain resilience is essential for business-to-business firms. Building on dynamic capabilities theory, we examine three literature gaps on supply chain resilience: resource reconfiguration during high impact disruptions; resilience across multiple supply chain levels; and resilience when government is involved. The food bank supply chain is examined during the turbulence of 2018-2020 from the U.S.-China trade war and COVID-19 pandemic. Due to the trade war, the U.S. Department of Agriculture (USDA) shifted agricultural commodities intended for exports to food banks, creating scale and scope supply shocks, and this was followed by food demand and supply shocks from the pandemic. In-depth interviews were conducted with supply chain members, from farmers to processing firms to food banks. Qualitative analysis provides detailed insights on three stages of supply chain resilience: anticipating, adapting and responding, and recovery and learning. Our qualitative analysis shows that the responses to the trade war built resilience during the pandemic by leveraging dynamic capabilities, frugal innovation, social capital, and public/private partnerships. From the specific insights for food banks emerged broader insights for business-to-business markets, in the form of twelve propositions for building supply chain resilience to high impact disruptions.

**The Effect of State Earned Income Tax Credit (EITC) Eligibility on Food Insufficiency during the COVID-19 Pandemic (preprint) <https://dx.doi.org/10.2139/ssrn.4149892>**

This paper uses data from the Household Pulse Survey to examine whether and for how long the eligibility to receive state Earned Income Tax Credit (EITC) benefits reduced self-reported household food insufficiency among the eligible households during the COVID-19 pandemic. The result of a difference-in-differences (DD) model, estimated using ordinary least squares (OLS), indicates the eligibility to receive state EITC benefits reduced food insufficiency among the eligible between mid-February 2021 and early October 2021 by about 2 percentage points. However, the results of an event study model, which allows for the possibility of a decaying effect, reveal the effect was significantly different from 0 in only some of the post-treatment biweekly periods. Overall, the results suggest that state EITC eligibility reduced food insufficiency among the eligible over a relatively short period.

**Dynamics of macroeconomic factor effects on food assistance program participation in the United States. <https://dx.doi.org/10.1371/journal.pone.0269442>**

Using polynomial distributed lag (PDL) models, the impacts of macroeconomic factors relating to economic, financial, and sociological stress and designed to be short-run predictors of U.S. economic performance are identified and assessed concerning participation in key food assistance programs (SNAP, WIC, and NSLP). The econometric analysis covers the period October 1999 to September 2020. The impact of COVID-19 on participation in these programs also is quantified. Based on the parameter estimates obtained from the econometric PDL models, ex-ante forecasts of participation in the SNAP, WIC, and NSLP subsequently are made and evaluated over the period October 2020 to August 2021. The empirical results show that different sets of macroeconomic drivers affect participation levels across the respective food assistance programs. No macroeconomic factor is common across SNAP, WIC, and NSLP participation. Changes in macroeconomic conditions which influence SNAP, WIC and NSLP participation are not just contemporaneous but also affect participation levels anywhere from 1 month to 12 months later. Importantly, this research allows not only the determination of the macroeconomic factors which affect program participation but also allows the determination of the ability of the respective models to forecast program participation. As such, the Food and Nutrition Service will be in better position to assess program needs as well as to forecast program participation levels to minimize errors in the budgetary process.

DFWED

**Persistence of Coronavirus Surrogates on Meat and Fish Products during Long-Term Storage. <https://dx.doi.org/10.1128/aem.00504-22>**

Multiple pathways of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) transmission have been examined, and the role of contaminated foods as a source of SARS-CoV-2 exposure has been suggested. As many cases of SARS-CoV-2 have been linked to meat processing plants, it may be that conditions in live animal markets and slaughterhouses or meat processing plant procedures transfer viral particles to meat, poultry, and seafood during animal slaughter, processing, storage, or transport. Because of the potential for contamination of foods such as beef, chicken, pork, or fish, the goal of this study was to evaluate the survival of a lipid enveloped RNA bacteriophage, phi 6, as well as two animal coronaviruses, murine hepatitis virus (MHV) and transmissible gastroenteritis virus (TGEV), as SARS-CoV-2 surrogates for their survival under various meat and fish cold-storage conditions over 30 days. Viral surrogates differed in survival, depending on food product and temperature, but overall, viruses survived for extended periods of time at high concentrations at both refrigerated and frozen temperatures. The ability of SARS-CoV-2 viral surrogates like Phi 6 and animal coronaviruses to survive for varying extents on some meat and fish products when stored refrigerated or frozen is a significant

and concerning finding. Continued efforts are needed to prevent contamination of foods and food processing surfaces, worker hands, and food processing utensils such as knives, and there is a need to better address the lack of or inadequate disinfection of these foods prior to meat packaging.

**IMPORTANCE** The ability of SARS-CoV-2 viral surrogates like Phi 6 and animal coronaviruses to survive for long periods on meat and fish products at cold temperatures emphasizes the need for rigorous and sustained food sanitation and hygiene in the harvest, transport, processing, and distribution of these foods.

### **Efficacy of Washing Produce in Removing Human Coronavirus OC43 and Murine Norovirus.**

<https://dx.doi.org/10.1111/jam.15667>

**AIMS:** Fresh produce is often a vehicle for transmission of foodborne pathogens such as human norovirus. Thus, it is recommended to wash the surface of produce before consumption, and one of the most common ways to wash produce is by rinsing under running tap water. This study determined the effectiveness of removal of human coronavirus-OC43 (HCoV-OC43), as a surrogate for severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) and murine norovirus-1 (MNV-1), as a surrogate for human norovirus, from contaminated lettuce, apples and cucumbers. **METHODS AND RESULTS:** The produce surfaces were artificially inoculated in conjunction with fecal material to represent natural contamination. Rinsing under tap water for 10 s at 40 mL/s removed  $1.94 \pm 0.44$ ,  $1.42 \pm 0.00$ , and  $1.42 \pm 0.42$  log of HCoV-OC43 from apple, cucumber and lettuce, respectively. The same washing technique removed  $1.77 \pm 0.17$ ,  $1.42 \pm 0.07$  and  $1.79 \pm 0.14$  log of MNV-1 from apple, cucumber and lettuce, respectively. This washing technique was effective at reducing a significant amount of viral contamination, however, it was not enough to eliminate the entire contamination. There was no significant difference in reduction of viral load between the two viruses, nor between the three surfaces tested in this study. **CONCLUSIONS:** Our data suggest that washing under tap water would be an efficient way of reducing the risk of foodborne viral transmission only if the level of contamination is less than 2 log PFU. **SIGNIFICANCE AND IMPACT OF STUDY:** This study demonstrates that running tap water was effective at reducing the amount of infectious HCoV-OC43 and MNV on produce surfaces, and washing produce continues to be an important task to perform prior to consumption to avoid infection by foodborne viruses, particularly for foods which are eaten raw.

### **NIOSH and FARMWORKER HEALTH**

#### **Ventilation Requirements and Recommendations for Controlling SARS-CoV-2 and Variants Outbreaks in Indoor Gathering Places with Close Contact (preprint)**

<https://doi.org/10.1101/2022.06.15.22276447>

Unexpected rapid infection involving SARS-CoV-2 variant Omicron known as the fifth wave of outbreak occurred since early January 2022 in Hong Kong. Almost 1.2 million citizens were infected in three months. Ventilation provisions in some gathering places with close contact such as restaurants were found to be lower than requirements, believed to be one of the main causes of transmission in these indoor spaces. At the end of the fifth outbreak in mid-May 2022, group infections were still found in several such gathering places including restaurants and pubs due to inadequate ventilation provisions. There are worries about triggering the sixth wave of outbreak. Key points related to ventilation requirements in such gathering places are discussed in this paper. Adequate ventilation of 6 air changes per hour minimum must be provided to avoid direct air transmission of virus. Indoor aerodynamics induced by ventilation system must be considered too. However, it is difficult to measure ventilation rate quickly and accurately. A control scheme on virus outbreaks is proposed on installing mechanical ventilation energy use meters and carbon dioxide sensors for checking ventilation provisions adequacy quickly.

**Restaurant frontline employees' turnover intentions: three-way interactions between job stress, fear of COVID-19, and resilience** <https://doi.org/10.1108/IJCHM-08-2021-1016>

**Purpose**>The COVID-19 pandemic intensifies the high turnover rate in the restaurant industry. Applying the conservation of resources (COR) theory, this study aims to examine the factors influencing US restaurant frontline employees' organizational and occupational turnover intention with an emphasis on the three-way interactions between job stress, fear of COVID-19 (FC) and resilience.  
**Design/methodology/approach**>A sample of 243 US restaurant frontline employees participated in this study. PROCESS macro was used for hypothesis testing.  
**Findings**>Organizational turnover intention fully mediated the relationship between job stress and restaurant employees' occupational turnover intention. FC intensified the positive relationship between job stress and organizational turnover intentions. Job stress, FC and resilience interacted to affect restaurant frontline employees' organizational turnover intention such that when resilience is high, FC strengthened the positive relationship between job stress and organizational turnover intention, and the indirect effect of job stress on occupational turnover intention via organizational turnover intention.  
**Practical implications**>Restaurants should take measures to reduce frontline employees' fear and continue implementing practices to alleviate job stress during a crisis to reduce employees' turnover intentions. Training on building employee resilience could also be provided by restaurant operators.  
**Originality/value**>This study added to the limited knowledge of factors that are associated with restaurant employees' organizational and occupational turnover intentions in the context of a global crisis and expanded the current knowledge of how fear and resilience may impact restaurant employees' behavioral intentions.

**NCEH**

**Inactivation of SARS-CoV-2 and influenza A virus by dry fogging hypochlorous acid solution and hydrogen peroxide solution.** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8989197>

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the causative agent of coronavirus disease 2019 (COVID-19), is transmitted mainly by droplet or aerosol infection; however, it may also be transmitted by contact infection. SARS-CoV-2 that adheres to environmental surfaces remains infectious for several days. We herein attempted to inactivate SARS-CoV-2 and influenza A virus adhering to an environmental surface by dry fogging hypochlorous acid solution and hydrogen peroxide solution. SARS-CoV-2 and influenza virus were air-dried on plastic plates and placed into a test chamber for inactivation by the dry fogging of these disinfectants. The results obtained showed that the dry fogging of hypochlorous acid solution and hydrogen peroxide solution inactivated SARS-CoV-2 and influenza A virus in CT value (the product of the disinfectant concentration and contact time)-dependent manners. SARS-CoV-2 was more resistant to the virucidal effects of aerosolized hypochlorous acid solution and hydrogen peroxide solution than influenza A virus; therefore, higher concentrations of disinfectants or longer contact times were required to inactivate SARS-CoV-2 than influenza A virus. The present results provide important information for the development of a strategy that inactivates SARS-CoV-2 and influenza A virus on environmental surfaces by spatial fogging.

**OTHER: CROSS CUTTING FOOD SYSTEM**

**The impact of crowd gatherings on the spread of COVID-19.** <https://dx.doi.org/10.1016/j.envres.2022.113604>

Crowd gatherings are an important cause of COVID-19 outbreaks. However, how the scale, scene and other factors of gatherings affect the spread of the epidemic remains unclear. A total of 184 gathering events worldwide were collected to construct a database, and 99 of them with a clear gathering scale were used for statistical analysis of the impact of these factors on the disease incidence among the crowd in the study. The results showed that the impact of small-scale (less than 100 people) gathering

events on the spread of COVID-19 in the city is also not to be underestimated due to their characteristics of more frequent occurrence and less detection and control. In our dataset, 22.22% of small-scale events have an incidence of more than 0.8. In contrast, the incidence of most large-scale events is less than 0.4. Gathering scenes such as "Meal" and "Family" occur in densely populated private or small public places have the highest incidence. We further designed a model of epidemic transmission triggered by crowd gathering events and simulated the impact of crowd gathering events on the overall epidemic situation in the city. The simulation results showed that the number of patients will be drastically reduced if the scale and the density of crowds gathering are halved. It indicated that crowd gatherings should be strictly controlled on a small scale. In addition, it showed that the model well reproduce the epidemic spread after crowd gathering events better than does the original SIER model and could be applied to epidemic prediction after sudden gathering events.

**Meals and Room Temperature Storage do not Significantly Affect Feasibility of Direct RT-PCR Tests for SARS-CoV-2 Using Saliva.** <https://dx.doi.org/10.7754/Clin.Lab.2021.210451>

**BACKGROUND:** Rapid detection of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) using saliva samples has emerged as a preferred technique since sample collection is easy and noninvasive. In addition, several commercial high-throughput PCR kits that do not require RNA extraction/purification have been developed and are now available for testing saliva samples. However, an optimal protocol for SARS-CoV-2 RT-PCR testing of saliva samples using the RNA extraction/purification-free kits has not yet been established. The aim of this study was to establish optimal preanalytical conditions, including saliva sample collection, storage, and dilution for RNA extraction/purification-free RT-PCR (direct RT-PCR). **METHODS:** Patients suspected with COVID-19 from March 02 to August 31, 2020, were enrolled in this study. A total of 248 samples, including 43 nasopharyngeal swabs and 205 saliva samples, were collected from 66 patients (37 outpatients and 29 inpatients) and tested using the 2019 Novel Coronavirus Detection Kit (nCoV-DK, Shimadzu Corporation, Kyoto, Japan). **RESULTS:** The detection results obtained using nasopharyngeal swabs and saliva samples matched 100%. The sampling time, i.e., either awakening time or post-breakfast, had no significant effect on the viral load of the saliva samples. Although saliva samples are routinely diluted to reduce viscosity, we observed that dilution negatively affected PCR sensitivity. Saliva samples could be stored at room temperature (25°C) for 24 hours or at 4°C for up to 48 hours. **CONCLUSIONS:** This study demonstrated the appropriate conditions of saliva sample collection, processing, and storage, and indicated that the nCoV-DK is applicable to saliva samples, making the diagnosis method simple and safe.

**OTHER: GENERAL**

**COVID and the club: conversations with Boys & Girls Club leaders on providing services during the COVID-19 pandemic** <https://doi.org/10.1108/jcs-10-2021-0039>

Purpose Boys & Girls Clubs of America (BGCs) provide numerous avenues for youth to connect, be physically active and have healthy meals/snacks. These services are often provided to low-income families at reduced cost to bridge the gap in after school and summer childcare. However, many of these clubs were forced to dramatically change their services during the COVID-19 pandemic. This study aims to examine how 13 BGCs in Texas, USA, experienced COVID-19 and persevered to provide services. **Design/methodology/approach** Interviews were conducted with 16 BGC leaders from 13 different BGCs. Open-ended questions were used to elicit leaders' experiences with the pandemic, services their clubs were able to offer, barriers overcome and supports crucial to their ability to serve their communities. Thematic analysis was used to generate findings from these interviews. Findings BGC services changed significantly during the pandemic. Normal activities were no longer possible; however, leaders (alongside their communities) continually provided services for their families. Further, leaders reiterated the power of the community coming together in support of their families. **Social implications** While BGC leaders

had to adapt services, they found ways to reach families and serve their community. These adaptations can have dramatic impacts on the social and physical well-being of children in their communities. Learning from this adversity can improve services as clubs start to build back. Originality/value This study provides vital context to the changing care and setting children were exposed to during the pandemic response. Additionally, these results provide understanding of the adaptations that took place in these services.

### **Social Class and Emotional Well-Being: Lessons From a Daily Diary Study of Families Engaged in Virtual Elementary School During COVID-19** <https://doi.org/10.1177/23328584221095854>

To understand how parents adapted to virtual learning expectations during the initial COVID-19 school closures in spring 2020, this study investigated families' daily activities, including parents' emotions and their appraisals of the value of daily activities across two timepoints. Thirty-two parent-child dyads (Mean child age = 78 months, 50% male;47% Latinx/Hispanic;28% Spanish speaking) from a Southern California school district serving a diverse population completed a daily diary texting protocol (experience sampling method;ESM) five times per day over five days. Families spent most of their time together engaging in mealtime activities (preparing meals and eating). Families from low socioeconomic backgrounds reported appraising academic activities, social skills, and life skills more highly than families from high socioeconomic backgrounds. Parents reported more positive emotions than negative emotions. Findings provide opportunities for educators to mitigate learning loss by building on children's learning experiences and family adaptations to daily routines during COVID-19.

### **Buying Access One Trip at a Time Lower-Income Households and Ride-Hail** <https://doi.org/10.1080/01944363.2022.2027262>

Problem, research strategy, and findings New transportation options like ride-hail can expand accessibility without the costs of car ownership. Ride-hail's potential is particularly salient for lower-income and zero-car households. We used interviews and a national (U.S.) survey to examine how and why lower-income travelers in the United States use ride-hail. Survey and interview responses provided a temporal snapshot and thus reflect, in part, travel challenges specific to COVID-19. Findings suggest that lower-income travelers, particularly those without personal cars, use ride-hail in ways distinct from those typically reported in broader travel surveys. Individuals without cars are more likely to use ride-hail, and use it more often, compared with people with cars, particularly to fill spatial and temporal gaps in public transit service and to access medical care and groceries. Costs and price unpredictability remain significant barriers limiting travelers' use of ride-hail services. Takeaway for practice This research demonstrates a latent need for car access among lower-income travelers. Substantial gaps in alternative modes pose challenges for travelers seeking reliable and timely transportation. Planners should invest in transit, biking, and walking to provide robust alternatives to car ownership. Such investments, however, take time. In the meantime, cities and agencies should consider subsidizing ride-hail trips to bridge existing gaps in the transportation network.

### **Food and COVID-19 Lit Review: Weeks ending 6/17/22 and 6/24/22**

DNPAO

- Additional Fruit and Vegetable Vouchers for Pregnant WIC Clients: An Equity-Focused Strategy to Improve Food Security and Diet Quality. <https://dx.doi.org/10.3390/nu14112328>



- Food consumption according to the level of processing and sleep quality during the COVID-19 pandemic. <https://dx.doi.org/10.1016/j.clnesp.2022.03.023>

#### DFWED

- Online dashboards for SARS-CoV-2 wastewater data need standard best practices: an environmental health communication agenda  
doi: <https://doi.org/10.1101/2022.06.08.22276124>
- A comparison of food safety conformity between cattle and pig slaughterhouses  
<https://doi.org/10.1016/j.foodcont.2022.109143>

#### NIOSH and FARMWORKER HEALTH

- Review of adaptations of U.S. Commercial Fisheries in response to the COVID-19 pandemic using the Resist-Accept-Direct (RAD) framework <https://doi.org/10.1111/fme.12567>

#### NCEH

- Multi-route exposure sampling of quaternary ammonium compounds and ethanol surface disinfectants in a K-8 school. <https://dx.doi.org/10.1111/ina.13036>
- Virucidal activities of novel hand hygiene and surface disinfectant formulations containing EGCG-palmitate (EC16). <https://dx.doi.org/10.1016/j.ajic.2022.05.027>

#### OTHER: CROSS CUTTING FOOD SYSTEMS

- Mitigating the Impact of Emerging Animal Infectious Disease Threats: First Emerging Animal Infectious Diseases Conference (EAIDC) Report. <https://dx.doi.org/10.3390/v14050947>
- Food and beverage industry in a pandemic context <https://doi.org/10.1504/IJSEM.2022.122738>

#### OTHER: GENERAL

- Evening with NASA Scientists and Engineers: A Senior Living Community Outreach Program [here](https://doi.org/10.3389/fdata.2022.867085)
- Accessibility and Essential Travel: Public Transport Reliance Among Senior Citizens During the COVID-19 Pandemic <https://doi.org/10.3389/fdata.2022.867085>

#### DNPAO

##### **Additional Fruit and Vegetable Vouchers for Pregnant WIC Clients: An Equity-Focused Strategy to Improve Food Security and Diet Quality.** <https://dx.doi.org/10.3390/nu14112328>

Women with low household income and from racial/ethnic minority groups are at elevated risk of food insecurity. Food insecurity during pregnancy is associated with overall less healthy diets, lower intake of the pregnancy-supportive nutrients iron and folate, and significant variations in diet across the course of a month. The goal of this study was to explore the impact of an ongoing \$40/month supplement for fruits and vegetables (F&Vs) provided to pregnant people enrolled in the Special Supplemental Nutrition Program for Women and Children (WIC). Our primary outcome was food insecurity using the USDA 6-item survey, and our secondary outcome was dietary intake of F&Vs based on the 10-item Dietary Screener Questionnaire. Participants in intervention and comparison counties completed surveys at enrollment and approximately three months later (n = 609). Mean  $\pm$  SD food insecurity at baseline was  $3.67 \pm 2.79$  and  $3.47 \pm 2.73$  in the intervention and comparison groups, respectively, and the adjusted between-group change from baseline to follow-up in food insecurity was 0.05 [95% CI: -0.35, 0.44] (p > 0.05). F&V intake (in cup equivalents) was  $2.56 \pm 0.95$  and  $2.51 \pm 0.89$  at baseline in the two groups, and the adjusted mean between-group difference in changes from baseline was -0.06 [-0.23, 0.11] (p

> 0.05). Recruitment and data collection for this study coincided with the most intensive of America's COVID relief efforts. Our results may indicate that small increases in highly targeted food resources make less of a difference in the context of larger, more general resources being provided to individuals and households in need.

**Food consumption according to the level of processing and sleep quality during the COVID-19 pandemic.** <https://dx.doi.org/10.1016/j.clnesp.2022.03.023>

**BACKGROUND AND AIMS:** Consumption of ultra-processed foods is negatively associated with health outcomes, however, the contribution to sleep quality is limited. Therefore, the objective of this study was to evaluate the association between food intake by frequency and degree of processing and sleep quality in adults during the covid-19 pandemic. **METHODS:** Population-based survey of adults from October to December 2020 in the Iron Quadrangle region, Brazil. The exposure variable was a food intake score that considered the frequency of consumption and food processing degree. The total score ranged from 0 (best) to 48 points (worst food quality), categorized into quartiles. Furthermore, we also evaluated whether individuals replaced their lunch and/or dinner based mostly on fresh/minimally processed foods for ultra-processed foods, for five or more days in the week. The outcome variable was sleep quality assessed with the Pittsburgh Sleep Quality Index. We constructed a contrasting directed acyclic graph (DAG) model to estimate the adjusted odds ratio of the association between score eating and sleep, by logistic regression. **RESULTS:** Most of the 1762 individuals evaluated had poor sleep quality (52.5%). The minimum and maximum food scores were 0 and 30 points (mean 9.16; 95% CI 8.50, 9.81). The higher values of the score corresponded to lower consumption of fresh and minimally processed foods and higher consumption of ultraprocessed foods. In multivariate analysis, individuals in the third food consumption score had 71% greater odds of poor sleep quality (OR = 1.71; 95% CI: 1.03, 2.85) and in the fourth quartile 144% greater odds (OR = 2.44; 95% CI: 1.32, 2.44). Besides, replacing the dinner meal with ultra-processed foods five days or more in the week was also associated with poor sleep quality (OR = 2.01; 95%CI: 1.14, 3.57). **CONCLUSION:** Higher consumption of ultra-processed foods concomitant with lower consumption of fresh and minimally processed foods is associated with a higher chance of poor sleep quality.

DFWED

**Online dashboards for SARS-CoV-2 wastewater data need standard best practices: an environmental health communication agenda** doi: <https://doi.org/10.1101/2022.06.08.22276124>

The rapid development of scientific communication approaches for environmental surveillance data with online information dashboards has been done in the absence of a global organizing body during the coronavirus disease 2019 pandemic. We aim to make a case for standardization of dashboards presenting SARS-CoV-2 wastewater data. The list of dashboards was compiled as of March 31, 2022. The 127 dashboards reviewed represented 27 countries using a range of line/bar graphs, maps, and tables with symbol presentation. We identified 96 separate units of measure for the wastewater SARS-CoV-2 data. There was also inconsistency in using linear or log scale. Twenty-five percent of dashboards presented SARS-CoV-2 variant monitoring. Only 30% (38/125) of dashboards provided downloadable source data. There is great opportunity to improve scientific communication through the adoption of uniform data presentation conventions or standards for this field.

**A comparison of food safety conformity between cattle and pig slaughterhouses**

<https://doi.org/10.1016/j.foodcont.2022.109143>

The aim of the study was to evaluate and compare the level of conformity with food safety requirements in cattle and pig slaughterhouses in the qualification procedure of beef and pork suppliers

to a large-scale meat processing plant. Seventy-two slaughterhouses supplying beef and pork to the meat processing plant were audited. The audits were carried out in 2019–2020 during the COVID-19 pandemic. Most of the evaluated slaughterhouses met the audit requirements, but 10% were not qualified. There were two and half times more disqualified pig slaughterhouses than cattle ones. Large-sized slaughterhouses were scored significantly better than the medium-sized ones. The results made it possible to identify areas requiring urgent improvement in slaughterhouses, especially in the case of food safety/HACCP and non-conformities control, site hygiene, and pest control. Significantly more complete fulfillment of the requirements was found in cattle than in pig slaughterhouses. The highest differences between cattle and pig slaughterhouses were found in the area of site hygiene, pest control, and production process criteria. The highest scored criterion for both types of slaughterhouse was SARS-CoV-2/COVID-19 issues. This indicates that prevention spreading of COVID-19 in the work environment was highly ensured.

#### NIOSH and FARMWORKER HEALTH

##### **Review of adaptations of U.S. Commercial Fisheries in response to the COVID-19 pandemic using the Resist-Accept-Direct (RAD) framework** <https://doi.org/10.1111/fme.12567>

The COVID-19 pandemic transformed social and economic systems globally, including fisheries systems. Decreases in seafood demand, supply chain disruptions, and public safety regulations required numerous adaptations to maintain the livelihoods and social resilience of fishing communities. Surveys, interviews, and focus groups were undertaken to assess impacts from and adaptive responses to the pandemic in commercial fisheries in five U.S. regions: the Northeast, California, Alaska, the U.S. Caribbean, and the Pacific Islands. Fishery adaptation strategies were categorized using the Resist?Accept?Direct (RAD) framework, a novel application to understand social transformation in a social-ecological system in response to a disturbance. A number of innovations emerged, or were facilitated, that could improve the fisheries' resilience to future disruptions. Fishers with diversified options and strategic flexibility generally fared better, i.e., had fewer disruptions to their livelihoods. Using the RAD framework to identify adaptation strategies from fishery system actors highlights opportunities for improving resilience of fisheries social-ecological systems to future stressors.

#### NCEH

##### **Multi-route exposure sampling of quaternary ammonium compounds and ethanol surface disinfectants in a K-8 school.** <https://dx.doi.org/10.1111/ina.13036>

The frequency of surface disinfectant use has increased over the last several years in public settings such as schools, especially during the COVID-19 pandemic. Although these products are important for infection control and prevention, their increased use may intensify the exposure to both persons applying the disinfection product as well as bystanders. Safety assessments have demonstrated that these products, when used as intended, are considered safe for use and effective; however, point-of-contact effects (such as respiratory or dermal irritation) may still occur. Additionally, relative exposures may vary significantly due to the wide variation in disinfectant formulation and application methods. Quantitative estimations of exposures to two commonly used active ingredients, quaternary ammonium compounds (QACs) and ethanol, are not well characterized during product use and application scenarios. To assess the potential for health risks attributable to increased use in classroom settings, as well as to quantitatively evaluate the potential exposure to both ethanol and QACs, student and adult bystander surface and air measurements were collected in a K-8 school setting in Ohio, United States, over a three-day period. Direct-reading instruments were utilized to collect real-time air samples that characterized mass fraction concentrations following the use of the QAC- and ethanol-based disinfectants. Furthermore, surface and air sampling of microbial species were conducted to establish the overall bioburden and effectiveness of each disinfectant to inform the comparative risk and health

effect impacts from the tested products use scenario. Both tested products were approximately equally effective at reducing bioburdens on desk surfaces. In some classrooms, concentrations of QAC congeners were significantly increased on desk surfaces following the application of the disinfectant spray; however, the magnitude of the change in concentration was small. Ethanol was not measured on surfaces due to its volatility. Airborne concentrations increased immediately following spray of each disinfectant product but rapidly returned to baseline. Each of the QAC congeners listed in the product safety data sheets were detected and measurable on desk surfaces; however, air concentrations were generally below the limit of detection. The 15-min time-weighted averages (TWAs) of both QACs and ethanol in the air were below respective health effects benchmarks, and therefore, the negative impact on health outcomes is considered to be minimal from short-term, repeated use of ethanol- or QAC-based spray products in a school setting when the products are used as directed.

**Virucidal activities of novel hand hygiene and surface disinfectant formulations containing EGCG-palmitate (EC16).** <https://dx.doi.org/10.1016/j.ajic.2022.05.027>

BACKGROUND: Non-toxic hand hygiene and surface disinfectant products with virucidal activity against norovirus are in urgent need to aid in curtailing infections due to this alcohol-resistant non-enveloped virus. METHOD: Alcohol-based formulations were made with epigallocatechin-3-gallate-palmitate (EC16), an FDA accepted food additive. Based on in-house testing of formulations, three prototypes, PTV80 hand gel, PST70 surface disinfectant spray and PST70 surface disinfectant wipe, were selected from in-house tests for independent testing at GLP (good laboratory practice) laboratories according to EN 14476:2019 (hand gel), ASTM test method E1053-20 (spray), and ASTM E2362-15, E1053, and ASTM E2896-12 (wipe). RESULTS: The PTV80 hand gel prototype demonstrated a >99.999% reduction of murine norovirus S99 infectivity in 60 seconds. Carrier testing of the PST70 surface spray and surface wipe demonstrated reduction of feline calicivirus infectivity by >99.99% in 60 seconds. In addition, testing with human coronavirus and human herpes simplex virus demonstrated >99.99% efficacy in 60 seconds, consistent with broad spectrum virucidal activity. CONCLUSION: The novel non-toxic prototypes containing EC16 were found to be suitable for use in future hand sanitizer gel, surface disinfectant spray and wipe products against norovirus. Products based on these formulations could be used safely to help prevent and control norovirus and other emerging virus outbreaks, pending future studies.

OTHER: CROSS CUTTING FOOD SYSTEMS

**Mitigating the Impact of Emerging Animal Infectious Disease Threats: First Emerging Animal Infectious Diseases Conference (EAIDC) Report.** <https://dx.doi.org/10.3390/v14050947>

From 29 November to 1 December 2021, an "emerging animal infectious disease conference (EAIDC)" was held at the Pennsylvania State University. This conference brought together distinguished thought leaders in animal health, veterinary diagnostics, epidemiology and disease surveillance, and agricultural economics. The conference's primary objective was to review the lessons learned from past experiences in dealing with high-consequence animal infectious diseases to inform an action plan to prepare for future epizootics and panzootics. Invited speakers and panel members comprised world-leading experts in animal infectious diseases from federal state agencies, academia, professional societies, and the private sector. The conference concluded that the biosecurity of livestock operations is critical for minimizing the devastating impact of emerging animal infectious diseases. The panel also highlighted the need to develop and benchmark cutting-edge diagnostics for rapidly detecting pathogens in clinical samples and the environment. Developing next-generation pathogen agnostic diagnostics will help detect variants of known pathogens and unknown novel pathogens. The conference also highlighted the importance of the One Health approach in dealing with emerging animal and human infectious diseases.

The recommendations of the conference may be used to inform policy discussions focused on developing strategies for monitoring and preventing emerging infectious disease threats to the livestock industry.

**Food and beverage industry in a pandemic context** <https://doi.org/10.1504/IJSEM.2022.122738>

The pandemic has been a serious concern since its arrival in early 2020 around the globe. The aim of this research is to study the decay of the food and beverage industry, facing the pandemic of Covid-19. Throughout this research we have studied the classification of our sample, the fears and discomforts of our respondents regarding the new reality faced and the routine alteration of inquiries and by extension the impacted in the industry. In order to respond to these questions, we have based our investigation in the conception of a survey we have distributed and analysed a predictive model and clustering analysis. The findings drawn in this study were meaningful and lead us to the confirmation of the biggest fears and discomfort reasons when attending restaurants in a pandemic context but also the causes that make individuals reconsider their attendance in restaurant establishments. Copyright © 2022 Inderscience Enterprises Ltd.

OTHER: GENERAL

**Evening with NASA Scientists and Engineers: A Senior Living Community Outreach Program** [here](#)

Introduction: An Evening with NASA Scientists and Engineers is an outreach program for senior living communities, where participants learn from and interact with a scientist or engineer in a virtual setting. Participants learn about NASA science and engineering through a behind-the-scenes look from the people who work at NASA. The program focuses on both the stories behind the discoveries and the stories behind the people. The audience tunes in to the events via the NASA Zoom Webinar platform, where they have the opportunity to ask questions throughout the approximately 30-minute program. By bringing the audience into the conversation, we build rapport and thus improve their connection with NASA. Overview: An Evening with NASA Scientists and Engineers began in September 2020 when we identified a need for outreach to this particular demographic, as senior living communities had been hit especially hard by the COVID-19 pandemic. The program covers a wide range of topics, including heliophysics, astrophysics, planetary science, Earth science, planetary defense, and more, depending on what is topically appropriate at the time, and occurs on a roughly monthly basis. Each interactive presentation is between 20-25 minutes with 5-10 minutes of dedicated Q&A. Future dates and topics may change depending on new developments to NASA missions and stories. Audience: As of December 2021, we have four regularly attending senior living communities, spanning the East Coast from New Hampshire to Florida, with each joining the overall program at various stages of its development. The ability to reach many different senior living communities is crucial so that a diversity of people may benefit from this program. The audience consists of seniors with varying experience and comprehension levels – some are very familiar with the sciences while others are simply curious to learn more. Residents tune in to each event from their individual rooms or from their larger community rooms. RiverWoods Exeter. The RiverWoods Exeter community was our initial audience who acted as our “guinea pig” to see how this program might be implemented and to work out any major issues. They are located in Exeter, NH but also have two additional campuses in Durham, NH and Manchester, NH, that joined us a few months into the program. Culpepper Garden. Our second community to join the program was Culpepper Garden, a senior living community in Arlington, VA that provides both independent and assisted living housing to low-income seniors. Edinburgh Square. Our third community, Edinburgh Square, connected with us after hearing about the program through Culpepper Garden. Edinburgh Square is an HUD-subsidized retirement community in Roanoke, VA that houses both seniors and those living with disabilities. Moonstruck Astronomy Club. The Moonstruck Astronomy Club consists of

residents from the On Top of the World retirement community in Ocala, FL and was the latest senior living community to join us. NASA Zoom Webinar: An Evening with NASA Scientists and Engineers reaches numerous senior living communities through live presentations that we host using the NASA Zoom Webinar virtual platform. Participants are typically already familiar with the Zoom platform which enables a lower barrier to entry. A recording of each talk is added to a designated video playlist on the NASA STEM YouTube channel so that audiences worldwide may view them [1]. These recordings began with our April 1, 2021 presentation, as this was when NASA Zoom Webinar was implemented, thus enabling us to record each talk. Metrics: We record attendance numbers from the senior living communities for each event as well as those from YouTube views after the presentation recording is posted online. Depending on which communities tune in, typical attendance numbers are between 60-100 people. RiverWoods Exeter has the most regularly attending residents, with an average of 55 attendees per event. As of December 2021, we have hosted fourteen events, nine of which were recorded and posted to our designated NASA STEM YouTube Channel playlist. The nine recordings combined have roughly 4,000 YouTube views thus far, with specific videos seeing higher view counts around launch dates (e.g. NASA's DART mission) and trending topics (e.g. JWST). A list of speakers, topics, and links to presentation recordings is shown in Table 1. Future Program Expansion: Thus far, we have been adding communities on an individual basis. To make this process more streamlined, we are looking into working with senior living community networks and organizations such as LeadingAge [2]. In this manner, we will be able to reach more communities while also making it easier to send and receive relevant information.

### **Accessibility and Essential Travel: Public Transport Reliance Among Senior Citizens During the COVID-19 Pandemic** <https://doi.org/10.3389/fdata.2022.867085>

Using smart card travel data, we compare demand for bus services by passengers of age 65 or older prior to and during the COVID-19 pandemic to identify public transport-reliant users residing in more car-dependent environments—i.e., people who rely on public transport services to carry out essential activities, such as daily shopping and live in areas with low public transport accessibility. Viewing lockdowns as natural experiments, we use spatial analysis combined with multilevel logistic regressions to characterize the demographic and geographic context of those passengers who continued to use public transport services in these areas during lockdown periods, or quickly returned to public transport when restrictions were eased. We find that this particular type of public transport reliance is significantly associated with socio-demographic characteristics alongside urban residential conditions. Specifically, we identify suburban geographies of public transport reliance, which are at risk of being overlooked in approaches that view public transport dependence mainly as an outcome of deprivation. Our research demonstrates once again that inclusive, healthy and sustainable mobility can only be achieved if all areas of metropolitan regions are well and reliably served by public transport.

### **Food and COVID-19 Lit Review: Weeks ending 6/3/22 and 6/10/22**

DNPAO

- Increase in newly diagnosed type 1 diabetes in youth during the COVID-19 pandemic in the United States: A multi-center analysis. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9115477>
- A Systematic Review of the Impact of the First Year of COVID-19 on Obesity Risk Factors: A Pandemic Fueling a Pandemic? <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8989548>

- COVID-19 and food insecurity in the Blackfeet Tribal Community. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9113917>
- The Changing Landscape of Children's Diet and Nutrition: New Threats, New Opportunities. <https://dx.doi.org/10.1159/000524328>
- Efforts in adopting the ultra-processed food and soft drinks labeling legislation in a COVID-19 environment: The cases of Colombia and Mexico <https://doi.org/10.1111/basr.12272>
- Geographic Patterns of Applications to the Supplemental Nutrition Assistance Program (SNAP) in New Orleans, Louisiana in the Immediate Aftermath of the COVID-19 Pandemic <https://doi.org/10.1080/19320248.2022.2077160>

#### DFWED

- The Safety of Cold-Chain Food in Post-COVID-19 Pandemic: Precaution and Quarantine DOI: 10.3390/foods11111540
- Surveillance of SARS-CoV-2 Contamination in Frozen Food-Related Samples — China, July 2020 [access here](#)

#### NIOSH and FARMWORKER HEALTH

- Modeling the systemic risks of COVID-19 on the wildland firefighting workforce. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9116702>
- When gig workers become essential: Leveraging customer moral self-awareness beyond COVID-19. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9107384>
- Estimates of COVID-19 vaccine uptake in major occupational groups and detailed occupational categories in the United States, April-May 2021. <https://dx.doi.org/10.1002/ajim.23370>

#### NCEH

- Effect of different setups, protective screens and air supply systems on the exposure to aerosols in a mock-up restaurant <https://doi.org/10.1080/14733315.2022.2064962>
- Aerodynamic Prediction of Time Duration to Becoming Infected with Coronavirus in a Public Place <https://doi.org/10.3390/fluids7050176>

#### OTHER: CROSS CUTTING FOOD SYSTEMS

- Routine Surveillance and Vaccination on a University Campus During the Spread of the SARS-CoV-2 Omicron Variant. <https://dx.doi.org/10.1001/jamanetworkopen.2022.12906>

#### OTHER: GENERAL

- Navigating the chaos": teacher considerations while adapting curriculum and instruction during the COVID-19 pandemic" <https://doi.org/10.1108/qri-02-2022-0026>
- A Qualitative study on diverse perspectives and identities of firearm owners. <https://dx.doi.org/10.1136/injuryprev-2022-044522>
- The end of the COVID-19 pandemic. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9111437>
- A call for an independent inquiry into the origin of the SARS-CoV-2 virus. <https://dx.doi.org/10.1073/pnas.2202769119>
- The role of schools in driving SARS-CoV-2 transmission: Not just an open-and-shut case. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8858687>
- Assessing US Congressional Exposure to the Issue of Emerging Infectious Disease Risk Prior to 2020. <https://dx.doi.org/10.1089/hs.2021.0205>

**Increase in newly diagnosed type 1 diabetes in youth during the COVID-19 pandemic in the United States: A multi-center analysis.** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9115477>

BACKGROUND: An increase in newly diagnosed type 1 diabetes (T1D) has been posited during the COVID-19 pandemic, but data are conflicting. We aimed to determine trends in newly diagnosed T1D and severity of presentation at diagnosis for pediatric and adolescent patients during COVID-19 (2020) as compared to the previous year (2019) in a multi-center analysis across the United States. METHODS: This retrospective study from seven centers in the T1D Exchange Quality Improvement Collaborative (T1DX-QI) included data on new onset T1D diagnosis and proportion in DKA at diagnosis from January 1 to December 31, 2020, compared to the prior year. Chi-square tests were used to compare differences in patient characteristics during the pandemic period compared to the prior year. RESULTS: Across seven sites, there were 1399 newly diagnosed T1D patients in 2020, compared to 1277 in 2019 ( $p = 0.007$ ). A greater proportion of newly diagnosed patients presented in DKA in 2020 compared to 2019 (599/1399(42.8%) vs. 493/1277(38.6%),  $p = 0.02$ ), with a higher proportion presenting with severe DKA ( $p = 0.01$ ) as characterized by a pH  $<7.1$  and/or bicarbonate of  $<5$  mmol/L. Monthly data trends demonstrated a higher number of new T1D diagnoses over the spring and summer months (March to September) of 2020 compared to 2019 ( $p < 0.001$ ). CONCLUSIONS: We found an increase in newly diagnosed T1D and a greater proportion presenting in DKA at diagnosis during the COVID-19 pandemic compared to the prior year. Future longitudinal studies are needed to confirm these findings with population level data and determine the long-term impact of COVID-19 on diabetes trends.

**A Systematic Review of the Impact of the First Year of COVID-19 on Obesity Risk Factors: A Pandemic Fueling a Pandemic?** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8989548>

Obesity is increasingly prevalent worldwide. Associated risk factors, including depression, socioeconomic stress, poor diet, and lack of physical activity, have all been impacted by the coronavirus disease 2019 (COVID-19) pandemic. This systematic review aims to explore the indirect effects of the first year of COVID-19 on obesity and its risk factors. A literature search of PubMed and EMBASE was performed from 1 January 2020 to 31 December 2020 to identify relevant studies pertaining to the first year of the COVID-19 pandemic (PROSPERO; CRD42020219433). All English-language studies on weight change and key obesity risk factors (psychosocial and socioeconomic health) during the COVID-19 pandemic were considered for inclusion. Of 805 full-text articles that were reviewed, 87 were included for analysis. The included studies observed increased food and alcohol consumption, increased sedentary time, worsening depressive symptoms, and increased financial stress. Overall, these results suggest that COVID-19 has exacerbated the current risk factors for obesity and is likely to worsen obesity rates in the near future. Future studies, and policy makers, will need to carefully consider their interdependency to develop effective interventions able to mitigate the obesity pandemic.

**COVID-19 and food insecurity in the Blackfeet Tribal Community.**

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9113917>

To examine the impact of the COVID-19 pandemic on food insecurity in the Blackfeet American Indian Tribal Community. American Indian adults residing on the Blackfeet reservation in Northwest Montana ( $n = 167$ ) participated in a longitudinal survey across 4 months during the COVID-19 pandemic (August 24, 2020- November 30, 2020). Participants reported on demographics and food insecurity. We examined trajectories of food insecurity alongside COVID-19 incidence. While food insecurity was high in the Blackfeet community preceding the pandemic, 79% of our sample reported significantly greater food insecurity at the end of the study. Blackfeet women were more likely to report higher levels of food insecurity and having more people in the household predicted higher food insecurity. Longitudinal data indicate that the COVID-19 pandemic exacerbated already high levels of food insecurity in the Blackfeet



community. Existing programs and policies are inadequate to address this public health concern in AI tribal communities.

### **The Changing Landscape of Children's Diet and Nutrition: New Threats, New Opportunities.**

<https://dx.doi.org/10.1159/000524328>

**BACKGROUND:** Over the last 30-40 years, we have seen an improvement in global child undernutrition, with major reductions in wasting and stunting. Meanwhile, childhood obesity has dramatically increased, initially in high-income populations and subsequently in the more economically vulnerable. These trends are related to significant changes in diet and external factors, including new environmental threats. **SUMMARY:** Obesity rates first increased in older children, then gradually in infants. And in the next couple of years, there will be more overweight and obese than moderately or severely underweight children in the world. The changes in childhood nutritional landscape are a result of poor diets. Today, almost 50% of the world's population consumes either too many or too few calories. Dietary disparities between countries result in disparities of under- and overnutrition and impact the global health landscape. Most children with obesity, wasting, and micronutrient deficiencies live in lower income countries and in lower income families within any country. High energy-low nutrient diets are contributing to the increase in non-communicable diseases, which will manifest later in this generation of children. In 1990, child wasting was the #1 leading risk factor for mortality for all ages, and high BMI was #16; today, they are #11 and #5, respectively. COVID-19 and climate change are new major threats to global nutrition. Current and future efforts to improve the state of child nutrition require multisectoral approaches to reprioritize actions which address current trends and emerging threats.

### **Efforts in adopting the ultra-processed food and soft drinks labeling legislation in a COVID-19 environment: The cases of Colombia and Mexico** <https://doi.org/10.1111/basr.12272>

Diabetes contributes to COVID-19 deaths in Colombia and Mexico, where the latter having the highest prevalence of diabetes among OECD countries. Some reports consider that advertising influences diabetes by confusing labels on ultra-processed foods and soft drinks that lead to unhealthy food choices. Both countries are in the process of modifying their labeling legislation; however, governments and food industries have pushed to delay its implementation. Using a mixed research design, we interviewed 550 consumers in both countries during June-July 2020; a high number of respondents misunderstand today's food labeling and are unaware of the new labeling legislation. Respondents strongly agree that the food industry should be in charge of changing the labels; otherwise, they would consider not buying their products. Using cluster analysis, we identified three groups that would help design public policies, nutritional and educational campaigns. Although changes in food labeling alone are not enough to reduce obesity and diabetes rates, food labels constitute public health tools due they assist consumers to make food and nutritional choices (considering that nutrition can help prevent and overcome COVID-19). The costs of maintaining current labels could increase Colombians and Mexicans illness and poverty. These deceptive practices of the food industry would harm their brands.

### **Geographic Patterns of Applications to the Supplemental Nutrition Assistance Program (SNAP) in New Orleans, Louisiana in the Immediate Aftermath of the COVID-19 Pandemic**

<https://doi.org/10.1080/19320248.2022.2077160>

This paper examined geographic patterns of changes in the density of Supplemental Nutrition Assistance Program (SNAP) applications at the zip code level in New Orleans, LA in the immediate aftermath of the COVID-19 pandemic (March-May 2020), compared to pre-pandemic times (March-May 2019). All zip codes analyzed experienced increases in SNAP application density, ranging from 25% to 360%. While disadvantaged zip codes had higher SNAP application densities at baseline, they experienced a

comparatively lower increase across time. Results highlight the staggering need for food assistance as a result of the COVID-19 pandemic, including in areas with historically low need.

DFWED

### **The Safety of Cold-Chain Food in Post-COVID-19 Pandemic: Precaution and Quarantine**

**DOI: 10.3390/foods11111540**

Since the outbreak of coronavirus disease-19 (COVID-19), cold-chain food contamination caused by the pathogenic severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) has attracted huge concern. Cold-chain foods provide a congenial environment for SARS-CoV-2 survival, which presents a potential risk for public health. Strengthening the SARS-CoV-2 supervision of cold-chain foods has become the top priority in many countries. Methodologically, the potential safety risks and precaution measures of SARS-CoV-2 contamination on cold-chain food are analyzed. To ensure the safety of cold-chain foods, the advances in SARS-CoV-2 detection strategies are summarized based on technical principles and target biomarkers. In particular, the techniques suitable for SARS-CoV-2 detection in a cold-chain environment are discussed. Although many quarantine techniques are available, the field-based quarantine technique on cold-chain food with characteristics of real-time, sensitive, specific, portable, and large-scale application is urgently needed.

### **Surveillance of SARS-CoV-2 Contamination in Frozen Food-Related Samples — China, July 2020 [access here](#)**

Introduction: Current evidence shows that coronavirus disease 2019 (COVID-19) is neither a food safety issue nor a foodborne disease. However, the outbreaks of this disease in workers of meat- or poultry-processing plants and food markets have been reported in many countries. Systematic reports on severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) contamination in food-related samples worldwide are lacking so far. This study aimed to survey and monitor SARS-CoV-2 contamination in samples of foods or their packaging, storage environment, and employees, as well as explore the possible potential for virus transmission via frozen foods. Methods: Swabs of frozen food-related samples were collected between July 2020 and July 2021 in 31 provincial-level administrative divisions (PLADs) and Xinjiang Construction Corps in China. The SARS-CoV-2 RNAs were extracted and analyzed by real-time quantitative polymerase chain reaction using the commercially available SARS-CoV-2 nucleic acid test kit. Results: More than 55.83 million samples were analyzed, and 1,455 (0.26 per 10,000) were found to be positive for SARS-CoV-2 nucleic acid. Among the virus-positive samples, 96.41% (1,398/1,450) and 3.59% (52/1,450) were food/food packaging materials and environment, respectively. As for 1,398 SARS-CoV-2-positive food and food packaging materials, 99.50%, (1,391/1,398) were imported and 7 were domestic. The outer packaging of food was frequently contaminated by the virus 78.75% (1,101/1,398). Conclusions Our study supported speculation that cold-chain foods might act as the SARS-CoV-2 carrier, and food handlers/operators were at high risk of exposure to the virus. It is necessary to carry out a comprehensive mass testing for SARS-CoV-2 nuclei acid, along with contact tracing and symptom screening in cold-chain food handlers and processors so as to identify high proportions of asymptomatic or pre-symptomatic infections. Meanwhile, research and development of effective self-protection equipment available at a temperature below  $-18^{\circ}\text{C}$  is urgent.

NIOSH and FARMWORKER HEALTH

### **Modeling the systemic risks of COVID-19 on the wildland firefighting workforce.**

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9116702>

Wildfire management in the US relies on a complex nationwide network of shared resources that are allocated based on regional need. While this network bolsters firefighting capacity, it may also provide pathways for transmission of infectious diseases between fire sites. In this manuscript, we review a first

attempt at building an epidemiological model adapted to the interconnected fire system, with the aims of supporting prevention and mitigation efforts along with understanding potential impacts to workforce capacity. Specifically, we developed an agent-based model of COVID-19 built on historical wildland fire assignments using detailed dispatch data from 2016-2018, which form a network of firefighters dispersed spatially and temporally across the US. We used this model to simulate SARS-CoV-2 transmission under several intervention scenarios including vaccination and social distancing. We found vaccination and social distancing are effective at reducing transmission at fire incidents. Under a scenario assuming High Compliance with recommended mitigations (including vaccination), infection rates, number of outbreaks, and worker days missed are effectively negligible, suggesting the recommended interventions could successfully mitigate the risk of cascading infections between fires. Under a contrasting Low Compliance scenario, it is possible for cascading outbreaks to emerge leading to relatively high numbers of worker days missed. As the model was built in 2021 before the emergence of the Delta and Omicron variants, the modeled viral parameters and isolation/quarantine policies may have less relevance to 2022, but nevertheless underscore the importance of following basic prevention and mitigation guidance. This work could set the foundation for future modeling efforts focused on mitigating spread of infectious disease at wildland fire incidents to manage both the health of fire personnel and system capacity.

#### **When gig workers become essential: Leveraging customer moral self-awareness beyond COVID-19.**

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9107384>

The COVID-19 pandemic has intensified the extent to which economies in the developed and developing world rely on gig workers to perform essential tasks such as health care, personal transport, food and package delivery, and ad hoc tasking services. As a result, workers who provide such services are no longer perceived as mere low-skilled laborers, but as essential workers who fulfill a crucial role in society. The newly elevated moral and economic status of these workers increases consumer demand for corporate social responsibility regarding this stakeholder group - specifically for practices that increase worker freedom and rewards. We provide algorithmic tools for online labor platforms to meet this demand, thereby bolstering their social purpose and ethical branding while better protecting themselves from future reputational crises. To do so, we advance a managerial strategy rooted in moral self-awareness theory in order to leverage customers' virtuous self-perception and increase gig-worker freedom.

#### **Estimates of COVID-19 vaccine uptake in major occupational groups and detailed occupational categories in the United States, April-May 2021.** <https://dx.doi.org/10.1002/ajim.23370>

BACKGROUND: While other studies have reported estimates of COVID-19 vaccine uptake by broad occupational group, little is known about vaccine uptake by detailed occupational category. METHODS: Data on COVID-19 vaccination were provided by US adults ages 18 years old who responded to the Facebook/Delphi Group COVID-19 Trends and Impact Survey (Delphi US CTIS) in April-May 2021, reported working for pay in the past 4 weeks, and answered questions about their COVID-19 vaccine status. Percentages of occupational groups reporting having had at least one COVID-19 vaccination were weighted to resemble the US general population and calculated for 23 major occupational groups and 120 detailed occupational categories in 15 major groups. RESULTS: COVID-19 vaccine uptake for all 828,401 working adult respondents was 73.6%. Uptake varied considerably across the 23 major occupational groups, from 45.7% for Construction and Extraction to 87.9% for Education, Training, and Library. Percentage vaccinated was also very low for Installation, Maintenance, and Repair at 52.1% and Farming, Fishing, and Forestry at 53.9%. Among the 120 detailed occupational categories, the highest percentage vaccinated was 93.9% for Postsecondary Teacher and the three lowest values were 39.1% for Any Extraction Worker in Oil, Gas, Mining, or Quarrying; 40.1% for Vehicle or Mobile Equipment

Mechanic, Installer, or Repairer; and 42.0% for Any Construction Trades Worker. CONCLUSION: Low vaccination percentages were seen in many US occupations by the end of May 2021, early in the period of widespread availability of vaccines for adults. These findings could help inform the deployment of occupation-specific vaccine promotion activities during future viral epidemics and pandemics.

#### NCEH

##### **Effect of different setups, protective screens and air supply systems on the exposure to aerosols in a mock-up restaurant** <https://doi.org/10.1080/14733315.2022.2064962>

Social distancing measures to lower the risk of SARS-CoV-2 transmission limit seating capacity in and constrain restaurants' ability to operate in an economically sustainable way. Experiments have been conducted in a real-size mock-up of a restaurant, using different table setting and configurations of the ventilation system. The study has analysed the effects on total exposure to aerosols in different settings compared with social distancing. Ventilation rate is the most decisive factor for the total exposure. The particle removal rate is directly proportional to the ventilation rate, while total exposure decreases with higher ventilation rates. At low ventilation rate, setups with protective screens perform comparably or somewhat superior to the social distancing configuration, but effect size is much smaller than for ventilation rate and results are not always significant. Air supply system type does not have significant effect on either total exposure or exposure duration.

##### **Aerodynamic Prediction of Time Duration to Becoming Infected with Coronavirus in a Public Place** <https://doi.org/10.3390/fluids7050176>

The COVID-19 pandemic has caused panic and chaos that modern society has never seen before. Despite their paramount importance, the transmission routes of coronavirus SARS-CoV-2 remain unclear and a point of contention between the various sectors. Recent studies strongly suggest that COVID-19 could be transmitted via air in inadequately ventilated environments. The present study investigates the possibility of the aerosol transmission of coronavirus SARS-CoV-2 and illustrates the associated environmental conditions. The main objective of the current work is to accurately predict the time duration of getting an infection while sharing an indoor space with a patient of COVID-19 or similar viruses. We conducted a 3D computational fluid dynamics (CFD)-based investigation of indoor airflow and the associated aerosol transport in a restaurant setting, where likely cases of airflow-induced infection of COVID-19 caused by asymptomatic individuals were reported in Guangzhou, China. The Eulerian-Eulerian flow model coupled with the  $k-\epsilon$  turbulence approach was employed to resolve complex indoor processes, including human respiration activities, such as breathing, speaking, and sneezing. The predicted results suggest that 10 minutes are enough to become infected with COVID-19 when sharing a Table with coronavirus patients. The results also showed that although changing the ventilation rate will improve the quality of air within closed spaces, it will not be enough to protect a person from COVID-19. This model may be suitable for future engineering analyses aimed at reshaping public spaces and indoor common areas to face the spread of aerosols and droplets that may contain pathogens.

#### OTHER: CROSS CUTTING FOOD SYSTEMS

##### **Routine Surveillance and Vaccination on a University Campus During the Spread of the SARS-CoV-2 Omicron Variant.** <https://dx.doi.org/10.1001/jamanetworkopen.2022.12906>

*No abstract available*

#### OTHER: GENERAL

**Navigating the chaos": teacher considerations while adapting curriculum and instruction during the COVID-19 pandemic" <https://doi.org/10.1108/qrj-02-2022-0026>**

**Purpose** The pandemic has presented many new challenges tasking teachers with meeting the various social-emotional, academic and logistical needs of students in the midst of an ever-changing landscape. The onset of COVID-19 has drastically impacted schools and inevitably raised questions about nearly all aspects of teaching including but not limited to: how to deliver instruction, grade students, engage students, deliver materials to students, create equitable access to curriculum and assess students' mental and social health in the context of remote, hybrid and in-person instructional models. As such, this paper examines the role that the pandemic plays in deeply complexifying the already intricate decision-making processes that teachers undergo on a daily basis. **Design/methodology/approach** This study uses a participant research design (Wagner, 1993) to conduct a ground-level analysis of what two high school English Language arts teachers consider as they adapt curriculum and instruction during the COVID-19 pandemic. **Findings** This study set out to fulfill two aims: (1) to examine teacher considerations during the process of adapting curriculum and instruction and (2) to document the challenges and opportunities teachers face during this process. Findings related to the first aim revolve around teacher considerations of dilemmas such as: individual conferences vs whole class curriculum progress, depth vs breadth in relation to academic progress, social emotional concerns for student well-being vs curricular progress, creating meaningful learning activities and assessments vs COVID-19 limitations, and flexibility and accountability. In addition to navigating these dilemmas, the extreme uncertainty of the situation also prompted findings related to the second aim: opportunities to experiment with new curricular ideas and the challenge of traversing a wide range of teacher emotions. **Originality/value** This paper's qualitative research design that draws on my identities of classroom teacher and doctoral student to provide an original perspective into what teachers experienced in terms of adapting curriculum and instruction during an unprecedented time. While much research, news and media, and policy has discussed the pandemic's impact on education, there is an urgent need for more teacher voices to inform understanding of what occurs on the ground level of classrooms.

**A Qualitative study on diverse perspectives and identities of firearm owners.**

<https://dx.doi.org/10.1136/injuryprev-2022-044522>

**OBJECTIVE:** Research surrounding firearm ownership is often contextualised within the perspectives of older white men. We expand this description using the perceptions of a diverse group of firearm-owning stakeholders. **METHODS:** We conducted semistructured interviews from October 2020 to May 2021 with Colorado/Washington State stakeholders representing (1) firearm ranges/retailers; (2) law enforcement agencies or (3) relevant state/national firearm organisations. Data were analysed using standard qualitative techniques and included 25 participants, representing varied sociocultural groups including racial and ethnic minorities, political minorities and sexual minorities. **RESULTS:** Participants for this analysis were of different self-identified sociocultural groups including racial and ethnic minorities (African American, Hispanic and Asian), political minorities (liberal) and sexual minorities, defined as Lesbian, Gay, Bisexual, and Transgender (LGBT). Perspectives on firearm ownership included an idea of gun culture as a component of (1) personal identity, (2) an expression of full citizenship and (3) necessary for self-protection. A strong subtheme was the intersection of minority group and firearm owner identities, creating a need for divergent social communities because of ideas on traditional gun culture. These communities are a safe place for individuals belonging to minority groups to escape negative external and internal group associations with firearms. **CONCLUSION:** Perspectives on firearms and firearm ownership in the secondary analysis were heterogeneous and related to personal experiences, external and internal group pressures that influence individual behaviour. Understanding the breadth of perspectives on firearm ownership is imperative to engaging individuals for risk

reduction. This study adds to the literature by expanding an understanding of the motivation for firearm ownership among diverse communities.

**The end of the COVID-19 pandemic.** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9111437>

There are no widely accepted, quantitative definitions for the end of a pandemic such as COVID-19. The end of the pandemic due to a new virus and the transition to endemicity may be defined based on a high proportion of the global population having some immunity from natural infection or vaccination. Other considerations include diminished death toll, diminished pressure on health systems, reduced actual and perceived personal risk, removal of restrictive measures and diminished public attention. A threshold of 70% of the global population having being vaccinated or infected was probably already reached in the second half of 2021. Endemicity may still show major spikes of infections and seasonality, but typically less clinical burden, although some locations are still hit more than others. Death toll and ICU occupancy figures are also consistent with a transition to endemicity by end 2021/early 2022. Personal risk of the vast majority of the global population was already very small by end 2021, but perceived risk may still be grossly overestimated. Restrictive measures of high stringency have persisted in many countries by early 2022. The gargantuan attention in news media, social media and even scientific circles should be tempered. Public health officials need to declare the end of the pandemic. Mid- and long-term consequences of epidemic waves and of adopted measures on health, society, economy, civilization and democracy may perpetuate a pandemic legacy long after the pandemic itself has ended.

**A call for an independent inquiry into the origin of the SARS-CoV-2 virus.**

<https://dx.doi.org/10.1073/pnas.2202769119>

**The role of schools in driving SARS-CoV-2 transmission: Not just an open-and-shut case.**

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8858687>

Keeping schools open without permitting COVID-19 spread has been complicated by conflicting messages around the role of children and schools in fueling the pandemic. Here, we describe methodological limitations of research minimizing SARS-CoV-2 transmission in schools, and we review evidence for safely operating schools while reducing overall SARS-CoV-2 transmission.

**Assessing US Congressional Exposure to the Issue of Emerging Infectious Disease Risk Prior to 2020.**

<https://dx.doi.org/10.1089/hs.2021.0205>

Despite decades of US government attention to biological threats, COVID-19 revealed substantial deficits in US preparedness. In our evaluation, we sought to catalog and quantify information delivered to members of Congress that would enable them to determine their level of concern about emerging infectious disease (EID) risk and direct a course of action. We examined hearings on EID from 1995 through 2019 as a proxy for congressional awareness of EID risk, searching the Congressional Record using keywords. During this timeframe, Congress conducted 167 hearings relevant to EID, encompassing 860 witness appearances. The most active House and Senate committees were those with jurisdiction over homeland security, health, oversight, and funding. There was a markedly lower level of activity among committees with jurisdiction over foreign relations, financial services, small business, agriculture, and every other relevant area of jurisdiction. Our results suggest that absence of lawmaker knowledge of EID risks was not the cause of the United States' lack of preparedness.

## Food and COVID-19 Lit Review: Week ending 5/27/22

### DNPAO

- COVID-19 and Food Insecurity in a Vulnerable Rural State <https://doi.org/10.1016/j.dialog.2022.100013>
- Rural Food Insecurity: A Longitudinal Analysis of Low-Income Rural Households with Children in the South <https://doi.org/10.7758/RSF.2022.8.3.02>
- “People Like Us”: News Coverage of Food Assistance During the COVID-19 Pandemic <https://doi.org/10.1089/heq.2022.0001>
- Understanding SNAP Recipient Characteristics to Guide Equitable Expansion of Nutrition Incentive Programs in Diverse Food Retail Settings DOI: [10.3390/ijerph19094977](https://doi.org/10.3390/ijerph19094977)
- Estimates of the Nutritional Impact of Non-Participation in the National School Lunch Program during COVID-19 School Closures. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9003403>
- Food Security Impacts of the COVID-19 Pandemic: Longitudinal Evidence from a Cohort of Adults in Vermont during the First Year. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9002789>

### NIOSH and FARMWORKER HEALTH

- Psychology of working counseling framework applied to a gender diverse restaurant worker during COVID-19 <https://doi.org/10.1002/joec.12189>
- US soldiers and the role of leadership: COVID-19, mental health, and adherence to public health guidelines. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9092038>
- The Effects of the Opioid Crisis on Agricultural Industries <https://doi.org/10.3390/ijerph19095343>
- A binational USA-Mexico COVID-19 vaccine clinic: A novel model for cross-border collaboration in health crisis. DOI: [10.7189/jogh.12.03012](https://doi.org/10.7189/jogh.12.03012)

### NCEH

- Revisiting SARS-CoV-2 environmental contamination by patients with COVID-19: The Omicron variant does not differ from previous strains. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8896873>
- Human viruses lurking in the environment activated by excessive use of COVID-19 prevention supplies. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8938188>
- Containment of a carbapenem-resistant Acinetobacter baumannii complex outbreak in a COVID-19 intensive care unit. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8881223>
- Indoor Particulate Matters Measured in Residential Homes in the Southeastern United States: Effects of Pandemic Lockdown and Holiday Cooking <https://doi.org/10.4209/aaqr.210302>

### OTHER: CROSS-CUTTING FOOD SYSTEM

- [Commentary] Want to prevent pandemics? Stop spillovers. <https://dx.doi.org/10.1038/d41586-022-01312-y>
- Looking over our shoulders at disaster DOI: <https://doi.org/10.25035/visions.24.01.06>
- Wildmeat consumption and zoonotic spillover: contextualising disease emergence and policy responses [https://doi.org/10.1016/S2542-5196\(22\)00064-X](https://doi.org/10.1016/S2542-5196(22)00064-X)
- Leveraging data analytics to understand the relationship between restaurants' safety violations and COVID-19 transmission doi: [10.1016/j.ijhm.2022.103241](https://doi.org/10.1016/j.ijhm.2022.103241)
- Mycotoxins in Maize Silage from China in 2019. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9027405>

## OTHER: GENERAL

- Harassment of Health Officials: A Significant Threat to the Public's Health <https://doi.org/10.2105/AJPH.2022.306797>
- Indoor Public Mask-Wearing Behavior Changes in Response to National, State, and Local COVID-19 Policies. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8963438>
- Evaluating Food Packaging Waste in Schools: A Systematic Literature Review doi: [10.3390/ijerph19095607](https://doi.org/10.3390/ijerph19095607)
- COVID-19 Reflections: COVID-19 Vaccination in North Carolina: Promoting Equity by Partnering with Communities and Health Care Providers. <https://dx.doi.org/10.18043/ncm.83.3.197>

## DNPAO

### **COVID-19 and Food Insecurity in a Vulnerable Rural State**

<https://doi.org/10.1016/j.dialog.2022.100013>

**Objective.** This study explored variations in food insecurity across sociodemographic groups and changes specific to the COVID-19 pandemic, including income loss, stimulus check receipt, and changes in household size. **Design.** A cross-sectional online survey was conducted using a 2-item food insecurity screener. COVID-19 related factors and sociodemographic data were collected. **Setting.** Data were collected in Arkansas, United States, during July and August 2020. **Participants.** A sample of 1205 adults was recruited using ARresearch, a volunteer research registry. Participants were over the age of 18 and living, working, or receiving health care in Arkansas. **Results.** The prevalence of food insecurity was 24.9% during the COVID-19 pandemic. Food insecurity was elevated even after the majority of respondents received a stimulus check. Chi-square and t-tests revealed that food insecurity was more prevalent among those who are younger, Black, Hispanic/Latinx, lower-income, less educated, and living in households with children. Multivariate logistic regression revealed that odds of food insecurity were greater for individuals who reported income loss due to the pandemic (OR = 3.29;  $p < .001$ ), Black respondents (OR = 2.06,  $p = .014$ ), Hispanic respondents (OR = 3.34,  $p = .001$ ), those earning less than \$25,000 annually (OR = 4.92;  $p < .001$ ) or between \$25,000 to \$49,999 (OR = 2.04;  $p = .023$ ), respondents with a high school degree or less (OR = 4.21;  $p < .001$ ) or some college (OR = 2.55;  $p < .001$ ), and those living in households with children (OR = 1.62;  $p = .021$ ). Odds of food insecurity were lower for those who had received a stimulus check (OR = 0.60;  $p = .026$ ). **Conclusion.** Food insecurity prevalence was high in Arkansas in July and August 2020. The risk of food insecurity was uneven across sociodemographic groups. Several factors related to the COVID-19 pandemic were indicators for increased risk of food insecurity. Interventions to address food insecurity that recognize social factors unique to the pandemic are needed to reduce levels of food insecurity.

### **Rural Food Insecurity: A Longitudinal Analysis of Low-Income Rural Households with Children in the South** <https://doi.org/10.7758/RSF.2022.8.3.02>

Researchers have noted large spatial variations in rates of food insecurity. But little research exists on why this is so and the impacts it has on rural families. Drawing on a mixed-methods longitudinal study with 124 poor and working-class households in North Carolina, we analyze the processes that shape lower-income rural families' access to food. We trace the narratives of three families whose stories are emblematic of themes from the larger data set to illumine how space and context influence families' experiences across the life course. As the caregivers in our study navigated how to feed their families, living in a rural area shaped the resources and often precarious forms of support that they drew on from their social networks, local communities, and the state.



## **“People Like Us”: News Coverage of Food Assistance During the COVID-19 Pandemic**

<https://doi.org/10.1089/heq.2022.0001>

Objective: To understand how the public discourse around food assistance and social responsibility evolved during the first year of the COVID-19 pandemic by analyzing news coverage. Methods: We conducted an ethnographic content analysis of news articles and photographs about food insecurity or food assistance published by U.S. newspapers and wire services between December 1, 2019, and November 30, 2020. We analyzed a random sample of 241 articles and 223 photographs to assess how they depicted food assistance programs, the program participants, and whether they included cues for deservingness. Results: Before the pandemic, news about food assistance was dominated by stories about abuse and fraud. Once COVID-19 began, news coverage contained cues known to engender beliefs about the deservingness of people receiving assistance. During the pandemic, news also highlighted misconceptions about food assistance programs, called for policy changes to reduce logistical barriers, and described the plight of families and other “people like us” in need of food assistance. Discussion: News coverage during the pandemic cued audience empathy, highlighted the logistical strains faced by food assistance programs, and elevated values of government accountability. The narrative about society's obligation to care for communities in need can be transferred to other safety net programs that protect the public's health. Health Equity Implications: As the pandemic evolves, public health leaders can maintain the narrative about the importance of food assistance and expand the characteristics of this narrative to challenge well-entrenched, but false, narratives about those who need help.

## **Understanding SNAP Recipient Characteristics to Guide Equitable Expansion of Nutrition Incentive Programs in Diverse Food Retail Settings DOI: [10.3390/ijerph19094977](https://doi.org/10.3390/ijerph19094977)**

Structural barriers, such as food costs, reduce access to healthy foods for populations with limited income, including those benefitting from the Supplemental Nutrition Assistance Program (SNAP). Nutrition incentive programs seek to address this barrier. Evaluations of SNAP-based incentive programming often focus on one setting (i.e., either farmers' markets or grocery stores). We examined use patterns, characteristics, and preferences among 253 SNAP consumers with access to incentive programming at both a farmers' market and a grocery store located within five miles of their home. Cross-sectional survey data were collected in 2019 in two Ohio cities. Despite geographic access, 45% of those surveyed were not using the incentive program; most non-users (80.5%) were unaware of the program. Program users compared to non-users had higher household incomes ( $p < 0.001$ ) and knew more people using the program ( $p < 0.001$ ). Grocery stores were the most common setting of use (59%); 29% used at farmers' markets; 11% used in both settings. User characteristics varied by store setting based on demographics, program experience, fruit and vegetable purchasing and consumption patterns, and social dynamics related to use. Our findings support comprehensive awareness-raising efforts and tailored implementation of incentive programming that attends to diverse segments of SNAP consumers to promote equity in program reach.

## **Estimates of the Nutritional Impact of Non-Participation in the National School Lunch Program during COVID-19 School Closures. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9003403>**

The COVID-19 pandemic resulted in widespread school closures, reducing access to school meals for millions of students previously participating in the US Department of Agriculture (USDA) National School Lunch Program (NSLP). School-prepared meals are, on average, more nutritious than home-prepared meals. In the absence of recent data measuring changes in children's diets during the pandemic, this article aims to provide conservative, back-of-the-envelope estimates of the nutritional impacts of the pandemic for school-aged children in the United States. We used administrative data from the USDA on the number of NSLP lunches served in 2019 and 2020 and nationally representative data from the USDA

School Nutrition and Meal Cost Study on the quality of school-prepared and home-prepared lunches. We estimate changes in lunchtime calories and nutrients consumed by NSLP participants from March to November 2020, compared to the same months in 2019. We estimate that an NSLP participant receiving no school meals would increase their caloric consumption by 640 calories per week and reduce their consumption of nutrients such as calcium and vitamin D. Because 27 to 78 million fewer lunches were served per week in March-November 2020 compared to the previous year, nationally, students may have consumed 3 to 10 billion additional calories per week. As students return to school, it is vital to increase school meal participation and update nutrition policies to address potentially widening nutrition disparities.

**Food Security Impacts of the COVID-19 Pandemic: Longitudinal Evidence from a Cohort of Adults in Vermont during the First Year.** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9002789>

This study assessed changes in household food insecurity throughout the first year of the COVID-19 pandemic in a cohort of adults in the state of Vermont, USA, and examined the socio-demographic characteristics associated with increased odds of experiencing food insecurity during the pandemic. We conducted three online surveys between March 2020 and March 2021 to collect longitudinal data on food security, use of food assistance programs, and job disruptions during the COVID-19 pandemic. Food security was measured using the USDA six-item module. Among the 441 respondents, food insecurity rates increased significantly during the pandemic and remained above pre-pandemic levels a year after the start of the pandemic. Nearly a third (31.6%) of respondents experienced food insecurity at some point during the first year of the pandemic, with 53.1% of food-insecure households being classified as newly food-insecure. The odds of experiencing food insecurity during the pandemic varied based on socio-demographic factors. Households with children (OR 5.5, 95% CI 1.782-16.936,  $p < 0.01$ ), women (OR 8.1, 95% CI 1.777-36.647,  $p < 0.05$ ), BIPOC/Hispanic respondents (OR 11.8, 95% CI 1.615-85.805,  $p < 0.05$ ), and households experiencing a job disruption (OR 5.0, 95% CI 1.583-16.005,  $p < 0.01$ ) had significantly higher odds of experiencing food insecurity during the first year of the COVID-19 pandemic, while respondents with a college degree (OR 0.08; 95% CI 0.025-0.246;  $p < 0.001$ ) and household income of  $\leq$  USD 50,000 (OR 0.01; 95% CI 0.003-0.038;  $p < 0.001$ ) had lower odds of experiencing food insecurity. These findings indicate that food insecurity continued to be a significant challenge one year after the start of the pandemic, which is important, given the adverse health impacts associated with food insecurity and health disparities among certain socio-demographic groups.

**NIOSH and FARMWORKER HEALTH**

**Psychology of working counseling framework applied to a gender diverse restaurant worker during COVID-19** <https://doi.org/10.1002/joec.12189>

Blustein's psychology of working counseling (PWC) framework provides a foundation for contextualizing needs of gender diverse individuals within a turbulent employment landscape. Given the impact of COVID-19 on the restaurant industry, many are navigating financial instability and challenges maintaining mental and physical health. The presented clinical case is situated in the context of restaurant work during a pandemic and incorporates considerations of intersecting identities including gender identity, class, and mental health. This article also provides interventions and professional development strategies based on PWC that career counselors can adapt to their own gender diverse clients in the restaurant industry.

**US soldiers and the role of leadership: COVID-19, mental health, and adherence to public health guidelines.** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9092038>

BACKGROUND: Previous studies have documented the impact of domain-specific leadership behaviors on targeted health outcomes in employees. The goal of the present study was to determine the

association between specific leadership behaviors addressing COVID-19 and US soldiers' mental health and adherence to COVID-19 public health guidelines. METHODS: An electronic, anonymous survey was administered to US Army soldiers across three major commands (N = 7,829) from December 2020 to January 2021. The primary predictor of interest was soldiers' ratings of their immediate supervisors' behaviors related to COVID-19. The outcomes were soldiers' mental health (i.e., depression and generalized anxiety) and adherence to COVID-19 public health guidelines. Covariates were rank, gender, ratings of immediate supervisors' general leadership, level of COVID-19 concerns, and COVID-19 status (e.g., tested positive, became seriously ill). Logistic regressions were used to model the unique association of COVID-19 leadership behaviors with outcomes after adjusting for covariates. RESULTS: High levels of COVID-19 leadership behaviors were associated with lesser likelihood of soldiers' screening positive for depression (AOR = 0.46; 95% CI [0.39, 0.54]) and anxiety (AOR = 0.54; 95% CI [0.45, 0.64]), and greater likelihood of frequent adherence to preventive health guidelines (AORs = 1.58; 95% CI [1.39, 1.80] to 2.50; 95% CI [2.01, 3.11]). CONCLUSION: Higher levels of COVID-19 leadership behaviors may support soldiers' mental health and encourage their adherence to COVID-19 public health guidelines. Given the link between these leader behaviors and soldier adaptation to the pandemic over and above general leadership, training for supervisors should focus on targeting specific health-promoting behaviors. Results can inform leader training for the military and other high-risk occupations.

#### **The Effects of the Opioid Crisis on Agricultural Industries** <https://doi.org/10.3390/ijerph19095343>

Opioid use remains a significant public health crisis. However, few quantitative or qualitative data exist on the prevalence of opioid use and associated mental health conditions in agricultural industries and how it affects the industries themselves. Data on opioid use and associated consequences were collected among agricultural business owners and workers using both quantitative (n = 129) and qualitative assessment (n = 7). The prevalence of opioid use, pain, stress, and depressive symptoms as well as associated hazards were characterized among individuals who work in horticulture (nursery and landscape) and those who work in food production (livestock and crops). Qualitative interviews were also conducted to better understand individual experiences with opioid use. Opioid use was significantly higher among horticultural industries compared to food production. Pain and depressive scores were higher among those who had used opioids although stress did not differ. Importantly, substantial percentages of participants who reported opioid use also reported consequences associated with their use, including missing work, being injured at work while using, and having difficulty in completing daily tasks. These results provide initial evidence that opioid use is substantially affecting agricultural industries in terms of mental health, personal health, labor availability, and productivity.

#### **A binational USA-Mexico COVID-19 vaccine clinic: A novel model for cross-border collaboration in health crisis.** DOI: [10.7189/jogh.12.03012](https://doi.org/10.7189/jogh.12.03012)

No abstract available

#### NCEH

#### **Revisiting SARS-CoV-2 environmental contamination by patients with COVID-19: The Omicron variant does not differ from previous strains.** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8896873>

SARS-CoV-2 Omicron strain emergence raised concerns that its enhanced infectivity is partly due to altered spread/contamination modalities. We therefore sampled high-contact surfaces and air in close proximity to patients who were verified as infected with the Omicron strain, using identical protocols applied to sample patients positive to the original or Alpha strains. Cumulatively, for all 3 strains, viral RNA was detected in 90 of 168 surfaces and 6 of 49 air samples (mean cycle threshold [Ct]=35.2±2.5). No infective virus was identified. No significant differences in prevalence were found between strains.

**Human viruses lurking in the environment activated by excessive use of COVID-19 prevention supplies.** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8938188>

Due to extensive COVID-19 prevention measures, millions of tons of chemicals penetrated into natural environment. Alterations of human viruses in the environment, the neglected perceiver of environmental fluctuations, remain obscure. To decipher the interaction between human viruses and COVID-19 related chemicals, environmental samples were collected on March 2020 from surroundings of designated hospitals and receivers of wastewater treatment plant effluent in Wuhan. The virus community and chemical concentration were respectively unveiled in virtue of virome and ultra-high-performance liquid chromatography-tandem mass spectrometry. The complex relationship between virus and chemical was ulteriorly elaborated by random forest model. As an indicator, environmental viruses were corroborated to sensitively reflect the ecological disturbance originated from pandemic prevention supplies. Chemicals especially trihalomethanes restrained the virus community diversity. Confronting this adverse scenario, Human gammaherpesvirus 4 and Orf virus with resistance to trihalomethanes flourished while replication potential of Macacine alphaherpesvirus 1 ascended under glucocorticoids stress. Consequently, human viruses lurking in the environment were actuated by COVID-19 prevention chemicals, which was a constant burden to public health in this ongoing pandemic. Besides, segments of SARS-CoV-2 RNA were detected near designated hospitals, suggesting environment as a missing link in the transmission route. This research innovatively underlined the human health risk of pandemic prevention supplies from the virus - environment interaction, appealing for monitoring of environmental viruses in long term.

**Containment of a carbapenem-resistant *Acinetobacter baumannii* complex outbreak in a COVID-19 intensive care unit.** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8881223>

**BACKGROUND:** A carbapenem-resistant *Acinetobacter baumannii* outbreak in the COVID intensive care unit of a community hospital was contained using multidrug resistant organism guidelines. The purpose of this study is to report on an outbreak investigation and containment strategy that was used, and to discuss prevention strategy. **METHODS:** A multidisciplinary approach contained the spread of infection. Strategies implemented included consultation with experts, screening, and reversal of personal protective equipment conservation. Ensuring infection control best practices are maintained remain important efforts to reduce the spread of multidrug resistant organisms. **RESULTS:** Five patients with carbapenem-resistant *Acinetobacter baumannii* were identified from routine clinical cultures within one week and one patient was identified from active surveillance cultures. **DISCUSSION:** Personal protective equipment conservation, strategies to prevent health care personnel exposure, and patient surge staffing protocols may have increased the likelihood of multidrug resistant organism transmission. Environmental and behavioral infection control regulations with effective administrative guidance, active surveillance cultures, and antimicrobial stewardship are critical to prevent future outbreaks. **CONCLUSIONS:** After outbreak containment strategies were implemented, no additional patients were identified with carbapenem-resistant *Acinetobacter baumannii*. Conventional infection prevention and control strategies were re-instituted. A multidisciplinary approach with continued focus on hand hygiene, environmental cleaning, and correct use of personal protective equipment needs to be put in place to successfully contain and prevent the spread of carbapenem resistant infections.

**Indoor Particulate Matters Measured in Residential Homes in the Southeastern United States: Effects of Pandemic Lockdown and Holiday Cooking** <https://doi.org/10.4209/aaqr.210302>

Although humans spend a majority of their lives in indoor environments, indoor air quality is immensely understudied, compared to ambient air. Here, we show the first long-term measurements of household indoor PM concentrations in the southeastern United States, for one year (May 2019 through April

2020) covering the COVID-19 hard-lockdown period (March and April 2020). Particle size distributions between 0.25–35 µm were measured with a low-cos period. Before the pandemic, the indoor PM level was lower than the outdoor, but it became similar or higher than the outdoor level during the pandemic. Thanksgiving holiday cooking (prior to COVID-19) produced high concentrations of PM for an extended period (e.g., over 6 hours) even with active kitchen ventilation. PM concentrations during a cooking and cleaning event usually increased linearly to a maximum value and then decayed exponentially. The decay time of indoor PM ranged from several minutes up to ~100 minutes and increased with the particle size, indicating that particle deposition to the interior surfaces is the main sink process of the indoor PM.

OTHER: CROSS-CUTTING FOOD SYSTEM

**[Commentary] Want to prevent pandemics? Stop spillovers.**

<https://dx.doi.org/10.1038/d41586-022-01312-y>

**Looking over our shoulders at disaster DOI: <https://doi.org/10.25035/visions.24.01.06>**

In a journey spanning almost 20 years the Southern Food & Beverage Museum has become established as a solid and reliable museum and attraction in New Orleans, Louisiana. Its journey to established museum has been fraught with disaster and determination – from Hurricane Katrina in 2005, the financial crisis of 2008, the BP Oil Spill, and COVID - to more local disasters like floods and hurricanes. Today it is ready for whatever may happen, as well as prepared with a plan to pivot, innovate, and re-invent itself, all the while deepening its mission and continuing to be the Southern Food & Beverage Museum

**Wildmeat consumption and zoonotic spillover: contextualising disease emergence and policy responses**

[https://doi.org/10.1016/S2542-5196\(22\)00064-X](https://doi.org/10.1016/S2542-5196(22)00064-X)

Zoonotic diseases are estimated to constitute 75% of all emerging infectious diseases, of which more than 70% come from wild species. The potential threat of zoonotic spillover from the consumption of wildmeat has been the subject of policy and media attention, especially in the context of the COVID-19 pandemic; however, little is known about the actual conditions that contribute to the risk of spillover and associated disease transmission. In this Review, we compile existing evidence from available literature on the conditions of spillover associated with wildmeat consumption, including the types of wild animal and disease, modes of transmission, and the conditions in which spillover is thought to have occurred. We suggest that stronger understanding of the context of spillover from wildmeat is needed to enable more targeted and effective policy responses that reduce the risk of future pandemics of zoonotic origin. Such interventions could also lead to the avoidance of unintended adverse consequences for human communities that rely on wild produce, including wildmeat, as sources of dietary protein, fat, and micronutrients.

**Leveraging data analytics to understand the relationship between restaurants' safety violations and COVID-19 transmission doi: [10.1016/j.ijhm.2022.103241](https://doi.org/10.1016/j.ijhm.2022.103241)**

This paper leverages natural language processing, spatial analysis, and statistical analysis to examine the relationship between restaurants' safety violations and COVID-19 cases. We used location-based consumers' complaints data during the early stage of business reopening in Florida, USA. First, statistical analysis was conducted to examine the correlation between restaurants' safety violations and COVID-19 transmission. Second, a neural network-based deep learning model was developed to perform topic modeling based on consumers' complaints. Third, spatial modeling of the complaints' geographic distributions was performed to identify the hotspots of consumers' complaints and COVID-19 cases. The

results reveal a positive relationship between consumers' complaints about restaurants' safety violations and COVID-19 cases. In particular, consumers' complaints about personal protection measures had the highest correlation with COVID-19 cases, followed by environmental safety measures. Our analytical methods and findings shed light on customers' behavioral shifts and hospitality businesses' adaptive practices during a pandemic.

#### **Mycotoxins in Maize Silage from China in 2019.**

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9027405>

Animal feed (including forage and silage) can be contaminated with mycotoxins. Here, 200 maize silage samples from around China were collected in 2019 and analyzed for regulated mycotoxins, masked mycotoxins (deoxynivalenol, 3-acetyldeoxynivalenol, 15-acetyldeoxynivalenol, and deoxynivalenol-3-glucoside), and emerging mycotoxins (beauvericin, enniatins, moniliformin, and alternariol). Deoxynivalenol and zearalenone were detected in 99.5% and 79.5% of the samples, respectively. Other regulated mycotoxins were detected in fewer samples. The highest deoxynivalenol and zearalenone concentrations were 3600 and 830 µg/kg, respectively. The most commonly detected masked mycotoxin was 15-acetyldeoxynivalenol, which was detected in 68.5% of the samples and had median and maximum concentrations of 61.3 and 410 µg/kg, respectively. The emerging mycotoxins beauvericin, alternariol, enniatin A, enniatin B1, and moniliformin were detected in 99.5%, 85%, 80.5%, 72.5%, and 44.5%, respectively, of the samples but at low concentrations (medians <25 µg/kg). The samples tended to contain multiple mycotoxins, e.g., the correlation coefficients for the relationships between the concentrations of beauvericin and deoxynivalenol, deoxynivalenol and zearalenone, and zearalenone and beauvericin were 1.0, 0.995, and 0.995, respectively. The results indicated that there needs to be more awareness of the presence of one or more masked and emerging mycotoxins in maize silage in China.

OTHER: GENERAL

#### **Harassment of Health Officials: A Significant Threat to the Public's Health**

<https://doi.org/10.2105/AJPH.2022.306797>

Local and state public health officials, who before the pandemic mainly worked behind the scenes to protect the public's health, were quickly thrust into the spotlight alongside their governors, mayors, and county commissioners to explain public health mitigation efforts such as business and school closures, mandatory mask orders, and social distancing recommendations. Before COVID-19, state and territorial health officials faced opposition from members of the public for supporting efforts to ban youth vaping and the sale of flavored e-cigarettes, for failing to support (and in some states for supporting) the use of cannabis for medical or recreational use, for enforcing vaccination requirements for school entry, or for supporting taxes on sugar-sweetened beverages. A VIEW FROM THE FIELD As the executive director of the Association of State and Territorial Health Officials (ASTHO), I have seen firsthand the stress, strain, and cognitive dissonance that results from the denigration and defamation of our public health leaders. By November 2021, almost every state legislature has seen the introduction of a bill to weaken or remove the emergency powers of governors and/or local or state health officials.<sup>11</sup> Successful efforts to reduce the power of public health authorities are a Pyrrhic victory: knee-jerk reactions that incite one's political base but with potentially deadly consequences for all of us when health officials' hands are tied in new outbreaks.

#### **Indoor Public Mask-Wearing Behavior Changes in Response to National, State, and Local COVID-19**

**Policies.** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8963438>

OBJECTIVE: To estimate changes in public mask-wearing behavior in response to public health policies during COVID-19. DESIGN: Panel of observed public mask-wearing. SETTING: Counts of adult behavior in

Marion County, Indiana, between November 15, 2020, and May 31, 2021. DETERMINANTS OF INTEREST: (1) Removal of state masking requirement; (2) introduction of the National Strategy for the COVID-19 Response and Pandemic Preparedness; (3) the Centers for Disease Control and Prevention (CDC) recommendation that vaccinated individuals did not need to wear masks in public; and (4) COVID-19 vaccine availability. OUTCOME: Percent observed with correct mask-wearing. ANALYSES: Fixed-effects models estimated the association between policies and mask-wearing. RESULTS: Ending Indiana's mask requirement was not associated with changes in correct mask-wearing. The CDC's recommendation was associated with a decrease of 12.3 percentage points in correct mask-wearing (95% CI, -23.47 to -1.05; P = .032). CONCLUSIONS: Behavior encouraged by local mask requirements appeared to be resilient to changes in state policy. CDC recommendations appeared influential.

### **Evaluating Food Packaging Waste in Schools: A Systematic Literature Review**

doi: [10.3390/ijerph19095607](https://doi.org/10.3390/ijerph19095607)

Public schools in the U.S. generate about 14,500 tons of municipal solid waste daily, and approximately 42% of that is food packaging generated by school foodservice, contributing significantly to the global packaging waste crisis. This literature review summarizes methods used to evaluate food packaging waste in school foodservice. This review has two objectives: first, to understand which methodologies currently exist to evaluate food packaging waste generation and disposal in school foodservice; and second, to describe the creation of and share a practical standardized instrument to evaluate food packaging waste generation and disposal in school foodservice. A systematic review was conducted using the following search terms: solid waste, school, cafeteria and food packaging, waste, and school. The final review included 24 studies conducted in school environments (kindergarten through twelfth grade or college/university), 16 of which took place in the U.S. Food packaging waste evaluations included objective methods of waste audits, models, and secondary data as well as subjective methods of qualitative observations, questionnaires, interviews, and focus groups. Large variation exists in the settings, participants, designs, and methodologies for evaluating school foodservice packaging waste. Lack of standardization was observed even within each methodology (e.g., waste audit). A new instrument is proposed to support comprehensive and replicable data collection, to further the understanding of school foodservice food packaging waste in the U.S., and to reduce environmental harms.

### **COVID-19 Reflections: COVID-19 Vaccination in North Carolina: Promoting Equity by Partnering with Communities and Health Care Providers.** <https://dx.doi.org/10.18043/ncm.83.3.197>

North Carolina implemented a rapid statewide COVID-19 vaccine strategy that focused on vaccinating people quickly and equitably. We describe the sociodemographic factors associated with COVID-19 vaccine uptake in North Carolina and how these factors were considered in communication as well as community and health care provider engagement in the COVID-19 response.

## **Food and COVID-19 Lit Review: Week ending 5/20/22**

### **DNPAO**

- Harvest for Health, a Randomized Controlled Trial testing a Home-Based, Vegetable Gardening Intervention among Older Cancer Survivors across Alabama: An Analysis of Accrual and Modifications made in Intervention Delivery and Assessment during COVID-19 <https://doi.org/10.1016/j.jand.2022.05.005>

- Improving the capacity of local food network through local food hubs' development <https://doi.org/10.1515/opag-2022-0088>
- Weight stigma in the COVID-19 pandemic: a scoping review <https://doi.org/10.1186/S40337-022-00563-4>
- Resilience-by-Design and Resilience-by-Intervention in supply chains for remote and indigenous communities COMMENT <https://doi.org/10.1038/s41467-022-28734-6>
- The Role of Nutrition in COVID-19: Taking a Lesson from the 1918 H1N1 Pandemic <https://doi.org/10.1177/15598276221097621>

#### DFWED

- Improved methods for the detection and quantification of SARS-CoV-2 RNA in wastewater <https://doi.org/10.1038/S41598-022-11187-8>
- The Importance of Heating Unit Operations in the Food Industry to Obtain Safe and High-Quality Products. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9094675>

#### NIOSH and FARMWORKER HEALTH

- Restaurant frontline employees' turnover intentions: three-way interactions between job stress, fear of COVID-19, and resilience <https://doi.org/10.1108/ijchm-08-2021-1016>
- Treating Workers as Essential Too: An Ethical Framework for Public Health Interventions to Prevent and Control COVID-19 Infections among Meat-processing Facility Workers and Their Communities in the United States <https://doi.org/10.1007/S11673-022-10170-2>
- Doubt in store: vaccine hesitancy among grocery workers during the COVID-19 pandemic <https://doi.org/10.1007/S10865-021-00276-0>

#### OTHER: CROSS-CUTTING FOOD SYSTEM

- Leveraging data analytics to understand the relationship between restaurants' safety violations and COVID-19 transmission. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9091265>
- Saving Local Restaurants: The Impact of Altruism, Self-Enhancement, and Affiliation on Restaurant Customers' Electronic Word of Mouth Behavior (EWOM) <https://doi.org/10.1177/10963480221092704>
- Perceptions of Tap Water Associated with Low-Income Michigan Mothers' and Young Children's Beverage Intake. <https://dx.doi.org/10.1017/S1368980022001136>
- Changes in clinical features of food-related anaphylaxis in children during 5 years. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9066084>

#### OTHER: GENERAL

- It still takes a village: Advocating healthy living medicine for communities through social justice action <https://doi.org/10.1016/j.pcad.2022.04.014>
- The Role of Forests and Trees in Poverty Dynamics <https://doi.org/10.1016/j.forpol.2022.102750>
- Good ingredients from foods to vegan cosmetics after COVID-19 pandemic <https://doi.org/10.1111/jocd.15028>



## **Harvest for Health, a Randomized Controlled Trial testing a Home-Based, Vegetable Gardening Intervention among Older Cancer Survivors across Alabama: An Analysis of Accrual and Modifications made in Intervention Delivery and Assessment during COVID-19**

<https://doi.org/10.1016/j.jand.2022.05.005>

Background Accelerated functional decline is a concern among older cancer survivors that threatens independence and quality-of-life. Pilot studies suggest that vegetable gardening interventions ameliorate functional decline through improved diet and physical activity. Objectives The aim of this paper is to describe the rationale, recruitment challenges, and enrollment of the Harvest for Health randomized controlled trial (RCT) that will test the impact of a home-based, vegetable gardening intervention on vegetable & fruit (V&F) consumption, physical activity, and physical functioning among older cancer survivors. Modifications made to the intervention and assessments to assure safety and continuity of the RCT throughout the COVID-19 pandemic also are reported. Design Harvest for Health is a 2-year, 2-arm, single-blinded, wait-list controlled RCT with cross-over. Participants /setting: Medicare-eligible survivors of cancers with  $\geq 60\%$  5-year survival were recruited across Alabama from October 1, 2016 to February 8, 2021. Intervention Participants are randomly-assigned to a wait-list control or a 1-year home-based gardening intervention and individually-mentored by Extension-certified Master Gardeners to cultivate spring, summer, and fall vegetable gardens. Main outcome measures While the RCT's primary endpoint is a composite measure of V&F consumption, physical activity, and physical functioning, this paper focuses on recruitment and modifications made to the intervention and assessments during COVID-19. Statistical analyses performed Chi-square and t-tests ( $\alpha < 0.05$ ) were used to compare enrolled vs. unenrolled populations. Results Older cancer survivors ( $n=9,708$ ) were contacted by letter and telephone; 1,460 indicated interest (15% response rate), 473 were screened eligible and consented, and 381 completed baseline assessments and were randomized. Enrollees did not differ from non-respondents/refusals by race and ethnicity, or rural-urban status, but were comprised of significantly higher numbers of comparatively younger survivors, those who were female, and survivors of breast cancer ( $p$ -values  $< 0.001$ ). While COVID-19 delayed trial completion, protocol modifications overcame this barrier and study completion is anticipated by June 2022. Conclusions This RCT will provide evidence on the effects of a mentored vegetable gardening program among older cancer survivors. If efficacious, Harvest for Health represents a novel, multifaceted approach to improve lifestyle behaviors and health outcomes among cancer survivors – one with capacity for sustainability and widespread dissemination.

## **Improving the capacity of local food network through local food hubs' development**

<https://doi.org/10.1515/opag-2022-0088>

The COVID-19 pandemic and humanitarian challenges such as war and conflict, climate changes, and economic crises bring unexpected humanitarian challenges, such as food insecurity. Especially for developing countries, this is a double crisis, food poverty and COVID-19 pandemic. This situation needs an alternative food network (AFN), which can improve the local food sources to fulfill the food demand. The local food hubs' (LFHs) development as an AFN that considers local producers and customers could serve as an alternative strategy to reduce the uncertainty of food availability. However, the challenge in developing LFH in developing countries is the problem of logistics efficiency. Therefore, this study discusses the development of food logistics efficiency by determining the optimum location of LFH and the fulfillment of food supply for each optimum location of LFH in rural areas. Robust optimization is applied to the Multi-Objective Many-to-Many Location-Routing Problem (MOMMLRP) model to handle the uncertain demand and production capacity. This study focused on West Java Province, Indonesia, as areas that represent developing countries. Based on our result, eight sub-districts have been determined as an optimum location to develop LFHs. This study also elaborates on the food network in

the worst situation that needs regional food hubs' (RFHs) support. The RFH support can be used when the LFH faces an unexpected problem that cannot fulfill their demand.

**Weight stigma in the COVID-19 pandemic: a scoping review** <https://doi.org/10.1186/S40337-022-00563-4>

Weight stigma is a phenomenon associated with adverse behavioural and psychological consequences. Although experts suggest that its increase during the COVID-19 pandemic may be associated with worse health outcomes for people with obesity, a thorough analysis of the main findings and gaps is still needed when relating to this subject. We aim to answer three questions: (1) How does weight stigma manifest in the COVID-19 pandemic? (2) How can weight stigma affect people with overweight or obesity in times of COVID-19? (3) What are the perceptions and experiences of weight stigma during the pandemic in individuals who experience overweight or obesity? We conducted a scoping review of studies addressing weight stigma and the COVID-19 pandemic in electronic databases (Medline/PubMed, CINAHL, Embase, PsycInfo, BVS/Lilacs, Scopus, Web of Science, Google Scholar, and OpenGrey) published until 10th August 2021. All relevant studies were reviewed in full by two researchers. In addition, a narrative synthesis of the data was performed. The results included 35 studies out of 8,090 records and identified 13 original research publications, 14 text and opinion papers, and 6 narrative reviews. The results revealed the presence of weight stigma in the media, healthcare settings, interpersonal relationships, and public campaigns during the COVID-19 pandemic. The evidence of increasing weight stigma in the COVID-19 outbreak is limited, though. Many weight discrimination consequences were described during this time, such as impairment in accessing healthcare, worst COVID-19 outcomes, and maladaptive eating. However, only maladaptive behaviours and decline in mental health outcomes were demonstrated empirically in all age groups. This effect occurred regardless of body mass index, but people with high body weight were more likely to experience weight stigma. For some people with obesity, weight stigma in the pandemic has made activities of daily routine difficult. The results suggest that weight stigma in the COVID-19 pandemic occurs in several settings; moreover, although weight discrimination impacts mental health, whether before or during the pandemic, this influence between the pandemic and pre-pandemic scenario is still unclear. Therefore, more research is required in this field while the pandemic lasts, especially with people with obesity. Overall, people with overweight or obesity are more vulnerable to weight stigma than individuals without overweight. In addition, weight stigma refers to discrimination or prejudice based on a person's weight and relates to several consequences, for instance, poor healthcare treatment and mental health problems. In the COVID-19 outbreak, these weight stigma effects tend to become even more critical because they may be associated with unfavourable COVID-19 outcomes and eating disorder risks. Thus, it is crucial to investigate how weight stigma occurs during the pandemic and its impact on health, mainly for the most affected people. We investigated 35 studies published between 2019 and 2021 to map and explore how weight stigma was manifested and the related consequences for people with overweight or obesity in the COVID-19 pandemic. Only about a third of them were quantitative or qualitative, limiting the evidence of weight stigma in the COVID-19 context. The available evidence suggests that weight stigma manifests in several settings such as media, healthcare, public campaigns, and is more common in people with excess weight. However, weight discrimination experiences before or during the pandemic were associated with adverse psychological and behavioural consequences across all age groups, regardless of body weight. For some people with obesity, for instance, weight stigma made it difficult to accomplish their activities of daily routine. Nevertheless, it remains unclear whether weight stigma has increased in the pandemic, thus, more studies are required, especially about people with overweight or obesity.

## **Resilience-by-Design and Resilience-by-Intervention in supply chains for remote and indigenous communities** COMMENT <https://doi.org/10.1038/s41467-022-28734-6>

The COVID-19 pandemic has illustrated the fragility of food security and associated supply chains for remote and Indigenous communities. Here we highlight challenges faced by the Tribal Population of Noepe (Martha's Vineyard) and argue for the inclusion of Resilience-by-Design and Resilience-by-Intervention in supply chain management.

## **The Role of Nutrition in COVID-19: Taking a Lesson from the 1918 H1N1 Pandemic** <https://doi.org/10.1177/15598276221097621>

In looking for solutions to the COVID-19 pandemic, important lessons come from the H1N1 influenza pandemic of 1918-1919. During the H1N1 influenza pandemic, the soldiers had better outcomes than the civilian populations, but the best outcomes were reported by a Seventh-day Adventist seminary, where a plant-based diet was provided. The diet has been described as including grains, fruits, nuts, and vegetables. A few clinical trials have also assessed the role of nutrition in COVID-19. One study with almost six hundred thousand participants showed that those with a high consumption of fruits and vegetables had a reduced risk of COVID-19 of any severity by 9% and a reduced risk of severe COVID-19 by 41%. Another study in healthcare workers who were frequently exposed to COVID-19 in their clinical practice has demonstrated that those who reported being on a plant-based diet had a 73% lower risk of moderate-to-severe COVID-19. Based on the lessons from 1918 and the recent nutrition research in COVID-19, it seems plausible that a healthful plant-based diet may be a powerful tool to decrease the risk of severe COVID-19 and should be promoted as one of the public health safety measures.

DFWED

## **Improved methods for the detection and quantification of SARS-CoV-2 RNA in wastewater** <https://doi.org/10.1038/S41598-022-11187-8>

Since the start of the COVID-19 pandemic, different methods have been used to detect the presence of genetic material of SARS-CoV-2 in wastewater. The use of wastewater for SARS-CoV-2 RNA detection and quantification showed different problems, associated to the complexity of the matrix and the lack of standard methods used to analyze the presence of an enveloped virus, such as coronavirus. Different strategies for the concentration process were selected to carry out the detection and quantification of SARS-CoV-2 RNA in wastewater: (a) aluminum hydroxide adsorption-precipitation, (b) pre-treatment with glycine buffer and precipitation with polyethylene-glycol (PEG) and (c) ultrafiltration (Centricon). Our results showed that the reduction of organic matter, using the pre-treatment with glycine buffer before the concentration with Centricon or aluminum hydroxide adsorption-precipitation, improved the recovery percentage of the control virus, Mengovirus (MgV) ( $8.37\% \pm 5.88$  n = 43;  $6.97\% \pm 6.51$  n = 20, respectively), and the detection of SARS-CoV-2 in comparison with the same methodology without a pre-treatment. For the concentration with Centricon, the use of 100 mL of wastewater, instead of 200 mL, increased the MgV recovery, and allowed a positive detection of SARS-CoV-2 with N1 and N2 targets. The quantity of SARS-CoV-2 RNA detected in wastewater did not show a direct correlation with the number of confirmed cases, but the study of its upwards or downwards trend over time enabled the detection of an increase of epidemiological data produced in September 2020, January 2021 and April 2021.

## **The Importance of Heating Unit Operations in the Food Industry to Obtain Safe and High-Quality Products.** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9094675>

Civilization has begun around 3,500 BCE in Mesopotamia and the realization by people that they could manipulate food to preserve it, through sun drying, fermentation, freezing in the snow, or cooking by

fire, was an important factor for the nomadic humans to start settling. Food by nature is subject to spoilage and the application of any kind of preservation method enables storage and weighted consumption. Throughout human history, many techniques have been developed and improved such as heat treatment, drying, freezing, extraction, mixing and the use of preservatives, among others. In the food industry of the modern world, each technique is implemented through sequential steps, known as unit operations. This opinion paper presents an overview of the main heating unit operations used in the food industry, highlighting their benefits to converting raw materials into palatable products with high quality and safe for consumption. Examples are presented to illustrate how several food products available in the market were submitted only to physical transformations based on scientific knowledge. However, there is a range of intensity in physical processing and the applied energy level depends on the nature of the food, target microorganism, storage conditions, type of packaging, and desired shelf-life. The importance of food safety is stressed since processed foods have been criticized for confusion between nutritious values and processing steps. There are still many challenges to the food industry to design the process in optimal conditions for food quality and with less environmental impacts and novel thermal and non-thermal technologies have been studied and implemented.

#### NIOSH and FARMWORKER HEALTH

##### **Restaurant frontline employees' turnover intentions: three-way interactions between job stress, fear of COVID-19, and resilience <https://doi.org/10.1108/ijchm-08-2021-1016>**

**Purpose** The COVID-19 pandemic intensifies the high turnover rate in the restaurant industry. Applying the conservation of resources (COR) theory, this study aims to examine the factors influencing US restaurant frontline employees' organizational and occupational turnover intention with an emphasis on the three-way interactions between job stress, fear of COVID-19 (FC) and resilience.

**Design/methodology/approach** A sample of 243 US restaurant frontline employees participated in this study. PROCESS macro was used for hypothesis testing. **Findings** Organizational turnover intention fully mediated the relationship between job stress and restaurant employees' occupational turnover intention. FC intensified the positive relationship between job stress and organizational turnover intentions. Job stress, FC and resilience interacted to affect restaurant frontline employees' organizational turnover intention such that when resilience is high, FC strengthened the positive relationship between job stress and organizational turnover intention, and the indirect effect of job stress on occupational turnover intention via organizational turnover intention. **Practical implications** Restaurants should take measures to reduce frontline employees' fear and continue implementing practices to alleviate job stress during a crisis to reduce employees' turnover intentions. Training on building employee resilience could also be provided by restaurant operators. **Originality/value** This study added to the limited knowledge of factors that are associated with restaurant employees' organizational and occupational turnover intentions in the context of a global crisis and expanded the current knowledge of how fear and resilience may impact restaurant employees' behavioral intentions.

##### **Treating Workers as Essential Too: An Ethical Framework for Public Health Interventions to Prevent and Control COVID-19 Infections among Meat-processing Facility Workers and Their Communities in the United States <https://doi.org/10.1007/S11673-022-10170-2>**

Meat is a multi-billion-dollar industry that relies on people performing risky physical work inside meat-processing facilities over long shifts in close proximity. These workers are socially disempowered, and many are members of groups beset by historic and ongoing structural discrimination. The combination of working conditions and worker characteristics facilitate the spread of SARS-CoV-2, the virus that causes COVID-19. Workers have been expected to put their health and lives at risk during the pandemic because of government and industry pressures to keep this “essential industry” producing. Numerous

interventions can significantly reduce the risks to workers and their communities; however, the industry's implementation has been sporadic and inconsistent. With a focus on the U.S. context, this paper offers an ethical framework for infection prevention and control recommendations grounded in public health values of health and safety, interdependence and solidarity, and health equity and justice, with particular attention to considerations of reciprocity, equitable burden sharing, harm reduction, and health promotion. Meat-processing workers are owed an approach that protects their health relative to the risks of harms to them, their families, and their communities. Sacrifices from businesses benefitting financially from essential industry status are ethically warranted and should acknowledge the risks assumed by workers in the context of existing structural inequities.

#### **Doubt in store: vaccine hesitancy among grocery workers during the COVID-19 pandemic**

<https://doi.org/10.1007/S10865-021-00276-0>

The objective of this study was to assess the influence of workplace safety conditions alongside the World Health Organization's model of the "3 Cs", on grocery store workers' vaccine hesitancy concerning COVID-19. Data for this study come from the Arizona Frontline Workers Survey, a longitudinal web-based survey of 770 grocery store workers in the state of Arizona (US) collected in July 2020 and January 2021. We utilized ordinary least squares and multinomial logistic regression analyses to assess predictors of hesitancy at our Wave 2. Thirty-nine percent of our sample reported being unlikely to get vaccinated against COVID-19. Two aspects of the "3 Cs" model, confidence and convenience, were correlated with lower levels of vaccine hesitancy while the perceptions of being protected by one's employer increased hesitancy. Our findings underscore the importance of workplace conditions for vaccine hesitancy and the need to include vaccine messaging in employers' safety practices.

#### **OTHER: CROSS-CUTTING FOOD SYSTEM**

##### **Changes in clinical features of food-related anaphylaxis in children during 5 years.**

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9066084>

Background: Despite being frequently recommended, adrenaline auto-injectors (AAIs) are insufficiently prescribed and used for the prehospital management of anaphylaxis. Objective: This study aimed to investigate recent changes in the clinical features and prehospital management of food-related anaphylaxis in children. Methods: We retrospectively compared the clinical features of children who were hospitalized for food-related anaphylaxis in 2013 and 2018. The patients' medical records were reviewed for causative foods, triggers, location, AAI prescription, and/or use, wheezing on admission, and treatment. Results: Overall, 62 consecutive patients (43 males; median age, 5.6 years) hospitalized in 2018 were compared with 57 patients (37 males; median age, 4.3 years) hospitalized in 2013. There were no significant differences between the cohorts in age, gender, causative foods, or wheezing on admission. Cow's milk, wheat, and egg represented over half of the causative foods in both groups. Compared with 2013, the incidence of anaphylaxis decreased at home but increased at nurseries and schools in 2018. Exercise was a significantly more common trigger for anaphylaxis in 2018. Furthermore, a significant increase was observed in AAI administration by lay helpers or the patients themselves and in ambulance transportation. After admission, intramuscular adrenaline was administered to 26 patients in 2013 and 12 patients in 2018. Patients receiving prehospital adrenaline were significantly less likely to require in-hospital adrenaline injections. Conclusion: Food-related anaphylaxis triggered by exercise and AAI use have increased. Hence, raising awareness and educating caregivers, patients, teachers, and medical professionals are essential for the optimal management of this disorder.

**Leveraging data analytics to understand the relationship between restaurants' safety violations and COVID-19 transmission.** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9091265>

This paper leverages natural language processing, spatial analysis, and statistical analysis to examine the relationship between restaurants' safety violations and COVID-19 cases. We use location-based consumers' complaints data during the early stage of business reopening in Florida, USA. First, statistical analysis was conducted to examine the correlation between restaurants' safety violations and COVID-19 transmission. Second, a neural network-based deep learning model was developed to perform topic modeling based on consumers' complaints. Third, spatial modeling of the complaints' geographic distributions was performed to identify the hotspots of consumers' complaints and COVID-19 cases. The results reveal a positive relationship between consumers' complaints about restaurants' safety violations and COVID-19 cases. In particular, consumers' complaints about personal protection measures had the highest correlation with COVID-19 cases, followed by environmental safety measures. Our analytical methods and findings shed light on customers' behavioral shifts and hospitality businesses' adaptive practices during a pandemic.

### **Saving Local Restaurants: The Impact of Altruism, Self-Enhancement, and Affiliation on Restaurant Customers' Electronic Word of Mouth Behavior (EWOM)**

<https://doi.org/10.1177/10963480221092704>

During the COVID-19 pandemic, many restaurants faced a shift from a dine-in based service model to a takeout-based model. As a result of the qualitative differences between dine-in and take-out experiences, there was a corresponding change in customers' electronic word of mouth (EWOM) behavior. While pre-pandemic EWOM behavior relied on dine-in specific factors such as décor, lighting, and employee interactions, take-out dining relies less on these types of atmospheric elements to drive post-consumption evaluations. Accordingly, the purpose of this research was to explore the drivers of take-out dining EWOM by examining the effects of altruism, self-enhancement, and restaurant affiliation. Using the psychological framework of Underdog Theory, the results showed that both self-enhancement and altruistic motives result in positive EWOM, but that this relationship was moderated in important ways based on whether the restaurant was independently owned or part of a chain.

### **Perceptions of Tap Water Associated with Low-Income Michigan Mothers' and Young Children's Beverage Intake.** <https://dx.doi.org/10.1017/S1368980022001136>

**OBJECTIVE:** To quantify perceptions of tap water among low-income mothers with young children residing in Michigan and examine associations between perceptions of tap water, mothers' and young children's beverage intake, and mothers' infant feeding practices. **DESIGN:** Cross-sectional study. **SETTING:** Online survey. **PARTICIPANTS:** Medicaid-insured individuals who had given birth at a large Midwestern US hospital between fall 2016 and fall 2020 were invited by email to complete a survey in winter 2020 (N=3,881); 15.6% (N=606) completed eligibility screening, 550 (90.8%) were eligible to participate, and 500 (90.9%) provided valid survey data regarding perceptions of tap water, self and child beverage intake, and infant feeding practices. **RESULTS:** Two-thirds (66.2%) of mothers reported that their home tap water was safe to drink without a filter while 21.6% were unsure about the safety of their home tap water. Mothers' perceptions of their home tap water were associated with their own tap and bottled water intake and their young children's tap water and bottled water intake. Mothers with more negative perceptions of tap water in general, independent of their perceptions about their home tap water, consumed more bottled water and sugar-sweetened beverages, and their young children drank bottled water and fruit drinks more frequently. Few associations were observed between mothers' perceptions of tap water and infant feeding practices. **CONCLUSIONS:** Uncertainty about tap water safety and negative perceptions of tap water are common among low-income Michigan mothers. These beliefs may contribute to less healthful and more costly beverage intake among mothers and their young children.

## OTHER: GENERAL

### **It still takes a village: Advocating healthy living medicine for communities through social justice action** <https://doi.org/10.1016/j.pcad.2022.04.014>

Countless individuals in the United States continue to experience effects related to the coronavirus disease 2019 (COVID-19) pandemic, such as job/business instability, the breaking down of school systems, isolation, and negative health consequences. There are, however, certain populations and communities that continue to be disproportionately affected, resulting in severe health outcomes, decreased quality of life, and alarmingly high death rates. These populations typically live in historically excluded communities and identify as persons of color. To advance health equity in these communities, healthy living (HL) strategies are paramount. In fact HL Medicine - getting sufficient physical activity, practicing good nutrition, maintaining a healthy body weight, and not smoking, can be a viable solution. Applying these concepts, particularly the promotion of physical activity, through community collaboration can advance the goals of social justice action.

### **The Role of Forests and Trees in Poverty Dynamics** <https://doi.org/10.1016/j.forpol.2022.102750>

Understanding the contribution of forests to poverty alleviation and human well-being has never been more important. The effects of the COVID-19 pandemic are erasing gains in poverty reduction achieved over the past several decades. At the same time, climate change is increasing the frequency of extreme weather events and natural disasters, especially in poor rural communities. In this paper, we review approaches to measuring poverty and well-being finding that standard approaches to measuring poverty and poverty dynamics typically do not adequately consider environmental goods and services, leading to an incomplete understanding of poverty dynamics among policy makers and practitioners. We identify four archetypal poverty trajectories and discuss how subsistence and cash income, assets, and non-material benefits from forests and tree-based systems influence each of them. We draw on the broad literature on forests and livelihoods, acknowledging that the majority of the literature on the topic of forests and poverty relies on static, micro-level, and highly contextualized analyses. Our review suggest that forests and tree-based systems provide a pathway out of poverty only under very specific conditions, when high value goods are accessible and marketed, or when ecosystem services can be monetized for the benefit of people living in or near forests. However, the role that forests play in supporting and maintaining current consumption, diversifying incomes, and meeting basic needs may be extremely important, particularly for those experiencing transient poverty. We discuss negative externalities associated with living proximate to forests, including the special case of geographic poverty traps, which can occur in remote forested areas. To build a strong evidence base for policy makers we recommend that research on forest-poverty dynamics address longer time-frames (up to decades), larger and/or nested spatial scales, and are contextualized within the landscape, region, or national setting where it is conducted. Advancing our understanding of forest-poverty dynamics is critical, particularly in low and middle-income countries where large numbers of people live in or near forests or in landscapes with forest-agriculture mosaics. Policy makers should strive to understand the potential role for forest-based livelihood strategies among their suite of social protection and poverty reduction policies and programs, particularly for addressing transient poverty.

### **Good ingredients from foods to vegan cosmetics after COVID-19 pandemic**

<https://doi.org/10.1111/jocd.15028>

Background New changes are taking place in the beauty and cosmetology market due to changes in daily life due to coronavirus disease-19 (COVID-19) and environmental alteration caused by the spread of live commerce. Purpose This study technically investigated the future value and direction of vegan cosmetics from food to cosmetics by focusing on good ingredients after COVID-19 pandemic and changing the

needs of consumers in the beauty and cosmetics industry. Methods This review paper is a critical literature review, and a narrative review approach has been used for this study. A total of 300 to 400 references were selected using representative journal search websites such as PubMed, Google Scholar, Scopus, RISS, and ResearchGate, which a total of 45 papers were selected in the final stage based on 2009 to 2022. Result As environmental problems increased after the COVID-19 pandemic, we tried to understand the needs of consumers for vegan cosmetics, which are good ingredients and good cosmetics. Therefore, this narrative review clearly shows the need for beauty and cosmetics industry consumers to pursue good consumption due to the global COVID-19 pandemic. Conclusion Accordingly, this literature review will need to identify consumer needs for vegan cosmetics that started from vegan foods and develop the applications for the development of customized inner beauty products, customized vegan inner beauty products and/or customized vegan cosmetics using customized cosmetics. This is expected to be used as important marketing materials for the global vegan cosmetics market that confirms new changes in the cosmetics market.

## **Food and COVID-19 Lit Review: Weeks ending 05/6/22 and 05/13/22**

### **DNPAO**

- HomeStyles-2 for SNAP-Ed families with children in middle childhood: Cluster randomized trial protocol <https://doi.org/10.1016/j.cct.2022.106771>
- Adaptive capacity in emergency food distribution: Pandemic pivots and possibilities for resilient communities in Colorado <https://doi.org/10.5304/jafscd.2022.113.004>
- CPAs' Role in Food Relief Organizations after COVID-19: Certified Public Accountant [here](#)
- Changes to the home food environment and parent feeding practices during the COVID-19 pandemic: A qualitative exploration. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8594079>

### **DFWED**

- Exploring the Experiences of Members of the International Food Safety Authorities Network: An Interpretative Phenomenological Analysis. <https://dx.doi.org/10.4315/JFP-21-171>

### **NCEH**

- Comprehensive Risk Pathway of the Qualitative Likelihood of Human Exposure to Severe Acute Respiratory Syndrome Coronavirus 2 from the Food Chain. <https://dx.doi.org/10.4315/JFP-21-218>
- Hand Washing Observations in Fast-Food and Full-Service Restaurants: Results from the 2014 U.S. Food and Drug Administration Retail Food Risk Factors Study. <https://dx.doi.org/10.4315/JFP-20-412>

### **NIOSH and Farmworker Health**

- The Abysmal Organization of Work and Work Safety Culture Experienced by North Carolina Latinx Women in Farmworker Families <https://doi.org/10.3390/ijerph19084516>
- Children, work, and safety on the farm during COVID-19: A harder juggling act <https://doi.org/10.1080/1059924x.2022.2068716>
- US workers' willingness to accept meatpacking jobs amid the COVID-19 pandemic <https://doi.org/10.1002/jaa2.8>



- The use of personal protective equipment during common industrial hog operation work activities and acute lung function changes in a prospective worker cohort, North Carolina, USA (preprint) <https://doi.org/10.1101/2020.11.03.20205252>
- SARS-CoV-2 seroprevalence survey in grocery store workers - Minnesota, 2020-2021 <https://doi.org/10.3390/ijerph19063501>

#### OTHER: CROSS-CUTTING FOOD SYSTEM

- Towards the Sustainable Development Goal of Zero Hunger: What Role Do Institutions Play? <https://doi.org/10.3390/su14084598>
- Cross-Contamination on Atypical Surfaces and Venues in Food Service Environments. <https://dx.doi.org/10.4315/JFP-20-314>
- Chronic Exposure to the Food Additive tBHQ Modulates Expression of Genes Related to SARS-CoV-2 and Influenza Viruses <https://doi.org/10.3390/life12050642>

#### OTHER: GENERAL

- How Does Migration Background Affect COVID-19 Vaccination Intentions? A Complex Relationship Between General Attitudes, Religiosity, Acculturation and Fears of Infection <https://doi.org/10.3389/fpubh.2022.854146>
- The COVID-19 Pandemic: Health Impact on Unaccompanied Migrant Children <https://doi.org/10.1093/sw/swac014>
- Age-friendly communities during the time of COVID-19: a model for rapid community response <https://doi.org/10.1080/08959420.2022.2049576>
- Excess death among Latino people in California during the COVID-19 pandemic (preprint) <https://doi.org/10.1101/2020.12.18.20248434>

#### DNPAO

##### **HomeStyles-2 for SNAP-Ed families with children in middle childhood: Cluster randomized trial protocol** <https://doi.org/10.1016/j.cct.2022.106771>

Background Childhood obesity prevention efforts are needed in the United States, especially for families with low income. The purpose of this study is to determine whether HomeStyles-2, a nutrition education and childhood obesity prevention program for families with children in middle childhood (ages 6 to 11 years), motivates parents to re-shape their home environments and weight-related lifestyle practices to be more supportive of meeting national nutrition and physical activity recommendations and weight status of their children more so than those in the control condition. Methods A research-practice partnership with Florida's Supplemental Nutrition Assistance Program-Education (SNAP-Ed) program was formed to conduct a cluster randomized trial to evaluate the HomeStyles-2 intervention. SNAP-Ed-eligible individuals who are parents/caregivers of children aged 6–11 living in the study catchment area will be invited to enroll in the study and participate in a six-lesson series using the HomeStyles-2 program or an attention control program. The primary outcome measures related to parent weight-related behaviors will be assessed on the individual level. Linear mixed models with a hierarchical design will be used to assess outcomes of interest. Discussion This study has the potential to demonstrate the effectiveness of a new curriculum implemented in a federal nutrition education program. Because of the COVID-19 pandemic, adjustments were made to the intervention design to allow for virtual delivery of the intervention through SNAP-Ed. This unanticipated change will offer much-needed research on the effectiveness of virtual nutrition education, which may help to expand SNAP-Ed's reach across the country. Trial registration: NCT05019339.

### **CPAs' Role in Food Relief Organizations after COVID-19: Certified Public Accountant [here](#)**

According to the National Council of Nonprofits, the sector employs approximately 12.3 million people and spends more than \$826 billion on salaries, benefits, and payroll taxes annually [National Council of Nonprofits (NCN), 2021. "Economic Impact," February 2, 2021, <https://bit.ly/3wjgVnT>]. [...]these nonprofits create many opportunities to fuel the United States' economic engine: nonprofits consume a wide range of goods and services, ranging from immediate needs (e.g., food, utilities, office supplies, rent) to larger expenses (e.g., computer and medical equipment). According to the Independent Sector survey (2020), only 23% of food pantries were operational during the height of the pandemic and they struggled to survive, leading to profound adverse financial and social implications. NBC News, April 8, 2020, <https://nbcnews.to/3tpaspU>). Since 2020, food pantries have had to adjust to this new environment with new strategies and activities, focusing on urgent needs and direct emergency assistance.

### **Adaptive capacity in emergency food distribution: Pandemic pivots and possibilities for resilient communities in Colorado <https://doi.org/10.5304/jafscd.2022.113.004>**

The unprecedented circumstances of the COVID-19 pandemic have revealed weaknesses in our emergency food distribution programs and also highlighted the importance of the adaptive capacity that is actively fostered within such programs. Community-based food distribution programs have faced an increased reliance on their services due to record-breaking food insecurity since March 2020. Concurrently, these emergency food distribution programs have had to deal with the logistical challenges of operating their programs during a pandemic. How are they adapting, and which existing organizational assets have they been able to draw from and/or strengthen? Based on in-depth qualitative research with emergency food distribution programs in Boulder and Denver, Colorado, this paper analyzes how their operational responses to the COVID-19 crisis both demonstrate and reinforce adaptive capacities. By drawing from collective resources, leveraging the efficiency of their flexible and decentralized structures, and networking across organizations, the programs in our study took advantage of existing organizational assets. At the same time, we argue that by overcoming logistical and practical barriers to address emerging food insecurity needs, they simultaneously deepened their adaptive capacities to respond to ongoing and future crises.

### **Changes to the home food environment and parent feeding practices during the COVID-19 pandemic: A qualitative exploration. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8594079>**

The COVID-19 pandemic brought about many changes that potentially altered the home food environment, which has been associated with child eating patterns and dietary intake. There is also some evidence that changes due to the COVID-19 pandemic are associated with health behaviors in children, such as an increased intake of high-calorie snack food. The current study aimed to more deeply understand how the COVID-19 pandemic affected the home food environment of meal and snack time routines and parent feeding practices within families of young children. Data for this study are taken from the Kids EAT! Study, a racially/ethnically diverse cohort of families with 2-5 year old children. Qualitative interviews were conducted by phone and video conference with mothers (n = 25) during August/September 2020 and were coded using a hybrid deductive/inductive analysis approach. This allowed coders to identify themes using the interview questions as an organizational template (deductive) while also allowing unique themes to emerge from the qualitative data (inductive). Three overarching themes emerged with multiple sub-themes: 1) Mothers were more directive in the types of food and amounts of food eaten by children; 2) Mothers had less rules around mealtimes; 3) Mothers had increased meal responsibilities. When faced with a change in a structured schedule and increased stress-such as occurred with the COVID-19 pandemic, parents may benefit from advice on how to

manage parent feeding practices, including tips on appropriate limit setting, establishing a schedule and routines, and improving accessibility of healthful snacks. Lessons learned during the COVID-19 pandemic may have relevance to other time periods when families face disruptions to routine and during other times of transition.

#### DFWED

##### **Exploring the Experiences of Members of the International Food Safety Authorities Network: An Interpretative Phenomenological Analysis.** <https://dx.doi.org/10.4315/JFP-21-171>

ABSTRACT: The International Food Safety Authorities Network (INFOSAN) is a global network of national food safety authorities from 190 countries, managed jointly by the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) that aims to facilitate the rapid exchange of information during food safety incidents. A three-phase study of INFOSAN was launched in 2019 to characterize and examine the network as a functional community of practice and determine its value systematically and rigorously from its members' perspectives. The first two phases of the study involved analyzing the INFOSAN Community Website and surveying of all of its members. The main objective of this third and final phase of the study was to understand the experiences of a small group of INFOSAN members as they relate to various dimensions of membership. A qualitative methodology was used to provide a deeper understanding of members' experiences and supplement the results from the first two quantitative study phases. Interviews were conducted with 10 INFOSAN members from 10 geographic regions, transcribed verbatim, and analyzed using interpretative phenomenological analysis. The results offer an understanding of INFOSAN members' experiences in the context of what participation in this global network means to them and relate to five themes concerning trust, learning, health protection, sense of community, and future potential. The findings suggest that focusing on outreach to sustain personal interest, training to improve technical capacity, and advocacy to obtain political buy-in are ways in which the INFOSAN Secretariat could enable participation and create value at the individual, organizational, and national level, respectively. Such engagement could translate into more effective international communication during urgent food safety incidents and fewer cases of foodborne illness worldwide.

#### NCEH

##### **Comprehensive Risk Pathway of the Qualitative Likelihood of Human Exposure to Severe Acute Respiratory Syndrome Coronavirus 2 from the Food Chain.** <https://dx.doi.org/10.4315/JFP-21-218>

ABSTRACT: A group of experts from all Canadian federal food safety partners was formed to monitor the potential issues relating to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) food contamination, to gather and consider all of the relevant evidence and to determine the impact for Canadian food safety. A comprehensive risk pathway was generated to consider the likelihood of a SARS-CoV-2 contamination event at any of the relevant steps of the food processing and handling chain and the potential for exposure and transmission of the virus to the consumer. The scientific evidence was reviewed and assessed for each event in the pathway, taking into consideration relevant elements that could increase or mitigate the risk of contamination. The advantage of having an event-wise contextualization of the SARS-CoV-2 transmission pathway through the food chain is that it provides a systematic and consistent approach to evaluate any new data and communicate its importance and impact. The pathway also increases the objectivity and consistency of the assessment in a rapidly

evolving and high-stakes situation. Based on our review and analysis, there is currently no comprehensive epidemiological evidence of confirmed cases of SARS-CoV-2, or its known variants, causing coronavirus disease 2019 from transmission through food or food packaging. Considering the remote possibility of exposure through food, the likelihood of exposure by ingestion or contact with mucosa is considered negligible to very low, and good hygiene practices during food preparation should continue to be followed.

**Hand Washing Observations in Fast-Food and Full-Service Restaurants: Results from the 2014 U.S. Food and Drug Administration Retail Food Risk Factors Study.** <https://dx.doi.org/10.4315/JFP-20-412>

ABSTRACT: Properly executed hand washing by food service employees can greatly minimize the risk of transmitting foodborne pathogens to food and food contact surfaces in restaurants. However, food service employee hand washing is often not done correctly or does not occur as often as it should. The purpose of this study was to assess the relative impact of (i) the convenience and accessibility of hand washing facilities; (ii) the maintenance of hand washing supplies, (iii) multiunit status, (iv) having a certified food protection manager, and (v) having a food safety management system for compliance with proper hand washing. Results revealed marked differences in hand washing behaviors between fast-food and full-service restaurants; 45% of 425 fast-food restaurants and 57% of 396 full-service restaurants were out of compliance for washing hands correctly, and 57% of fast-food restaurants and 78% of full-service restaurants were out of compliance for employee hands being washed when required. Logistic regression results indicated the benefits of accessibility and maintenance of the hand washing sink and of a food safety management system for increasing the likelihood of employees washing hands when they are supposed to and washing them correctly when they do.

NIOSH and Farmworker Health

**The Abysmal Organization of Work and Work Safety Culture Experienced by North Carolina Latinx Women in Farmworker Families** <https://doi.org/10.3390/ijerph19084516>

The occupational health of immigrant workers in the United States is a major concern. This analysis describes two domains, organization of work and work safety culture, important to the occupational health of Latinx women in farmworker families. Sixty-seven Latinx women in North Carolina farmworker families completed a baseline and five follow-up questionnaires in 2019 through 2021. Fifty-nine of the women were employed in the year prior to the Follow-Up 5 Questionnaire. These women experienced an abysmal organization of work and work safety culture. They experienced significant job churn, with most changing employment several times during the 18-month period. Most of their jobs were seasonal, paid less than \$10.00 per hour, piece-rate, and almost all without benefits. The women's jobs had little skill variety (mean 1.5) or decision latitude (mean 1.1), but had high psychological demands (mean 2.0). Work safety climate was very low (mean 13.7), with 76.3% of women noting that their supervisors were "only interested in doing the job fast and cheaply" rather than safely. Women employed as farmworkers versus those in other jobs had few differences. Further research and intervention are needed on the organization of work and work safety culture of Latinx women manual workers.

**Children, work, and safety on the farm during COVID-19: A harder juggling act** <https://doi.org/10.1080/1059924x.2022.2068716>

OBJECTIVES: Measures to curb the spread of COVID-19 in the Spring of 2020 immediately raised concerns among farm safety experts about the increase in children's risk exposure due to changes in childcare and schooling arrangements. METHODS: I conducted univariate and inductive content analysis on survey data from 134 farm parents from 38 U.S. states to understand how they were taking care of

their children in the early months of COVID-19. RESULTS: My findings overall confirm experts' predictions. The move to distance learning for about three quarter of respondents with school-age children and changes in childcare arrangements for over half of those with pre-school-age children led respondents to contend with fewer options and added responsibilities. Most frequently-used adaptation strategies reflected lower reliance on the traditionally important social networks, a desire to preserve household income, and greater involvement of children on the farm. As a result, taking care of their children became harder for more than half of respondents with likely repercussions on children's exposure to risk, parents' well-being, and on the farm business. The empirical insights of my findings provide descriptive baseline and contextual data for future research on the impact of COVID-19. The conceptual insights expand the farm safety literature by illustrating the need to study underappreciated structural factors shaping how farm parents juggle children with their professional obligations. CONCLUSION: Finally, findings around the complexity of raising children and connections to farm productivity and farm safety highlight the importance of considering farm women's well-being alongside the safety of their children.

### **US workers' willingness to accept meatpacking jobs amid the COVID-19 pandemic**

<https://doi.org/10.1002/jaa2.8>

We implement a discrete choice experiment to examine the impact of COVID-19 exposure risk, unemployment risk, enhanced and extended unemployment benefits, and job attributes on low-skilled workers' willingness to accept (WTA) meatpacking jobs. With a sample average WTA wage of \$22.77/h, the current national average meatpacking wage of approximately \$15/h is too low for these workers to consider this employment opportunity. Enhanced layoff risk and exposure to COVID-19 further deterred respondents, while health insurance, retirement benefits, and a signing bonus enhanced respondents' WTA. The additional unemployment benefits of the CARES Act neither deterred nor encouraged respondents WTA.

### **SARS-CoV-2 seroprevalence survey in grocery store workers - Minnesota, 2020-2021**

<https://doi.org/10.3390/ijerph19063501>

Grocery workers were essential to the workforce and exempt from lockdown requirements as per Minnesota Executive Order 20-20. The risk of COVID-19 transmission in grocery settings is not well documented. This study aimed to determine which factors influenced seropositivity among grocery workers. We conducted a cross-sectional study of Minnesota grocery workers aged 18 and older using a convenience sample. Participants were recruited using a flyer disseminated electronically via e-mail, social media, and newspaper advertising. Participants were directed to an electronic survey and were asked to self-collect capillary blood for IgG antibody testing. Data were analyzed using logistic regression and adjusted for urbanicity, which confounded the relationship between number of job responsibilities in a store and seropositivity. Of 861 Minnesota grocery workers surveyed, 706 (82%) were tested as part of this study, of which 56 (7.9%) tested positive for IgG antibodies. Participants aged 65-74 years had the highest percent positivity. Having multiple job responsibilities in a store was significantly associated with seropositivity in our adjusted model (OR: 1.14 95% CI: 1.01-1.27). Workplace factors influenced seropositivity among Minnesota grocery workers. Future research will examine other potential factors (e.g., in-store preventive measures and access to PPE) that may contribute to increased seropositivity.

### **The use of personal protective equipment during common industrial hog operation work activities and acute lung function changes in a prospective worker cohort, North Carolina, USA (preprint)**

<https://doi.org/10.1101/2020.11.03.20205252>

**INTRODUCTION:** As occupational activities related to acute industrial hog operation (IHO) worker lung function are not well defined, we aimed to identify IHO work activities associated with diminished respiratory function and the effectiveness, if any, of personal protective equipment (PPE) on IHOs. **METHODS:** From 2014-2015, 103 IHO workers were enrolled and followed for 16 weeks. At each bi-weekly visit, lung function measurements were collected via spirometry and work activities and PPE use were self-reported via questionnaire. Generalized linear and linear fixed-effects models were fitted to cross-sectional and longitudinal data. **RESULTS:** At baseline, increasing years worked on an IHO were associated with diminished lung function, but other activities were less consistent in direction and magnitude. In longitudinal models, only reports of working in feeding/finisher barns, showed a consistent association. However, a -0.3 L (95% confidence interval: -0.6, -0.04) difference in FEV<sub>1</sub> was estimated when workers wore PPE consistently versus those weeks they did not. In post-hoc analyses, we found that coveralls and facemasks were worn less consistently when workers experienced worse barn conditions and had more contact with pigs, but coveralls were worn more consistently as cleaning activities increased. **CONCLUSIONS:** Similar to past studies, baseline estimates were likely obscured by healthy worker bias. Also making it challenging to disentangle the effect of work activities on lung function was the discovery that IHO workers used PPE differently according to work task. These data suggest that interventions may be targeted toward improving barn conditions so that workers can consistently utilize IHO-provided PPE. **KEY MESSAGES:** What is already known about this subject?: Working on industrial hog operations may be deleterious to long- and short-term respiratory health due to airborne bacteria, endotoxin, hazardous gases, dust, and dander in barns. In efficacy studies PPE has been shown to be protective, but studies have shown that PPE utilization among hog workers has historically been sub-optimal. What are the new findings?: As barn conditions worsened and contact with pigs increased, workers in this cohort reported wearing coveralls and face masks less often; however, they reported increased PPE use as they conducted more cleaning activities at work. During weeks when workers wore PPE their lung function declined, a possible cause being the improper use of the equipment leading to a false sense of protection or re-exposure to hazardous contaminants. How might this impact on policy or clinical practice in the foreseeable future?: Given COVID-19, the H1N1 "swine flu" pandemic, our knowledge of antimicrobial resistant pathogens, and increasing awareness about how food systems are linked to the spread of emerging infectious diseases, occupational health intervention research and workplace policies may focus on creating barn environments that are more conducive to PPE use which could help protect workers and consequently the community.

#### **OTHER: CROSS-CUTTING FOOD SYSTEM**

##### **Towards the Sustainable Development Goal of Zero Hunger: What Role Do Institutions Play?**

<https://doi.org/10.3390/su14084598>

Empirical research has aimed to substantiate the institution–food security nexus. However, institutional literature has largely overlooked the relationship between institutions and the sustainable development goal of zero hunger (SDG2). SDG2 is a multidimensional goal that extends beyond food security and requires comprehensive investigation. Therefore, this study explored the role of institutions in promoting SDG2 achievement using a panel dataset spanning 108 countries from 2000 to 2019. The institutional impact was evaluated using worldwide governance indicators, and the International Country Risk Guide (ICRG)'s political risk ratings. Simultaneous equation modeling was used as the estimation technique. According to the results, institutions showed a positive and highly significant association with SDG2 performance. All the dimensions of good governance promoted SDG2 performance. Except for maintaining law and order, all other dimensions of political risk indicators were found to improve SDG2 performance. This study also discovered significant evidence that voice and

accountability, as well as the settlement and the prevention of conflicts, had the most substantial influences on SDG2 achievement. In developing countries, improving both the quality of governance and political stability had a comparatively higher impact on SDG2 performance than in developed countries. Furthermore, institutions showed a significant mediating impact on SDG2 performance via agricultural productivity and economic growth. Based on these findings, this study concluded that the pursuit of good governance and inclusive institutions could be instrumental in achieving SDG2.

### **Cross-Contamination on Atypical Surfaces and Venues in Food Service Environments.**

<https://dx.doi.org/10.4315/JFP-20-314>

**ABSTRACT:** Cross-contamination of raw food to other surfaces, hands, and foods is a serious issue in food service. With individuals eating more meals away from home, contracting a foodborne illness from a food service establishment is an increasing concern. However, most studies have concentrated on hands or food contact surfaces and neglected atypical and unusual surfaces (surfaces that are not typically identified as a source of cross-contamination) and venues. This review was conducted to identify atypically cross-contaminated surfaces and atypical venues where cross-contamination could occur that have not been examined thoroughly in the literature. Most surfaces that could be at risk for cross-contamination are frequently touched, are rarely cleaned and sanitized, and can support the persistence and/or growth of foodborne pathogens. These surfaces include menus, spice and condiment containers, aprons and coveralls, mobile devices and tablets, and money. Venues that are explored, such as temporary events, mobile vendors, and markets, are usually limited in space or infrastructure, have low compliance with proper hand washing, and provide the opportunity for raw and ready-to-eat foods to come into contact with one another. These factors create an environment in which cross-contamination can occur and potentially impact food safety. A more comprehensive cleaning and sanitizing regime encompassing these surfaces and venues could help mitigate cross-contamination. This review highlights key surfaces and venues that have the potential to be cross-contaminated and have been underestimated or not fully investigated. These knowledge gaps indicate where further work is needed to fully understand the role of these surfaces and venues in cross-contamination and how it can be prevented.

### **Chronic Exposure to the Food Additive tBHQ Modulates Expression of Genes Related to SARS-CoV-2 and Influenza Viruses** <https://doi.org/10.3390/life12050642>

**Background.** tert-butylhydroquinone (tBHQ) is an antioxidant commonly used as a food additive. Studies suggest that tBHQ could modulate immune responses to influenza and SARS-CoV-2 infection. In our transcriptomic analysis we explored the molecular mechanisms behind tBHQ's modulatory properties and the relationships to respiratory viral infections. **Methods.** tBHQ was administered per os to BALB/c mice (1.5% [w/w]) for 20 days. Splenic T cells were isolated with magnetic separation and subjected to transcriptomic analysis. Gene-set enrichment analysis and g:Profiler was conducted to provide a functional interpretation of significantly changed genes. Further analysis for AHR/NRF2 binding sites was performed with GeneHancer. **Results.** In CD4+ cells, we found significantly altered expression of 269 genes by tBHQ. Of them, many had relevance in influenza infection such as genes responsible for virus entry (Anxa1/2, Cd14), interferon signaling (Dusp10, Tnfsf13), or prostaglandin synthesis (Ptgs1/2). In SARS-CoV-2 infections, interferon signaling (Ifitm1), proteolytic enzymes (CtsB), and also cell-surface proteins (Cd14, Cd151) were among the prominent alterations after tBHQ exposure. Of these genes, many had one or more binding sites for AHR and NRF2, two major xenosensors triggered by tBHQ. **Conclusions.** Our results strongly suggest that a common food additive, tBHQ, can modulate virus-dependent processes in both influenza and SARS-CoV-2 infections.

OTHER: GENERAL

### **How Does Migration Background Affect COVID-19 Vaccination Intentions? A Complex Relationship Between General Attitudes, Religiosity, Acculturation and Fears of Infection**

<https://doi.org/10.3389/fpubh.2022.854146>

OBJECTIVES: The aim of the study is to investigate the relationship between migration background and COVID-19 vaccine intentions, exploring multiple mediation paths. We argue that the migrational and sociocultural background influences general attitudes toward health and political/public institutions. The effects of these general attitudes on vaccination intentions are mediated by fears of infection. Additionally, we analyze a migrant-only model including acculturation variables (years since migration, foreign and host country media consumption) and region of origin (European vs. Non-European). Design: The data (n = 1027) stem from an online access panel collected between March 15 and March 25, 2021. Quotas for gender and age were set according to the online population of Germany. The use of an oversampling framework for first generation migrants resulted in a sample with 50% first generation migrants and 50% native Germans without migration background. Models were calculated using a Structural Equation Modeling approach. RESULTS: Migration background both increases and decreases antecedents of vaccination intentions. Being a migrant increases positive antecedents like religiosity, which in turn positively influence general attitudes and thus fears of infection and vaccination intentions. But being a migrant has also a significant direct negative association with vaccination intentions, implying missing mediators. Increasing years since migration increase host country (German) media consumption and decrease consumption of media from the country of origin. Both media variables are positively associated with political trust and health consciousness. Additionally, European compared to Non-European migrants have less political trust, fear of personal infection and lower vaccination intentions on the whole. CONCLUSIONS: The study found that vaccination intentions can be understood by applying the proposed hypothetical structure. We found complex associations of the migration and sociocultural background and COVID-19 vaccination intentions, where antecedents of vaccination intentions are both increased and decreased by migration background and migration specific factors.

### **The COVID-19 Pandemic: Health Impact on Unaccompanied Migrant Children**

<https://doi.org/10.1093/sw/swac014>

From the point of apprehension by U.S. Customs and Border Protection at the U.S.-Mexican border to their reunification with sponsors in U.S. communities, unaccompanied children (UC) face political, social, and economic conditions, heightening their risk for mental and physical health burdens that may be exacerbated during the COVID-19 pandemic. Such risk underscores the importance of social work practice and advocacy for the improved treatment and experiences of UC. This article uses a structural vulnerability conceptual lens to summarize the existing literature regarding UC and argues that UC's liminal immigration status, economic precarity, and lack of healthcare access place this group at high structural vulnerability during the pandemic. Further, this article identifies and describes three contexts of structural vulnerability of UC that are important points of social work intervention: (1) at the border, where migrant children are denied their legal right to seek protection;(2) in detention and shelter facilities;and (3) during reunification with sponsors. This article concludes with important practice and policy opportunities for social workers to pursue to obtain social justice for an important and highly vulnerable migrant child population.

### **Age-friendly communities during the time of COVID-19: a model for rapid community response**

<https://doi.org/10.1080/08959420.2022.2049576>

With the COVID-19 epidemic disproportionately impacting older adults, cities across the United States (U.S.) and the world scrambled to meet the needs of their older residents. Members of the World Health



Organization's Age-Friendly Communities (AFCs) network rely on cross-system community collaborations and resident voices to create age-friendly social, built, and service environments. These key elements of AFCs place them in a unique position to quickly identify needs of older residents, launch short-term targeted interventions, and support integration of new programs into existing systems for post-crisis sustainability. This essay discusses how one age-friendly community applied key tenets of the Centers for Disease Control's rapid response team model to meet the immediate, short-term needs of older residents for social connection, food, personal protective equipment (PPE), emergency preparedness, and technology utilization. Sustainability of the rapid response interventions was supported through the relationships and structures created by the AFC. Guidelines to contain disease outbreaks are helpful when responding to outcomes of outbreaks. Age-friendly communities core values align with the tenants of disaster response. Age-friendly communities are well positioned to respond to the consequences of COVID-19.

### **Excess death among Latino people in California during the COVID-19 pandemic (preprint)**

<https://doi.org/10.1101/2020.12.18.20248434>

**BACKGROUND:** Latino people in the US are experiencing higher excess deaths during the COVID-19 pandemic than any other racial/ethnic group, but it is unclear which subgroups within this diverse population are most affected. Such information is necessary to target policies that prevent further excess mortality and reduce inequities. **METHODS:** Using death certificate data for January 1, 2016 through February 29, 2020 and time-series models, we estimated the expected weekly deaths among Latino people in California from March 1 through October 3, 2020. We quantified excess mortality as observed minus expected deaths and risk ratios (RR) as the ratio of observed to expected deaths. We considered subgroups defined by age, sex, place of birth, education, occupation, and combinations of these factors. **FINDINGS:** During the first seven months of the pandemic, Latino deaths in California exceeded expected deaths by 10,316, a 31% increase. Excess death rates were greatest for individuals born in Mexico (RR 1.44;95% PI, 1.41, 1.48) or Central America (RR 1.49;95% PI, 1.37, 1.64), with less than a high school degree (RR 1.41;95% PI, 1.35, 1.46), or in food-and-agriculture (RR 1.60;95% PI, 1.48, 1.74) or manufacturing occupations (RR 1.59;95% PI, 1.50, 1.69). Immigrant disadvantages in excess death were magnified among working-age Latinos in essential occupations. **INTERPRETATION:** The pandemic has disproportionately impacted mortality among Latino immigrants and Latinos in unprotected essential jobs; Interventions to reduce these disparities should include early vaccination, workplace safety enforcement, and expanded access to medical care. **FUNDING:** National Institute on Aging; UCSF. **RESEARCH IN CONTEXT:** Evidence before this study: Several articles have suggested all-cause excess mortality estimates are superior to official COVID-19 counts for assessing the impact of the pandemic on marginalized populations that lack access to testing and healthcare. We searched PubMed, Google scholar, and the medRxiv preprint database through December 22, 2020 for studies of ("excess mortality" or "excess death") AND ("COVID-19" or "coronavirus") set in the United States and we identified two empirical studies with estimates of excess mortality among Latinos during the pandemic. The study set in California (from our research team) found per capita excess mortality was highest among Black and Latino people. The national study found percent excess mortality was significantly higher among Latino people than any other racial/ethnic group. Neither study further disaggregated the diverse Latino population or provided subgroup estimates to clarify why excess pandemic mortality is so high in this population. In the U.S., official COVID-19 statistics are rarely disaggregated by place of birth, education, or occupation which has resulted in a lack of evidence of how these factors have impacted mortality during the pandemic. No study to date of excess mortality in the U.S. has provided estimates for immigrant or occupational subgroups. Added value of this study: Our population-based observational study of all-cause mortality during the COVID-19 pandemic provides the first estimates of within-group heterogeneity among the Latino population in California - one of the populations hardest

hit by COVID-19 in the U.S. We provide the first subgroup estimates by place of birth and occupational sector, in addition to combined estimates by foreign-birth and participation in an essential job and education. In doing so, we reveal that Latino immigrants in essential occupations have the highest risk of excess death during the pandemic among working-age Latinos. We highlight the heightened risk of excess mortality associated with food/agriculture and manufacturing occupational sectors, essential sectors in which workers may lack COVID-19 protections. Implications of all the available evidence: Our study revealed stark disparities in excess mortality during the COVID-19 pandemic among Latinos, pointing to the particularly high vulnerability of Latino immigrants and Latinos in essential jobs. These findings may offer insight into the disproportionate COVID-19 mortality experienced by immigrants or similarly marginalized groups in other contexts. Interventions to reduce these disparities should include policies enforcing occupational safety, especially for immigrant workers, early vaccination, and expanded access to medical care.

## **Food and COVID-19 Lit Review: Week ending 04/29/22**

### **DNPAO**

- Food and beverage offerings by parents of preschoolers: A daily survey study of dinner offerings during COVID-19 <https://doi.org/10.1016/J.APPET.2022.106047>
- Addressing Health Disparities through an Innovative University-Community Vaccination and Food Access Model <https://doi.org/10.1017/cts.2022.88>
- Brief research commentary: the US indigenous food sovereignty movement's impact on understandings of COVID-19 in Indian country. (Special Issue: More than disaster: creativity in growing, distributing, and accessing food during covid-19.) <https://doi.org/10.1111/cuag.12280>
- Updates in the treatment of eating disorders in 2021: a year in review in Eating Disorders: The Journal of Treatment & Prevention <https://doi.org/10.1080/10640266.2022.2064109>
- Changes of symptoms of eating disorders (ED) and their related psychological health issues during the COVID-19 pandemic: a systematic review and meta-analysis. <https://dx.doi.org/10.1186/s40337-022-00550>

### **DFWED**

- Seafood Safety, Potential Hazards and Future Perspective <https://doi.org/10.4194/TRJFAS20533>

### **NIOSH and Farmworker Health**

- Understanding vaccine hesitancy among underserved communities in South Florida – an effort by the Florida Community-Engaged Research Alliance Against COVID-19 in

Disproportionately Affected Communities (FL-CEAL) to address vaccine uptake disparities in the COVID-19 pandemic <https://doi.org/10.1017/cts.2022.59>

- Work-Life Stress during the Coronavirus Pandemic among Latina Farmworkers in a Rural California Region <https://doi.org/10.3390/ijerph19084928>

#### OTHER: CROSS CUTTING FOOD SYSTEMS

- COVID connections: lessons from adaptations to COVID-19 as strategies for building food system resilience. (Special Issue: More than disaster: creativity in growing, distributing, and accessing food during covid-19.) <https://doi.org/10.1111/cuag.12276>
- Prevalence of a-Gal IgE and Mammalian Meat Allergy in a COVID-19 Vaccine Employee Cohort <https://doi.org/10.1016/j.jaci.2021.12.680>
- Averting wildlife-borne infectious disease epidemics requires a focus on socio-ecological drivers and a redesign of the global food system <https://doi.org/10.1016/j.eclinm.2022.101386>

#### OTHER: GENERAL

- A Systematic Review of Arts-Based Interventions Delivered to Children and Young People in Nature or Outdoor Spaces: Impact on Nature Connectedness, Health and Wellbeing. <https://dx.doi.org/10.3389/fpsyg.2022.858781>
- Challenges for Evaluation Practices and Innovative Approaches: Lessons during COVID-19 Pandemic <https://doi.org/10.1016/j.evalprogplan.2022.102095>
- School Meal Access and Changes in Meal Participation During COVID-19 School Closures: A Stratified Random Sample of CalFresh Healthy Living Eligible School Districts in California <https://doi.org/10.1016/j.pmedr.2022.101794>

#### DNPAO

##### **Food and beverage offerings by parents of preschoolers: A daily survey study of dinner offerings during COVID-19** <https://doi.org/10.1016/J.APPET.2022.106047>

The COVID-19 pandemic is likely to have altered parents' daily feeding practices, including what and how much they feed their children, which may have negative implications for children's weight. The primary aim of this study was to examine patterns of and variation in parents' daily food and beverage offerings at dinner across 10 days during the COVID-19 pandemic using descriptive analysis and non-parametric tests. Ninety-nine parents ( $M_{\text{age}} = 32.90$ ,  $SD_{\text{age}} = 5.60$ ) of children ages 2–4 years ( $M = 2.82$ ,  $SD = 0.78$ ) completed an online baseline survey and 10 daily surveys (929 completed surveys) assessing their daily food and beverage offerings at dinner. On average, parents did not offer recommended foods and beverages on a daily basis; parents offered vegetables and protein most often across the 10 days, however, less than 50% of parents offered the recommended serving size for each group. The intraclass correlations and random sampling plots revealed considerable within-parent variation in food and beverage offerings. Eating dinner as a family, planning dinner in advance, and preparing a homemade dinner were associated with more vegetable and protein offerings, while processed, fast, or fried foods were offered less often when dinner was planned or

homemade. Dairy, water, and refined grains were offered more often when dinner was homemade, while whole grains, processed, fast, or fried foods, and sugar-sweetened beverages were offered less often when dinner was homemade. The results provide documentation of parents' daily food and beverage offerings at dinner within the context of COVID-19 and point towards the importance of examining predictors and consequences of parents' daily feeding practices.

**Addressing Health Disparities through an Innovative University-Community Vaccination and Food Access Model** <https://doi.org/10.1017/cts.2022.88>

**OBJECTIVES/GOALS:** To describe and evaluate an innovative university-community vaccination and food access model for minority, immigrant, and underserved individuals experiencing food insecurity during a global pandemic. **METHODS/STUDY POPULATION:** The Purdue University Center for Health Equity and Innovation (CHEI) partnered with the two largest food banks in the Midwest and Walgreens to offer free COVID-19 and Flu vaccinations alongside food distribution. Goals included addressing food insecurity, increasing vaccine access, and decreasing vaccine hesitancy. CHEI acquired funding, recruited volunteers and interpreters, assessed interest and addressed vaccine hesitancy. Food bank/pantry partners distributed food and provided access to clientele and marketing assistance. Walgreens procured, administered, and documented vaccinations. The Model accommodated drive-through and indoor processes. Unidentifiable observational and self-report data were collected. Descriptive statistics were computed to characterize program outcomes. **RESULTS/ANTICIPATED RESULTS:** A total of 11 vaccination events occurred between June and October 2021 at three food bank/pantry locations. Of these 11 events, nine (82%) were drive-through and two (18%) took place indoors, eight (72%) offered COVID-19 vaccinations only, and three (27%) offered both COVID-19 and Flu vaccinations. Food was distributed to a total of 5,108 families and 416 vaccines (314 COVID, 102 Flu) were administered. Of the 396 individuals who received at least one vaccine, 20 (5%) received both a COVID and Flu vaccine. Of the 386 individuals who received at least one vaccine and reported their sex, 194 (50%) identified as female and the average age of those who received at least one vaccine was 45 years old. Of those who reported race (N = 228) or ethnicity (N = 253), 43% identified as Black or African American and 53% identified as LatinX. **DISCUSSION/SIGNIFICANCE:** Findings offer an innovative vaccination and food access model for diverse individuals experiencing food insecurity during a global pandemic. By drawing on cost effective, accessible, and culturally contextualized practices to optimize the reach and quality of vaccination services we can improve access barriers and mitigate health disparities.

**Brief research commentary: the US indigenous food sovereignty movement's impact on understandings of COVID-19 in Indian country. (Special Issue: More than disaster: creativity in growing, distributing, and accessing food during covid-19.)**

<https://doi.org/10.1111/cuag.12280>

This research commentary provides an overview of contemporary anthropological research regarding the US Indigenous food sovereignty movement and demonstrates how it informs the impacts of COVID-19 on Indian Country. Past anthropological research on US Indigenous foodways, while useful, has lacked US Indigenous voices and in-depth political context. Alternatively, many current Indigenous scholars prioritize integration of this crucial political

landscape, thus increasing the relevancy and application of this work. For this review, I begin by coalescing a selection of these recent research developments, primarily focusing on research undertaken by Indigenous scholars currently in, and affiliated with, anthropology. I then connect the ways in which their ethnographic and community-based findings shed insight into challenges that arose during the Covid-19 pandemic in 2020. Finally, I critique anthropology's lack of support for these research projects and offer suggestions regarding future US Indigenous food sovereignty research directions.

**Updates in the treatment of eating disorders in 2021: a year in review in *Eating Disorders: The Journal of Treatment & Prevention*** <https://doi.org/10.1080/10640266.2022.2064109>

An array of novel and important studies advancing the treatment of eating disorders (EDs) were published in *Eating Disorders: The Journal of Treatment & Prevention* in 2021. In an unprecedented year of challenges to the delivery of ED treatment, and the volume of patients requiring it, this review summarizes the recent contributions to the literature on the treatment of EDs. Notably, an emphasis on assessing and addressing barriers to collaborative care offers much promise in augmenting treatment delivery and patient outcomes. In keeping with recent data illustrating an elevated risk for increased symptom severity during the COVID-19 pandemic, a focus on further disseminating treatments to higher level of care settings will be critical as the field meets the challenge presented by COVID-19. In addition, we review recent findings relating to the broader assessment and treatment of comorbidities which exacerbate ED symptom severity—which offer critical insights into the development of novel treatments. These recent contributions pave the way for more nuanced approaches to treating EDs across the diagnostic spectrum.

**Changes of symptoms of eating disorders (ED) and their related psychological health issues during the COVID-19 pandemic: a systematic review and meta-analysis.**

<https://dx.doi.org/10.1186/s40337-022-00550>

**BACKGROUND:** The COVID-19 pandemic and its related social restrictions have profoundly affected people's mental health. It can be assumed that symptomatic behaviors and mental health of individuals with eating disorders (ED) deteriorated during this time. To get a thorough overview, we conducted a systematic review and meta-analysis with the following aims: First, to provide a comprehensive overview of symptoms of ED during the COVID-19-related confinement; second, to identify psychological mechanisms which impacted the emergence and maintenance of ED symptoms; third, to describe changes of daily routine and changes of access to healthcare in individuals with ED during confinement. **METHODS:** We searched Embase, PubMed, and Scopus databases for observational studies published between January 1st, 2020, to July 1st, 2021, which investigated the symptomatology of ED during the COVID-19 pandemic. **RESULTS:** After the screening, 13 studies with 7848 participants were included in the present systematic review and meta-analysis. The overall pooled prevalence of exacerbation of binge eating, food restriction, purging behaviors, and concerns about food intake in the pooled sample of 7848 was 59.65% (95% CI: 49.30%; 69.60%), and the overall prevalence of improved symptoms of ED in the pooled sample of 741 individuals was 9.37% (95% CI: 3.92%; 16.57%). Furthermore, COVID-19-related social restrictions negatively impacted the psychological health, daily routines, and physical activity of individuals with ED. More specifically, symptoms of

anxiety and depression related to ED were increased significantly over time. However, there were also positive aspects to the COVID-19 pandemic. The main positive consequences included more emotional support from the family, less pressure to engage in social activities, and more flexible meal planning. Individuals with ED reported having difficulties getting access to healthcare centers and using telemedicine. They also found a hard time communicating via online sessions. **CONCLUSIONS:** According to our interpretation, based on the data included in the systematic review and meta-analysis, the COVID-19 pandemic and its related social restrictions detrimentally impacted the mental health of majority of individuals with ED. Limited and impaired access to healthcare interventions appeared to have further exacerbated mental health issues of individuals with ED. Given this background, it seems that individuals with ED demand more attention during the COVID-19 crisis, and it is necessary to ensure that their course of treatment remains uninterrupted.

DFWED

### **Seafood Safety, Potential Hazards and Future Perspective**

<https://doi.org/10.4194/TRJFAS20533>

Along with the numerous benefits for human health, seafood may pose various health risks. These potential hazards may be of anthropogenic origin as well as natural. Pathogenic bacteria, viruses, organic and inorganic pollutants, microplastics, parasites, shellfish poisonings, ciguatera, tetrodotoxin, histamine, or seafood allergy may threaten consumer health. Evaluating the possible sources of these hazards and conditions is necessary to provide healthy and safe seafood to the consumer. Increased awareness of consumers on sustainability, food safety, origin and availability will greatly affect consumption trends. Therefore, this review presents a future perspective for seafood consumption. Antibiotic resistance and the effect of climate change on fish consumption, the recent critical problems of the seafood industry, were also discussed. This review gives current information on the potential hazards of seafood and provides a perspective for future trends in fish consumption. The seafood processing sector should consider these potential risks and adapt to changing consumer preferences. © 2022, Central Fisheries Research Inst. All rights reserved.

NIOSH and Farmworker Health

### **Understanding vaccine hesitancy among underserved communities in South Florida – an effort by the Florida Community-Engaged Research Alliance Against COVID-19 in Disproportionately Affected Communities (FL-CEAL) to address vaccine uptake disparities in the COVID-19 pandemic** <https://doi.org/10.1017/cts.2022.59>

**OBJECTIVES/GOALS:** The goal of this project is to understand vaccine hesitancy and barriers to COVID-19 vaccine uptake among underserved communities in South Florida, to promote vaccine awareness, and to tailor education and communication based on the findings, in partnership with local community-based organizations. **METHODS/STUDY POPULATION:** By partnering with local community organizations, leaders, faith groups, and other trusted sources, the FL-CEAL teams will conduct a nationally developed CEAL survey in minority communities in South Florida to understand vaccine hesitancy and barriers, conduct outreach activities such as webinars and virtual townhalls to address hesitancy and promote vaccine uptake, and develop

and disseminate educational materials and social media communications based on findings. The communities in South Florida include the **Latinx farm working community**, Latinx sexual/gender minorities, and Haitian and Black populations in South Florida.

**RESULTS/ANTICIPATED RESULTS:** Early findings have indicated that hesitancy drivers vary among specific communities, while lack of trust is an overall barrier. Over 100 outreach activities have been conducted, including events with subject matter experts and community partners addressing vaccines. A credit-earning Community Health Worker (CHW) curriculum on COVID vaccine hesitancy was created in partnership with the Miami CTSI and the Florida CHW Coalition and has been delivered to over 200 Florida CHWs. The training focuses on evidence-informed best practices for CHWs to increase vaccine acceptance. At least 350 surveys will be conducted to understand beliefs and concerns around COVID-19 vaccines, and tailor education materials and communication strategies. **DISCUSSION/SIGNIFICANCE:** The FL-CEAL Alliance has successfully leveraged their ongoing state-wide effort at addressing COVID-19 disparities to focus on COVID vaccine hesitancy in minority communities and leveraged data and findings to inform community-specific approaches in addressing some of those barriers.

### **Work-Life Stress during the Coronavirus Pandemic among Latina Farmworkers in a Rural California Region** <https://doi.org/10.3390/ijerph19084928>

**Objectives:** To examine the type and severity of stressors experienced among Latina farmworkers during the COVID-19 pandemic. **Methods:** A survey containing the Migrant Farmworker Stress Inventory was administered to 77 female-identifying Latina farmworkers working in a US–Mexico border region. A sub-sample of five participants participated in key-informant interviews. Data collection occurred in Summer 2021. **Results:** Nearly 40% of Latina farmworkers reported high stress levels indicative of clinical mental health risks. Health and safety concerns and experienced stressors identified included visible substance abuse and poor bathroom conditions at the field site, language barriers, and balancing work and home life demands. **Conclusions:** Latina farmworkers have unique health and safety needs, and COVID-19 has contributed to the experienced stressors. Understanding the familial and working environment sources of stress specific to female agriculture workers is imperative to implementing culturally and gender-responsive strategies to better support the health and safety of farming populations in future pandemics.

### **OTHER: CROSS CUTTING FOOD SYSTEMS**

#### **COVID connections: lessons from adaptations to COVID-19 as strategies for building food system resilience. (Special Issue: More than disaster: creativity in growing, distributing, and accessing food during covid-19.)** <https://doi.org/10.1111/cuag.12276>

To identify elements of crisis response that might hold lessons for resilience beyond the current moment, we studied a central North Carolina food system during the COVID-19 pandemic. Based on ethnographic interviews with farmers, employees and volunteers of food access organizations, and local government employees, our work found that connection, networking, innovation, and technology adoption were sources of strength and growth. **Lessons:** food system actors found that their social connections helped them to exchange information and resources, meet increased food needs among SNAP (Supplemental Nutrition Assistance Program) participants and Latina/os immigrants, and combine efforts to adopt technologies and

learn from new labor pools. Challenges: while navigating COVID-19, food system actors faced challenges spanning labor, safety, information, government policies, supply shortages, weather, and unreliable information. In addition to lessons and challenges, we offer a series of future research directions that we identified in our study findings. Our study shows that small-scale production and local food organization and government responses are important and dynamic parts of a resilient food system. Regional systems' actors were able to pivot more quickly than large-scale systems and presented a more flexible, locally suitable model that will likely prove adaptive beyond the pandemic.

**Prevalence of a-Gal IgE and Mammalian Meat Allergy in a COVID-19 Vaccine Employee Cohort** <https://doi.org/10.1016/j.jaci.2021.12.680>

**RATIONALE:** The a-Gal syndrome (AGS) is a tick-acquired allergic disorder caused by IgE to galactose- $\alpha$ -1,3-galactose (a-Gal). To date, most studies on AGS come from case-control studies and there is limited information about the prevalence of alpha-gal sensitization and allergy in the community. Here we addressed these questions in an employee vaccine cohort. **METHODS:** Adults affiliated with the University of Virginia were recruited as part of an IRB-approved COVID-19 antibody study. All participants had received at least one FDA-EUA approved COVID-19 vaccine. Allergic disease was not considered in inclusion or exclusion criteria and subjects provided a blood sample and answered a questionnaire about medical and dietary history. Total IgE and IgE to a-Gal were assayed by ImmunoCAP. **RESULTS:** Of 232 subjects, median age was 42 (IQR 32-54), 178 (77%) were female, 5 (2.2%) reported mammalian meat allergy and 35 (15.1%) had IgE to a-Gal  $\geq$  0.1 kUA/L. Compared to non-sensitized subjects, a-Gal sensitized subjects were older (median age 57 vs 40,  $p < 0.001$ ) and had higher levels of total IgE (GM 49 IU/mL vs 19 IU/mL,  $p = 0.002$ ), but rates of asthma, allergic rhinitis and atopic dermatitis were similar. Of the 35 sensitized subjects, 4 (11%) reported mammalian meat allergy whereas 26 (74%) routinely consumed mammalian meat at least once a week and none reported recurrent hives. **CONCLUSIONS:** In this unselected cohort from central Virginia, the prevalence of a-Gal sIgE was 15.1% but self-reported mammalian meat allergy was 2.2%. Consistent with other reports, many subjects who are sensitized to a-Gal tolerate mammalian meat without obvious allergic symptoms.

**Averting wildlife-borne infectious disease epidemics requires a focus on socio-ecological drivers and a redesign of the global food system**

<https://doi.org/10.1016/j.eclinm.2022.101386>

**Summary** A debate has emerged over the potential socio-ecological drivers of wildlife-origin zoonotic disease outbreaks and emerging infectious disease (EID) events. This Review explores the extent to which the incidence of wildlife-origin infectious disease outbreaks, which are likely to include devastating pandemics like HIV/AIDS and COVID-19, may be linked to excessive and increasing rates of tropical deforestation for agricultural food production and wild meat hunting and trade, which are further related to contemporary ecological crises such as global warming and mass species extinction. Here we explore a set of precautionary responses to wildlife-origin zoonosis threat, including: (a) limiting human encroachment into tropical wildlands by promoting a global transition to diets low in livestock source foods; (b) containing tropical wild meat hunting and trade by curbing urban wild meat demand, while securing access



for indigenous people and local communities in remote subsistence areas; and (c) improving biosecurity and other strategies to break zoonosis transmission pathways at the wildlife-human interface and along animal source food supply chains.

OTHER: GENERAL

**A Systematic Review of Arts-Based Interventions Delivered to Children and Young People in Nature or Outdoor Spaces: Impact on Nature Connectedness, Health and Wellbeing.**

<https://dx.doi.org/10.3389/fpsyg.2022.858781>

**Background:** The time that children and young people spend in nature and outdoor spaces has decreased significantly over the past 30 years. This was exacerbated with a further 60% decline post-COVID-19. Research demonstrating that natural environments have a positive impact on health and wellbeing has led to prescription of nature-based health interventions and green prescribing, although evidence for its use is predominantly limited to adults. Growing evidence also shows the impact of arts on all aspects of health and wellbeing. However, what has received scant attention in literature is the interconnection between the two: arts and nature. **Aims:** This review synthesizes the literature surrounding the interconnectedness between arts and nature, and their impact on the health and wellbeing of children and young people. **Methods:** Eight major electronic databases were systematically searched, while hand-searching included 20 journals, six books, and contact with experts. The review was conducted using the Cochrane handbook for systematic reviews, PRISMA guidelines and TIDieR template. All stages were conducted independently by two researchers and the protocol was published on PROSPERO (Registration no.: CRD42021286574). **Results:** Although 9,314 records were identified, only 11 records were included as most studies focused either on arts or nature, but not both. Studies were conducted in United Kingdom, United States, Ireland, Australia, and Hong Kong, in a range of spaces such as forests, woodlands, beaches, parks, fields, gardens, and school playgrounds. The review encompasses data from 602 participants in total. **Discussion:** Arts-in-nature offered an inclusive medium to engage all children and young people, especially those who might otherwise remain disinterested about environmental issues and disengaged with educational programs. Further, arts-in-nature provided stimuli to increase nature connectivity, understand environmental issues and explore ways to prevent environmental disasters. This led to higher environmental awareness and pro-environmental behaviors, and potential decrease in eco-anxiety. **Conclusion:** Although the quality of qualitative studies was high, the quality of quantitative studies was low or unclear, thus quantitative evidence is still at its infancy. Implications for research, policy, and practice are discussed, such as methods and activities to strengthen future interventions. Scaling-up existing interventions may lead to wider recognition and inclusion of arts-in-nature in future health guidelines, including green prescribing.

**Challenges for Evaluation Practices and Innovative Approaches: Lessons during COVID-19 Pandemic** <https://doi.org/10.1016/j.evalprogplan.2022.102095>

COVID-19 pandemic has affected every country across different continents, be a developed or developing economy. The COVID-19 pandemic has led to a dramatic loss of human life worldwide and presents an unprecedented challenge to public health, food systems and the world of work. Conducting evaluation during COVID-19 pandemic was even more challenging as

compared to the evaluation in conflict areas. Sudden lockdown and sustained restrictions was unexpected and affected the evaluators plan of actions for the ongoing as well as forthcoming evaluation activities. Not only primary data collection but secondary research also got hampered as access to knowledge resource centres/libraries stopped due to closure of these centres. As far as primary data collection is concerned, not only data collection exercise got stopped but even for those evaluations where data collection had been completed, the electronic data entry of filled-in survey schedules got stalled for a while. The paper discusses the critical components of evaluation, which gets affected during pandemic like situation such as use of participatory evaluation techniques; missing evidence based policy decisions; external and internal validity not ensured or ethical norms get compromised. To overcome such situations, the evaluation world should be ready with the suggested solutions such as, Use of Artificial Intelligence, computer-assisted interviews, capacity building of community members for participatory evaluation and making ethical review of evaluation protocols mandatory.

**School Meal Access and Changes in Meal Participation During COVID-19 School Closures: A Stratified Random Sample of CalFresh Healthy Living Eligible School Districts in California**  
<https://doi.org/10.1016/j.pmedr.2022.101794>

The National School Lunch and School Breakfast programs are a nutrition safety net for millions of children in the United States, particularly children in households with lower incomes. During Spring 2020 COVID-19 school closures, schools served school meals through the Summer Meal Programs. Despite efforts to increase access, meal participation declined, and food insecurity increased. We aimed to (1) describe meal program features as communicated in low-income California school districts' on-line resources (2) examine associations between meal program features and change in meal participation between May 2019 and May 2020 and (3) evaluate equity by describing meal site coverage and placement relative to the size of priority populations. Data from district online resources and meal reimbursement claims were collected for a stratified, random sample of 190 CalFresh Healthy Living-eligible districts. Linear regression was used to examine associations between district meal program features and percent change in meal participation. Meal site location and density were examined in relation to the size of priority populations. In May 2020, compared to May 2019, total meals served decreased by a median 46%. There were gaps in the information provided in district online resources and low variation in measured district meal program features. These features explained little of the variation in the percent change in meal participation. A greater proportion of meal sites were placed in areas with larger priority populations, yet the density of sites was not proportionate to the priority populations' sizes. Findings show actionable areas for improving meal access during school closures.

**Food and COVID-19 Lit Review: Weeks ending 04/15/22 and 04/22/22**

## DNPAO

- Family Systems Cultural and Resilience Dimensions to Consider in Nutrition Interventions: Exploring Preschoolers' Eating and Physical Activity Routines During COVID-19. <https://dx.doi.org/10.1016/j.jneb.2022.01.001>
- Factors associated with COVID-19 vaccine intent among Latino SNAP participants in Southern California. <https://dx.doi.org/10.1186/s12889-022-13027-w>
- Evaluating Possible Mechanisms Linking Obesity to COVID-19: a Narrative Review. <https://dx.doi.org/10.1007/s11695-022-05933-0>
- A Preliminary Evaluation of Virginia Fresh Match: Impacts and Demographic Considerations for Future Fruit and Vegetable Incentive Programs. <https://dx.doi.org/10.3390/ijerph19074367>

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## DFWED

- Interactions between Street Food and Food Safety Topics in the Scientific Literature-A Bibliometric Analysis with Science Mapping. <https://dx.doi.org/10.3390/foods11060789>
- COVID-19 Outbreaks Linked to Imported Frozen Food — China, June 2020 – May 2021  
doi: [10.46234/ccdcw2022.072](https://doi.org/10.46234/ccdcw2022.072)

## NIOSH and Farmworker Health

- Essential but Ignored: COVID-19 Litigation and the Meatpacking Industry (preprint) [access here](#)
- Combined Infection Control Interventions Protect the Essential Workforce from Occupationally-Acquired SARS-CoV-2 during Produce Production, Harvesting and Processing Activities (preprint) <https://doi.org/10.1101/2022.04.06.22273125>
- Shedding Light into the Need of Knowledge Sharing in H2020 Thematic Networks for the Agriculture and Forestry Innovation <https://doi.org/10.3390/su14073951>
- Beyond Discriminatory Intent: Agriculture, Labor Rights, and the Shortcomings of Equal Protection Doctrine [access here](#)

## NCEH

- RRISK: Analyzing COVID-19 Risk in Food Establishments [https://doi.org/10.1007/978-3-030-93080-6\\_10](https://doi.org/10.1007/978-3-030-93080-6_10)
- Coronaviruses are stable on glass, but are eliminated by manual dishwashing procedures <https://doi.org/10.1016/j.fm.2022.104036>

## OTHER: CROSS-CUTTING FOOD SYSTEMS

- Food systems during the COVID-19 pandemic: vulnerabilities, adaptations, and resilience <https://doi.org/10.1079/cabireviews202217014>
- Public Health Shock, Intervention Policies, and Health Behaviors: Evidence from COVID-19 <https://doi.org/10.15353/rea.v14i1.4787>
- Retail Mergers and Acquisitions, and Specialty Crop Producers: Evidence from California <https://doi.org/10.3390/su14073876>
- Restaurant closures during the COVID-19 pandemic: A descriptive analysis. <https://dx.doi.org/10.1016/j.econlet.2022.110380>

## OTHER: GENERAL

- Latino Invisibility in the Pandemic. <https://dx.doi.org/10.1001/amajethics.2022.289>

- Friend-shield protection from the crowd: How friendship makes people feel invulnerable to COVID-19. <https://dx.doi.org/10.1037/xap0000417>
- Overcrowded housing increases risk for COVID-19 mortality: an ecological study. <https://dx.doi.org/10.1186/s13104-022-06015-1>
- Health communication in and out of public health emergencies: to persuade or to inform? <https://dx.doi.org/10.1186/s12961-022-00828-z>
- Transmission of SARS-CoV-2 in educational settings in 2020: a review. <https://dx.doi.org/10.1136/bmjopen-2021-058308>

## DNPAO

### **Family Systems Cultural and Resilience Dimensions to Consider in Nutrition Interventions: Exploring Preschoolers' Eating and Physical Activity Routines During COVID-19.**

<https://dx.doi.org/10.1016/j.jneb.2022.01.001>

OBJECTIVE: To describe the weight-related family functioning of racial minority families with low income using family systems theory as an interpretive framework. DESIGN: Primarily a qualitative study with interviews plus; descriptive demographics, anthropometrics, a family functioning measure, and food insecurity screening. SETTING: Telephone interviews with families of preschool-aged children in an urban setting. PARTICIPANTS: Primary caregivers of preschool-aged children. PHENOMENON OF INTEREST: Cultural impacts on family systems. ANALYSIS: Interviews were audio-recorded, transcribed verbatim, and loaded into NVivo 12 for thematic analysis. Descriptive statistics. RESULTS: The 23 participants were mothers and 2 maternal grandmothers. Seventy-four percent were African American, most children were normal weight (nâ€=â€15, 65%), mean family function scores were high, and more than half the families were at risk for food insecurity (nâ€=â€13, 56%). Acculturation and intergenerational eating-related cultural dimensions were discerned as the overarching themes influencing family cohesion. Family cohesion appeared to have helped the families adapt to the impact of coronavirus disease 2019. CONCLUSIONS AND IMPLICATIONS: Cultural dimensions such as acculturation and intergenerational influences appeared to be associated with social cohesion and family functioning around weight-related behaviors for these families. These findings add cultural and family resilience dimensions to family systems theory in nutrition interventions.

### **Factors associated with COVID-19 vaccine intent among Latino SNAP participants in Southern California.** <https://dx.doi.org/10.1186/s12889-022-13027-w>

BACKGROUND: COVID-19 is significantly impacting the health and well-being of the country, particularly for ethnic minority populations and low-income groups. Our goal was to determine COVID-19 vaccination intent in a low-income, Latino population receiving aid from the Supplemental Nutrition Assistance Program (SNAP) in Southern California, and identify contributing factors and concerns. METHODS: A cross-sectional, mixed-methods survey was conducted among participants in the Southern California Nutrition Incentives Program (¡Más Fresco! More Fresh). Only Latino respondents were included in this analysis. Primary outcome was vaccine intent trichotomized into: "definitely/likely yes", "not sure/don't know", and "definitely/likely not." RESULTS: The majority of participants (n = 486) were female (93%), Spanish speaking (74%), with a median age of 40 years (IQR = 13). Approximately half (48%) reported they would get a COVID-19 vaccine, 39% were unsure, and 13% reported "definitely/likely not". In the multivariable multinomial logistic regression model, participants with a household member with a COVID-19 health risk factor were more likely to be unsure about getting the vaccine. Participants who were primarily English speaking, did not receive the influenza vaccine last

season, and reported not reading or talking about COVID-19 were more likely to report not intending to receive the vaccine. Many respondents were concerned about "side effects and ingredients", and did not trust the vaccine development process, particularly with how fast it happened. CONCLUSION: Low-income Latinos in Southern California were generally hesitant to get a COVID-19 vaccine. Culturally sensitive vaccine promotion campaigns need to address the concerns of minority populations who experience increased morbidity and mortality from COVID-19.

#### **Evaluating Possible Mechanisms Linking Obesity to COVID-19: a Narrative Review.**

<https://dx.doi.org/10.1007/s11695-022-05933-0>

Currently, pneumonia caused by the coronavirus disease 2019 (COVID-19) is a pandemic. To date, there is no specific antiviral treatment for the disease, and universal access to the vaccine is a serious challenge. Some observational studies have shown that COVID-19 is more common in countries with a high prevalence of obesity and that people with COVID-19 have a higher body mass index. In these studies, obesity increased the risk of disease, as well as its severity and mortality. This study aimed to review the mechanisms that link obesity to COVID-19.

#### **A Preliminary Evaluation of Virginia Fresh Match: Impacts and Demographic Considerations for Future Fruit and Vegetable Incentive Programs.** <https://dx.doi.org/10.3390/ijerph19074367>

The purpose of this communication is to describe the preliminary evaluation of the Virginia Fresh Match (VFM) financial incentive program for fresh fruits and vegetables for Virginia Supplemental Nutrition Assistance Program shoppers and to determine if there were differences in incentive outcomes by race. In this cross-sectional study, a questionnaire was administered to shoppers using Virginia Fresh Match incentives at participating farmers markets and community-based food retail outlets. Repeated measures ANOVAs were used to detect differences in fruit and vegetable consumption between demographic groups over time. Chi-square tests were used to determine if there were associations between race and perceived impact of VFM incentives on making food last and the attribution of VFM incentives to changes in fruit and vegetable consumption frequency. Frequency of fruit and vegetable intake was significantly higher during VFM incentive use, with a difference of  $1.17 \pm 0.07$  and  $1.07 \pm 0.07$  on a Likert scale measure, respectively ( $p < 0.001$ ). There were racial differences in assertions that VFM incentives helped food to last. VFM incentives were effective at increasing fruit and vegetable consumption, but racial differences should be considered in the administration of VFM to avoid reinforcing systems or approaches that may contribute to disparities in food access and food security.

DFWED

#### **Interactions between Street Food and Food Safety Topics in the Scientific Literature-A Bibliometric Analysis with Science Mapping.** <https://dx.doi.org/10.3390/foods11060789>

Street food (SF) consists of ready-to-eat food prepared and sold on the street. This food constitutes the food traditions of local populations in many countries of the world. SF characterizes a large number of cities around the world, from New York to Paris, from Palermo to cities of North Africa, China, India and Japan. SF is inexpensive and prepared following traditional methods that meet local consumer preferences, culinary culture and lifestyles. Moreover, SF allows a unique experience for tourists who also want to experience a destination through traditional food consumed on the street together with the locals. Nevertheless, SF is linked to several health hazards. Hence, several studies discussed on the compliance with hygiene and food quality requirements that SF vendors should guarantee, to ensure human health. So far, there is no bibliometric review attempting to provide an objective and comprehensive analysis of the existing scientific documents that simultaneously study the scientific topic of SF linked to that of Food Safety (FS). Therefore, the objective of this paper is to provide a

theoretical framework of the interactions between studies on SF and FS topics, in order to discover if the combined topic of "Street Food Safety" (SFS) was investigated as a topic in its own right. A bibliometric analysis was carried out analyzing 276 scientific contributions from the last 21 years, indexed in the Elsevier Scopus database and in the Clarivate Web of Science database. The results showed a very strong interaction between the two topics and many others in several scientific sectors; In particular, the topic of SFS involves many disciplines of social sciences. The results highlight that the scientific topic of SFS exists but not consciously, and it is believed that the research interest in this topic can grow considerably in the coming years, also because of the current COVID-19 pandemic situation that we are experiencing.

### **COVID-19 Outbreaks Linked to Imported Frozen Food — China, June 2020 – May 2021**

doi: [10.46234/ccdcw2022.072](https://doi.org/10.46234/ccdcw2022.072)

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) RNA contamination was reported on China's imported frozen foods and packaging materials. However, there was no evidence of this disease initiated by environment-to-human transmission until the outbreak of coronavirus disease 2019 (COVID-19) in Beijing in June 2020. This article aims to analyze and summarize COVID-19 outbreaks related to cold-chain foods to provide a scientific basis for tracing the epidemiological trajectory of the pandemic, providing risk assessments, and mitigation policies. Overall, 37 COVID-19 outbreaks and 5,741 infected cases were reported within the study period. It was found that 7 outbreaks and 689 cases were linked to imported frozen foods. The first index case among the 7 outbreaks was exposed to SARS-CoV-2-contaminated outer packaging of frozen food, triggering the subsequent community transmission. This study supported the speculation that cold-chain foods act as a pathway for SARS-CoV-2 and might present a risk for virus transmission between countries and regions. Handlers and processors exposed to the imported frozen foods should be effectively self-protected, daily monitored for clinical manifestations of COVID-19, and tested for SARS-CoV-2 nucleic acid at regular intervals.

### **NIOSH and Farmworker Health**

#### **Essential but Ignored: COVID-19 Litigation and the Meatpacking Industry (preprint) [access here](#)**

The spread of the novel coronavirus SARS-CoV-2 (COVID-19) among meatpacking employees forced closures and slowdowns at many plants across the United States. As the meatpacking giants JBS, Smithfield, and Tyson became hotbeds for COVID-19, national meat production plummeted. To forestall further supply chain disruptions, former President Trump passed an Executive Order compelling plants to continue operating as "essential businesses." As work continued, employees reported that social distancing and mask-wearing were not being enforced, managers were pressuring sick employees to work and not revealing co-worker's infections, and an overall lack of Personal Protective Equipment (PPE) or training to reduce the risk of infection prevailed. With over 50,000 meatpacking workers contracting and 250 dying from COVID-19, academic scholarship has neglected addressing this failure to keep workers safe. The problem is that while workers were deemed "essential," they were ignored by employer practices and lax regulations allowing rapid COVID-19 transmission in the workplace. As illnesses and deaths mounted, the former Trump administration did not issue a COVID-19 emergency standard and many states also narrowed their worker protections, passing "liability shield" legislation and restricting worker's compensation coverage for employee claims. Injured on the job, plaintiffs began suing for their rights. However, while litigation brought by workers and their families, labor advocates, and unions has advanced, plaintiffs continue to struggle to overcome motions to dismiss based on preemption by either workers' compensation, primary jurisdiction, or liability shields. This Article is the first to use COVID-19 litigation to expose gaps in workplace safety, and the first to present a timely, evidence-based solution to address the problem: a new Emergency Temporary Standard (ETS) and workers' compensation reform. The new ETS will provide a necessary baseline for Occupational Safety

and Health Administration (OSHA) fines and citations which will, in turn, motivate companies to adopt safety practices. It will also help plaintiffs present evidence of breach of a standard in their workers' compensation hearings and personal injury claims. Finally, this Article will fundamentally impact three simultaneous discussions: (1) an investigation by the new House Select Subcommittee on the Coronavirus Crisis on how the country's meatpacking companies handled the pandemic;(2) the development of a new Emergency Temporary Standard to combat the spread of COVID-19;(3) litigation involving a case accusing the world's largest meat processing company of causing a worker's COVID-19 death.

### **Combined Infection Control Interventions Protect the Essential Workforce from Occupationally-Acquired SARS-CoV-2 during Produce Production, Harvesting and Processing Activities (preprint)**

<https://doi.org/10.1101/2022.04.06.22273125>

Essential food workers experience an elevated risk of SARS-CoV-2 infection due to prolonged occupational exposures (e.g., frequent close contact, enclosed spaces) in food production and processing areas, shared transportation (car or bus), and employer-provided shared housing. The purpose of this study was to evaluate the impact of combined food industry interventions and vaccination on reducing the daily cumulative risk of SARS-CoV-2 infection for produce workers. Six linked quantitative microbial risk assessment models were developed in R to simulate daily scenarios experienced by a worker. Standard industry interventions (2 m physical distancing, handwashing, surface disinfection, universal masking, increased ventilation) and two-dose mRNA vaccinations (86–99% efficacy) were modeled individually and jointly to assess risk reductions. The infection risk for an indoor (0.802, 95% Uncertainty Interval [UI]: 0.472–0.984) and outdoor (0.483, 95% UI: 0.255–0.821) worker was reduced to 0.018 (93% reduction) and 0.060 (87.5% reduction) after implementation of combined industry interventions. Upon integration of these interventions with vaccination, the infection risk for indoor (0.001, 95% UI: 0.0001–0.005) and outdoor (0.004, 95% UI: 0.001–0.016) workers was reduced by ≥99.1%. Food workers face considerable risk of occupationally-acquired SARS-CoV-2 infection without interventions;however, consistent implementation of key infection control measures paired with vaccination effectively mitigates these risks. Synopsis Bundled interventions, particularly if they include vaccination, produce significant reductions (>99%) in SARS-CoV-2 infection risk for essential food workers.

### **Shedding Light into the Need of Knowledge Sharing in H2020 Thematic Networks for the Agriculture and Forestry Innovation** <https://doi.org/10.3390/su14073951>

Providing ready-for-practice materials in an easily accessible and user-friendly way is one of the challenges of Horizon 2020 Thematic Networks (TNs) to promote agriculture and forestry innovation. Those materials are the result of the co-creation and knowledge exchange among TN actors. Using a survey, we investigated the most efficient communication and dissemination (C&D) channels, types and formats of TN-produced data, as well as the involvement of TN actors. Additionally, we propose to collect TN outputs in a single digital platform, such that they are more Findable, Accessible, Interoperable, and Reusable (FAIR), ensuring the TN's impact. An open and interactive platform may allow us to overcome challenging issues such as language barriers, limited Internet access and differing cultural backgrounds. The results obtained from the survey suggest which content should be stored in such a digital knowledge reservoir for agriculture and forestry. For example, newsletters and visual materials are often preferred by farmers and foresters. Additionally, face-to-face interaction is confirmed to be the most preferred way of retrieving information, especially by researchers and farmers/foresters. Future work will further investigate the variations in needs of different user profiles. As such, the proposed platform can stimulate knowledge exchange among all TN actors.

## **Beyond Discriminatory Intent: Agriculture, Labor Rights, and the Shortcomings of Equal Protection Doctrine** [access here](#)

The National Labor Relations Act provides labor protections for millions of workers. The existing exemption for agricultural workers, however, leaves a crucial category of workers vulnerable because they lack federal protection to form unions and collectively bargain with their employers. Implemented in 1935, the exemption created a severe disparate impact for farm workers, most of whom are Latinx. This lack of labor rights robs agricultural workers of important tools to increase wages and improve working conditions and benefits. In the past, plaintiffs have attempted to challenge the exemption on equal protection grounds, but these challenges have failed—in large part because there is no direct evidence of Congress' intent to discriminate against Latinx workers, despite the exemption's disproportionate harm. This Note presents a theoretical framework for assessing equal protection claims challenging laws that have a prolonged and severe disparate impact, a framework which, unlike current equal protection doctrine, does not require plaintiffs prove discriminatory intent. The intention in creating this new framework is to make it easier for plaintiffs to challenge longstanding laws that continue to have a harmful disparate impact on minorities, even in cases where it is difficult or impossible to prove that Congress harbored discriminatory intent when it passed the law. This Note explains the elements of the theoretical framework and applies it to the NLRA agricultural exemption.

NCEH

## **RRISK: Analyzing COVID-19 Risk in Food Establishments** [https://doi.org/10.1007/978-3-030-93080-6\\_10](https://doi.org/10.1007/978-3-030-93080-6_10)

During the COVID-19 pandemic, consumers have faced significant additional health risks when eating out. In this paper we present RRISK, a comprehensive, visual, and interactive application that allows users to view COVID-19 risk assessments for restaurants in any area in the United States, search for the safest food establishments, and find the best places to eat in their area while still minimising their risk of contracting COVID-19. RRISK provides a colour-coded risk assessment for all food establishments in a given area, and displays it on an easy-to-navigate, interactive map platform. We take a data-driven and machine learning-based approach using data collected from appropriate and diverse sources related to COVID-19 prevalence, restaurant reviews, customer feedback and health inspection data to compute an overall risk score and communicate this information to users. We demonstrate that RRISK has high accuracy when it comes to modeling restaurant risk, and complements social media ratings for restaurants with more precise risk scores. RRISK has the potential to save lives and completely revolutionise the pandemic dining experience, by connecting the public with the scientific data and analysis needed to make informed, facts-based dining decisions. © 2022, The Author(s), under exclusive license to Springer Nature Switzerland AG.

## **Coronaviruses are stable on glass, but are eliminated by manual dishwashing procedures** <https://doi.org/10.1016/j.fm.2022.104036>

Severe acute respiratory syndrome coronavirus type 2 (SARS-CoV-2) is primarily transmitted from human to human via droplets and aerosols. While transmission via contaminated surfaces is also considered possible, the overall risk of this transmission route is assumed to be low. Nevertheless, transmission through contaminated drinking glasses may pose an increased risk as the glass is in direct contact with the mouth and oral cavity. Using human coronavirus 229E (HCoV-229E) as surrogate for SARS-CoV-2, this study examined coronavirus stability on glass, inactivation by dishwashing detergents, and virus elimination by a manual glass scrubbing device. Infectious HCoV-229E was recovered from glass up to 7 and 21 days storage under daylight and dark conditions, respectively. Near complete inactivation of HCoV-229E (>4 log<sub>10</sub> reduction) was observed after incubation with two common



dishwashing detergents at room temperature for 15 s, whereas incubation at 43 °C for 60 s was necessary for a third detergent to achieve a similar titer reduction. The virus was efficiently removed from contaminated drinking glasses using a manual glass scrubbing device in accordance with German standard DIN 6653-3. The results confirm that coronaviruses are relatively stable on glass, but indicate that common manual dishwashing procedures can efficiently eliminate coronaviruses from drinking glasses.

## **OTHER: CROSS-CUTTING FOOD SYSTEMS**

### **Food systems during the COVID-19 pandemic: vulnerabilities, adaptations, and resilience**

<https://doi.org/10.1079/cabireviews202217014>

This paper reviews the emerging literature on food systems and food supply chains during the COVID-19 pandemic. Four themes are explored: consumer demand and retail market effects; supply-side shocks; food system and supply chain resilience; and developing countries and food insecurity. The effect of demand-side shocks is explored, including the sudden shift in expenditures from food service to food retail. Longer-run structural changes in the food retailing landscape include the expansion of online food delivery. The effect of supply-side shocks is examined extensively in the literature, including short-run adaptations as supply chains pivoted from the food service sector to food retail, along with supply-side disruptions due to labour force outbreaks of COVID-19. Resilience is a common theme in the literature, at both food system and food supply chain levels. While a variety of perspectives are offered, most assessments point to a surprising degree of resilience and adaptability, while identifying the points of vulnerability. The pandemic increased food insecurity through the effect on household incomes from reduced labour mobility, lockdowns, and a contraction in economic activity. These effects were particularly prominent among vulnerable populations in developing countries. Significant attention has been paid to the short- and medium-run effects of the pandemic on food systems, with further research needed to understand any longer-term structural changes that may arise. The COVID-19 pandemic offers lessons for the robustness of food systems and the importance of timely, well-informed policy responses in preparation for future global shocks.

### **Public Health Shock, Intervention Policies, and Health Behaviors: Evidence from COVID-19**

<https://doi.org/10.15353/rea.v14i1.4787>

In response to the COVID-19 pandemic, many countries, including the U.S., adopted intervention policies aimed at averting the spread. However, these policies may have led to significant changes in public health behaviors. We use Google search queries to examine how state government actions are associated with people's internet searches (internet browsing habits) related to health behaviors. We employ the differences-in-differences method to determine the link between disease outbreak, associated intervention policies, and changes in health behavior related searches. Our findings show that school closures, restaurant restrictions, and stay-at-home orders lead to a significant rise in searches for workout, physical activity, exercise, takeout, liquor, and wine. Moreover, people's concerns regarding weight loss, diet, nutrition, restaurant, and fast food substantially decline following stay-at-home orders. Our event-study results indicate that changes in health behaviors began weeks before stay-at-home orders were implemented contemporaneously with emergency declarations and other partial closures. These findings suggest that people's health behaviors are notably affected by state government's intervention policies. © 2022 Samira Hasanzadeh, and Modjgan Alishahi.

### **Retail Mergers and Acquisitions, and Specialty Crop Producers: Evidence from California**

<https://doi.org/10.3390/su14073876>

Relatively little is known about the economic impact of mergers and acquisitions in the food retail industry on upstream agricultural producers. We study the potential impact of the 2014 merger between Safeway and Albertsons on California specialty crop growers. There is a consensus among the 19 growers that we interviewed that merger events are unfavorable since they lead to uncertainty, lower prices, lost revenue, and higher transaction costs. State-level analysis of USDA crop price data provides support for these contentions.

**Restaurant closures during the COVID-19 pandemic: A descriptive analysis.**

<https://dx.doi.org/10.1016/j.econlet.2022.110380>

This paper analyzes restaurant closure patterns during the first year of the COVID-19 pandemic. Using establishment-level data from Yelp and SafeGraph, I describe restaurant and location characteristics related to the closure decisions. Lower-rated restaurants and restaurants located closer to the city center were more likely to close in 2020.

**OTHER: GENERAL**

**Latino Invisibility in the Pandemic.** <https://dx.doi.org/10.1001/amajethics.2022.289>

Devastating effects of COVID-19 among Latinos have not been adequately emphasized or addressed by media, public health experts, researchers, or government officials. Moreover, the underreporting of the crisis' effect on Latinos and the undercounting of cases continues even as programs, initiatives, and policies are designed and implemented to mitigate the spread of the virus; to allocate resources to lessen the economic, educational, housing, and nutritional consequences of COVID; and to direct recovery planning. The invisibility and systematic neglect of the Latino population has contributed to Latino individuals' disproportionately high rates of infection, hospitalization, and death. Changing the COVID-19 narrative is necessary in order to ensure appropriate and equitable responses to the pandemic's effect on Latinos.

**Friend-shield protection from the crowd: How friendship makes people feel invulnerable to COVID-19.**

<https://dx.doi.org/10.1037/xap0000417>

When deciding whether to eat inside a restaurant or how many health protection items to purchase, individuals in the coronavirus disease (COVID-19) era tend to consider the infection risk of crowds of generalized others. With a field study and four experiments, the present study identifies associations between COVID-19 and friendship (e.g., thinking of a friend while reading COVID-19-related news, perceiving a friend as the source of infection, noting friends' presence during potential COVID-19 exposure) that decrease both infection risk perceptions and protective behaviors. The sense of safety that stems from psychological closeness of friends reduces perceived virus infection risks associated with third-party crowds. The distinction between psychological closeness and safety toward friends versus acquaintances widens with clear in-group/out-group boundaries, such that this friend-shield effect is especially pronounced among people whose group boundaries are well established. Limiting interactions to close friends and family members is a common protective measure to reduce COVID-19 transmission risk, but the study findings demonstrate that this practice also unintentionally creates other issues, in that people tend to perceive reduced health risks and engage in potentially hazardous health behaviors. By identifying this risk and encouraging more holistic responses, this research offers implications for individuals, health officials, and policymakers. (PsycInfo Database Record (c) 2022 APA, all rights reserved).

### **Overcrowded housing increases risk for COVID-19 mortality: an ecological study.**

<https://dx.doi.org/10.1186/s13104-022-06015-1>

**OBJECTIVES:** Overcrowded housing is a sociodemographic variable associated with increased infection and mortality rates from communicable diseases. It is not well understood if this association exists for COVID-19. Our objective was hence to determine the association between household overcrowding and risk of mortality from COVID-19, and this was done by performing bivariable and multivariable analyses using COVID-19 data from cities in Los Angeles County. **RESULTS:** Bivariate regression revealed that overcrowded households were positively associated with COVID-19 deaths (standardized  $\beta = 0.863$ ,  $p < 0.001$ ). COVID-19 case totals, people aged 60+, and the number of overcrowded households met conditions for inclusion in the backwards stepwise linear regression model. Analysis revealed all independent variables were positively associated with mortality rates, primarily for individuals 60 + (standardized  $\beta_1 = 0.375$ ,  $p = 0.001$ ), followed by overcrowded households (standardized  $\beta_2 = 0.346$ ,  $p = 0.014$ ), and total COVID-19 cases (standardized  $\beta_3 = 0.311$ ,  $p < 0.001$ ). Our findings highlight that residing in overcrowded households may be an important risk factor for COVID-19 mortality. Public health entities should consider this population when allocating resources for prevention and control of COVID-19 mortality and future disease outbreaks.

### **Health communication in and out of public health emergencies: to persuade or to inform?**

<https://dx.doi.org/10.1186/s12961-022-00828-z>

Much health communication during the COVID-19 pandemic has been designed to persuade people more than to inform them. For example, messages like "masks save lives" are intended to compel people to wear face masks, not to enable them to make an informed decision about whether to wear a face mask or to understand the justification for a mask mandate. Both persuading people and informing them are reasonable goals for health communication. However, those goals can sometimes be in conflict. In this article, we discuss potential conflicts between seeking to persuade or to inform people, the use of spin to persuade people, the ethics of persuasion, and implications for health communication in the context of the pandemic and generally. Decisions to persuade people rather than enable them to make an informed choice may be justified, but the basis for those decisions should be transparent and the evidence should not be distorted. We suggest nine principles to guide decisions by health authorities about whether to try to persuade people.

### **Transmission of SARS-CoV-2 in educational settings in 2020: a review.**

<https://dx.doi.org/10.1136/bmjopen-2021-058308>

**OBJECTIVES:** School closures have been used as a core non-pharmaceutical intervention (NPI) during the COVID-19 pandemic. This review aims at identifying SARS-CoV-2 transmission in educational settings during the first waves of the pandemic. **METHODS:** This literature review assessed studies published between December 2019 and 1 April 2021 in Medline and Embase, which included studies that assessed educational settings from approximately January 2020 to January 2021. The inclusion criteria were based on the PCC framework (P-Population, C-Concept, C-Context). The study Population was restricted to people 1-17 years old (excluding neonatal transmission), the Concept was to assess child-to-child and child-to-adult transmission, while the Context was to assess specifically educational setting transmission. **RESULTS:** Fifteen studies met inclusion criteria, ranging from daycare centres to high schools and summer camps, while eight studies assessed the re-opening of schools in the 2020-2021 school year. In principle, although there is sufficient evidence that children can both be infected by and transmit SARS-CoV-2 in school settings, the SAR remain relatively low-when NPI measures are implemented in parallel. Moreover, although the evidence was limited, there was an indication that younger children may have a lower SAR than adolescents. **CONCLUSIONS:** Transmission in educational settings in 2020 was minimal-when NPI measures were implemented in parallel. However, with an upsurge of cases related to

variants of concern, continuous surveillance and assessment of the evidence is warranted to ensure the maximum protection of the health of students and the educational workforce, while also minimising the numerous negative impacts that school closures may have on children.

## **Food and COVID-19 Lit Review: Weeks ending 04/01/22 and 04/08/22**

### **DNPAO**

- A Study on Online Intervention for Early Childhood Eating Disorders during COVID-19 <https://doi.org/10.3390/ijerph19063696>
- The Relationship between Physical Activity, Physical Exercise, and Human Gut Microbiota in Healthy and Unhealthy Subjects: A Systematic Review <https://doi.org/10.3390/biology11030479>
- The correlation between food insecurity and infant mortality in North Carolina <https://doi.org/10.1017/S136898002200026X>
- Examining the Area Agencies on Aging nutrition program in response to the COVID-19 <https://doi.org/10.36150/2499-6564-N383>
- Has the COVID-19 pandemic lockdown worsened eating disorders symptoms among patients with eating disorders? A systematic review. <https://pubmed.ncbi.nlm.nih.gov/35369670/>

### **DFWED**

- Food and Waterborne Disease Outbreaks after a Super Typhoon Hit the Southern Philippines during the COVID-19 Pandemic: A Triple Public Health Emergency <https://doi.org/10.1017/S1049023X2200053X>
- SARS-CoV-2 cold-chain transmission: Characteristics, risks and strategies. <https://dx.doi.org/10.1002/jmv.27750>

### **NIOSH**

- COVID-19 mortality among working-age Americans in 46 states, by industry and occupation <https://medrxiv.org/cgi/content/short/2022.03.29.22273085>
- The impact of workplace safety and customer misbehavior on supermarket workers' stress and psychological distress during the COVID-19 pandemic <https://doi.org/10.1108/IJWHM-03-2021-0074>

### **NCEH**

- Sneezing Aerosol Transport in an Indoor Farmers' Market <https://doi.org/10.3390/buildings12030355>
- COVID-19 Disease Model with Reservoir of Infection : Cleaning Surfaces and Wearing Masks Strategies (preprint) <https://doi.org/10.1101/2022.03.16.22272508>

### **NCFW**

- COVID-19 vaccine hesitancy among undocumented migrants during the early phase of the vaccination campaign: a multicentric cross-sectional study <https://doi.org/10.1136/bmjopen-2021-056591>
- Impact of COVID-19 pandemic on California farmworkers' mental health and food security. <https://dx.doi.org/10.1080/1059924X.2022.2058664>

#### **OTHER: CROSS-CUTTING FOOD SYSTEMS**

- Tracing the Story of Food Across Food Systems <https://doi.org/10.3389/fcomm.2022.727647>
- Potential sanitizers and disinfectants for fresh fruits and vegetables: A comprehensive review <https://doi.org/10.1111/jfpp.16495>
- Pandemic-EBT and grab-and-go school Meals: Costs, reach, and benefits of two approaches to keep children fed during school closures due to COVID-19 <https://medrxiv.org/cgi/content/short/2022.04.06.22273512>

#### **OTHER: GENERAL**

- Accounting for Social Risk Does not Eliminate Race/Ethnic Disparities in COVID-19 Infection Among Insured Adults: a Cohort Study. <https://dx.doi.org/10.1007/s11606-021-07261-y>
- Clinicians' perceptions of the health status of formerly detained immigrants <https://doi.org/10.1186/s12889-022-12967-7>

#### **DNPAO**

##### **A Study on Online Intervention for Early Childhood Eating Disorders during COVID-19**

<https://doi.org/10.3390/ijerph19063696>

Eating disorders are among the most common clinical manifestations in children, and they are frequently connected with maternal psychopathological risk, internalizing/externalizing problems in children, and poor quality of mother–child feeding exchanges. During the COVID-19 lockdown, in person assessment and intervention were impeded due to the indications of maintaining interpersonal distancing and by limits to travel. Therefore, web-based methods were adopted to meet patients' needs. In this study N = 278 participants completed the SCL-90/R and the CBCL to examine the psychopathological symptoms of mothers and children (age of the children = 24 months); moreover, the dyads were video-recorded during feeding and followed an online video-feedback based intervention. Maternal emotional state, interactive conflict, food refusal in children, and dyadic affective state all improved considerably, as did offspring internalizing/externalizing problems and mothers' depression, anxiety, and obsession–compulsion symptoms. This study showed that video-feedback web-based intervention might be employed successfully to yield considerable beneficial effects. © 2022 by the authors. Licensee MDPI, Basel, Switzerland.

##### **The Relationship between Physical Activity, Physical Exercise, and Human Gut Microbiota in Healthy and Unhealthy Subjects: A Systematic Review**

<https://doi.org/10.3390/biology11030479>

To date, the influence that physical activity (PA)/physical exercise (PE) can exert on the human gut microbiota (GM) is still poorly understood. Several issues arise in structuring research in this area, starting from the association between PA/PE and diet. Indeed, the diet of an individual is a key factor for the composition of the GM and those who regularly practice PA/PE, generally, have dietary patterns favorable to the creation of an ideal environment for the proliferation of a GM capable of contributing to the host's health. It is therefore difficult to establish with certainty whether the effects generated on the GM are due to a PA protocol, the type of diet followed, or to both. In addition, most of the available studies use animal models to investigate a possible correlation between PA/PE and changes in the GM, which may be not necessarily applied to humans. Evidence suggests that aerobic PA/PE seems capable of producing significant changes in GM; training parameters, likewise, can differentially influence the GM in young or elderly people and these changes appear to be transient and reversible. Several studies have been conducted to find at least an association between physical activity (PA)/physical exercise (PE) and the possibility to modulate the gut microbiome (GM). However, the specific effects produced on the human GM by different types of PA/PE, different training modalities, and their age-related effects are not yet fully understood. Therefore, this systematic review aims to evaluate and summarize the current scientific evidence investigating the bi-directional relationship between PA/PE and the human GM, with a specific focus on the different types/variables of PA/PE and age-related effects, in healthy and unhealthy people. A systematic search was conducted across four databases (Web of Science, Medline (PubMed), Google Scholar, and Cochrane Library). Information was extracted using the populations, exposure, intervention, comparison, outcomes (PICOS) format. The Oxford Quality Scoring System Scale, the Risk of Bias in Non-Randomized Studies of Interventions (ROBINS-I) tool, and the JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies were used as a qualitative measure of the review. The protocol was registered in PROSPERO (code: CRD42022302725). The following data items were extracted: author, year of publication, study design, number and age of participants, type of PA/PE carried out, protocol/workload and diet assessment, duration of intervention, measurement tools used, and main outcomes. Two team authors reviewed 694 s for inclusion and at the end of the screening process, only 76 full texts were analyzed. Lastly, only 25 research articles met the eligibility criteria. The synthesis of these findings suggests that GM diversity is associated with aerobic exercise contrary to resistance training; abundance of Prevotella genus seems to be correlated with training duration; no significant change in GM richness and diversity are detected when exercising according to the minimum dose recommended by the World Health Organizations; intense and prolonged PE can induce a higher abundance of pro-inflammatory bacteria; PA does not lead to significant GM  $\alpha/\beta$ -diversity in elderly people (60+ years). The heterogeneity of the training parameters used in the studies, diet control, and different sequencing methods are the main confounders. Thus, this systematic review can provide an in-depth overview of the relationship between PA/PE and the human intestinal microbiota and, at the same time, provide indications from the athletic and health perspective.

**The correlation between food insecurity and infant mortality in North Carolina**

<https://doi.org/10.1017/S136898002200026X>

**Objective:**Food insecurity (FI) affects approximately 11.1 % of US households and is related to worsened infant outcomes. Evidence in lower income countries links FI and infant mortality rates (IMR), but there are limited data in the USA. This study examines the relationship between FI and IMR in North Carolina (NC).**Design:**NC county-level health data were used from the 2019 Robert Wood Johnson Foundation County Health Rankings. The dependent variable was county-level IMR. Eighteen county-level independent variables were selected and a multivariable linear regression was performed. The independent variable, FI, was based on the United States Department of Agriculture's Food Security Supplement to the Current Population Survey.**Setting:**NC counties.**Participants:**Residents of NC, county-level data.**Results:**The mean NC county-level IMR was 7.9 per 1000 live births compared with 5.8 nationally. The average percentage of county population reporting FI was 15.4 % in the state v. 11.8 % nationally. Three variables statistically significantly predicted county IMR: percent of county population reporting FI;county population and percent population with diabetes (P values, respectively, < 0.04;< 0.05;< 0.03). These variables explained 42.4 % of the variance of county-level IMR. With the largest standardised coefficient (0.247), FI was the strongest predictor of IMR.**Conclusions:**FI, low birth weight and diabetes are positively correlated with infant mortality. While correlation is not causation, addressing FI as part of multifaceted social determinants of health might improve county-level IMR in NC.

### **Examining the Area Agencies on Aging nutrition program in response to the COVID-19**

<https://doi.org/10.36150/2499-6564-N383>

**Background & aims.** During the COVID-19 pandemic in the U.S., Area Agencies on Aging (AAA) became an essential source for older adults to maintain a healthy life after social isolation. It has developed different programs in response to the COVID-19 outbreak, such as home delivered meals to support older adults' nutrition supply. The purpose of this study was to examine how well AAA has managed such important nutrition plans facing the COVID-19 changes. **Methods.** We integrated three databases, including 49 weeks (6 April 2020-14 March 2021) 33 Planning and Service Area (PSA) meal data, PSAs' key characteristics from the California Department of Aging, and the COVID-19 cases from the California Department of Public Health. We examined the association between the number of meals and people served and the COVID-19 cases and PSA features, using the univariate analysis and the random effect model. **Results.** We observed a positive relationship between the number of meals served and the number of the COVID-19 cases, however, not the number of people served. We found a negative relationship between the number of rural older adults with both the number of meals served and people served. Additionally, non-English-speaking and minority played a positive and negative role respectively as to the number of meals served. **Conclusions.** These results indicated that the AAA should cover a wider population, especially in rural areas experiencing a shortage of volunteers in the pandemic, urging the collaboration with high-tech and third-party companies to improve delivery efficiency. © 2022, Pacini Editore S.p.A./AU-CNS. All rights reserved.

### **Has the COVID-19 pandemic lockdown worsened eating disorders symptoms among patients with eating disorders? A systematic review.**

<https://pubmed.ncbi.nlm.nih.gov/35369670/>

**Objective:** During the coronavirus pandemic lockdowns, general medical complications have received the most attention, and few studies have examined the association between the COVID-19 lockdown and eating disorders (ED). This study aimed to investigate the impact of the coronavirus lockdowns on ED symptoms severity and summarize factors associated with lockdowns that led to changes in eating disorders. **Method:** PubMed, Scopus, and Cochrane Library databases were searched for studies measuring the impact of coronavirus lockdowns on ED symptoms. **Results:** A total of 132 studies were retrieved, after abstract screening and removal of duplicates, 21 papers were full-text screened, and 11 eligible papers were identified. Factors associated with symptomatic deterioration in ED patients during COVID-19 lockdowns included disruption of lifestyle routine, social isolation, reduced access to usual support networks, limited or no access to healthcare and mental care services, and social anxiety. **Discussion:** Overall, the pandemic lockdowns were associated with worsening of eating disorders. This triggering environment can lead to increased anxiety and depression symptoms, change in dietary habits, and eventually result in worsening eating disorder symptoms.

#### DFWED

#### **Food and Waterborne Disease Outbreaks after a Super Typhoon Hit the Southern Philippines during the COVID-19 Pandemic: A Triple Public Health Emergency**

<https://doi.org/10.1017/S1049023X2200053X>

During the coronavirus disease 2019 (COVID-19) pandemic, a super typhoon struck the southern Philippines, killing hundreds of people, displacing hundreds of thousands of families, and affecting millions of Filipinos. Apart from posing a threat to public health in the country, which is still dealing with the pandemic effects of being the most affected country in the Western Pacific Region, the natural disaster also brought with it another burden, as many provinces reported outbreaks of food and waterborne diseases as a result of contaminated drinking water, damaged water pipes, water supply outages, unsafe food preparation, and poor sanitation. These triple public health emergencies of super typhoon, food and waterborne infections, and COVID-19 can be extremely difficult to manage, especially since hundreds of health care facilities were also damaged by the recent natural disaster, and many health care workers are becoming ill as a result of the appearance of novel COVID-19 variants of concern in the country. Although these challenges can be devastating, Filipinos have a reputation for being resilient in the face of disasters and emergencies.

#### **SARS-CoV-2 cold-chain transmission: Characteristics, risks and strategies.**

<https://dx.doi.org/10.1002/jmv.27750>

Low temperature and certain humidity are conducive to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) for long-time survival and long-distance spread during logistics and trades. Contaminated cold-chain or frozen products and outer packaging act as the carrier of SARS-CoV-2, that infects the high-risk population who works in the ports, cold storage or seafood market. Since the coronavirus disease 2019 (COVID-19) pandemic worldwide, multiple localized outbreaks caused by SARS-CoV-2 contaminated imported cold-chain products have been reported in China, which brought challenges to COVID-19 prevention and control. Here, we review the evidences of SARS-CoV-2 cold-chain transmission from six confirmed cold-chain related COVID-19 outbreaks in China, especially in terms of SARS-CoV-2 whole-genome



sequencing and virus isolation. In addition, we summarize the characteristics and mode of SARS-CoV-2 cold-chain transmission from both six COVID-19 outbreaks in China and the outbreaks suspected cold-chain transmission in other countries. Finally, we analyze the underlying risks of SARS-CoV-2 cold-chain transmission and propose the preventive countermeasures. This article is protected by copyright. All rights reserved.

## NIOSH

### **COVID-19 mortality among working-age Americans in 46 states, by industry and occupation**

<https://medrxiv.org/cgi/content/short/2022.03.29.22273085>

**Introduction** A small body of epidemiological research suggests that working in an essential sector is a risk factor for SARS-CoV-2 infection or subsequent disease or mortality. However, there is limited evidence to date on the US, or on how the risks associated with essential work differ across demographic subgroups defined by age, sex, and race/ethnicity. **Methods** Using publicly available data from the National Center for Health Statistics on deaths occurring in the US in 2020, we calculated per-capita COVID-19 mortality by industry and occupation. We additionally calculated per-capita COVID-19 mortality by essential industry---essential or not--- by age group, sex, and race/ethnicity. **Results** Among non-military individuals and individuals with a known industry or occupation, there were 48,030 reported COVID-19 deaths, representing 25.1 COVID-19 deaths per 100,000 working-age individuals after age standardization. Per-capita age-standardized COVID-19 mortality was 1.89 times higher among essential workers than among workers in non-essential industries, representing an absolute difference of 14.7 per 100,000. Across industry, per-capita age-standardized COVID-19 mortality was highest in the following industries: accommodation and food services (45.4 per 100,000); transportation and warehousing (43.4); agriculture, forestry, fishing and hunting (42.3); mining (39.6); and construction (38.7). **Discussion** We urge for paid sick leave, which can help increase vaccine access and minimize disease transmission. Given that SARS-CoV-2 is an airborne virus, we also call for collaborative efforts to ensure that workplace settings are properly ventilated and that workers have access to effective masks.

### **The impact of workplace safety and customer misbehavior on supermarket workers' stress and psychological distress during the COVID-19 pandemic** <https://doi.org/10.1108/IJWHM-03-2021-0074>

**Purpose:** Essential frontline workers in the retail sector face increased exposure risks to coronavirus disease 2019 (COVID-19) due to frequent interactions with the general public. Often these interactions are fraught with controversies over public safety protocols. The purpose of this study is to examine the impacts of frontline workers' perceptions of workplace safety and customer misbehaviors on their stress and psychological distress to inform managing workplace health and safety during public health crises. **Design/methodology/approach:** The authors conducted an online survey of 3,344 supermarket workers in the state of Arizona (US) during the state's first COVID-19 pandemic wave in July 2020. Measures included mental health distress, and perceptions of workplace safety and customer behaviors. The authors utilized a mixed-methods approach combining multiple regression analyses with qualitative analyses of open-ended comments. **Findings:** Workers reported high rates of stress and psychological distress. Increases in mental health morbidity were correlated with perceptions of being unsafe

in the workplace and concerns about negative customer encounters. Qualitative analyses reveal frustration with management's efforts to reduce risks intertwined with feelings of being unsafe and vulnerable to threatening customer encounters. Practical implications: The findings highlight the need to provide and enforce clear safety guidelines, including how to manage potential hostile customer interactions, to promote positive health workplace management during a pandemic. Originality/value: This study is among the first to assess the COVID-19 pandemic's impact on the mental health of non-health care frontline essential workers and presents novel insights regarding perceived customer misbehavior and need for management support and guidance in a public health crisis. © 2022, Emerald Publishing Limited.

## **NCEH**

### **Sneezing Aerosol Transport in an Indoor Farmers' Market**

<https://doi.org/10.3390/buildings12030355>

The transportation and surface deposition of aerosols from sneezing in a small indoor farmers' market are studied numerically. The effects of numbers and locations of the entrances and exits of the market are discussed under the condition of natural convection. The results indicate that aerosols leave the indoor environment more quickly when two doors are designed face to face on the walls perpendicular to the natural wind direction compared to other natural ventilation strategies. The concentrations of aerosols accumulated on the surfaces of the stalls and human bodies inside the market are also lower. In this case, the risk of contacting the virus is relatively low among susceptible individuals in the indoor farmers' markets. Moreover, opening more doors on the walls parallel to the natural wind direction is not beneficial for the fast exhaust of aerosols.

### **Impact of COVID-19 pandemic on California farmworkers' mental health and food security.**

<https://dx.doi.org/10.1080/1059924X.2022.2058664>

**OBJECTIVES:** . To examine the mental health and economic impact of the COVID-19 pandemic on Latino farmworkers in California. **METHODS:** We conducted a cross-sectional study of adult farmworkers (n=1,115) between July 16 and November 30, 2020. We collected information via phone interviews. We used the Patient Health Questionnaire-2 and the Generalized Anxiety Disorder-2 scales to assess depression and anxiety symptoms. We adapted the U.S. Department of Agriculture six-question scale to assess household food insecurity. **RESULTS:** Nearly 20% of study participants reported symptoms of depression and 15% reported symptoms of anxiety. Six percent reported increasing their substance use and 37% experienced food insecurity during the pandemic. Depression and anxiety symptoms were more frequent among women or those who had experienced  $\geq 1$  recent COVID-19 related symptom, but less frequent among those who were married and/or worked in the fields. Increased substance use was more common among farmworkers who had  $\geq 1$  COVID-19 related symptom, but less common among women and those who spoke a language other than English at home, were born outside the U.S., or lived in crowded housing. Food insecurity was common among those who were born outside the U.S. or lived with children <18 years, but less common among those with more education, a higher income, or who had lived longer in the U.S. **CONCLUSIONS:** The pandemic has exacerbated challenges affecting mental health and food security among farmworkers. Interventions and prevention efforts, led by respected and trusted members of the community,

should include on-the-spot supplemental income, increased mental health services, and food support services.

**COVID-19 Disease Model with Reservoir of Infection : Cleaning Surfaces and Wearing Masks Strategies (preprint) <https://doi.org/10.1101/2022.03.16.22272508>**

At the end of 2019 a new coronavirus (called SARS-COV-2) epidemic appears in china and spreads from China to the rest of the world at beginning of 2020 and caused a new disease called COVID –19. It's well known that, COVID –19 disease spreads between humans through the air by coughing and sneezing or by contact. In this paper, we develop a mathematical SIR model which takes into account the effect of disease transmission by coughing and sneezing and the period of latency which is represented by time delays. We prove that, there is non effect of latency period on the dynamics of the propagation and transmission of the coronavirus, and for some critical value of the basic reproduction number a transcritical bifurcation may occur and the disease disappears for values smaller than this critical value and persist otherwise. In the end, we carry out some numerical simulations in order to illustrate our theoretical results. Our study confirm that, cleaning surfaces and wearing masks is a controlling strategy for limiting the propagation of COVID – 19.

**NCFW**

**COVID-19 vaccine hesitancy among undocumented migrants during the early phase of the vaccination campaign: a multicentric cross-sectional study <https://doi.org/10.1136/bmjopen-2021-056591>**

**STUDY OBJECTIVES:** The marginalisation of undocumented migrants raises concerns about equitable access to COVID-19 vaccination. This study aims to describe migrants' hesitancy about the COVID-19 vaccination during the early phase of the vaccination campaign. **SETTING:** This multicentric cross-sectional survey was conducted in health facilities providing care to undocumented migrants in the USA, Switzerland, Italy and France in February-May 2021. **PARTICIPANTS:** Eligibility criteria included age >16 years, being of foreign origin and living without valid residency permit in the country of recruitment. A convenience sample of minimum 100 patients per study site was targeted. **PRIMARY AND SECONDARY OUTCOME MEASURES:** Data were collected using an anonymous structured questionnaire. The main outcomes were perceived access to the local COVID-19 vaccination programme and demand for vaccination. **RESULTS:** Altogether, 812 undocumented migrants participated (54.3% Geneva, 17.5% Baltimore, 15.5% Milano and 12.7% Paris). Most (60.9%) were women. The median age was 39 years (interquartile range 1). Participants originated from the Americas (55.9%), Africa (12.7%), Western Pacific (11.2%) Eastern Mediterranean (7.9%), Europe (7.6%) and South-East Asia (4.7%). Overall, 14.1% and 26.2% of participants, respectively, reported prior COVID-19 infection and fear of developing severe COVID-19 infection. Risk factors for severe infection were frequently reported (29.5%). Self-perceived accessibility of COVID-19 vaccination was high (86.4%), yet demand was low (41.1%) correlating with age, comorbidity and views on vaccination which were better for vaccination in general (77.3%) than vaccination against COVID-19 (56.5%). Participants mainly searched for information about vaccination in the traditional and social media. **CONCLUSIONS:** We found a mismatch between perceived

accessibility and demand for the COVID-19 vaccination. Public health interventions using different communication modes should build on trust about vaccination in general to tackle undocumented migrants' hesitancy for COVID-19 vaccination with a specific attention to men, younger migrants and those at low clinical risk of severe infection.

#### **OTHER: CROSS-CUTTING FOOD SYSTEMS**

##### **Tracing the Story of Food Across Food Systems <https://doi.org/10.3389/fcomm.2022.727647>**

This paper addresses the impulse to render systemic food systems issues into stories in light of ongoing challenges such as food scares, food fraud, and the COVID-19 pandemic. Such stories about food systems are seen as embodying the ideal of supply chain transparency currently in vogue and regarded as key to solving food system inequities by shedding light on them. Read in the context of documentary cinematic unveilings of unethical production practices, transparency initiatives of various types, particularly those dependent on the real-time, crypto-ensured storytelling of blockchain and digital twinning technology, would seem to provide a new model of indexicality, a new contract with social reality. However, such tracing systems and the questions they raise instead describe the way in which food—and the land, people and animals who are involved in its production—becomes fodder for various power plays. Copyright © 2022 Khan.

##### **Potential sanitizers and disinfectants for fresh fruits and vegetables: A comprehensive review**

<https://doi.org/10.1111/jfpp.16495>

Fresh fruits and vegetables carry a heavy load of microorganisms which may cause the risks of food-borne illness to the consumer. Even after washing with water, there is a need for sanitization and disinfection to drop down a load of harmful microbes under the safe limit. Sanitizers and disinfectants are not only cost-effective but also nonhazardous and eco-friendly. Moreover, they should not hamper the organoleptic and nutritional properties of fresh produce. With rising demand for safe, nutritious, and fresh fruits and vegetables, many new disinfectants and treatments are commercially available. During this COVID-19 outbreak, knowledge of sanitizers and disinfectants for fresh fruits and vegetables is very important. This review focuses on working principles, applications, and related legislation of physical and chemical disinfection technologies (chlorine, chlorine dioxide, ozone, organic acids, electrolyzed water, irradiation, ultrasound etc.) and their effectiveness for shelf-life extension of fresh produce. Novelty impact statement: This review article gives comprehensive information about potential sanitizers and disinfectants for fresh produce discussing their mechanisms and relevant legislation in one place. The article will help the readers to opt for the suitable method for disinfecting fresh produce and also will provide a reference to use these methods within permissible limits as per legislation. Such information is very much relevant in the present Covid-19 pandemic scenario. © 2022 Wiley Periodicals LLC.

##### **Pandemic-EBT and grab-and-go school Meals: Costs, reach, and benefits of two approaches to keep children fed during school closures due to COVID-19**

<https://medrxiv.org/cgi/content/short/2022.04.06.22273512>

Importance: School meals improve nutrition and health for millions of U.S. children. School closures due to the COVID-19 pandemic disrupted children's access to school meals. Two policy approaches were activated to replace missed meals for children from low-income families. The Pandemic Electronic Benefit Transfer (P-EBT) program provided the cash value of missed meals directly to families on debit-like cards to use for making food purchases. The grab-and-go meals program offered prepared meals from school kitchens at community distribution points. The effectiveness of these programs at reaching those who needed them and their costs were unknown. Objective: To determine how many eligible children were reached by P-EBT and grab-and-go meals, how many meals or benefits were received, and how much each program cost to implement. Design: Cross-sectional study, Spring 2020. Setting: National. Participants: All children <19 years old and children age 6-18 eligible to receive free or reduced price meals (FRPM). Exposure(s): Receipt of P-EBT or grab-and-go school meals. Main Outcome(s) and Measure(s): Percentage of children reached by P-EBT and grab-and-go school meals; average benefit received per recipient; and average cost, including implementation costs and time costs to families, per meal distributed. Results: Grab-and-go school meals reached about 10.5 million children (17% of all US children), most of whom were FRPM-eligible students. Among FRPM-eligible students only, grab-and-go meals reached 27%, compared to 89% reached by P-EBT. Among those receiving benefits, the average monthly benefit was larger for grab-and-go school meals (\$148) relative to P-EBT (\$110). P-EBT had lower costs per meal delivered - \$6.51 - compared to \$8.20 for grab-and-go school meals. P-EBT had lower public sector implementation costs but higher uncompensated time costs to families (e.g., preparation time for meals) compared to grab-and-go school meals. Conclusions and Relevance: Both programs supported children's access to food when schools were closed and in complementary ways. P-EBT is an efficient and effective policy option to support food access for eligible children when school is out.

#### **OTHER: GENERAL**

##### **Accounting for Social Risk Does not Eliminate Race/Ethnic Disparities in COVID-19 Infection Among Insured Adults: a Cohort Study.** <https://dx.doi.org/10.1007/s11606-021-07261-y>

BACKGROUND: Communities of color have been disproportionately impacted by the COVID-19 epidemic in the USA. OBJECTIVES: To examine the relationship of self-reported social health needs with SARS-COV-2 infection by race/ethnicity among insured adults with access to high-quality health care. DESIGN AND PARTICIPANTS: A prospective cohort study of 26,741 adult Kaiser Permanente Northern California members insured by Medicaid and 58,802 Kaiser Permanente Colorado members insured by Medicare Advantage who completed social risk assessments prior to the onset of the COVID-19 pandemic. MAIN MEASURES: We examined the independent relationships of demographic, medical, and social factors on SARS-COV-2 testing and positivity between March 1, 2020, and November 30, 2020, by race/ethnicity. KEY RESULTS: Findings were similar in the two cohorts, with Latino (16-18%), Asian (11-14%), and Black (11-12%) members having the highest prevalence of SARS-COV-2 infection (ORs adjusted for age, gender, and use of interpreter ranging from 1.68 to 2.23 compared to White member [7-8%],  $p < 0.001$ ). Further adjustment for medical comorbidity (e.g., obesity, diabetes, chronic lung disease); neighborhood measures; and self-reported social risk factors (e.g., trouble paying for basics, food insecurity, housing concerns, transportation barriers) did not appreciably change

these results. CONCLUSIONS: Compared to non-Latino White members, members of other race/ethnic groups had higher positivity rates that were only minimally reduced after controlling for medical and neighborhood conditions and self-reported social risk factors. These findings suggest that traditional infection transmission factors such as essential work roles and household size that have disproportionate representation among communities of color may be important contributors to SARS-COV-2 infection among insured adults.

### **Clinicians' perceptions of the health status of formerly detained immigrants**

<https://doi.org/10.1186/s12889-022-12967-7>

BACKGROUND: In the past decade, the U.S. immigration detention system regularly detained more than 30,000 people per day; in 2019 prior to the pandemic, the daily detention population exceeded 52,000 people. Inhumane detention conditions have been documented by internal government watchdogs, and news media and human rights groups who have observed overcrowding, poor hygiene and sanitation and poor and delayed medical care, as well as verbal, physical and sexual abuse. METHODS: This study surveyed health professionals across the United States who had provided care for immigrants who were recently released from immigration detention to assess clinician perceptions about the adverse health impact of immigration detention on migrant populations based on real-life clinical encounters. There were 150 survey responses, of which 85 clinicians observed medical conditions attributed to detention. RESULTS: These 85 clinicians reported seeing a combined estimate of 1300 patients with a medical issue related to their time in detention, including patients with delayed access to medical care or medicine in detention, patients with new or acute health conditions such as infection and injury attributed to detention, and patients with worsened chronic or special needs conditions. Clinicians also provided details regarding sentinel cases, categorized into the following themes: Pregnant women, Children, Mentally Ill, COVID-19, and Other serious health issue. CONCLUSIONS: This is the first survey, to our knowledge, of health care professionals treating individuals upon release from detention. Due to the lack of transparency by federal entities and limited access to detainees, this survey serves as a source of credible information about conditions experienced within immigration detention facilities and is a means of corroborating immigrant testimonials and media reports. These findings can help inform policy discussions regarding systematic changes to the delivery of healthcare in detention, quality assurance and transparent reporting.

## **Food and COVID-19 Lit Review: Week ending 03/25/2022**

### **DNPAO**

- Validating Food Security Measurement in a Pediatric Nutrition Screening Tool (Nutristep (R))  
<https://doi.org/10.1080/19320248.2022.2047863>

- US state variations in food bank donation policy and implications for nutrition <https://doi.org/10.1016/j.pmedr.2022.101737>

#### **DFWED**

- Food as a transmitter of viruses: A review <https://doi.org/10.17268/SCI.AGROPECU.2022.003>

#### **NIOSH**

- The use of a surgical helmet system with a high-efficiency particulate air filter as possible protection equipment during the coronavirus disease 2019 pandemic: a double-blinded randomized control study. <https://dx.doi.org/10.1007/s00264-022-05371-8>
- Does fear of COVID-19 undermine career optimism? A time-lagged quantitative inquiry of non-managerial employees <https://doi.org/10.1108/K-10-2021-1036>
- Exposure to avian coronavirus vaccines is associated with increased levels of SARS-CoV-2-cross-reactive antibodies (preprint) <https://doi.org/10.22541/au.164751461.12776339/v1>
- Lessons Learned From a Qualitative COVID-19 Investigation Among Essential Workers With Limited English Proficiency in Southwest Kansas. <https://dx.doi.org/10.1177/10901981221080091>

#### **NCEH**

- The impact of organisational characteristics of staff and facility on infectious disease outbreaks in care homes: a systematic review. <https://dx.doi.org/10.1186/s12913-022-07481-w>
- SARS-CoV-2 Survival in Common Non-Alcoholic and Alcoholic Beverages <https://doi.org/10.3390/foods11060802>
- Evaluation of ventilation, indoor air quality, and probability of viral infection in an outdoor dining enclosure. <https://dx.doi.org/10.1080/15459624.2022.2053692>

#### **NCFW**

- Agricultural extension in the context of the Covid-19 pandemic: Issues and challenges in the field <https://doi.org/10.22124/CJES.2022.5408>

#### **OTHER: CROSS-CUTTING FOOD SYSTEMS**

- Designing the building space of a shopping street to use as a disaster evacuation shelter during the COVID-19 pandemic: A case study in Kobe, Japan. <https://dx.doi.org/10.1016/j.ijdr.2021.102680>
- Effectiveness and utilization of hospital-directed wellness initiatives during the covid-19 pandemic <https://escholarship.org/uc/item/39x7b005>
- Investigating the Epidemiological and Economic Effects of a Third-Party Certification Policy for Restaurants with COVID-19 Prevention Measures (preprint) <https://doi.org/10.21203/rs.3.rs-1417222/v1>

#### **OTHER: GENERAL**

- The Effect of Vaccine Hesitancy on Racial and Ethnic Minority Children During the COVID-19 Pandemic. <https://dx.doi.org/10.3928/19382359-20220216-01>
- Public Health Impacts of Exposure to Disinfectants, Therapeutics, and Illicit Substances During the COVID-19 Pandemic <https://doi.org/10.52794/hujpharm.978727>

- Equity of 2020-2021 school re-opening models and implementation of multi-tiered system of supports following initial COVID-19 building closure

## **DNPAO**

### **Validating Food Security Measurement in a Pediatric Nutrition Screening Tool (Nutristep (R))**

<https://doi.org/10.1080/19320248.2022.2047863>

The Nutrition Screening Tool for Every Preschooler (NutriSTEP (R)) is a 17-item nutrition-screening tool administered to parents. This study validated the food security question in the NutriSTEP (R) against the Household Food Security Survey (HESS) and the Hunger Vital Sign. Parents (n = 55) of Head Start preschoolers answered an online survey that included the NutriSTEP (R), the Hunger Vital Sign, and the HFSS. All of the tools identified over 40% of the participants experienced food insecurity. The food security question in the NutriSTEP (R) had 82.1% sensitivity and 94.1% specificity when compared against the HFSS reference standard. The NutriSTEP (R) adequately identified children with food insecurity.

### **US state variations in food bank donation policy and implications for nutrition**

<https://doi.org/10.1016/j.pmedr.2022.101737>

Food insecurity has increased dramatically in 2020 as a result of the COVID-19 public health and economic crisis. Many more families in the United States are turning to the charitable food system to help meet their needs. However, little is known about the policies that influence food bank donations and whether they promote healthy food donations. The purpose of this study was to explore state variation in food donation policies and secondarily to assess whether policies promoted the donation of healthy foods and beverages. We reviewed donation policies for all states in the United States and Washington, DC (hereafter “states”) in fall 2020. Two reviewers independently assessed donation policies using two legal databases;we reconciled discrepancies via team discussion. We then grouped them into 10 distinct categories based on common purpose and theme. We identified 252 state policies from 51 states. Policies fell into all 10 categories. The largest category was “liability protection,” with all states having a policy in this category. The second largest category was date labeling;32 states had requirements or policies restricting the donation of past-dated foods. However, across all categories, we found that only 2 policies explicitly promoted the donation of healthy foods and beverages. Although all states had some policies governing food donations, few promoted healthier foods and beverages. States could encourage healthy donations through policy to help ensure that all families have access to nutritious foods and beverages.

## **DFWED**

### **Food as a transmitter of viruses: A review <https://doi.org/10.17268/SCI.AGROPECU.2022.003>**

Viruses have been present throughout human history, causing diseases due to infections and food poisoning;they have caused frequent public health problems worldwide. These illnesses are usually mild, moderate, or severe in nature. The personal hygiene of food handlers and processing processes should be checked periodically. Virus detection protocols and safety measures should be continually reviewed as viruses change their mode of infection. The objective of this review was to discuss the possible routes of virus transmission to humans through food. Important topics have been reviewed such as: definition of food viruses, presence, and types of viruses in food, enteric viruses, zoonotic viruses, water as a means of transmission, risks of infection, other non-conventional foods as potential transmitters of viruses and food safety, in addition to current and future challenges, research work on viruses more



resistant to heat treatments in food should be sought. Also, future work on survival time of active viruses on food surfaces. In addition, studies that determine the mechanisms of virus mutation in relation to the conditions of food handling and processing. © 2022 Universidad Nacional de Trujillo. All right reserved.

## **NIOSH**

**The use of a surgical helmet system with a high-efficiency particulate air filter as possible protection equipment during the coronavirus disease 2019 pandemic: a double-blinded randomized control study.** <https://dx.doi.org/10.1007/s00264-022-05371-8>

**PURPOSE:** The rapid spread of coronavirus disease 2019 (COVID-19) has increased the use of personal protective equipment. The purpose of this study was to investigate whether a commercially available sterile surgical helmet system (SSHS) can be considered protective against COVID-19 and therefore safe for use. **METHODS:** A double-blinded randomized controlled study was performed to investigate the efficacy of the ViVi® SSHS with a high-efficiency particulate air filter called HFD Hood (THI, Total Healthcare Innovation GmbH, Feistritz im Rosental, Austria) to protect against respiratory droplets. Forty recruited participants were divided into two different groups. The SSHS was tested using a validated qualitative test for respirator masks through saccharin or placebo solutions based on random allocation into two cohorts. Saccharin droplets are a validated surrogate marker for any elements of viral size, such as coronaviruses. A positive report of sweet taste after saccharin exposure was suggestive of ViVi® SSHS inefficacy in protection against droplets. **RESULTS:** One participant out of 21 (4.8%) reported positive for taste within the placebo cohort, while five out of 19 (26.3%) reported positive for taste within the saccharin cohort upon testing. Two out of 21 (9.5%) participants reported positive for taste within the placebo cohort, and two out of 19 (10.5%) reported positive for taste within the saccharin cohort upon retesting. There were no statistically significant differences between the saccharin and placebo groups in either the test or retest measurements ( $p = 0.085$  and  $p = 1.000$ , respectively). **CONCLUSIONS:** This study demonstrates that the ViVi® SSHS equipped with HFD Hood protects against respiratory droplets, increasing protection against several microorganisms, including the virus that causes COVID-19, allowing surgeons to carry out procedures on COVID-positive patients in a more comfortable and safer way.

**Does fear of COVID-19 undermine career optimism? A time-lagged quantitative inquiry of non-managerial employees** <https://doi.org/10.1108/K-10-2021-1036>

**Purpose:** This study intends to examine the impact of a fear of coronavirus disease 2019 (COVID-19) on workers' career optimism via perceived job insecurity among non-managerial working restaurant employees. **Design/methodology/approach:** Time-lagged quantitative data were collected in two waves from 316 non-managerial on-job restaurant employees. Structural equation modeling technique was applied to examine the measurement and structural model. **Findings:** The study showed that workers' fear of COVID-19 positively impacts their job insecurity. Further, the study found that increasing level of job insecurity depletes workers' career optimism—an outlook of their future career prospects. **Research limitations/implications:** The study suggests organizations should work to make employees feel secure in terms of their job continuity and career progression. Eventually, this would support employees in shielding themselves against possible resource loss (e.g. career optimism) due to pandemic crises. **Originality/value:** Extant literature has tested the impact of the COVID-19 pandemic on employees' workplace attitudes and behaviors such as job satisfaction (e.g. Bajrami et al., 2021) and safety performance (e.g. Kim et al., 2021). However, little has been researched on the impact of the COVID-19 pandemic on employees' future career outlook, particularly of non-essential workers in the hospitality industry. To the best of the author's knowledge, an explicit examination of the impact of COVID-19 fear on career optimism has not been conducted previously. Hence, this study will not only be a valuable

contribution in the literature of career management, but will also yield important practical implications.  
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**Exposure to avian coronavirus vaccines is associated with increased levels of SARS-CoV-2-cross-reactive antibodies (preprint)** <https://doi.org/10.22541/au.164751461.12776339/v1>

Background: Although avian coronavirus infectious bronchitis virus (IBV) and SARS-CoV-2 belong to different genera of the Coronaviridae family, exposure to IBV may result in the development of cross-reactive antibodies to SARS-CoV-2 due to homologous epitopes. We aimed to investigate whether antibody responses to IBV cross-react with SARS-CoV-2 in poultry farm personnel who are occupationally exposed to aerosolized IBV vaccines. Methods: : We analyzed sera from poultry farm personnel, COVID-19 patients, and pre-pandemic controls. IgG levels against the SARS-CoV-2 antigens S1, RBD, S2, and N and peptides corresponding to the SARS-CoV-2 ORF3a, N, and S proteins as well as whole virus antigens of the four major S1-genotypes 4/91, IS/1494/06, M41, and D274 of IBV were investigated by in-house ELISAs. Moreover, live-virus neutralization test (VNT) was performed. Results: : A subgroup of poultry farm personnel showed elevated levels of specific IgG for all tested SARS-CoV-2 antigens compared to pre-pandemic controls. Moreover, poultry farm personnel, COVID-19 patients, and pre-pandemic controls showed specific IgG antibodies against IBV strains. These antibody titers were higher in long-term vaccine implementers. We observed a strong correlation between IBV-specific IgG and SARS-CoV-2 S1-, RBD-, S2-, and N-specific IgG in poultry farm personnel compared to pre-pandemic controls and COVID-19 patients. However, no neutralization was observed for these cross-reactive antibodies from poultry farm personnel using the VNT. Conclusion: We report here for the first time the detection of cross-reactive IgG antibodies against SARS-CoV-2 antigens in humans exposed to IBV vaccines. These findings have implications for future vaccination strategies and possibly cross-reactive T cell immunity.

**Lessons Learned From a Qualitative COVID-19 Investigation Among Essential Workers With Limited English Proficiency in Southwest Kansas.** <https://dx.doi.org/10.1177/10901981221080091>

In this commentary, we briefly describe our methodology in conducting a remote qualitative investigation with essential workers from southwest Kansas, and then describe some key considerations, challenges, and lessons learned in recruiting and conducting interviews remotely. From August 4, 2020 through August 26, 2020, Centers for Disease Control and Prevention (CDC) staff conducted five phone interviews with culturally and linguistically diverse employees in southwest Kansas to understand COVID-19 knowledge, attitudes, and practices and communication preferences. Our experience details the potential challenges of the federal government in recruiting individuals from these communities and highlights the possibilities for more effectively engaging health department and community partners to support investigation efforts. Optimizing recruitment strategies with additional participation from community partners, developing culturally and linguistically appropriate data collection tools, and providing supportive resources and services may augment participation from refugee, immigrant, and migrant (RIM) communities in similar remote investigations.

**NCEH**

**The impact of organisational characteristics of staff and facility on infectious disease outbreaks in care homes: a systematic review.** <https://dx.doi.org/10.1186/s12913-022-07481-w>

BACKGROUND: Infectious disease outbreaks are common in care homes, often with substantial impact on the rates of infection and mortality of the residents, who primarily are older people vulnerable to infections. There is growing evidence that organisational characteristics of staff and facility might play a role in infectious disease outbreaks however such evidence have not previously been systematically

reviewed. Therefore, this systematic review aims to examine the impact of facility and staff characteristics on the risk of infectious disease outbreaks in care homes. METHODS: Five databases (MEDLINE, EMBASE, ProQuest, Web of Science, CINAHL) were searched. Studies considered for inclusion were of any design reporting on an outbreak of any infectious disease in one or more care homes providing care for primarily older people with original data on: facility size, facility location (urban/rural), facility design, use of temporary hired staff, staff compartmentalizing, residence of staff, and/or nursing aides hours per resident. Retrieved studies were screened, assessed for quality using CASP, and analysed employing a narrative synthesis. RESULTS: Sixteen studies (8 cohort studies, 6 cross-sectional studies, 2 case-control) were included from the search which generated 10,424 unique records. COVID-19 was the most commonly reported cause of outbreak (n = 11). The other studies focused on influenza, respiratory and gastrointestinal outbreaks. Most studies reported on the impact of facility size (n = 11) followed by facility design (n = 4), use of temporary hired staff (n = 3), facility location (n = 2), staff compartmentalizing (n = 2), nurse aides hours (n = 2) and residence of staff (n = 1). Findings suggest that urban location and larger facility size may be associated with greater risks of an infectious disease outbreak. Additionally, the risk of a larger outbreak seems lower in larger facilities. Whilst staff compartmentalizing may be associated with lower risk of an outbreak, staff residing in highly infected areas may be associated with greater risk of outbreak. The influence of facility design, use of temporary staff, and nurse aides hours remains unclear. CONCLUSIONS: This systematic review suggests that larger facilities have greater risks of infectious disease outbreaks, yet the risk of a larger outbreak seems lower in larger facilities. Due to lack of robust findings the impact of facility and staff characteristics on infectious disease outbreaks remain largely unknown. PROSPERO: CRD42020213585 .

### **SARS-CoV-2 Survival in Common Non-Alcoholic and Alcoholic Beverages**

<https://doi.org/10.3390/foods11060802>

SARS-CoV-2, the causative agent of COVID-19, is known to be transmitted by respiratory droplets and aerosols. Since the virus is shed at high concentrations in respiratory secretions and saliva, SARS-CoV-2 would also be expected to be transmitted through activities that involve the transfer of saliva from one individual to another, such as kissing or sharing beverages. To assess the survival of infectious SARS-CoV-2 in common beverages, we quantified infectious virus by plaque assays one hour after inoculation into 18 non-alcoholic and 16 alcoholic beverages, plus saliva, and also 7 days later for 5 of these beverages. SARS-CoV-2 remains infectious with minimal reductions in several common beverages, including milk and beer. However, cocoa, coffee, tea, fruit juices, and wine contain antiviral compounds that inactivate SARS-CoV-2. Although hard liquors containing 40% alcohol immediately inactivate SARS-CoV-2, mixing with non-alcoholic beverages reduces the antiviral effects. In summary, SARS-CoV-2 can be recovered from commonly consumed beverages in a beverage type and time-dependent manner. Although aerosol or droplet transmission remains the most likely mode of transmission, our findings combined with others suggest that beverages contaminated with SARS-CoV-2 during handling, serving, or through sharing of drinks should be considered as a potential vehicle for virus transmission.

### **Evaluation of ventilation, indoor air quality, and probability of viral infection in an outdoor dining enclosure.** <https://dx.doi.org/10.1080/15459624.2022.2053692>

In 2020, many cities closed indoor dining to curb rising COVID-19 cases. While restaurants in warmer climates were able to serve outdoors year-round, restaurants in colder climates adopted various solutions to continually operate throughout the colder months, such as the use of single-party outdoor dining enclosures to allow for the continuation of outdoor dining. This study evaluates indoor air quality and the air exchange rate using carbon dioxide as a tracer gas in a dining enclosure (12.03 m<sup>3</sup>) and models the probability of COVID-19 infection within such an enclosure. The air exchange rates were determined during two trials for the following scenarios: 1) door closed, 2) door opened, and 3) door

opened intermittently every 15 min for one min per opening. The probability of COVID-19 infection was evaluated for each of these scenarios for one hour, with occupancy levels of two, four, and six patrons. The Wells-Riley equation was used to predict the probability of infection inside the dining enclosure. The air exchange rates were lowest in the closed-door scenarios (0.29 to 0.59 ACH), higher in the intermittent scenarios (2.36 to 2.49 ACH), and highest in the open-door scenarios (3.61 to 33.35 ACH). As the number of subjects inside the enclosure increased, the carbon dioxide accumulation increased in the closed-door and intermittent scenarios. There was no identifiable accumulation of carbon dioxide in the open-door scenario. The probability of infection (assuming one infected person without a mask) was inversely proportional to the airflow rate, and ranged from 0.0002 to 0.84 in the open-door scenario, 0.0034 to 0.94 for the intermittent scenarios, and 0.015 to 1.0 for the closed-door scenarios. The results from this study indicate that under typical use, the indoor air quality inside dining enclosures degrades during occupancy. The probability of patrons and workers inside dining enclosures being infected with COVID-19 is high when dining or serving a party with an infected person.

## **NCFW**

### **Agricultural extension in the context of the Covid-19 pandemic: Issues and challenges in the field**

<https://doi.org/10.22124/CJES.2022.5408>

The extension is an active procedure requiring contact between the extension worker and the individual to establish a behavior change process. This study examines the revival of the notion of extension, the difficulty of extension in the period of the COVID-19 epidemic, and the problems of extension in the future. The revitalization of the meaning of extension includes: (1) extension is not just conveying information messages to the target (farmers) but is an activity of delivering messages until there is a behavior change (knowledge, attitudes, and skills) of message recipients/target communities;(2) extension is not just a transfer of technology, but it is a process of activities carried out between extension workers and target communities to solve problems faced by farmers;(3) extension is not just an activity that is partial and sporadic in the short term but is carried out as a whole with very long and continuous stages;(4) extension is not based on the mere interest of the extension worker but is based on the needs of the target community. Furthermore, the challenges of extension in the age of the COVID-19 epidemic are: (1) the low level of cosmopolitan farmers makes the information collected delayed;(2) farmers with all their constraints find it challenging to adjust to changes;and (3) the radius of confidence of farmers is minimal. Thus, the challenges of extension in the future are: (1) how to generate an entrepreneurial spirit for farmers;(2) the introduction of social media and web applications is mandatory as new media that extension workers should use;and (3) future extension services should be able to synergize conflicts of interest between stakeholders. © The Author(s).

## **OTHER: CROSS-CUTTING FOOD SYSTEMS**

### **Designing the building space of a shopping street to use as a disaster evacuation shelter during the COVID-19 pandemic: A case study in Kobe, Japan. <https://dx.doi.org/10.1016/j.ijdr.2021.102680>**

This study considers the risk of a natural hazard-induced disaster occurring during a pandemic, such as the novel coronavirus (COVID-19) pandemic, and develops the idea of utilizing a shopping street with disaster-proof buildings as a temporary evacuation shelter by incorporating countermeasures against the spread of infectious diseases. Using a case study of a shopping street in Kobe, Japan, we estimate shelter capacity by considering the requirement of 6 m<sup>2</sup> of space allotted for each person. The shelter can accommodate 1194 evacuees and provide them with food and drinks for one day, even in the worst case of lifeline disruption. This study proposes a method of designing shelter space, and demonstrates how non-homogeneous and noncontinuous spaces within shopping street buildings can be applied to

prevent the spread of infection, through the classification of evacuee types and use of space and facilities designated for each type. The study further examines the liability issue of secondary infection at the shelter with reference to civic law and the roles of government in developing a distributed evacuation framework.

### **Effectiveness and utilization of hospital-directed wellness initiatives during the covid-19 pandemic** <https://escholarship.org/uc/item/39x7b005>

**Learning Objectives:** Given the ongoing pandemic, the authors hope to determine which of the commonly implemented COVID-19 hospital-directed wellness initiatives were most effective for physicians, enabling tailored recommendations for future wellness plans. **Background:** The COVID-19 pandemic has placed an unprecedented burden on healthcare workers. Many hospitals have instituted wellness initiatives. The optimal hospital-directed wellness initiatives during a pandemic are currently unknown. **Objectives:** The authors hope to determine which of the commonly implemented COVID-19 hospital-directed wellness initiatives were most effective for physicians, enabling tailored recommendations for future wellness plans. The hypothesis is that some hospital-directed wellness initiatives are significantly more effective than others. **Methods:** This cross-sectional survey was distributed via EM specific online email listservs and message boards, including ACEP, CORD, and SAEM/RAMS. Emergency Medicine physicians practicing in the USA were recruited; sample size was determined via convenience sample. Survey questions included practice setting, geographic location within the US, and pandemic-specific wellness initiatives implemented at institutions. Likert scale (1-5) responses were assessed for self reported effectiveness of each of the specified hospital wellness initiatives. Results were analyzed using descriptive statistics. **Results:** There were 527 responses eligible for inclusion. Morale at the time of the survey was significantly worse than morale at peak (4.36 v 4.57,  $p = 0.02$ ). The most effective interventions were direct payment, informal debriefing sessions among staff, free food and community Thank You cards. The least effective was the use of a victory song. The most common intervention was free food. The least common was direct payment. Among effective interventions, only free food was offered a majority of the time. **Conclusions:** Hospital-directed wellness plans should focus resources on more effective interventions such as direct payments, free food, informal debriefing sessions, and community Thank You cards. Wellness plans should continue even after COVID-19 cases lessen.

### **Investigating the Epidemiological and Economic Effects of a Third-Party Certification Policy for Restaurants with COVID-19 Prevention Measures (preprint)** <https://doi.org/10.21203/rs.3.rs-1417222/v1>

This study investigates the effects of a third-party certification policy for restaurants (including bars) that comply with indoor infection prevention measures on COVID-19 cases and economic activities. We focus on the case of Yamanashi Prefecture in Japan, which introduced a third-party certification policy that accredits facilities, predominantly restaurants, that comply with the designated guidelines. We employ a difference-in-differences design for each of our epidemiological and economic analyses. The estimation results show that, from July 2020 to April 2021, the certification policy reduced the total number of new infection cases by approximately 45.3% (848 cases) while increasing total sales and the number of customers per restaurant by approximately 12.8% (3.21 million Japanese yen or \$30,000) and 30.3% (2,909 customers), respectively, compared to the non-intervention scenarios. The results suggest that a third-party certification policy can be an effective policy to mitigate the trade-off between economic activities and infection prevention during a pandemic, especially when effective vaccines are not widely available.

## **OTHER: GENERAL**

### **The Effect of Vaccine Hesitancy on Racial and Ethnic Minority Children During the COVID-19 Pandemic.**

<https://dx.doi.org/10.3928/19382359-20220216-01>

The coronavirus disease 2019 (COVID-19) outbreak has ravaged the world, with numerous cases disproportionately attributed to the United States due to vaccine hesitancy. One vulnerable group that has been affected by vaccine hesitancy is the pediatric population, particularly those in racial and ethnic minority groups. To improve health outcomes and vaccination rates, we must first understand the factors contributing to vaccine hesitancy and its subsequent influence on the pediatric population. The medical community can better tailor public health strategies by analyzing historical and current events contributing to COVID-19 vaccine hesitancy. A comprehensive approach will improve the health of children and society as a whole. [Pediatr Ann. 2022;51(3):e107-e111.].

### **Public Health Impacts of Exposure to Disinfectants, Therapeutics, and Illicit Substances During the COVID-19 Pandemic** <https://doi.org/10.52794/hujpharm.978727>

The SARS-CoV-2 virus spread rapidly, infecting over a hundred million people worldwide; thus, it has been called the COVID-19 pandemic, in which it is very important to wear a protective mask, wash hands properly, obey social distance rules, and use disinfectants to protect ourselves against infection. Therefore, the consumption of cleaning agents such as disinfectants, surface cleaners, and bleach has increased during the pandemic. Misuse of these substances such as drinking or gargling of cleaners and excessive use has led to many poisoning cases and even deaths. In addition, quarantine and stay-at-home orders during the pandemic caused people to could not socialize and feel dissociated. Moreover, due to the economic problems, many people became unemployed, which affected substance abuse and alcohol consumption frequency, thus poisoning cases as well. This article aimed to review how the COVID-19 was affected the disinfectant or cleaner-induced poisoning cases and the public health impacts between the drug or substance abuse due to pandemic.

### **Equity of 2020-2021 school re-opening models and implementation of multi-tiered system of supports following initial COVID-19 building closure**

The COVID-19 pandemic shed a light on the differences in educational outcomes within American public schools. Although race and socio-economic status is independently associated with scholastic outcomes, it is necessary to take an intersectional approach to examining the persistent and widening opportunity gap stemming from inequity in public education. Certain groups that have been historically marginalized continue to be disproportionately disadvantaged when it comes to educational outcomes. Researchers anticipated that students would return to school in September 2020 with far fewer academic gains compared to a typical school year. This academic loss could lead to a reduction in lifetime earnings, with disadvantaged students facing a greater loss (Kuhfeld & Tarasawa, 2020; Hanshek, 2020). The purpose of the proposed study was to provide insight into the relationship between public school re-opening models post COVID-19 building closure and the characteristics of the students served in each re-opening model. In addition, this study sought to determine the relationship between the quality and continuity of a multi-tiered system of supports (MTSS) within each of the main three school re-opening models. To address the relationship between schools re-opening model and characteristics of students served, publicly available data from a sample of 73 public school districts within one county of the northeast United States was examined. In order to investigate the relationship between a school district's re-opening plan following COVID-19 building closure and the demographic and socio-economic make-up of students served in the school district, multinomial logistic regression analyses were conducted. Results indicated that a school district's percentage of Black students, a school district's percentage of students receiving ELL, a school district's percentage of students who received free and/or reduced lunch, and the total number of students enrolled in a district were statistically significant predictors for a school's re-

opening model post COVID-19 building shutdown. To address MTSS implementation level, three case studies were completed, which revealed differences in overall level of MTSS implementation between in-person re-opening when compared to virtual or hybrid reopening. However overall level of MTSS implementation was similar across virtual and hybrid re-opening models. (PsycInfo Database Record (c) 2022 APA, all rights reserved)

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## Food and COVID-19 Lit Review: Weeks ending 03/11/2022, 03/18/2022

### DNPAO

- Patterns of Food Assistance Program Participation, Food Insecurity, and Pantry Use among U.S. Households with Children during the COVID-19 Pandemic <https://doi.org/10.3390/nu14050988>
- Development of a Validated Tool to Screen for Food Allergy-associated Parental Anxiety (IMPAACT) <https://doi.org/10.1016/j.anai.2022.02.020>
- Hungry and hesitant: An exploration of the experience of stigma among on-campus food pantry users [dissertation] <https://scholarworks.calstate.edu/concern/theses/qb98mm49q?locale=en>
- Population-scale dietary interests during the COVID-19 pandemic <https://doi.org/10.1038/s41467-022-28498-z>
- CLASSIFICATION OF FOOD MENU AND GROUPING OF FOOD POTENTIAL TO SUPPORT THE FOOD SECURITY AND NUTRITION QUALITY <https://doi.org/10.28919/cmbn/6801>
- Hunger relief: A natural experiment from additional SNAP benefits during the COVID-19 pandemic <https://doi.org/10.1016/j.lana.2022.100224>

### DFWED

- Facing Food Risk Perception: Influences of Confinement by SARS-CoV-2 Pandemic in Young Population <https://doi.org/10.3390/foods11050662>
- Food Safety Assessment: Overview of Metrological Issues and Regulatory Aspects in the European Union <https://doi.org/10.3390/separations9020053>
- The impact of health awareness, food safety attention, and attitude factors towards consumer purchase interest of food products post-rise of COVID-19 <https://doi.org/10.18551/rjoas.2022-02.01>

### NIOSH

- Early Care and Education Workers' Experience and Stress during the COVID-19 Pandemic <https://doi.org/10.3390/ijerph19052670>

### NCEH

- Design of a Smart Footwear Disinfecting Station for Crowded Premises [https://doi.org/10.1007/978-981-16-7011-4\\_31](https://doi.org/10.1007/978-981-16-7011-4_31)
- Surveillance of SARS-CoV-2 in the environment and animal samples of the Huanan Seafood Market (preprint) <https://doi.org/10.21203/rs.3.rs-1370392/v1>
- SARS-CoV-2 Remained Airborne for a Prolonged Time in a Lockdown Confined Space <https://doi.org/10.4209/AAQR.210131>

- Water, Sanitation and Hygiene in Schools in Low- and Middle-Income Countries: A Systematic Review and Implications for the COVID-19 Pandemic <https://doi.org/10.3390/ijerph19053124>

## NCFW

- Understanding the challenges faced by Michigan's family farmers: race/ethnicity and the impacts of a pandemic <https://doi.org/10.1007/S10460-022-10305-6>

## OTHER: CROSS-CUTTING FOOD SYSTEMS

- A Multilingual App for Providing Information to SARS-CoV-2 Vaccination Candidates with Limited Language Proficiency: Development and Pilot <https://doi.org/10.3390/vaccines10030360>
- Resilience-by-Design and Resilience-by-Intervention in supply chains for remote and indigenous communities <https://doi.org/10.1038/s41467-022-28734-6>
- Rapid review of government issued documents relevant to mitigation of COVID-19 in the US food manufacturing and processing industry (preprint) <https://doi.org/10.1101/2022.02.25.22271516>
- Food Crisis as a Tool for Social Change: Lessons from New York City's COVID-19 Response <https://doi.org/10.1016/j.ugj.2022.03.001>
- Distributing Summer Meals during a Pandemic: Challenges and Innovations <https://doi.org/10.3390/ijerph19063167>

## OTHER: GENERAL

- The changing epidemiology of SARS-CoV-2 <https://doi.org/10.1126/science.abm4915>
- Multi-disciplinary Leadership to Mitigate COVID-19 in an Austere West African Military Environment <https://doi.org/10.1093/milmed/usac045>
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## DNPAO

### **Patterns of Food Assistance Program Participation, Food Insecurity, and Pantry Use among U.S. Households with Children during the COVID-19 Pandemic** <https://doi.org/10.3390/nu14050988>

This study aims to describe differences in participation in the Supplemental Nutrition Assistance Program (SNAP), Special Supplemental Nutrition Program for Women and Children (WIC), and school meal programs by household characteristics prior to and during the pandemic, and to examine the association of program participation with food security status and food pantry use. We analyze secondary data (n = 470) from an online survey collected in July/August 2020 using weighted multiple logistic regression models. Participation in SNAP declined among households with children in the first four months of the pandemic, while participation in WIC increased slightly, and participation in school meals remained unchanged. There were significant differences in SNAP, WIC, and school meal programs use by race/ethnicity, income, and urbanicity before and during the pandemic. Food insecurity prevalence was higher among SNAP participants at both periods but the gap between participants and non-participants was smaller during the pandemic. Pantry use and food insecurity rates were consistently higher among federal nutrition assistance program participants, possibly suggesting unmet food needs. These results highlight the need for increased program benefits and improved access to food, particularly during periods of hardship.

### **Development of a Validated Tool to Screen for Food Allergy-associated Parental Anxiety (IMPAACT)** <https://doi.org/10.1016/j.anai.2022.02.020>



Background : Parents commonly experience anxiety due to their children's food allergies (FA). Although FA-specific anxiety screening tools for adult and pediatric patients exist, a tool for parents with food-allergic children is lacking. Objective : This study aimed to develop and validate a tool that measures parental anxiety related to their child's FA. Methods : To construct the instrument, items were developed based on consultations with stakeholders and review of existing literature. The instrument was then pilot tested and items were modified based on relevance, importance, item-total correlations, and fit with the instrument's overall factor structure. The modified instrument was validated through assessing internal validity (reliability), convergent & discriminant validity, concurrent validity, and practical usefulness at two time points (pre-COVID and current). Results : The scale showed excellent reliability (Cronbach's  $\alpha$ =.95). It had a four-factor structure which was replicated at the two time-points. The four subscales were moderately correlated (between  $r$  =.438 and .744). The scale showed excellent convergent and discriminatory validity, correlating moderately with STAI and GAD, and highly with FAQL-PB. It also showed excellent concurrent validity, differentiating amongst many external variables. Most importantly, it successfully differentiated parents in need of psychological support for problems related to their child's FA. Conclusion : IMPAACT fills a gap in the existing literature by being the first screening tool to address parental anxiety associated with a child's FA. It has excellent internal and external validity, and is well-suited for use in both research and clinical settings to quickly determine which parents of children with FA are in need of further psychological support.

**Hungry and hesitant: An exploration of the experience of stigma among on-campus food pantry users** [dissertation] <https://scholarworks.calstate.edu/concern/theses/qb98mm49q?locale=en>

Food insecurity on college campuses has been a mainstay with the research community over the past decade. Studies indicate that between 20-59% of college students struggle to access affordable, quality, and nutritious food, leading to numerous negative academic and mental health outcomes. Students who are hungry report lower academic performance and campus engagement, while also reporting higher levels of anxiety and depression. To address this issue, campuses across the country have established on-campus food pantries meant to serve students, staff, and faculty. Unfortunately, a number of barriers have been identified, with stigma being the leading reason that individuals do not visit the pantry. The current phenomenological study seeks to understand the lived experience of stigma as a result of using an on-campus food pantry at public institutions using semi-structured interviews with ten students. These findings help to fill in critical gaps in the research while also helping policymakers and administrators as they develop strategies and practices that promote service utilization and inclusion, while providing food pantry staff and volunteers with critical data useful for enhancing customer service and informing best practices. (PsycInfo Database Record (c) 2022 APA, all rights reserved)

**Population-scale dietary interests during the COVID-19 pandemic** <https://doi.org/10.1038/s41467-022-28498-z>

The SARS-CoV-2 virus has altered people's lives around the world. Here we document population-wide shifts in dietary interests in 18 countries in 2020, as revealed through time series of Google search volumes. We find that during the first wave of the COVID-19 pandemic there was an overall surge in food interest, larger and longer-lasting than the surge during typical end-of-year holidays in Western countries. The shock of decreased mobility manifested as a drastic increase in interest in consuming food at home and a corresponding decrease in consuming food outside of home. The largest (up to threefold) increases occurred for calorie-dense carbohydrate-based foods such as pastries, bakery products, bread, and pies. The observed shifts in dietary interests have the potential to globally affect food consumption and health outcomes. These findings can inform governmental and organizational decisions regarding measures to mitigate the effects of the COVID-19 pandemic on diet and nutrition.

## **CLASSIFICATION OF FOOD MENU AND GROUPING OF FOOD POTENTIAL TO SUPPORT THE FOOD SECURITY AND NUTRITION QUALITY** <https://doi.org/10.28919/cmbn/6801>

The Movement for Diverse, Nutritious, Balanced, and Safe Diet, in this article called by B2SA is a program from the Indonesian government to improve resilience and nutritional quality in line with one of the Sustainable Development Goals, especially during the Coronavirus Disease (COVID-19) pandemic. In this article, classification and grouping methods are carried out to determine the development of supporting the B2SA program in Indonesia, such as the classified menu arrangement and the potential for grouped foodstuffs, especially in East Java, which is one of the provinces with a high COVID-19 spread rate and contributes greatly to food security in Indonesia. The application of the classification method in this study is to compare the performance of logistic regression and random forest. In addition, the clustering method is applied by comparing the performance of Single Linkage and K-Means. The results of this study are the category of food menu recommended by the population of East Java, which turned out to be 49.3% not meeting the B2SA standard. As for the results of the grouping, there are four groups for potential food categories of staple foods and side dishes, two groups for the category of fruits and vegetables. These results are expected to be a recommendation for the government in supporting the stability of food security to strengthen the resilience of the food industry in Indonesia because it is a region that has food potential in Indonesia. © 2022 the author(s).

## **Hunger relief: A natural experiment from additional SNAP benefits during the COVID-19 pandemic** <https://doi.org/10.1016/j.jana.2022.100224>

Summary Background COVID-19 has directly affected millions of people. Others have been indirectly affected; for example, there has been a startling increase in hunger brought about by the pandemic. Many countries have sought to relieve this problem through public policy. This research examines the effectiveness of enhanced Supplemental Nutrition Assistance Program (SNAP) benefits in the U.S. to alleviate hunger. Methods Using a biweekly cross-sectional survey and corresponding population weights from the U.S. Census Bureau, we estimate the effects of enhanced SNAP benefits on hunger in the U.S. as measured by food insufficiency. We use a Bayesian structural time series analysis to predict counterfactual values of food insufficiency. We supplement these findings by examining the effect of enhanced SNAP benefits on observed visits to a food pantry network in a mid-sized U.S. city. Findings Our primary finding estimates that nationwide a total 850,000 (95% credible interval 0.24–1.46 million) instances of food insufficiency were prevented per week by the 15 percent increase in SNAP benefits enacted in January 2021. Secondly, we find similar effects associated with SNAP benefit increases and local food pantry visits. Specifically, enhanced SNAP benefits resulted in fewer visits to the food pantry network than were predicted in the counterfactual model. Interpretation These results not only indicate that the policies enacted to mitigate hunger caused by the COVID-19 pandemic helped, but also quantifies how much these benefits helped on a national scale. As a result, policymakers can use this data to benchmark future policy actions at scale. Funding None.

## **DFWED**

### **Facing Food Risk Perception: Influences of Confinement by SARS-CoV-2 Pandemic in Young Population** <https://doi.org/10.3390/foods11050662>

A new food safety level of trust in food risk perception has been noticed, as a consequence of the SARS-CoV-2 pandemic. The pandemic made-up to review nutritional recommendations for the population, mainly for the young population. Here, the results of a designed survey for the young population, from the University of Valencia, Spain, belonging to grades in the health branch of knowledge, and in charge of carrying out the shopping task for their household, are reported. The study reports three different scenarios and years, as defined by the SARS-CoV-2 pandemic: before the pandemic (period January–December 2019), during the pandemic lockdown (period March 2020–August 2020), and after the

pandemic lockdown (September 2020–June 2021). The survey was designed with questions, profiling responses using the best–worst elicitation (BWE) format. Results reported that trust and evaluation of information differed in all three scenarios. In the SARS-CoV-2 pandemic, there was (i) a high increase in trust in the information provided inside (by) the shopping place, while there were no changes for the outside (kept in medium score);(ii) trust in cooperative stakeholders went from a medium-low to medium-high score, while, for individual stakeholders, it was maintained as a medium score, and (iii) trust in information on food products was kept in high score. Regarding the evaluation of the information provided by stakeholders, a tendency in medium score was maintained, while that from the channels of distribution went from medium-low to medium-high for buying on-site. A uniform tendency was observed for online/other distribution channels for all three years and descriptors studied: “Internet”, “Farmer on-demand”, and “Cooperative consumers” (<50%). This research provides findings of implications that contribute to changing the perception of food risk, due to the COVID-19 pandemic, i.e., the adaptation of the young population, trust in safety and quality, and importance of coordination from all communication points to avoid negative or strongest consequences, in case of future lockdowns or health crisis. © 2022 by the authors. Licensee MDPI, Basel, Switzerland.

**Food Safety Assessment: Overview of Metrological Issues and Regulatory Aspects in the European Union** <https://doi.org/10.3390/separations9020053>

The safety of the food we consume has a direct impact on individual and population health and affects the economic growth of the region where food safety is practised and enhanced. The central goal of the European Commission’s Food Safety policy is to ensure a high level of protection of human health covering the whole supply chain. In recent years, great attention has been paid to food testing and the application of metrological tools to support food safety. The global food market and national and international food safety regulations have created a huge demand for the measurement traceability and comparability of analytical results that are independent of time or space boundaries. This review provides an overview of the European food safety policy and regulation, with a focus on the measurement-related elements of the European Union (EU) food law. It also highlights how the application of analytical techniques, with particular reference to separation approaches, and metrological tools can ensure the control of certain contaminants that nowadays represent the main challenges for food safety (e.g., mycotoxins, nanoparticles, emerging and process contaminants). METROFOOD-RI-Infrastructure for promoting metrology in food and nutrition is therefore described in this context. This European research infrastructure has been developed and is being implemented in the frame of the European Strategy Forum on Research Infrastructures (ESFRI) to support metrology in food and nutrition and establish a strategy allowing reliable and comparable analytical measurements in food across the entire process line, from primary producers to consumers, and making data findable, accessible, interoperable, and reusable (FAIR).

**The impact of health awareness, food safety attention, and attitude factors towards consumer purchase interest of food products post-rise of COVID-19** <https://doi.org/10.18551/rjoas.2022-02.01>

This study purposes to analyze the relationship between the factors that shape consumer decisions in purchasing food products after the Covid 19 incident in June 2021. Consumers currently have high attention to the food products they consume. The Attention to Food Safety variable has a positive and highly significant effect on the Attitude and Purchase Intention variables, which are also consumer concerns about food safety which increase during the Covid-19 event. Attitude variable has a positive and highly significant effect on the Purchase Intention variable, interest can reflect a person's willingness to take a certain action. Consumers pay more for good quality products and services for the food products they consume.

## NIOSH

### **Early Care and Education Workers' Experience and Stress during the COVID-19 Pandemic**

<https://doi.org/10.3390/ijerph19052670>

Early care and education (ECE) workers experience many job-related stressors. During the COVID-19 pandemic, ECE programs either closed or remained open while workers faced additional demands. We deployed a survey of the center-based ECE workforce in Washington State (United States) one year into the COVID-19 pandemic to assess impacts and workers' perceived stress levels. We describe the prevalence of reported impacts, including workplace closures; job changes; COVID-19 transmission; risk factors for severe COVID-19; the use of social distancing practices; satisfaction with workplace responses; perceptions of worker roles, respect, and influence; and food and financial insecurity. Themes from open-ended responses illustrate how workers' jobs changed and the stressors that workers experienced as a result. Fifty-seven percent of ECE workers reported moderate or high levels of stress. In a regression model assessing unique contributions to stress, work changes that negatively impacted home life contributed most to stress. Feeling respected for one's work and feeling positive about one's role as an "essential worker" contributed to lower levels of stress. Experiencing financial insecurity, caring for school-aged children or children of multiple ages, being younger, and being born in the United States also contributed to higher stress. Findings can inform policies designed to support the workforce. © 2022 by the authors. Licensee MDPI, Basel, Switzerland.

## NCEH

### **Design of a Smart Footwear Disinfecting Station for Crowded Premises** [https://doi.org/10.1007/978-981-16-7011-4\\_31](https://doi.org/10.1007/978-981-16-7011-4_31)

Since the first virus was identified in the early last century, many kinds of different viruses have been discovered until now that can harm a human being. One of these is severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) or well known as coronavirus, which has pushed the entire world into a deadly pandemic. The pandemic has been affecting public health, employment, lifestyle, and the entire food system. To protect our house, workplace, and heavily populated areas such as markets and hospitals from being infected by the virus, it needs to be stopped in every possible way to be spread. Footwear is one of the potential sources of contamination and possible carrier of the virus, especially if it touches an infected place or someone who has already infected sneezes or coughs nearby. Since most footwear is made of leather, rubber, and plastic, the virus can live on these for many days at room temperature. Even footwear can be a breeding ground for bacteria and viruses as it comes in contact with dirt and germs more than anything else. In this paper, a smart device for disinfecting footwear has been proposed for crowded premises. The sensing device will automatically sense the visitor's presence at the entrance and will disinfect his footwear by spraying disinfecting agent underneath the footwear or foot. This disinfecting station will allow visitors to disinfect their footwear without stopping and will ensure effecting sanitization of the entire sole even if the sole has deep flex grooves or high heels. © 2022, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

### **Surveillance of SARS-CoV-2 in the environment and animal samples of the Huanan Seafood Market (preprint)** <https://doi.org/10.21203/rs.3.rs-1370392/v1>

Emerging in December 2019, coronavirus disease 2019 (COVID-19) eventually became a pandemic and has posed a tremendous threat to global public health. However, the origins of SARS-CoV-2, the causative agent of COVID-19, remain to be determined. It has reported that a certain number of the early case clusters had a contact history with Huanan Seafood Market. Therefore, surveillance of SARS-

CoV-2 within the market is of vital importance. Herein, we presented the SARS-CoV-2 detection results of 1380 samples collected from the environment and the animals within the market in early 2020. By SARS-CoV-2-specific RT-qPCR, 73 environmental samples tested positive for SARS-CoV-2 and three live viruses were successfully isolated. The viruses from the market shared nucleotide identity of 99.980% to 99.993% with the human isolate HCoV/Wuhan/IVDC-HB-01. In contrast, no virus was detected in the animal swabs covering 18 species of animals in the market. The SARS-CoV-2 nucleic acids in the positive environmental samples showed significant correlation of abundance of Homo sapiens with SARS-CoV-2. In summary, this study provided convincing evidence of the prevalence of SARS-CoV-2 in the Huanan Seafood Market during the early stage of COVID-19 outbreak.

### **SARS-CoV-2 Remained Airborne for a Prolonged Time in a Lockdown Confined Space**

<https://doi.org/10.4209/AAQR.210131>

Airborne transmission of COVID-19 plays an important role for the pandemic. However, nucleic acid based evidence of direct association of COVID-19 with environmental contamination is lacking. Here, we investigated a COVID-19 outbreak with two fast food employees infected, in which a traveler despite of a 14-day quarantine turned positive after check in with a hotel, using environmental SARS-CoV-2 sampling, epidemiological tracing, viral RNA sequence as well as surveillance method. Out of 25 positive environmental air and surface swab samples (N = 237) collected, SARS-CoV-2 was found to have remained airborne (5640–7840 RNA copies m<sup>-3</sup>) for more than 4 days in a female washroom. After aging for 5 days in the air, no viable virus was detected. The traveler did not have any contacts with the two employees; however, genome sequencing showed that SARS-CoV-2 variants from three patients and two environmental surface samples belonged to 20B viral clade, sharing a nucleic acid identity of more than 99.9%. We concluded that the outbreak was triggered by SARS-CoV-2 contaminated environments, where the employees inhaled the virus from the air or touching facility surfaces where the traveler did not have any physical contacts with. © The Author(s).

### **Water, Sanitation and Hygiene in Schools in Low- and Middle-Income Countries: A Systematic Review and Implications for the COVID-19 Pandemic**

<https://doi.org/10.3390/ijerph19053124>

The global COVID-19 pandemic has revealed the extent to which schools are struggling with the provision of safe drinking water, sanitation and hygiene (WASH). To describe the WASH conditions in schools and discuss the implications for the safe reopening of schools during the ongoing COVID-19 pandemic, a systematic review of peer-reviewed literature on WASH in schools in low- and middle-income countries was performed. In April 2021, five databases, including MEDLINE (via PubMed), Web of Science, Scopus, AJOL, and LILACS, were used to identify studies. Sixty-five papers met the inclusion criteria. We extracted and analyzed data considering the Joint Monitoring Programme (JMP) definitions and the normative contents of Human Rights to safe drinking water and sanitation. Publications included in this systematic review considered 18,465 schools, across 30 different countries. Results indicate a lack of adequate WASH conditions and menstrual hygiene management requirements in all countries. The largely insufficient and inadequate school infrastructure hampers students to practice healthy hygiene habits and handwashing in particular. In the context of the COVID-19 pandemic, being hindered to implement such a key strategy to contain the spread of SARS-CoV-2 in the school environment is of major concern.

## **NCFW**

**Understanding the challenges faced by Michigan's family farmers: race/ethnicity and the impacts of a pandemic** <https://doi.org/10.1007/S10460-022-10305-6>

Michigan is a critical agricultural state, and small family farms are a crucial component of the state's food sector. This paper examines how the race/ethnicity of the family farm owners/operators is related to farm characteristics, financing, and impacts of the pandemic. It compares 75 farms owned/operated solely by Whites and 15 with People of Color owners/operators. The essay examines how farmers finance their farm operations and the challenges they face doing so. The article also explores how the Coronavirus-19 (COVID-19) pandemic affected farming operations, the financial viability of farms, and how farmers responded to the challenges posed by the pandemic. The study found that People of Color farm owners/operators were younger than White farm owners/operators. The People of Color farm owners/operators tended to manage smaller farms for shorter periods than White farm owners/operators. Though two-thirds of the Farmers of Color owned their farms, they were more financially vulnerable than White farm owners/operators. The farmers studied had difficulty obtaining loans to finance their farms. Farmers reported increasing requests from people for food assistance during the pandemic. Farmers responded to the pandemic by participating in government programs such as the Farm to Families Food Box Program that purchased their produce. It allowed farmers to supply emergency food assistance programs with products from their farms. The products went to families receiving food assistance from soup kitchens, food banks, and other community-based nonprofits.

#### **OTHER: CROSS-CUTTING FOOD SYSTEMS**

##### **A Multilingual App for Providing Information to SARS-CoV-2 Vaccination Candidates with Limited Language Proficiency: Development and Pilot <https://doi.org/10.3390/vaccines10030360>**

Language barriers are obstacles in receiving vaccinations against COVID-19. They jeopardize informed consent, vaccination safety, and a positive immunization experience. We have developed a multilingual app to overcome language barriers when dealing with vaccination candidates with a limited proficiency in the locally spoken language. We applied the Spiral Technology Action Research (STAR) model to create the app within a discursive process involving healthcare professionals (HCPs) from vaccination sites, literature searches and guidelines, and field trials at vaccination centers. In a real-world pilot test, we assessed the usability and feedback for further improvement. Our efforts resulted in an app that facilitates communication with vaccination candidates in 40 languages, each with over 500 phrases that can be played back or displayed as text. In the pilot test, the app demonstrated its usability, and was well accepted by the vaccination candidates (n = 20). The app was mainly used to inform about the risks and benefits of the SARS-CoV-2 vaccination. Some HCPs struggled to navigate the comprehensive content and the pilot test exposed the need for additional phrases. The STAR model proved to be flexible in adapting to dynamic pandemic conditions and changing recommendations. This multilingual app overcomes language barriers in healthcare settings, promoting vaccines to migrants with limited language proficiency.

##### **Resilience-by-Design and Resilience-by-Intervention in supply chains for remote and indigenous communities <https://doi.org/10.1038/s41467-022-28734-6>**

The COVID-19 pandemic has illustrated the fragility of food security and associated supply chains for remote and Indigenous communities. Here we highlight challenges faced by the Tribal Population of Noepe (Martha's Vineyard) and argue for the inclusion of Resilience-by-Design and Resilience-by-Intervention in supply chain management. Indigenous and remote communities face difficulties in times of supply chain disruption. Here the authors comment on challenges faced by the Tribal Population of Noepe (Martha's Vineyard) and argue for the inclusion of Resilience-by-Design and Resilience-by-Intervention in supply chain management.

**Rapid review of government issued documents relevant to mitigation of COVID-19 in the US food manufacturing and processing industry (preprint)** <https://doi.org/10.1101/2022.02.25.22271516>

We surveyed publicly available records published by the United States (US) government between the start of the Coronavirus Disease 2019 (COVID-19) pandemic and September 30 th , 2021, to identify documents containing resources or guidelines about COVID-19 mitigation relevant to the US food manufacturing and processing industry (hereafter referred to as “the food processing industry”). Among 36 documents identified and reviewed (including 35 from government agencies and one from a relevant professional association), we extracted 19 categories of mitigation strategies covering the themes of employee biosafety, surveillance, vaccination, social distancing, and worker education. We concluded that the priority of COVID-19 mitigation in the food processing industry was to protect the health and safety of industry workers while maintaining food supply chain resilience to minimize disturbance in the food market and avoid food crisis. A collated list of the identified documents and their comprehensive review will (i) aid researchers and public health workers in interpreting the potential impacts of the recommended mitigations on the epidemiology of the disease among workers in the food processing industry and (ii) help the food processing industry sort out the most essential strategies to take in face of a pandemic.

**Food Crisis as a Tool for Social Change: Lessons from New York City's COVID-19 Response**  
<https://doi.org/10.1016/j.ugj.2022.03.001>

The COVID-19 pandemic disrupted food availability and affordability and changed the daily food practices of New Yorkers in three critical ways: (1) closing restaurants and public institutions, including schools, reduced food access and changed shopping patterns, food expenditures, and diets;(2) economic disruption exacerbated food insecurity and increased the need for food assistance;and (3) altered food practices affected diets. Vulnerable populations were disproportionately affected by these disruptions to the food system. The city's response included emergency measures to stave off food insecurity and hunger, yet the crisis also prompted a refocusing of food governance to address other social equity issues in the food system: fears of engaging with food programs by immigrant communities;disparities in access to online grocers;worker rights and worker ownership;and new priorities for the use of public space. The paper presents policy responses to the pandemic that illustrate how the crisis has opened opportunities for initiating changes that can lead to a more just food system.

**Distributing Summer Meals during a Pandemic: Challenges and Innovations**  
<https://doi.org/10.3390/ijerph19063167>

The USDA summer food programs provide meals for children when school is not in session. Although the COVID-19 pandemic has created challenges for food distribution programs, many regulations have been waived, providing opportunities for new approaches to meal distribution. The aim of this study was to identify practices designed to increase program participation during the summer of 2021. Semi-structured interviews were conducted with food service directors (N = 16) in a northeastern state. Questions addressed meal distribution methods;perceptions about facilitators and barriers to family participation;communication strategies used to reach families;and engagement with community partners. The responses were analyzed using an immersion-crystallization approach and four themes emerged: new opportunities for innovation due to the waivers;the importance of collaboration with community partners to increase reach;ongoing logistical challenges due to the pandemic;and the challenge and importance of reducing the stigma of participation. These findings underscore how the USDA waivers increased food service directors' ability to flexibly and creatively solve problems related to summer meal delivery. The FSDs believed that several of the waivers helped them increase participation in the summer meal program, suggesting that permanent changes to the summer meal regulations may be appropriate.

## **OTHER: GENERAL**

### **The changing epidemiology of SARS-CoV-2 <https://doi.org/10.1126/science.abm4915>**

We have come a long way since the start of the COVID-19 pandemic—from hoarding toilet paper and wiping down groceries to sending our children back to school and vaccinating billions. Over this period, the global community of epidemiologists and evolutionary biologists has also come a long way in understanding the complex and changing dynamics of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus that causes COVID-19. In this Review, we retrace our steps through the questions that this community faced as the pandemic unfolded. We focus on the key roles that mathematical modeling and quantitative analyses of empirical data have played in allowing us to address these questions and ultimately to better understand and control the pandemic.

### **Multi-disciplinary Leadership to Mitigate COVID-19 in an Austere West African Military Environment <https://doi.org/10.1093/milmed/usac045>**

**INTRODUCTION:** The COVID-19 pandemic created challenges for forward-deployed military units to Western Africa. Austere military environments afford multiple avenues to transmit COVID-19 amongst service members. **MATERIALS AND METHODS:** A COVID-19 outbreak on a military base in Western Africa spanning over 100 days is statistically analyzed using a Pearson's correlation coefficient. Furthermore, a COVID-19 reproductive number (R0) is evaluated to examine the relationship between specific command-directed policies to mitigate COVID-19 transmission. **RESULTS:** The multidisciplinary partnership of military command, medical, and public health leadership implemented evidence-based and epidemiologically informed COVID-19 preventive base-wide policies, including appropriate isolation/quarantine policies. The R0 for the outbreak was 0.03 and remained <1 for the outbreak duration. This base remained COVID-19 free for multiple weeks after policy implementation. **CONCLUSIONS:** The implementation of practical mitigating base-wide policies through seamless communication between military command/medical/public health leadership resolved the COVID-19 outbreak while maintaining mission readiness. Weekly COVID-19 testing epidemiological data may be utilized by commanders to direct further decision-making on tightening/loosening base-wide policy restrictions for continued mission-essential operations, e.g., security, food service, or airfield operations.

## **Food and COVID-19 Lit Review: Weeks ending 02/25/2022, 03/04/2022**

### **DNPAO**

- Telehealth and food insecurity screenings: challenges and lessons learned <https://doi.org/10.21037/mhealth-21-31>
- The Influence of Nutritional Supplementation for Iron Deficiency Anemia on Pregnancies Associated with SARS-CoV-2 Infection <https://doi.org/10.3390/nu14040836>

### **DFWED**

- An Evaluation of a Virtual Food Safety Program for Low-Income Families: Applying the Theory of Planned Behavior <https://doi.org/10.3390/foods11030355>
- Occurrence of viruses in sewage sludge: A systematic review <https://doi.org/10.1016/j.scitotenv.2022.153886>



## NIOSH

- Risk factors, immune response and whole-genome sequencing of SARS-CoV-2 in a cruise ship outbreak in Norway <https://doi.org/10.1016/j.ijid.2022.02.025>
- Outbreak investigation of airborne transmission of Omicron (B.1.1.529) - SARS-CoV-2 Variant of Concern in a restaurant: implication for enhancement of indoor air dilution <https://doi.org/10.1016/j.jhazmat.2022.128504>

## NCEH

- Environmental factors influencing the transmission of the coronavirus 2019: a review <https://doi.org/10.1007/s10311-022-01418-9>

## NCFW

- Mexican Migrant Farmworkers in Canada: Death, Disposability, and Disruptions during COVID-19 <https://doi.org/10.1525/msem.2022.38.1.140>
- COVID-19 and Essential Workers: Healthcare Delays among Organic Farmers  
DOI: [10.1016/j.jhqr.2022.02.001](https://doi.org/10.1016/j.jhqr.2022.02.001)

## OTHER: CROSS-CUTTING FOOD SYSTEMS

- The COVID-19 Pandemic, the Crisis of Care, and Mexican Immigrants in the United States: A Preliminary Analysis <https://doi.org/10.1525/msem.2022.38.1.170>
- The Impact of the COVID-19 Pandemic on Restaurant Resilience: Lessons, Generalizations, and Ideas for Future Research <https://doi.org/10.1287/serv.2021.0293>
- Impact of the COVID-19 pandemic on food production and animal health <https://doi.org/10.1016/j.tifs.2021.12.003>

## OTHER: GENERAL

- Ethnic/racial minorities' and migrants' access to COVID-19 vaccines: A systematic review of barriers and facilitators <https://doi.org/10.1016/j.jmh.2022.100086>
- Communicating with Stakeholders via Twitter: From CSR to COVID-19 [https://doi.org/10.1007/978-3-030-91532-2\\_10](https://doi.org/10.1007/978-3-030-91532-2_10)
- Latinx Community College Students and the (In)Opportunities Brought by COVID-19 Pandemic <https://doi.org/10.1080/15348431.2022.2039152>
- Food for thought: Eating before saliva collection and interference with SARS-CoV-2 detection <https://doi.org/10.1002/jmv.27660>
- A vicious cycle of health (IN)equity: Migrant inclusion in light of COVID-19 <https://doi.org/10.1016/j.hlpt.2022.100606>

## DNPAO

### Telehealth and food insecurity screenings: challenges and lessons learned

<https://doi.org/10.21037/mhealth-21-31>

Food insecurity remains a persistent problem in the United States and affected 35.2 million Americans in 2019. In the wake of COVID-19, food insecurity has increased in many communities. Given that food insecurity exacerbates poor health or health conditions, screening of food insecurity within medical settings is frequently identified within the literature as an important first step in effectively addressing this social concern and improving the health outcomes of patients. However, health care providers often

do not screen for food insecurity for a variety of reasons. In this article review, we discuss the challenges associated with incorporating food insecurity screenings within the medical model and how the COVID-19 pandemic has exacerbated these challenges. Specifically, the COVID-19 pandemic has substantially increased the delivery of health care services via telehealth, making screening for food insecurity even more difficult via remote videoconferencing. We examine the strengths and weaknesses of telehealth and their implications for food insecurity screenings. We discuss how these implications might inform future research regarding the use of telehealth as a means of screening patients for social determinants of health in the COVID-19 era. Given that the use of telehealth is not expected to back to pre-pandemic levels, it is important to understand how to best screen for social determinants of health via videoconferencing.

**The Influence of Nutritional Supplementation for Iron Deficiency Anemia on Pregnancies Associated with SARS-CoV-2 Infection** <https://doi.org/10.3390/nu14040836>

Anemia is a very common occurrence during pregnancy, with important variations during each trimester. Anemia was also considered as a risk factor for severity and negative outcomes in patients with SARS-CoV-2 infection. As the COVID-19 pandemic poses a significant threat for pregnant women in terms of infection risk and access to care, we developed a study to determine the impact of nutritional supplementation for iron deficiency anemia in correlation with the status of SARS-CoV-2 infection. In a case-control design, we identified 446 pregnancies that matched our inclusion criteria from the hospital database. The cases and controls were stratified by SARS-CoV-2 infection history to observe the association between exposure and outcomes in both the mother and the newborn. A total of 95 pregnant women were diagnosed with COVID-19, having a significantly higher proportion of iron deficiency anemia. Low birth weight, prematurity, and lower APGAR scores were statistically more often occurring in the COVID-19 group. Birth weight showed a wide variation by nutritional supplementation during pregnancy. A daily combination of iron and folate was the optimal choice to normalize the weight at birth. The complete blood count and laboratory studies for iron deficiency showed significantly decreased levels in association with SARS-CoV-2 exposure. Puerperal infection, emergency c-section, and small for gestational age were strongly associated with anemia in patients with COVID-19. It is imperative to screen for iron and folate deficiency in pregnancies at risk for complications, and it is recommended to supplement the nutritional intake of these two to promote the normal development and growth of the newborn and avoid multiple complications during pregnancy in the COVID-19 pandemic setting.

**DFWED**

**An Evaluation of a Virtual Food Safety Program for Low-Income Families: Applying the Theory of Planned Behavior** <https://doi.org/10.3390/foods11030355>

Low-income families are reported to have a limited knowledge of food safety and resources to follow food safety practices compared with the rest of the population. This paper evaluated a virtual food safety educational program targeting food handlers in low-income families. Trained native speakers of English and Spanish delivered course materials in both languages. A total of 60 individuals participated in the program, with 30 participants in each language group. Most were female, and most had fewer than three children. After the program, participants' food safety knowledge and self-reported safe food practice behavior scores increased significantly from 5.32 to 7.43 (out of 8.00) and from 24.78 to 29.30 (out of 35.00), respectively. The theory of planned behavior (TPB) was used to understand individuals' behavior change intention of food safety practices. All the TPB constructs' scores, including attitudes toward the behavior, perceived behavioral control, subjective norms, and behavior change intentions, were improved significantly; however, only the subjective norms and perceived behavioral control were significantly correlated with the behavior change intentions. This virtual educational program improved

low-income individuals' food safety knowledge and changed their food safety attitudes and behaviors, giving a path to develop and evaluate more virtual food safety educational programs in the future.

### **Occurrence of viruses in sewage sludge: A systematic review**

<https://doi.org/10.1016/j.scitotenv.2022.153886>

Enteric viruses are of great importance in wastewater due to their high excretion from infected individuals, low removal in wastewater treatment processes, long-time survival in the environment, and low infectious dose. Among the other viruses, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) surveillance in wastewater systems has received particular attention as a result of the current COVID-19 epidemic. Viruses adhering to solid particles in wastewater treatment processes will end up as sewage sludge, and therefore insufficient sludge treatment may result in viral particles dissemination into the environment. Here, we review data on viruses' presence in sewage sludge, their detection and concentration methods, and information on human health issues associated with sewage sludge land application. We used combinations of the following keywords in the Scopus, Web of Science (WOS), and PubMed databases, which were published between 2010 and January 21st, 2022: sludge (sewage sludge, biosolids, sewage solids, wastewater solids) and virus (enteric virus, viral particles, viral contamination, SARS-CoV-2, coronavirus). The sources were searched twice, once with and then without the common enteric virus names (adenovirus, rotavirus, norovirus, enterovirus, hepatitis A virus). Studies suggest adenovirus and norovirus as the most prevalent enteric viruses in sewage sludge. Indeed, other viruses include rotavirus, hepatitis A virus, and enterovirus were frequently found in sewage sludge samples. Untreated biological sludge and thickened sludge showed more viral contamination level than digested sludge and the lowest prevalence of viruses was reported in lime stabilized sludge. The review reveals that land application of sewage sludge may pose viral infection risks to people due to accidentally ingestion of sludge or intake of crops grown in biosolids amended soil. Moreover, contamination of groundwater and/or surface water may occur due to land application of sewage sludge.

### **NIOSH**

#### **Risk factors, immune response and whole-genome sequencing of SARS-CoV-2 in a cruise ship outbreak in Norway** <https://doi.org/10.1016/j.ijid.2022.02.025>

**Objective :** To improve understanding of SARS-CoV-2-transmission and prevention measures on cruise ships, we investigated a Norwegian cruise ship outbreak in July-August 2020 using a multidisciplinary approach, following a rapid outbreak-response launched by local and national health-authorities.

**Methods :** We conducted a cross-sectional study among crew members using epidemiological data and results from SARS-CoV-2-PCR of nasopharynx-oropharynx samples, antibody analyses of blood-samples, and whole-genome sequencing.

**Results :** We included 114 multinational crew members (71% participation), median age 36 years and 69% men. Attack rate was 33%;32 of 37 outbreak-cases were seropositive 5-10 days post-PCR. One PCR-negative participant was seropositive, suggesting prior infection. Network-analysis showed clusters based on common exposures, including embarkation date, nationality, sharing cabin with an infected cabin-mate (AOR 3.27 (95%CI 0.97-11.07, p=0.057), and specific workplaces (mechanical operations: 9.17 (1.82-45.78), catering: 6.11 (1.83-20.38)). Breaches in testing, quarantine and isolation practices before/during expeditions were reported. Whole-genome sequencing revealed lineage B.1.36, previously identified in Asia. Despite extensive sequencing, continued transmission of B.1.36 in Norway was not detected.

**Conclusions :** Our findings confirm high risk of SARS-CoV-2-transmission on cruise ships related to workplace and cabin-type and show that continued community-transmission after the outbreak could be stopped by implementing immediate infection control measures at the final destination.

## **Outbreak investigation of airborne transmission of Omicron (B.1.1.529) - SARS-CoV-2 Variant of Concern in a restaurant: implication for enhancement of indoor air dilution**

<https://doi.org/10.1016/j.jhazmat.2022.128504>

Airborne transmission of SARS-CoV-2 has been increasingly recognized in the outbreak of COVID-19, especially during the emergence of Omicron variant. We investigated an outbreak due to Omicron variant in a restaurant. Besides the epidemiological and phylogenetic analysis, the secondary attack rates of customers of restaurant-related COVID-19 before (outbreak R1) and after enhancement of indoor air dilution (outbreak R2) were compared. On 27th December 2021, an index case attended restaurant R2 for 98 minutes. Except for 1 sitting in the same table, six other secondary cases sat in 3 corners at 3 different zones, where designated staff served customers at different zones. The median exposure time was 34 minutes (range: 19-98 minutes). All 7 secondary cases were phylogenetically related to the index. Smoke test demonstrated the airflow direction which explained the distribution of secondary cases. Compared with an earlier COVID-19 outbreak in another restaurant R1 (19th February 2021), just preceding the mandatory requirement of enhancement of indoor air dilution, the secondary attack rates among customers in R2 was significantly lower than that in R1 (3.4%, 7/207 vs 28.9%, 22/76,  $p < 0.001$ ). Enhancement of indoor air dilution including ventilation and installation of air purifier and upper-room ultraviolet-C germicidal irradiation could minimize the risk of SARS-CoV-2 transmission in the restaurant.

### **NCEH**

#### **Environmental factors influencing the transmission of the coronavirus 2019: a review**

<https://doi.org/10.1007/s10311-022-01418-9>

The coronavirus 2019 pandemic, induced by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has strongly altered healthcare systems and the economy worldwide. The lack of knowledge on this virus has led to the implementation of uncertain strategies and measures to fight the pandemic. Here, we review environmental factors that control viral transmission, such as air, temperature, humidity, food, water and sewage, insects, inanimate surfaces, hand hygiene, and social distancing. The main route of viral transmission is the respiratory tract through aerosols. Masks and social distancing are effective in ceasing air transmission. Proper cleaning of surfaces and hand disinfection are required, especially in healthcare units. Food should be handled properly, and food handlers should work based on hygienic protocols. Water and sewage transmission, and transmission through insects appear less important than other environmental factors.

### **NCFW**

#### **Mexican Migrant Farmworkers in Canada: Death, Disposability, and Disruptions during COVID-19**

<https://doi.org/10.1525/msem.2022.38.1.140>

This essay focuses on Mexican migrant farmworkers employed in the Seasonal Agricultural Workers Program (SAWP) during the COVID-19 pandemic in Canada. During this time, Mexican workers became essential yet expendable while their agricultural employers reaped the material rewards as an essential industry. Through the lens of racialization and structural vulnerability, I explicate how the Mexican and Canadian states facilitated the continuation of capital accumulation in agriculture through the subjugation of Mexican workers. I seek to contribute to the nascent literature on the pandemic in relation to temporary-labor migration programs, Mexican migrant workers, and the racialization of workers to produce a tractable and cheap labor force.

#### **COVID-19 and Essential Workers: Healthcare Delays among Organic Farmers**

DOI: [10.1016/j.jhq.2022.02.001](https://doi.org/10.1016/j.jhq.2022.02.001)

Introduction and Objective: While the overall impact of COVID-19 is still being assessed, there is strong evidence that the pandemic has greatly aggravated traditional flaws of healthcare systems around the globe. Understanding the healthcare impact of the COVID-19 pandemic is essential for emergency preparedness and the prevention of collateral damage. The food and agriculture sector is an essential service and critical to food availability and access. However, literature on the healthcare impact of COVID-19 in farmers is scarce. This study aimed to explore healthcare delays caused by the COVID-19 pandemic in certified organic producers. Methods: An observational Cross-sectional study based on answers of an electronic self-reported survey. Participants included were United States certified organic producers listed in the Organic Integrity Database. Results: Respondents represented 40 states; response rate was estimated at 11%. Analyses were conducted on 344 records. A high majority were non-Hispanic Whites with a four-year college education or more. More than 90% had health insurance. More than one-third (36.5%) of respondents reported healthcare delays. Female producers were nearly twice as likely to report non-COVID-19 related healthcare delays as their male counterparts (OR 1.95, 95% CI: 1.10-3.44). Conclusion: This study provides national data on healthcare delays among organic producers and their households and identifies sex differences in non-COVID-19 related healthcare delays. This study is the first to collect data on organic producers and can serve as a baseline for future studies; it may inform practice, research and policy on emergency preparedness, protection of essential workers, and healthcare services and quality.

#### **OTHER: CROSS-CUTTING FOOD SYSTEMS**

##### **The COVID-19 Pandemic, the Crisis of Care, and Mexican Immigrants in the United States: A Preliminary Analysis <https://doi.org/10.1525/msem.2022.38.1.170>**

In the transition from Fordist to flexible accumulation in the last decades of the twentieth century, social reproduction was externalized onto families and communities. In the United States, this “crisis of care” was mitigated by the incorporation of illegalized Mexican immigrants’ low-cost reproductive labor in private and public services. From a feminist perspective on social reproduction and migration, we argue that the impacts of the COVID-19 economic crisis on Mexican immigrant communities were related to the specific ways that immigrants’ labor was incorporated into the circuits of social reproduction. Drawing on interviews with migrants from rural central Mexico in the United States, we analyze how immigrants absorbed the worst effects of the crisis by cheapening their labor, transferring unpaid reproductive labor to other household members, and engaging in informalized activities. Anti-immigrant policies exacerbated the precarious situations of undocumented immigrants and mixed-status Mexican families during the pandemic.

##### **The Impact of the COVID-19 Pandemic on Restaurant Resilience: Lessons, Generalizations, and Ideas for Future Research <https://doi.org/10.1287/serv.2021.0293>**

Pandemics cause business disruptions that have serious implications for the design and delivery of services, leading to adverse performance consequences for services industries. Focusing on the restaurant industry, the authors present a conceptual framework of restaurants' resilience during a pandemic that is grounded in existing services and strategy research, secondary and qualitative sources, and insights obtained from social media data. This framework is tested via an empirical analysis of the Yelp COVID-19 data set. Several interesting trends in consumer preferences are identified including a rapid shift toward third-party app delivery models. Surprisingly, the analysis shows that partnering with third-party app delivery services before COVID improved firms' resilience, whereas during the pandemic, these partnerships have a negative impact on restaurant survival. Furthermore, the study documents some important differences between the drivers of restaurant survival before versus during the pandemic, highlighting critical changes in consumer preferences that may shape the industry in the future.

## **Impact of the COVID-19 pandemic on food production and animal health**

<https://doi.org/10.1016/j.tifs.2021.12.003>

Background: Severe acute respiratory coronavirus syndrome 2 (SARS-CoV-2) is the etiological agent of coronavirus disease 2019 (COVID-19). SARS-CoV-2 was first detected in Wuhan, China and spread to other countries and continents causing a variety of respiratory and non-respiratory symptoms which led to death in severe cases. Scope and approach: In this review, we discuss and analyze the impact of the COVID-19 pandemic on animal production systems and food production of meat, dairy, eggs, and processed food, in addition to assessing the impact of the pandemic on animal healthcare systems, animal healthcare quality, animal welfare, food chain sustainability, and the global economy. We also provide effective recommendations to animal producers, veterinary healthcare professionals, workers in animal products industries, and governments to alleviate the effects of the pandemic on livestock farming and production systems. Key findings and conclusions: Port restrictions, border restrictions, curfews, and social distancing limitations led to reduced quality, productivity, and competitiveness of key productive sectors. The restrictions have hit the livestock sector hard by disrupting the animal feed supply chain, reducing animal farming services, limiting animal health services including delays in diagnosis and treatment of diseases, limiting access to markets and consumers, and reducing labor-force participation. The inhumane culling of animals jeopardized animal welfare. Egg smashing, milk dumping, and other animal product disruptions negatively impacted food production, consumption, and access to food originating from animals. In summary, COVID-19 triggered lockdowns and limitations on local and international trade have taken their toll on food production, animal production, and animal health and welfare. COVID-19 reverberations could exacerbate food insecurity, hunger, and global poverty. The effects could be massive on the most vulnerable populations and the poorest nations.

## **OTHER: GENERAL**

### **Ethnic/racial minorities' and migrants' access to COVID-19 vaccines: A systematic review of barriers and facilitators** <https://doi.org/10.1016/j.jmh.2022.100086>

Background There are widespread concerns that ethnic minorities and migrants may have inadequate access to COVID-19 vaccines. . Improving vaccine uptake among these vulnerable groups is important towards controlling the spread of COVID-19 and reducing unnecessary mortality. Here we perform a systematic review of ethnic minorities' and migrants' access to and acceptance of COVID-19 vaccines. Methods We searched PubMed and Web of Science databases for papers published between 1 January 2020 and 7 October 2021. Studies were included if they were peer-reviewed articles; written in English, included data or estimates of ethnic minorities' or migrants' access to vaccines; and employed either qualitative or quantitative methods. Of a total of 248 studies screened, 33 met these criteria and included in the final sample. Risk of bias in the included studies was assessed using Newcastle Ottawa Scale and Critical Appraisal Skills Program tools. We conducted a Synthesis Without Meta-analysis for quantitative studies and a Framework synthesis for qualitative studies. Results 31 of the included studies were conducted in high-income countries, including in the US (n = 17 studies), UK (n = 10), Qatar (n = 2), Israel (n = 1) and France (n = 1). One study was in an upper middle-income country -China (n=1) and another covered multiple countries (n = 1). 26 studies reported outcomes for ethnic minorities while 9 studies reported on migrants. Most of the studies were quantitative -cross sectional studies (n=24) and ecological (n=4). The remaining were qualitative (n=4) and mixed methods (n=1). There was consistent evidence of elevated levels of COVID-19 vaccine hesitancy among Black/Afro-Caribbean groups in the US and UK, while studies of Hispanic/Latino populations in the US and Asian populations in the UK provided mixed pictures, with levels higher, lower, or the same as their White counterparts. Asians in the US had the highest COVID-19 vaccine acceptance compared to other ethnic groups. There was higher vaccine acceptance among migrant groups in Qatar and China than in the general population. However,

migrants to the UK experienced barriers to vaccine access, mainly attributed to language and communication issues. Lack of confidence, mainly due to mistrust of government and health systems coupled with poor communication were the main barriers to uptake among Black ethnic minorities and migrants. Conclusions Our study found that low confidence in COVID-19 vaccines among Black ethnic minorities driven by mistrust and safety concerns led to high vaccine hesitancy in this group. Such vaccine hesitancy rates constitute a major barrier to COVID-19 vaccine uptake among this ethnic minority. For migrants, convenience factors such as language barriers, fear of deportation and reduced physical access reduced access to COVID-19 vaccines. Building trust, reducing physical barriers and improving communication and transparency about vaccine development through healthcare workers, religious and community leaders can improve access and facilitate uptake of COVID-19 vaccines among ethnic minority and migrant communities.

### **Communicating with Stakeholders via Twitter: From CSR to COVID-19** [https://doi.org/10.1007/978-3-030-91532-2\\_10](https://doi.org/10.1007/978-3-030-91532-2_10)

Communication efforts made in terms of Corporate Social Responsibility (CSR) are a task companies must carry out if they want stakeholders to recognize the work they are doing on the topic. This communication has become relevant, particularly during the last year, considering that stakeholders, especially customers, have increased their interest in sustainability, and communication impacts their perception. The most used communication tools for these topics are annual reports and web pages, but numerous companies tend to use social networks as an extra tool to communicate actions, considering the construction of dialog with stakeholders who can respond and interact. In an exploratory and descriptive way, through a sample of company tweets recognized as socially responsible from the last two years, this study shows that companies communicated more through Twitter during the pandemic and indicates the main words used for their communication during 2020. © 2022, The Author(s), under exclusive license to Springer Nature Switzerland AG.

### **Latinx Community College Students and the (In)Opportunities Brought by COVID-19 Pandemic** <https://doi.org/10.1080/15348431.2022.2039152>

The disruption to higher education institutions across the United States created by COVID-19 affected more than 20 million college students. States cancelled in-person classes and campus activities quickly shifted to remote and virtual learning. The pandemic, along with its economic impact, altered education for community college students, creating a traumatic event that exasperated mental health conditions. In addition, job loss increased food insecurities drastically during COVID-19 and students across the country turned to their colleges for wraparound services. In this proposal, the authors review the impact of COVID-19 on marginalized college students, specifically Latinx students in a South Texas college. The findings revealed that Latinx students navigated virtual learning differently and were impacted by their access to technology, as well as their access to mental health services and food pantries. [ FROM AUTHOR] Copyright of Journal of Latinos & Education is the property of Taylor & Francis Ltd and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use. This may be abridged. No warranty is given about the accuracy of the copy. Users should refer to the original published version of the material for the full .

### **Food for thought: Eating before saliva collection and interference with SARS-CoV-2 detection** <https://doi.org/10.1002/jmv.27660>

Saliva is a promising specimen for detection of viruses that cause upper respiratory infections including severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) due to its cost-effectiveness and non-invasive collection. However, together with intrinsic enzymes and oral microbiota, children's unique

dietary habits may introduce substances that interfere with diagnostic testing. To determine whether children's dietary choices impact SARS-CoV-2 molecular detection in saliva, we performed a diagnostic study that simulates testing of real-life specimens provided from healthy children (n=5) who self-collected saliva at home before and at 0, 20, and 60 minutes after eating 20 foods they selected. Each of seventy-two specimens was split into two volumes and spiked with SARS-CoV-2-negative or -positive clinical standards prior to side-by-side testing by reverse-transcription polymerase chain reaction matrix-assisted laser desorption ionization time-of-flight (RT-PCR/MALDI-TOF) assay. Detection of internal extraction control and SARS-CoV-2 nucleic acids was reduced in replicates of saliva collected at 0 minutes after eating 11 of 20 foods. Interference resolved at 20 and 60 minutes after eating all foods except hot dog in one participant. This represented a significant improvement in detection of nucleic acids compared to saliva collected at 0 minutes after eating ( $P=0.0005$ ). We demonstrate successful detection of viral nucleic acids in saliva self-collected by children before and after eating a variety of foods. Fasting is not required before saliva collection for SARS-CoV-2 testing by RT-PCR/MALDI-TOF, but waiting 20 minutes after eating is sufficient for accurate testing. These findings should be considered for SARS-CoV-2 testing and broader viral diagnostics in saliva specimens. This article is protected by copyright. All rights reserved.

### **A vicious cycle of health (IN)equity: Migrant inclusion in light of COVID-19**

<https://doi.org/10.1016/j.hlpt.2022.100606>

**Objectives :** Whilst mass vaccination is suggested as an important means to contain COVID-19 pandemic, vaccination policies across many countries have systematically excluded some groups of population, especially migrants. This study aims to document the impact of diversified vaccination strategies as a preventative and control measure for the health and safety of the wider population within a country.

**Methods :** We selected five countries that have experienced the changes in migrant inflows to the most extreme among OECD countries in 2020: The United States, Australia, Canada, Japan, and South Korea.

We conducted an extensive qualitative documentary analysis focused on policies and interventions implemented in these countries since January 2020 till the end of September 2021. We also analyzed publicly available epidemiological data (released by the governments and other international organizations).

**Results :** We find that achieving migrants' health and vaccination equity is not without challenges, and the failure to address those multiplicity of concerns may result in a vicious cycle for the vulnerable population at the fringes of our economy. Migrants continue to face extenuating

circumstances with higher risks to their health and safety, when they are excluded or disadvantaged in vaccination policies. The more inclusive and proactive the governments are in consideration of diversity of migrant populations, the better they can manage the pandemic, which leads to overall societal benefit of ensuring public health.

**Conclusions :** Equity-based policies can mitigate disparities in access to vaccination and healthcare, thereby reducing the spread of COVID-19 in the community.

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## **Food and COVID-19 Lit Review: Weeks ending 02/11/2022, 02/18/2022**

### **DNPAO**

- Causal systems mapping to promote healthy living for pandemic preparedness: a call to action for global public health. <https://dx.doi.org/10.1186/s12966-022-01255-7>



- The Impact of the COVID-19 Pandemic on Food Allergy Families <https://doi.org/10.1016/j.jaci.2021.12.481>
- Mealtime Best Practices and Infection Control in Early Care and Education Centers during COVID-19. <https://dx.doi.org/10.1111/cch.12979>
- Chronic Disease Burden - Nutrition and Lifestyle affecting Lives and Livelihoods in the Covid-19 Pandemic <https://doi.org/10.1016/j.shaw.2021.12.908>
- COVID-19 and obesity: the confrontation of two pandemics. [https://dx.doi.org/10.26355/eurrev\\_202201\\_27896](https://dx.doi.org/10.26355/eurrev_202201_27896)
- The Online Ordering Behaviors among Participants in the Oklahoma Women, Infants, and Children Program: A Cross-Sectional Analysis. <https://dx.doi.org/10.3390/ijerph19031805>
- Achieving equitable food security: How can food bank mobile pantries fill this humanitarian need <https://doi.org/10.1111/poms.13663>
- A Mixed-Methods Examination of the Impact of the Partnerships to Improve Community Health Produce Prescription Initiative in Northeastern North Carolina. <https://dx.doi.org/10.1097/PHH.0000000000001490>

#### **DFWED**

- Economic Impact of Temperature Control during Food Transportation-A COVID-19 Perspective. <https://dx.doi.org/10.3390/foods11030467>
- Assessing the Food Safety and Quality Assurance System during the COVID-19 Pandemic <https://doi.org/10.3390/su14031507>

#### **NIOSH**

- Occupations and Sickness-Related Absences during the COVID-19 Pandemic. <https://dx.doi.org/10.1177/00221465211053615>
- Psychological Well-Being and Mental Health in Migrant Job-Seekers with Disabilities <https://doi.org/10.1016/j.shaw.2021.12.1611>
- Low Wage, Public-Facing Workers and the Decision to Take Sick Leave During COVID-19 <https://doi.org/10.1016/j.shaw.2021.12.1609>
- The second Italian cross-sectional survey on Occupational Health and Safety: the secondary analysis to support the COVID-19 pandemic management <https://doi.org/10.1016/j.shaw.2021.12.1341>
- Occupational skin dermatoses as a result of Covid-19 prevention practices <https://doi.org/10.1016/j.shaw.2021.12.1286>
- Migrant Workers and Covid-19 <https://doi.org/10.1016/j.shaw.2021.12.892>
- Worker health and safety in a changing climate <https://doi.org/10.1016/j.shaw.2021.12.715>

#### **NCEH**

- Increased Use of Disinfectants During the COVID-19 Pandemic and Its Potential Impacts on Health and Safety <https://doi.org/10.1021/acs.chas.1c00026>
- Water and wastewater digital surveillance for monitoring and early detection of the COVID-19 hotspot: industry 4.0. <https://dx.doi.org/10.1007/s13762-022-03982-7>
- Infection risk of SARS-CoV-2 in a dining setting: Deposited droplets and aerosols. <https://dx.doi.org/10.1016/j.buildenv.2022.108888>

#### **NCFW**

- Co-designing the translation of research into practice to support mentally healthy workplaces in agricultural industries <https://doi.org/10.1016/j.shaw.2021.12.1557>
- Role of Extension Agents in Addressing Farm Stress in Colorado <https://doi.org/10.1016/j.shaw.2021.12.1550>

#### **OTHER: CROSS-CUTTING FOOD SYSTEMS**

- From resilience to satisfaction: Defining supply chain solutions for agri-food SMEs through quality approach. <https://dx.doi.org/10.1371/journal.pone.0263393>
- Will Participatory Guarantee Systems Happen Here? The Case for Innovative Food Systems Governance in the Developed World <https://doi.org/10.3390/su14031720>
- Consumer Perception and Understanding of European Union Quality Schemes: A Systematic Literature Review <https://doi.org/10.3390/su14031667>
- Demand for Social Interactions: Evidence from the Restaurant Industry during the COVID-19 Pandemic <https://doi.org/10.1111/jors.12585>
- COVID-19 and socio-materially bounded experimentation in food practices: insights from seven countries <https://doi.org/10.1080/15487733.2021.2013050>
- Opportunities for single-use plastic reduction in the food service sector during COVID-19. <https://dx.doi.org/10.1016/j.spc.2022.01.023>
- Heading for Tomorrow: Resilience Strategies for Post-COVID-19 Grocery Supply Chains <https://doi.org/10.3390/su14041942>

#### **OTHER: GENERAL**

- In Defense of Public Health. <https://dx.doi.org/10.2105/AJPH.2021.306644>
- Rising through the pandemic: a scoping review of quality improvement in public health during the COVID-19 pandemic. <https://dx.doi.org/10.1186/s12889-022-12631-0>
- Convenience Food Options and Adequacy of Nutrient Intake among School Children during the COVID-19 Pandemic <https://doi.org/10.3390/nu14030630>
- Publishing of COVID-19 preprints in peer-reviewed journals, preprinting trends, public discussion and quality issues DOI: [10.1007/s11192-021-04249-7](https://doi.org/10.1007/s11192-021-04249-7)
- Social determinants of health and health inequalities in context of COVID-19 pandemic <https://doi.org/10.1016/j.shaw.2021.12.1277>
- AACR Virtual Conference: 14th AACR Conference on the Science of Cancer Health Disparities in Racial/Ethnic Minorities and the Medically Underserved [abstracts here](#)
- National policy responses to maintain essential health services during the COVID-19 pandemic. doi: <https://dx.doi.org/10.2471/BLT.21.286852>

#### **DNPAO**

##### **Causal systems mapping to promote healthy living for pandemic preparedness: a call to action for global public health.** <https://dx.doi.org/10.1186/s12966-022-01255-7>

COVID-19 has severely impacted population health and well-being globally. Acknowledging that COVID-19 will not be the world's last pandemic, improving healthy living factors (i.e., physical activity, healthful nutrition, healthy weight), which are important in mitigating negative outcomes of future infectious disease pandemics, should be prioritized. Although well-documented, promoting healthy living factors remains challenged by a lack of scalability and sustainability due, in part, to a mismatch between

intervention focus on individual behavior change as opposed to recognizing complex and multifactorial causes that prevent people from living healthy lifestyles and maintaining them long-term (such as political will, economic benefits, urban planning, etc.). To recognize this complexity in promoting healthy living, we propose the application of systems science methods for the creation of a comprehensive causal systems map of healthy living factors in the context of COVID-19 to inform future pandemic preparedness. Generating such a map would benefit researchers, practitioners, and policy makers in multi-sector collaborative efforts to improve public health preparedness in the context of future pandemics in a scalable, sustainable, and equitable manner. This effort should be facilitated by a trusted and widely respected governing body with global reach.

### **The Impact of the COVID-19 Pandemic on Food Allergy Families**

<https://doi.org/10.1016/j.jaci.2021.12.481>

**RATIONALE:** Food allergy families face unique challenges associated with modified activities of daily living and access to appropriate foods. It is important to understand how food allergy families were impacted by the COVID-19 pandemic. **METHODS:** Food allergy caregivers completed an online survey regarding the impact of COVID-19 from 9/25/2020-1/15/2021. This survey was adapted from validated surveys The Chicago Food Allergy Research Surveys for Parents of Children with Food Allergy and The Johns Hopkins University Community Response Survey. The Wilcoxon rank-sum test, Kruskal-Wallis test, Fisher exact test, pairwise Fisher exact test, and pairwise Wilcoxon rank-sum test were used for analysis. **RESULTS:** Food allergy caregivers (n=5312, 96% female, 75% non-Hispanic white) reported the COVID-19 pandemic had an impact on their families. This impact manifested as problems with access to all food (45%) and allergen-free food (48%), increased stress (98%), increased discord within the home (72%), decreased household income (40%), increased reliance on processed foods (57%), changes in access to medical care (66%), and limited access to friends and family (94%). More caregivers with income < \$200,000 had financial stress (p<0.001) and lack of access to food (p=0.02) than caregivers with income > \$200,000. **CONCLUSIONS:** Food allergy families have experienced significant changes in their daily lives due to the COVID-19 pandemic. Changes in access to food, household income, and access to medical care were observed in addition to increases in stress and discord with a reduction in traditional support networks.

### **Mealtime Best Practices and Infection Control in Early Care and Education Centers during COVID-19.**

<https://dx.doi.org/10.1111/cch.12979>

**BACKGROUND:** Most young children in the United States (U.S.) attend early care and education (ECE) programs, where they consume the majority of daily calories. Best practices to support children's healthy eating include teachers sitting together with children, eating the same food, and appropriately supporting children in serving and feeding themselves. To understand how the COVID-19 pandemic changed mealtime practices in ECE, this study (1) describes what adaptations ECE directors and teachers made to mealtimes to include best practices, and (2) identifies common adaptations made to comply with COVID-19 infection control guidelines. **METHODS:** This cross-sectional, mixed-methods study utilized survey and interview questions based on the Trust Model and Social Cognitive Theory. More than 7000 surveys were distributed to ECE directors and teachers in Florida. Surveys were completed by 759 directors and 431 teachers. Also, 29 follow-up interviews with teachers were completed. Participants were asked to describe their mealtimes before and during COVID-19. Descriptive statistics and frequencies were used to analyze survey data and thematic analysis was applied to interview data. **RESULTS:** Less than 5% of survey respondents reported children serving themselves, a pre-COVID best

practice. Interviews identified three common adaptations: (1) modification-best practices were incorporated into new routines, such as eating together but sitting farther away (2) elimination-routines changed so that best practices were no longer possible, such as teachers wearing masks and standing during meals, and (3) minimal change-minimal changes due to COVID-19 occurred and consequently mealtime practices did not change. CONCLUSIONS: Current recommendations do not allow children to self-serve, which previously was a key best practice. ECE centers that have successfully integrated COVID-19 modifications and maintained mealtime best practices-perhaps in a new form-can serve as examples for others. These findings are generalizable to ECE centers in Florida and could be compared with other states.

### **Chronic Disease Burden - Nutrition and Lifestyle affecting Lives and Livelihoods in the Covid-19 Pandemic** <https://doi.org/10.1016/j.shaw.2021.12.908>

Introduction: The covid-19 pandemic had widened the health gap, further exposing the challenges that workers face. These individuals are often marginalised by job role, geographical location changes due to migration or societal stigma in terms of ethnic origin, gender and disability. This paper further explores the challenges that vulnerable workers face in terms of nutrition and lifestyle factors (as defined by the United Nations Sustainable Development Goals) that play an important role in dis-ease. Materials and Methods: A case series of workers globally affected by the above factors were researched and nutritionally relevant health factors analysed. This series covers all continents and was able to cover the burden of poor nutritional status as a contributing factor to covid 19 related mortality and morbidity. In particular, the effects nutrition being of relevance in the management of Long Covid was also flagged. Results: Poor nutritional status, in particular micronutrient deficiency and the double edged effects of both under and over nutrition have had direct and indirect effects on the susceptibility and recovery from covid-19. The findings further support that prevention and disease management is noted to be a key variable in the vulnerable worker population. Conclusions: The implementation of key nutritional parameters as part of the health and economic ecosystem is a significant factor in the saving of Lives and Livelihoods

### **COVID-19 and obesity: the confrontation of two pandemics.**

[https://dx.doi.org/10.26355/eurrev\\_202201\\_27896](https://dx.doi.org/10.26355/eurrev_202201_27896)

In 2009, obesity was identified for the first time as a risk factor for increased disease severity and mortality in patients infected with the H1N1 influenza A virus. During the current COVID-19 pandemic, overweight and obesity have been described as independent risk factors of disease severity and mortality due to COVID-19. Excess visceral fat is associated with systemic chronic microinflammation, changes in adipokine release, and oxidative stress. These disturbances result in an impaired immune response, including dysfunction in lymphocyte action and antibody production. Moreover, obesity is a cause of endothelial dysfunction, pro-coagulation state, and enhanced expression of angiotensin-converting enzyme 2 (ACE-2), which contributes to the infection itself and the severity of the disease. We analyzed both the impact of obesity on the severity of COVID-19 and the potential mechanism that influences this severity. Moreover, we discuss the effect of obesity complications on the severity of disease and mortality of patients with COVID-19. Furthermore, we summarize the effectiveness of COVID-19 vaccination in patients with obesity. Finally, we analyzed the effect of the COVID-19 pandemic on mood disturbances and emotional eating and, as a consequence, the development of obesity or an increase in its severity. In summary, the studies conducted during the COVID-19 pandemic indicate that effective obesity treatment should be initiated at once. In addition, the data confirm the need to organize efficient obesity treatment systems for the sake of not only the individual but also society.

**The Online Ordering Behaviors among Participants in the Oklahoma Women, Infants, and Children Program: A Cross-Sectional Analysis.** <https://dx.doi.org/10.3390/ijerph19031805>

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is a nutrition assistance program in the United States (U.S.). Participants in the program redeem their prescribed food benefits in WIC-authorized grocery stores. Online ordering is an innovative method being pilot-tested in some stores to facilitate WIC participants' food benefit redemption, which has become especially important in the COVID-19 pandemic. The present research aimed to examine the online ordering (OO) behaviors among 726 WIC households who adopted WIC OO in a grocery chain, XYZ (anonymous) store, in Oklahoma (OK). These households represented approximately 5% of WIC households who redeemed WIC benefits in XYZ stores during the study period, which was 1 July to 31 December 2020. This period was during the COVID-19 pandemic but after the temporary lockdown in Oklahoma had been lifted. Descriptive statistics were estimated for WIC OO households' adoption behaviors and their orders. The Cox proportional hazard model and zero-truncated negative binomial regression were applied to examine the relationship between participants' socio-demographics and the length of time between 1 July 2020, and their first OO, as well as the number of WIC online orders. About 80% of these online orders were picked up without any changes. Minority households had a significantly longer time before adopting their first OO (hazard ratio (HR) < 1,  $p < 0.001$ ), while households with a child or a woman participant, or more participants, had a shorter time before adopting OO (HR > 1,  $p < 0.05$ ). Non-Hispanic black households had a fewer number of OOs than non-Hispanic white households ( $B = -0.374$ ,  $p = 0.007$ ). OO adoption varied across socio-demographics. More efforts are needed to ensure equal access and adoption of WIC OO.

**Achieving equitable food security: How can food bank mobile pantries fill this humanitarian need** <https://doi.org/10.1111/poms.13663>

Hunger occurs in all locations around the globe, from developing to developed countries. In fact, there were over 37 million food insecure individuals (those without access to consistent nutritious food) in the United States in 2018, and this number increased in recent years due to the COVID pandemic. In many countries, food banks are used to consolidate food donations from individuals or government agencies and then provide that food to local partner agencies (such as food pantries and soup kitchens), who distribute it to food insecure individuals. As nonprofit humanitarian organizations, food banks strive to achieve geographic equity in their food distribution, so one area (or county) is not favored over others. However, food banks also want to maximize food distribution with their limited budgets. This equitable distribution versus cost balancing act is made even more challenging since food banks experience extreme variability in both the supply (donations) of food and partner agencies' capacity to deliver food to the food insecure. Our paper focuses on how mobile pantry programs, additional food bank storage capacity, and improved partner agency capacity can be utilized to address this supply and distribution capacity variability while considering food expiration times. Mobile pantry programs allow food banks to distribute food directly to the food insecure by sending their own trucks and employees to locations where food is most needed. Although all three of these approaches can be helpful, our results show that mobile pantries are a more effective approach to achieve high equity levels. This is especially true in the case of produce with relatively short expiration times. We also find that utilizing mobile pantry programs can increase equitable partner agency distribution considerably, because even small amounts of mobile pantry distribution in under-served areas allow for more equitable partner agency distribution in areas with available partner agency distribution capacity. Our research is based on data from our partner food bank, but our modeling and extensive sensitivity analysis should be applicable to many food banks with a similar collection and distribution structure.

## **A Mixed-Methods Examination of the Impact of the Partnerships to Improve Community Health Produce Prescription Initiative in Northeastern North Carolina.**

<https://dx.doi.org/10.1097/PHH.0000000000001490>

**OBJECTIVE:** To conduct a mixed-methods examination of the impact of the Partnerships to Improve Community Health produce prescription initiative in northeastern North Carolina. **DESIGN:** Quantitative surveys were conducted among participants before and after the distribution of produce prescription vouchers. Univariate statistics were used to describe the participant population, and paired t tests were used to examine change in fruit and vegetable intake. Qualitative, in-depth telephone interviews were conducted among participants, health educators, and food retailers and coded for themes. **SETTING:** Eight health promotion programs, 2 food pantries, and 11 food retailers. **PARTICIPANTS:** In each health promotion program or food pantry, between 6 and 97 participants were enrolled. **INTERVENTION:** Produce prescription vouchers were distributed to participants and redeemed at local food retailers. **MAIN OUTCOME MEASURE S:** An increase in local fruit and vegetable purchasing and consumption. **RESULTS:** Of the produce prescription participants who completed the baseline survey (n = 93), 86% were female, 64% were African American, and 68% were food insecure. The voucher redemption rate was 18%. The majority of participants indicated that they visit farmers' markets more now than before the produce prescription initiative, that shopping at the farmers' market made it easy to include more fresh produce in their family's diet, and that they tried a new farmers' market because of the produce prescription initiative. All health educators and food retailers who participated felt that the initiative benefited their program or operation and were willing to partner with the program again. **CONCLUSIONS:** While redemption rates were lower than anticipated, the produce prescription initiative had positive impacts on participants' local fruit and vegetable purchasing and consumption. Because of COVID-19, the initiative was not implemented until late in the North Carolina produce season. Moving forward, the program will start earlier and work with local food retailers to connect with their communities to increase redemption rates.

## **DFWED**

### **Economic Impact of Temperature Control during Food Transportation-A COVID-19 Perspective.**

<https://dx.doi.org/10.3390/foods11030467>

Temperature fluctuation and abuse in the food cold chain (FCC) is becoming an increasingly crucial factor in the process of food production and for the logistic business, especially in COVID-19 pandemic. The quality of perishable food products depends largely on accurate transport and maintenance temperature. The evidence for temperature-related food waste and loss is extensive. The research problem is thus: how to decrease and control food losses caused by temperature abuse in the FCC and restrictions due to the COVID-19 pandemic. The primary objective is to propose a framework for real-time temperature measurement protocols supported by passive RFID, IoT and Statistical Process Control (SPC) charts. This method allows not only the signaling of temperature abuse alerts but, in addition to hitherto methods, investigation and mitigation of the causes of process instability of individual FCC links in the future. The secondary objective is to delineate the necessary data sources and ways of their collection and utilization in order to decrease food losses and waste via process stabilization of temperature in transport and storage. As contribution to current literature and practice, we offer an in-depth analysis of threats in the FCC in food transport and storage infrastructure and a solution supplemented by SPC charts and tested in controlled experiments that is practicable from economic and technical standpoints.

### **Assessing the Food Safety and Quality Assurance System during the COVID-19 Pandemic**

<https://doi.org/10.3390/su14031507>

This study aims to develop and test a methodological approach to assess the system of food quality and safety in the COVID-19 pandemic. To achieve the study objectives, a multi-country research project was implemented with 425 enterprises from Russia, Azerbaijan, Ukraine, and Belarus. The application of the developed methodological approach resulted in comparable assessments of the various criteria of the food safety and quality assurance system in supply chains. This makes it possible to implement continuous monitoring of the state of the food safety and quality assurance system in the enterprises. In addition, the study identified critical weaknesses in the safety system, including a very low level of assessment by enterprises of the impact of WHO advisory protocols. This greatly increases the risks associated with food safety in the COVID-19 pandemic. Urgent action is required to increase the confidence of food supply chain actors in WHO recommendations and national food safety and quality protocols. The conducted assessments showed that a significant proportion of enterprises did not implement a food safety system. One out of five of the respondents claimed to have implemented safety systems at an enterprise in accordance with the standards recognized by the Global Food Safety Initiative. Only 2% declared the introduction of HACCP at an enterprise, which is logical given the high mistrust of WHO recommendations. The proposed approach can be used in the real sector of the economy to monitor the food safety and quality assurance system in the supply chain at the regional, sectoral and national levels. © 2022 by the author. Licensee MDPI, Basel, Switzerland.

## **NIOSH**

### **Occupations and Sickness-Related Absences during the COVID-19 Pandemic.**

<https://dx.doi.org/10.1177/00221465211053615>

Pandemic frontline occupations consist of disproportionately low socioeconomic status and racial minority workers. Documenting occupational health disparities is therefore crucial for understanding COVID-19-related health inequalities in the United States. This study uses Current Population Survey microdata to estimate occupational differences in sickness-related absences (SAs) from work in March through June 2020 and their contribution to educational, racial-ethnic, and nativity health disparities. We find that there has been an unprecedented rise in SAs concentrated in transportation, food-related, and personal care and service occupations. SA rates were 6 times higher in these occupations than in non-health-care professions. The greatest increases were in occupations that are unsuitable for remote work, require workers to work close to others, pay low wages, and rarely provide health insurance. Workers in these occupations are disproportionately Black, Hispanic, indigenous, and immigrants. Occupation contributes 41% of the total of Black/white differences and 54% of educational differences in SAs.

### **Psychological Well-Being and Mental Health in Migrant Job-Seekers with Disabilities**

<https://doi.org/10.1016/j.shaw.2021.12.1611>

Introduction: Migrant workers seeking employment in a host country often face a variety of stressors that affect their mental health. Studies have shown that depression, insomnia and fear are more likely reported in migrant workers during Sars-Cov-19 pandemic and lockdown process. Therefore, this study aims to evaluate the effectiveness of a 10-week job-coaching programme for migrant job-seekers with disabilities related to their psychological well-being or mental health. Materials and Methods: A single-group pre-test and-post-test research design type was used. The preliminary baseline results included 21 migrant job seekers with disabilities. The following reliable, validated and internationally accepted scales were used: Short Form Survey Instrument, WHO Well-Being Index (WHO-5), and Patient Health Questionnaire for Depression and Anxiety (PHQ-9). Results: The mean age of the participants was  $49 \pm 9$ . The participants were unemployed for an average of  $2.5 \pm 0.8$  years and lived in Belgium for a total of

17.9 ± 6.5 years. The majority of the participants experienced language barrier problems (85.7%); 57.1% of the participants had worked as cleaners in the past. A statistically significant negative and high correlation was found between WHO-5 quality of life scores and PHQ-9 depression scores ( $p < 0.01$ ;  $r = 0.715$ ). Conclusion: In the baseline measurements, migrant job seekers had moderate depression levels and negative quality of life and well-being. We now will investigate whether psychological health problems of migrant job seekers will increase during the Sars-Cov-19 pandemic period.

### **Low Wage, Public-Facing Workers and the Decision to Take Sick Leave During COVID-19**

<https://doi.org/10.1016/j.shaw.2021.12.1609>

Introduction: During the COVID-19 pandemic, low-wage workers faced high exposure risk as they continued to work in essential public-facing jobs such as grocery store clerks and gas station attendants. In a context where these types of jobs were usually precarious and had no paid sick leave, we explored how low-wage workers navigated decision-making around when to take sick leave. Material: From September 2021 to April 2022, in-depth, semi-structured interviews were conducted in Ontario and Quebec (Canada) with 72 low-wage and public-facing workers, managers of these kinds of workers, and key informants with insight into legal and policy issues related to low-wage workers. Methods: Interviews were transcribed verbatim and coded in NVivo. Analysis followed constant comparative methods as well as situational analysis. Results: Public-facing, low-wage workers and managers described psychosocial pressures of COVID-19-related customer aggression. In a context of economic insecurity, participants described a focus on “pleasing the customer”, “not rocking the boat” and a reluctance to take sick leave when experiencing COVID-19 symptoms for fear of loss of income and loss of future work shifts. Conclusions: Workers who worked while ill weighed risks of COVID-19 against risks of loss of income (need for food, paying the rent) and decided that working while ill was least problematic. This is a problem for society as poor worker protections put the public at risk.

### **The second Italian cross-sectional survey on Occupational Health and Safety: the secondary analysis to support the COVID-19 pandemic management**

<https://doi.org/10.1016/j.shaw.2021.12.1341>

Introduction: The COVID-19 pandemic has spread worldwide, with considerable impacts on both health and safety of workers. COVID-19 emergency highlighted the importance of risk perception surveys and the availability of data on OSH issues. Since 2014, INAIL (Italian Workers' Compensation Authority) conducted two editions of the periodic survey on Occupational Safety and Health (OSH), involving the main OSH actors. Materials and Methods: The 2nd wave of the survey, conducted in 2019 and addressed to representative workers and employers' samples, provided an important contribution to support the decision-making process of the Italian Government for action-oriented policy in order to determine priority and interventions on the COVID-19 emergency. A secondary analysis of data collected through the survey was useful for the drafting of the technical documents developed to support the release phase of the containment measures after the first lockdown (March-April 2020) for progressive reopening of work activities that had been suspended by regulatory restrictions. Results: Data referred to workers perception on biological risk, commuting, eating habits during working time and health surveillance by occupational physicians were considered. These data were analyzed according to economic sector and geographical areas based on the level of COVID-19 contagion. Conclusions: The epidemiological trend highlighted the importance of work as a substantial factor to consider both when implementing strategies aimed at containing the pandemic and shaping the lockdown mitigation strategy required for sustained economic recovery.

### **Occupational skin dermatoses as a result of Covid-19 prevention practices**

<https://doi.org/10.1016/j.shaw.2021.12.1286>



Introduction: Occupational skin diseases (OSD) account for a significant proportion of occupational disease. High risk occupations for OSD include workers in the healthcare, food service, metal-working, hairdressing and construction industries. The prevention of the COVID-19 virus has increased the use of personal protective equipment (PPE), handwashing and cleaning practices globally. Methods: We will cover the first hand experiences gained during the pandemic, by reviewing the presentations of OSD at a dermatology clinic as result of COVID-19 practices. Results: During the pandemic, the use of PPE created occlusive and humid environments particularly exacerbating underlying skin conditions. This phenomenon was not exclusive to high risk OSD occupations. Atopic individuals at risk of OSD had an increased susceptibility to irritant contact dermatitis (ICD) as a consequence of using hand sanitizers and additional hand washing. Furthermore more exacting cleaning practices provided exposures to additional irritants and allergens, such as laundry rinses containing benzalkonium chloride (BAK) and fragrances in personal care products. Patch testing proved useful in diagnosing and treating patients, which allowed workers to return to work. Conclusions: Personal protective practices adopted during the pandemic adversely affected workers, especially those with underlying skin conditions. This included the use of PPE, increased hand washing and sanitizing practices as well as increased cleaning practices. Treatment of underlying skin disorders as well as education on skin protection has been pertinent during this time.

**Migrant Workers and Covid-19** <https://doi.org/10.1016/j.shaw.2021.12.892>

Migrant workers, including internal migrants who move from rural to urban areas searching for employment, face multiple barriers in accessing health and other services, in particular occupational health. The Covid-19 pandemic highlighted the need for coordinated responses by countries and regions that include pandemic preparedness, public health interventions, lockdowns, economic support (food relief, etc) and vaccinations. Disease transmission controls and restrictions due to stringent border management, vaccination certificates and testing have hit migrant workers hard. The health, economic needs and mobility of migrants due to the pandemic may be overlooked in the overall Covid-19 response. The social and working conditions of migrants make them vulnerable to Covid-19. The decline in remittances and lack of employment has negative consequences for their families and communities. Interventions, with Covid-19 messaging appropriately to migrant worker needs, access to health services including vaccinations, and accommodation and food security assistance are important. Mental health needs are crucial due to their precarious work, living conditions and lack of family support. Trade unions and large employers may support workers through workplace Covid-19 interventions. Migrant workers in SMEs and domestic workers are at risk of unemployment due to their employers becoming unemployed or transmission risk fears. Multilateral instruments to protect migrant worker rights should be incorporated into country responses to Covid-19 and future epidemics and disasters to save lives and livelihoods including those of migrant workers.

**Worker health and safety in a changing climate** <https://doi.org/10.1016/j.shaw.2021.12.715>

Scientific reports on the advance of climate change signal 'code red for humanity' according to the Secretary-General of the United Nations. The threats to the health and well-being of workers mirror those faced by the population at large, but with important differences. In some sectors, such as maintenance of utilities and emergency services, exposures to climate hazards are not discretionary. Those paid by piece work may be forced, under extreme conditions, to risk personal well-being in order to protect incomes. Given their long-term connections with land and place, farmers are especially susceptible to mental health issues caused by environmental degradation. Workers will also be affected in particular ways by steps taken to prevent climate change: closure of industries that rely on fossil fuels will expose millions of workers to transitions and disruptions that may have significant effects on health, if poorly managed. The future is challenging. It is projected the intensity and frequency of heat waves

and floods and storms will increase. The structure of human mortality is changing as heat-related causes of mortality and morbidity prevail over conditions that are cold-related. Compounding exposures, such as the conjunction of climate instability and the COVID-19 pandemic, will multiply. In these circumstances it will be necessary to radically strengthen measures to protect health and safety at work.

## NCEH

### **Increased Use of Disinfectants During the COVID-19 Pandemic and Its Potential Impacts on Health and Safety** <https://doi.org/10.1021/acs.chas.1c00026>

The COVID-19 pandemic has called for the increased use of disinfectants worldwide in public facilities, transportation, hospitals, nursing homes, wastewater treatment facilities, and even common households to mitigate virus burden. Active ingredients in common disinfectants recommended for use against COVID-19 viruses include chemicals such as quaternary ammonium compounds (QACs), hydrogen peroxide, bleach (sodium hypochlorite), and alcohols. These disinfecting chemicals differ in their structures, properties, modes of action, environmental behaviors, and effects on human health upon exposure. Humans can be exposed to disinfecting chemicals mainly through dermal absorption, inhalation, and ingestion. The total exposure and relative contribution of each exposure route vary considerably among the disinfectants. QACs have been linked to occupational illnesses such as asthma and an increased risk of chronic obstructive pulmonary disease (COPD), whereas excess use of bleach, hydrogen peroxide, or alcohol-based disinfectants can cause respiratory damage and has been linked to an increased risk of developing and controlling asthma. Recent studies showed that the presence of QACs in human blood has been associated with changes in health biomarkers such as an increase in inflammatory cytokines, decreased mitochondrial function, and disruption of cholesterol homeostasis in a dose-dependent manner. Therefore, repeated human exposure to disinfectants during the pandemic has raised questions on exposure-related long-term health risks and occupational safety. Furthermore, in lieu of a lack of adequate knowledge and public awareness, these chemicals have been frequently used on porous surfaces, including fabrics/textiles and consumer plastics and even for disinfecting cloth facemasks, on which disinfectant chemical residues may persist for longer duration, causing potential degradation of plastic materials, releasing additives, and shedding microplastics. In addition, the increased use of these disinfectant chemicals and the subsequent discharge into wastewater may cause adverse impacts on aquatic ecosystems, accumulation on vegetables, and contamination of the food chain via wastewater irrigation and sludge application. This article provides a well-rounded understanding of the most common disinfectants and reviews modes of action of those disinfectants, their interactions with aquatic and terrestrial environments, the exposure to humans, and potential impacts to human health and safety.

### **Water and wastewater digital surveillance for monitoring and early detection of the COVID-19 hotspot: industry 4.0.** <https://dx.doi.org/10.1007/s13762-022-03982-7>

There are a high number of COVID-19 cases per capita in the world that goes undetected including clinical diseases compatible with COVID-19. While the presence of the COVID-19 in untreated drinking water is possible, it is yet to be detected in the drinking-water supplies. COVID-19 viral fragments have been found in excrete, this call for wastewater monitoring and analysis (wastewater surveillance) of the potential health risk. This raises concern about the potential of the SARS-CoV-2 transmission via the water systems. The economic limits on the medical screening for the SARS-CoV-2 or COVID-19 worldwide are turning to wastewater-based epidemiology as great potential tools for assessing and management of the COVID-19 pandemic. Surveillance and tracking of the pathogens in the wastewater are key to the early warning system and public health strategy monitoring of the COVID-19. Currently, RT-qPCR assays is been developed for SARS-CoV-2 RNA specimen clinical testing and detection in the water system. Convectional wastewater treatment methods and disinfection are expected to eradicate

the SAR-CoV-2. Chlorine, UV radiation, ozone, chloramine is been used to inactivate and disinfect the water treatment system against the SARS-CoV-2. Water management and design of the water infrastructure require major changes to accommodate climate change, water cycle, reimaging of digitalization, infrastructure and privacy protection. The water digital revolution, biosensors and nanoscale, contact tracing, knowledge management can accelerate with disruption of the COVID-19 outbreak (water-health-digital nexus).

### **Infection risk of SARS-CoV-2 in a dining setting: Deposited droplets and aerosols.**

<https://dx.doi.org/10.1016/j.buildenv.2022.108888>

Considering that safe-distancing and mask-wearing measures are not strictly enforced in dining settings in the context of SARS-CoV-2, the infection risks of patrons in a dining outlet (e.g., a cafe) is assessed in this study. The size-resolved aerosol emission rate (AER) and droplets deposition rate (DDR) on dining plates from speaking were obtained through chamber measurements and droplet deposition visualization via fluorescent imaging technique (FIT), respectively. The AER from speaking was 24698 #/min in the size range of 0.3-5.5  $\mu\text{m}$ , while the DDR was 365 #/min in the size range of 43-2847  $\mu\text{m}$ . Furthermore, an infection risk model was adopted and revised to evaluate the infection risk of 120 diners for a "3-h event" in the cafe. In a four-person dining setting around a rectangular table, a diner seated diagonally across an infected person posed the least infection risk due to the deposited droplets on dining plates. The deposited droplets on a dining plate were dominant in possible viral transmission as compared to the long-range airborne route when a diner shared a table with the infected person. Yet, long-range airborne transmission had the potential to infect other diners in the cafe, even resulting in super-spreading events. A fresh air supply of 12.1-17.0 L/s per person is recommended for the cafe to serve 4-20 diners concurrently to minimize infection risks due to aerosols. Current ventilation standards (e.g., 8-10 L/s per person) for a cafe are not enough to avoid the airborne transmission of SARS-CoV-2.

## **NCFW**

### **Co-designing the translation of research into practice to support mentally healthy workplaces in agricultural industries**

<https://doi.org/10.1016/j.shaw.2021.12.1557>

Introduction: Australian agriculture is vulnerable to an ageing and decreasing workforce, increasing technological demands, global markets, climate change and uncertainty. This poses challenges for work demand/control, workplace support, change management, role clarity/conflict, workplace relationships and environmental conditions—ultimately increasing psychological distress and suicide risk. The Primary Producer Knowledge Network (PPKN) aims to develop practical strategies to prevent work-related mental health risks in agriculture. Method: PPKN engaged in a detailed co-design process with farmers and industry stakeholders—including stakeholder interviews, online development and feedback workshops, and pilot testing, and delivered online due to COVID19 restrictions. Co-design was informed by mental health research, evidence-based co-design strategies for working with vulnerable consumers, and identified work-related risks to health, wellbeing and safety. Results: 9 recommendations were derived via co-design—guiding development of an interactive web platform, roadshow, and complementary resources to meet varying digital access/expertise. Ongoing solution-focused topic development—an iterative process with experts and primary producers—reflects varied needs of industry groups and age cohorts, and drives change in the design/management of work systems. Conclusions: PPKN addresses work-related risk factors via an approach that is relevant, meaningful and empowering for the agriculture workforce. Co-design outcomes, challenges and recommendations are applicable across occupational groups where mental health and safety are of con

### **Role of Extension Agents in Addressing Farm Stress in Colorado**

<https://doi.org/10.1016/j.shaw.2021.12.1550>

Introduction: Farmers and ranchers are known to experience high levels of stress related to weather, labor costs and shortages, financial concerns, international trade issues, and government regulations. These stressors can lead to higher risk of suicide and have been exacerbated by the COVID-19 pandemic which has influenced supply chains. Extension Agents have been viewed as trusted members of the community and as essential in supporting farmers and ranchers and connecting them with resources. The purpose of this study was to interview Extension Agents in rural counties in Colorado focusing on their perceptions about farm stress and suicide risk, the perspectives and needs of Extension agents to address these concerns, and the communities' readiness to engage in prevention efforts. Materials and Methods: Qualitative interviews were conducted among 5 Extension Agents in 5 counties in rural Colorado. Interviews were conducted using Zoom between March, 2020-September, 2020. Analysis was done using content analysis on the interview response data followed by a general inductive approach to identify themes. Results: Extension Agents believe prevention efforts are headed in the right direction, but stigma around seeking treatment prevents community members, and especially farmers and ranchers, from engaging with mental health resources. Conclusion: Implications for Extension Agents and rural community prevention efforts include increasing mental health literacy within the community to reduce stigma and tailoring resources that address rural communities' unreliable cell service.

#### **OTHER: CROSS-CUTTING FOOD SYSTEMS**

**From resilience to satisfaction: Defining supply chain solutions for agri-food SMEs through quality approach.** <https://dx.doi.org/10.1371/journal.pone.0263393>

Since it is an important human need and many organizations are involved in the value chain, the agricultural food supply chain is exposed to various risks that arise naturally or through human actions. This study aims to develop the application of a quality function deployment approach to increase the resilience of the food supply chain by understanding customer needs and logistical risks in the food supply chain. In-depth studies with empirical analysis were conducted to determine the importance of customer needs, food supply chain risks, and actions to improve supply chain resilience of SMEs in the agri-food industry. The result shows that the top three customer needs are "attractive, bright color", "firm texture" and "fresh smell". The top three risks in the agri-food supply chain are "improper storage," "Harvest Failure" and "Human Resource Risks" and the top three resilience actions are "continuous training," "preventive maintenance," and "supply chain forecasting." The implications of this study are to propose an idea that broadens the perspective of supply chain resilience in the agri-food industry by incorporating the needs of customers in considering how to mitigate the existing risks to the satisfaction of customers, and it also highlights the relatively low skill and coordination of the workforce in agri-food supply chains.

**Will Participatory Guarantee Systems Happen Here? The Case for Innovative Food Systems Governance in the Developed World** <https://doi.org/10.3390/su14031720>

Participatory guarantee systems (PGS) are locally-rooted agroecological governance mechanisms primarily designed to meet the needs of local producers for product certification and cooperative sales. They have experienced periodic waves of interest in different places throughout the globe. There is a small but rich and growing scholarship devoted to understanding how they are managed, how they are sustained, and what factors predict their success. Interestingly, there is little evidence that they have developed in the United States, which has instead, witnessed the growth of community supported agriculture (CSA), farmer's markets, food hubs and food policy councils (FPC), although many of these mechanisms have failed to sustain interest and support. Here, we explore the factors that drive the creation of systems in the global South, Europe and other regions, and identify the factors that shape a different trajectory for local agriculture in the United States. We discuss the possibilities for more radical food system transformation in the United States, considering a changing climate, an

industrial food system that has prioritized profit over health, and the COVID-19 pandemic. Finally, we conclude by identifying some future pathways for policy reform and research opportunities.

**Consumer Perception and Understanding of European Union Quality Schemes: A Systematic Literature Review** <https://doi.org/10.3390/su14031667>

Food, agriculture, and labeling, affecting the environment are well connected concepts, the balance between them being determined not only by pedological and climatic factors or the development level of agricultural techniques, but also by national governments and international organizations; food processing, trade policies and regulations. In this context, the European Union (EU) encourages the use of different food quality schemes: ;Protected Designation of Origin;(PDO), ;Protected Geographical Indication;(PGI), and;Traditional Specialty Guaranteed(TSG) to protect producers of special-quality foods and assist consumers in their purchasing decisions. This review examines existing studies on the impact of these labels on customers behavior. A total of 32 studies were found and systematized. The papers were selected if they featured unique empirical research on consumer perceptions of any of PDO, PGI and TSG labels. Using the search strategy, a literature analysis was performed based on papers extracted from Web of Science, Springer Link, Emerald Insights, and Science Direct. Although these papers highlight quite diversified findings, the internationally used labels play an increasing role in contemporary society and pandemic conditions caused by COVID-19, thus making the quality schemes relevant in consumer decision-making processes.

**Demand for Social Interactions: Evidence from the Restaurant Industry during the COVID-19 Pandemic** <https://doi.org/10.1111/jors.12585>

We study the heterogeneous impacts of COVID-19 on restaurants in the post-lockdown United States, from lens of social interactions. We use the data structure of chain restaurants to disentangle restaurant attributes such as food and service types (which vary across chains) and local market conditions such as infection risks (which vary with each establishment's geographical location). We find that visits to chains with higher social indices experienced larger drops as local new cases increased in 2020, but also faster recovery later when vaccination programs expanded. Moreover, demand for restaurants in city centers recovered faster than demand for those in suburbs. This article is protected by copyright. All rights reserved.

**COVID-19 and socio-materially bounded experimentation in food practices: insights from seven countries** <https://doi.org/10.1080/15487733.2021.2013050>

COVID-19 has caused unprecedented disruption to previously settled everyday routines, prompting a period of forced experimentation as people have adjusted to rapid changes in their private and working lives. For discussions regarding consumption, this period of experimentation has been interesting, as the apparent instability has disturbed the ongoing trajectory of consumption practices, and with it has created possibilities for a transition toward sustainability. In this article, we examine food practices (e.g., food shopping, preparation, and eating) in seven countries (France, Germany, Italy, Netherlands, Norway, UK, and Vietnam) to assess what we can learn to accelerate transitions toward sustainable consumption. Grounded in a practice theoretical approach, our empirical analysis shows how disruption of everyday routines has generated socio-materially bounded experimentation. We demonstrate commonalities across contexts in how lockdown measures have restricted the performance of previously taken-for-granted practices. We also show diversity in experimentation as food consumption is entangled in other everyday practices. Our study, on one hand, portrays how the adaptation of food practices allows disruption to be managed, demonstrating creativity in working within and around restrictions to continue to provide services for everyday life. On the other hand, we reveal that the capacity of experimentation is not evenly distributed among people and this variation helps in

identifying the wider socio-material conditions that constrain and enable opportunities for readjustment. Understanding disparities that affect experimentation (e.g., integration of food practices with work and caring practices) is informative when thinking about how to stimulate sustainability transformations in food practices and provides critical reflections on strategies to enable sustainable consumption.

### **Opportunities for single-use plastic reduction in the food service sector during COVID-19.**

<https://dx.doi.org/10.1016/j.spc.2022.01.023>

The COVID-19 pandemic caused a surge in consumption of single-use plastics (SUPs), particularly in the food service sector, due to concerns for public health and safety. To follow public health guidelines, food services have been limited to takeout service and have restricted use of personal reusable items. This study investigated opportunities to reduce increased use of SUPs in Nova Scotia food services sparked by the COVID-19 pandemic using semi-structured interviews and focus groups with stakeholders from the food service sector. Many participants had already implemented SUP reduction strategies prior to COVID-19. However, the COVID-19 pandemic forced businesses to rely on SUPs and to pause SUP reduction strategies. Obstacles to SUP reduction included operational challenges from COVID-19 restrictions, misunderstanding of local waste management systems, costs of transitioning to zero plastic waste, poorly manufactured alternatives, greenwashing, and ingrained societal convenience culture. Whilst not all SUP consumption patterns were attributed to COVID-19, these barriers prevented food retailers, waste managers and consumers from achieving zero-plastic waste goals. Food services should adopt SUP reduction strategies, including re-introducing reusables, implementing exchange programs for bulk items and takeout, providing education and awareness to staff and consumers, and sourcing sustainable SUP alternatives. SUP reduction strategies can be implemented immediately as public health officials and researchers agree reusable items can be used safely when using basic hygiene measures. Food services across Nova Scotia should adapt their operational procedures and create behaviour change to reduce SUPs.

### **Heading for Tomorrow: Resilience Strategies for Post-COVID-19 Grocery Supply Chains**

<https://doi.org/10.3390/su14041942>

Supply chain resilience is a critical capability needed to compete in the current turbulent and unpredictable business environment, but many companies still tend to underestimate its relevance. In the wake of the COVID-19 pandemic, understanding which supply chain impacts influence the policies and actions undertaken when resilience is concerned is important. This study investigated the relationships between the impacts experienced at the different supply chain tiers during the pandemic, and explored which impacts could drive perceptions towards developing resilience strategies in the future. A survey instrument was developed adopting a mid-range approach, targeting manufacturers active in the Italian grocery supply chain. Data were analysed using partial least square structural equation modelling (PLS-SEM). Results showed that source-related impacts deeply affect make- and delivery-related impacts, and make-related impacts mainly influence the perceptions about future resilience strategies. In fact, manufacturers appear to be primarily interested in those strategies ensuring the continuity of their intrinsic operations. The study could inform theory and practice about companies' decisions towards the adoption of certain approaches. Also, it highlights promising research avenues related to deepening understanding of how perceptions could predict future intentions to engage in protective actions to adequately cope with potential future disruptions.

**In Defense of Public Health.** <https://dx.doi.org/10.2105/AJPH.2021.306644>

**Rising through the pandemic: a scoping review of quality improvement in public health during the COVID-19 pandemic.** <https://dx.doi.org/10.1186/s12889-022-12631-0>

BACKGROUND: The COVID-19 pandemic generated a growing interest in and need for evidence-based tools to facilitate the implementation of emergency management strategies within public health practice. Quality improvement (QI) is a key framework and philosophy to guide organizational emergency response efforts; however, the nature and extent to which it has been used in public health settings during the COVID-19 pandemic remains unclear. METHODS: We conducted a scoping review of literature published January 2020 - February 2021 and focused on the topic of QI at public health agencies during the COVID-19 pandemic. The search was conducted using four bibliographic databases, in addition to a supplementary grey literature search through custom Google search engines and targeted website search methods. Of the 1,878 peer-reviewed articles assessed, 15 records met the inclusion criteria. An additional 11 relevant records were identified during the grey literature search, for a total of 26 records included in the scoping review. RESULTS: Records were organized into five topics: 1) collaborative problem solving and analysis with stakeholders; 2) supporting learning and capacity building in QI; 3) learning from past emergencies; 4) implementing QI methods during COVID-19; and 5) evaluating performance using frameworks/indicators. CONCLUSIONS: The literature indicates that QI-oriented activities are occurring at the organizational and program levels to enhance COVID-19 response. To optimize the benefits that QI approaches and methodologies may offer, it is important for public health agencies to focus on both widespread integration of QI as part of an organization's management philosophy and culture, as well as project level activities at all stages of the emergency management cycle.

**Convenience Food Options and Adequacy of Nutrient Intake among School Children during the COVID-19 Pandemic** <https://doi.org/10.3390/nu14030630>

The COVID-19 pandemic has caused changes in the family food environment, resulting in more families relying on convenience food options. This study aimed to investigate diet quality by convenience food options (namely instant, frozen, and take-out foods) among Japanese school children during the COVID-19 pandemic. We examined the relationship between the frequency of consumption of convenience food options and nutritional status of the school children. The participants (671 children, 10–14 years old) were chosen to form a nationally representative sample of the Japanese population. Using questionnaires completed by the participants' guardians, information was collected on the frequency of instant, frozen, and take-out food consumption. Habitual food and nutrient intake were collected using a validated food frequency questionnaire, completed by the children with help from their guardian(s). "Frequent" consumption was defined as consumption of instant, frozen, and/or take-out foods on more than 5 days per week. Using 19 nutrients and their respective dietary reference intake (DRI) values, an index was created to label each child's nutrient intake as "Adequate", "Inadequate", "Excess", or "Deficient". Compared to children with non-frequent consumption, school children with frequent instant food consumption had significantly higher rates of inadequate nutrient intake (risk ratio (RR) = 3.0 [95% CI: 1.6–5.6]) and excess nutrient intake (RR = 2.3 [95% CI: 1.3–4.2]), while school children with frequent take-out food consumption had significantly higher rates of inadequate nutrient intake (RR = 2.1 [95% CI: 1.3–3.3]). There were no significant differences for children with frequent frozen-food intake. These associations did not change when adjusting for

sociodemographic factors. Our results suggest that the frequent consumption of instant or take-out foods among school children results in non-adequate nutritional intake.

**Publishing of COVID-19 preprints in peer-reviewed journals, preprinting trends, public discussion and quality issues DOI: [10.1007/s11192-021-04249-7](https://doi.org/10.1007/s11192-021-04249-7)**

COVID-19-related (vs. non-related) articles appear to be more expeditiously processed and published in peer-reviewed journals. We aimed to evaluate: (i) whether COVID-19-related preprints were favored for publication, (ii) preprinting trends and public discussion of the preprints, and (iii) the relationship between the publication topic (COVID-19-related or not) and quality issues. Manuscripts deposited at bioRxiv and medRxiv between January 1 and September 27 2020 were assessed for the probability of publishing in peer-reviewed journals, and those published were evaluated for submission-to-acceptance time. The extent of public discussion was assessed based on Altmetric and Disqus data. The Retraction Watch Database and PubMed were used to explore the retraction of COVID-19 and non-COVID-19 articles and preprints. With adjustment for the preprinting server and number of deposited versions, COVID-19-related preprints were more likely to be published within 120 days since the deposition of the first version (OR = 1.96, 95% CI: 1.80–2.14) as well as over the entire observed period (OR = 1.39, 95% CI: 1.31–1.48). Submission-to-acceptance was by 35.85 days (95% CI: 32.25–39.45) shorter for COVID-19 articles. Public discussion of preprints was modest and COVID-19 articles were overrepresented in the pool of retracted articles in 2020. Current data suggest a preference for publication of COVID-19-related preprints over the observed period. Supplementary Information The online version contains supplementary material available at [10.1007/s11192-021-04249-7](https://doi.org/10.1007/s11192-021-04249-7).

**Social determinants of health and health inequalities in context of COVID-19 pandemic**

<https://doi.org/10.1016/j.shaw.2021.12.1277>

**Introduction:** The COVID-19 pandemic has disproportionately affected disadvantaged populations, exposing existing inequalities in the society and widening health inequalities. Health inequalities are those preventable differences in health status between groups that arise from the unequal opportunities and unequal distribution of resources related to health, which determine the risk of people getting ill, ability to prevent illness or opportunities to access medical care. **Material and Methods:** Literature search was done through relevant science databases. Available studies regarding health inequalities in context of COVID-19 pandemic were examined and presented in this review. **Results and Conclusions:** The higher risks of COVID-19 infection and mortality has been noticed for specific groups that are disproportionately affected by pandemic due to inequalities in the social determinants of health, such as living and working conditions, access to healthy food, opportunities for maintaining hygiene and access to healthcare. To understand why lower socioeconomic groups and minorities are more susceptible to infection, broader context of the pandemic has to be observed. Although the existence of virus is a key factor, differences in infection, prevalence, severity and mortality rates seem to be a result of a synergistic effect of the virus itself, social determinants of health and inequalities in pre-existing chronic diseases. The important task for the future is to create more equal and healthier living and working conditions, improving the health of the most vulnerable groups and reducing inequalities in the population.

**AACR Virtual Conference: 14th AACR Conference on the Science of Cancer Health Disparities in Racial/Ethnic Minorities and the Medically Underserved [abstracts here](#)**

The proceedings contain 286 papers. The topics discussed include: online cancer misinformation interventions for young adult cancer patients and caregivers;an examination of the implementation of a navigation patient navigation program to improve breast and cervical cancer screening rates of Chinese immigrant women;a latent class analysis of communication patterns between Hispanic and non-Hispanic



childhood cancer survivors, parents, and medical providers;the association of COVID-19 and cancer screening inquiries among Spanish speakers: an examination of NCI cancer information service data;general social media use amongst young adult cancer patients and caregivers;and an examination of online experiences among young adult cancer patients and caregivers reveals the pervasiveness and influence of diet and supplement-related misinformation.

### **National policy responses to maintain essential health services during the COVID-19 pandemic.**

doi: <https://dx.doi.org/10.2471/BLT.21.286852>

Essential health services – including services for human immunodeficiency virus (HIV) infection and/or acquired immunodeficiency syndrome (AIDS), tuberculosis, malaria, routine immunization, noncommunicable diseases, nutrition and reproductive, maternal, newborn, child and adolescent health – are foundational to primary health care and vital for protecting population health. The coronavirus disease 2019 (COVID-19) pandemic disrupted the delivery of essential health services in most countries, with ongoing and differing disruptions as the COVID-19 pandemic continues. To track policy development at a national level, we launched the COVID-19 Essential Health Services Policy Tracker<sup>6</sup> in collaboration with WHO's Maternal, Adolescent, Child Health and Ageing department with funding from the Bill & Melinda Gates Foundation. Our analysis of policies found that most national policies recommended the continuation or adaptation of essential health services.

## **Food and COVID-19 Lit Review: Week ending 02/04/2022**

### **DNPAO**

- COVID-19 Vaccination, Breastfeeding, and Milk Supply...Bertrand K, Honerkamp-Smith G, Chambers CD. Maternal and child outcomes reported by breastfeeding women following messenger RNA COVID-19 vaccination. *Breastfeeding Medicine*, 2021;16:697–701  
<https://doi.org/10.1089/bfm.2021.0273>
- COVID-19 Mortality in Europe, by Latitude and Obesity Status: A Geo-Spatial Analysis in 40 Countries <https://doi.org/10.3390/nu14030471>
- COVID-19 and Vitamin D (Co-VIVID Study): a systematic review and meta-analysis of randomized controlled trials. <https://dx.doi.org/10.1080/14787210.2022.2035217>
- What should a family physician know about nutrition and physical exercise rehabilitation' advices to communicate to long-term COVID-19" patients?"  
<https://dx.doi.org/10.1080/00325481.2022.2035589>

### **DFWED**

- SARS-CoV-2 Remains Infectious on Refrigerated Deli Food, Meats, and Fresh Produce for up to 21 Days <https://doi.org/10.3390/foods11030286>
- Understanding Agri-Food Traceability System User Intention in Respond to COVID-19 Pandemic: The Comparisons of Three Models <https://doi.org/10.3390/ijerph19031371>

### **NIOSH**

- Worker and employer experiences with COVID-19 and the California Workers' Compensation System: A review of the literature. <https://dx.doi.org/10.1002/ajim.23326>
- Health Management Occupations During COVID-19: Experiences of Older African Americans With Multimorbidity. <https://dx.doi.org/10.1177/15394492211068214>

## NCEH

- Assessment of COVID-19 aerosol transmission in a university campus food environment using a numerical method <https://doi.org/10.1016/j.gsf.2022.101353>

## Other

- Do not transform food systems on the backs of the rural poor <https://doi.org/10.1007/s12571-021-01214-3>
- Multiple spillovers from humans and onward transmission of SARS-CoV-2 in white-tailed deer. <https://dx.doi.org/10.1073/pnas.2121644119>
- The impact of COVID-19 on U.S. adolescents: loss of basic needs and engagement in health risk behaviors DOI: [10.1007/s12144-021-02411-1](https://doi.org/10.1007/s12144-021-02411-1)

## DNPAO

**COVID-19 Vaccination, Breastfeeding, and Milk Supply...Bertrand K, Honerkamp-Smith G, Chambers CD. Maternal and child outcomes reported by breastfeeding women following messenger RNA COVID-19 vaccination. Breastfeeding Medicine, 2021;16:697–701 <https://doi.org/10.1089/bfm.2021.0273>**

**COVID-19 Mortality in Europe, by Latitude and Obesity Status: A Geo-Spatial Analysis in 40 Countries <https://doi.org/10.3390/nu14030471>**

On 30 January 2020, the World Health Organization (WHO) declared the current novel coronavirus disease 2019 (COVID-19) as a public health emergency of international concern and later characterized it as a pandemic. New data show that excess body mass and vitamin D deficiency might be related to the disease severity and mortality. The aim of this study was to evaluate whether latitude, as a proxy of sunlight exposure and Vitamin D synthesis, and prevalent obesity among European populations, is related to COVID-19 spread and severity. European COVID-19 data (incidence and fatality), including information on the prevalence of obesity, social distancing, and others were obtained by the “Our World in Data” website on 17 April 2021. Adjusted analysis showed that higher COVID-19 incidence and fatality were pictured in countries being in higher latitude, both during the whole period, as well as, during the time period 1 November 2020–31 March 2021. Higher incidence and fatality of COVID-19 were observed where the prevalence of overweight/obesity was higher during the whole time period, whereas during the time period 1 November 2020–31 March 2021, only COVID-19 incidence was higher but not a fatality. The present results provide insights for targeted interventions and preventive strategies against COVID-19.

**COVID-19 and Vitamin D (Co-VIVID Study): a systematic review and meta-analysis of randomized controlled trials. <https://dx.doi.org/10.1080/14787210.2022.2035217>**

INTRODUCTION: Vitamin D levels have been reported to be associated with COVID-19 susceptibility, severity and mortality events. We performed a meta-analysis of randomized controlled trials (RCTs) to evaluate the use of vitamin D intervention on COVID-19 outcomes. AREAS COVERED: Literature search was conducted using PubMed, Cochrane library, and ClinicalTrials.gov databases. We included RCTs reporting the use of vitamin D intervention to control/placebo group in COVID-19. The study was registered at PROSPERO: CRD42021271461. EXPERT OPINION: A total of 6 RCTs with 551 COVID-19 patients were included. The overall collective evidence pooling all the outcomes across all RCTs

indicated the beneficial use of vitamin D intervention in COVID-19 (relative risk, RR = 0.60, 95% CI 0.40 to 0.92, Z=2.33, p=0.02, I2 = 48%). The rates of RT-PCR positivity was significantly decreased in the intervention group as compared to the non-vitamin D groups (RR = 0.46, 95% CI 0.24 to 0.89, Z=2.31, p=0.02, I2 = 0%). Conclusively, COVID-19 patients supplemented with vitamin D are more likely to demonstrate fewer rates of ICU admission, mortality events and RT-PCR positivity.

**What should a family physician know about nutrition and physical exercise rehabilitation' advices to communicate to long-term COVID-19" patients?" <https://dx.doi.org/10.1080/00325481.2022.2035589>**

In real practice, there is a paradox in the management of patients with "long-term Covid-19". Indeed, Family physicians (FPs) are on the front line in the management process of these patients. For "long-term Covid-19" patients, and according to the World Health Organization guideline, the cardiopulmonary rehabilitation (CPR) should be provided not only at tertiary- or secondary- care, but mainly at primary-care with a real implication of FPs. However, specific guidelines/recommendations were addressed for FPs. Therefore, an alternative including the CPR minimal advice that a FP should provide to "long-term Covid-19" patients, seems to be necessary to respond to the needs of FPs to face their involvement with "long-term Covid-19" patients. Thus, this paper aimed to report the CPR "minimal advice" that should be provided by FPs managing "long-term Covid-19" patients with incapacity (i.e.; alteration of the cardiorespiratory and muscular chain). According to the authors, FPs should be more cautious in the prescription of exercise and nutrition program and informed about the minimal advices related to nutritional and physical exercise rehabilitation guidelines when taking care of "long-term Covid-19" patients, and how these guidelines can relieve the mental and physical problems, improve immunity, and accelerate the recovery process of the patients. With the occurrence of new variants of the severe acute respiratory syndrome coronavirus 2, the nutritional and exercise rehabilitation guidelines implemented by FPs become indispensable to promote the recovery of Covid-19 patients and support a return to normal life.

**DFWED**

**SARS-CoV-2 Remains Infectious on Refrigerated Deli Food, Meats, and Fresh Produce for up to 21 Days <https://doi.org/10.3390/foods11030286>**

SARS-CoV-2, the virus that causes COVID-19, has been detected on foods and food packaging and the virus can infect oral cavity and intestinal cells, suggesting that infection could potentially occur following ingestion of virus-contaminated foods. To determine the relative risk of infection from different types of foods, we assessed survival of SARS-CoV-2 on refrigerated ready-to-eat deli items, fresh produce, and meats (including seafood). Deli items and meats with high protein, fat, and moisture maintained infectivity of SARS-CoV-2 for up to 21 days. However, processed meat, such as salami, and some fresh produce exhibited antiviral effects. SARS-CoV-2 also remained infectious in ground beef cooked rare or medium, but not well-done. Although infectious SARS-CoV-2 was inactivated on the foods over time, viral RNA was not degraded in similar trends, regardless of food type; thus, PCR-based assays for detection of pathogens on foods only indicate the presence of viral RNA, but do not correlate with presence or quantity of infectious virus. The survival and high recovery of SARS-CoV-2 on certain foods support the possibility that food contaminated with SARS-CoV-2 could potentially be a source of infection, highlighting the importance of proper food handling and cooking to inactivate any contaminating virus prior to consumption.

**Understanding Agri-Food Traceability System User Intention in Respond to COVID-19 Pandemic: The Comparisons of Three Models <https://doi.org/10.3390/ijerph19031371>**

Scientists believed the outbreak of COVID-19 could be linked to the consumption of wild animals, so food safety and hygiene have become the top concerns of the public. An agri-food traceability system becomes very important in this context because it can help the government to trace back the entire production and delivery process in case of food safety concerns. The traceability system is a complicated digitalized system because it integrates information and logistics systems. Previous studies used the technology acceptance model (TAM), information systems (IS) success model, expectation confirmation model (ECM), or extended model to explain the continuance intention of traceability system users. Very little literature can be found integrating two different models to explain user intention, not to mention comparing three models in one research context. This study proposed the technology acceptance model (TAM), technology acceptance model-information systems (TAM-IS) success, and technology acceptance model-expectation confirmation model (TAM-ECM) integrated models to evaluate the most appropriate model to explain agri-food traceability system during the COVID-19 pandemic. A questionnaire was designed based on a literature review, and 197 agri-food traceability system users were sampled. The collected data were analyzed by partial least square (PLS) to understand the explanatory power and the differences between the three models. The results showed that: (1) the TAM model has a fair explanatory power of continuance intention (62.2%), but was recommended for its simplicity; (2) the TAM-IS success integrated model had the best predictive power of 78.3%; and (3) the system providers should raise users' confirmation level, so their continuance intention could be reinforced through mediators, perceived value, and satisfaction. The above findings help to understand agri-food traceability system user intention, and provide theoretical and practical implications for system providers to refine their system design.

## **NIOSH**

### **Worker and employer experiences with COVID-19 and the California Workers' Compensation System: A review of the literature. <https://dx.doi.org/10.1002/ajim.23326>**

**BACKGROUND:** Given workplace risks from COVID-19, California policymakers passed Senate Bill (SB) 1159 to facilitate access to workers' compensation (WC) benefits for frontline workers. However there has been no review of the available evidence needed to inform policy decisions about COVID-19 and WC. **METHODS:** We conducted a literature review on worker and employer experiences surrounding COVID-19 and WC, adhering to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. **RESULTS:** Forty articles were included (16 about worker experiences and 24 about employer practices). Most were not about experiences and practices related to COVID-19 and WC. Worker studies indicated that paid sick leave reduced new COVID-19 cases and COVID-19 activity. Studies also found that rural agricultural and food processing workers lacked sick leave protection and faced severe housing and food insecurity. Studies on workplace health and safety indicated that healthcare workers with access to personal protective equipment had lower stress levels. Studies about employer practices found that unrestricted work in high-contact industries was associated with increased risks to at-risk workers, and with health disparities. No studies examined worker COVID-19 experiences and WC claims or benefits, job loss, retaliation, workers' medical care experiences, and return-to-work or leave practices. **CONCLUSIONS:** Our review identified experiences and practice related to COVID-19 and the WC system, but not specifically about WC and COVID-19 WC claims or benefits. Further research is needed to document and understand evidence underpinning the need for WC coverage for COVID-19 and to evaluate the impact of the current SB 1159 bill on WC in California.

### **Health Management Occupations During COVID-19: Experiences of Older African Americans With Multimorbidity. <https://dx.doi.org/10.1177/15394492211068214>**

Older African Americans with multimorbidity are at an especially high risk of adverse outcomes due to synergistic risks conferred by age, chronic disease burden and social determinants of health. Chronic condition self-management is one way older African Americans can use health management occupations and exercise agency to reduce their risk of becoming severely ill, and during the ongoing pandemic, of COVID-19 infection. The objective of this study was to understand how the COVID-19 pandemic shaped health management occupations of older African Americans. In-depth qualitative interviews were conducted with 30 African Americans aged 65 and older who reported having two or more chronic conditions. Data were analyzed using thematic analysis. Data suggest how key health management occupations (accessing care; managing medications, nutrition, and physical activity; and social and emotional health promotion and maintenance) were utilized and also shaped by the pandemic. Another key finding was perceived benefits of the pandemic on health and well-being.

## **NCEH**

### **Assessment of COVID-19 aerosol transmission in a university campus food environment using a numerical method <https://doi.org/10.1016/j.gsf.2022.101353>**

With the prevalence of COVID-19, the phenomenon of viruses spreading through aerosols has become a focus of attention. Diners in university dining halls have a high risk of exposure to respiratory droplets from others without the protection of face masks, which greatly increases the risk of COVID-19 transmission. Therefore, the transmission mechanism of respiratory droplets in extremely crowded dining environments should be investigated. In this study, a numerical simulation of coughing at dining tables under two conditions was performed, namely the presence and absence of protective partitions, and the evaporation and condensation of aerosol droplets in the air were examined. By using the numerical method, we analyzed and verified the isolation effect of dining table partitions in the propagation of aerosol droplets. The effect of changes in room temperature on the diffusion of coughed aerosols when partitions were present was analyzed. We demonstrated how respiratory droplets spread through coughing and how these droplets affect others. Finally, we proposed a design for a dining table partition that minimizes the transmission of COVID-19.

## **Other**

### **Do not transform food systems on the backs of the rural poor <https://doi.org/10.1007/s12571-021-01214-3>**

Even prior to COVID, there was a considerable push for food system transformation to achieve better nutrition and health as well as environmental and climate change outcomes. Recent years have seen a large number of high visibility and influential publications on food system transformation. Literature is emerging questioning the utility and scope of these analyses, particularly in terms of trade-offs among multiple objectives. We build on these critiques of emerging food system transformation approaches in our review of four recent and influential publications from the EAT-Lancet Commission, the IPCC, the World Resources Institute and the Food and Land Use Coalition. We argue that a major problem is the lack of explicit inclusion of the livelihoods of poor rural people in their modeling approaches and insufficient measures to ensure that the nature and scale of the envisioned changes will improve these livelihoods. Unless livelihoods and socioeconomic inclusion more broadly are brought to the center of such approaches, we very much risk transforming food systems to reach environmental and nutritional objectives on the backs of the rural poor.

### **Multiple spillovers from humans and onward transmission of SARS-CoV-2 in white-tailed deer. <https://dx.doi.org/10.1073/pnas.2121644119>**

Many animal species are susceptible to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection and could act as reservoirs; however, transmission in free-living animals has not been documented. White-tailed deer, the predominant cervid in North America, are susceptible to SARS-CoV-2 infection, and experimentally infected fawns can transmit the virus. To test the hypothesis that SARS-CoV-2 is circulating in deer, 283 retropharyngeal lymph node (RPLN) samples collected from 151 free-living and 132 captive deer in Iowa from April 2020 through January of 2021 were assayed for the presence of SARS-CoV-2 RNA. Ninety-four of the 283 (33.2%) deer samples were positive for SARS-CoV-2 RNA as assessed by RT-PCR. Notably, following the November 2020 peak of human cases in Iowa, and coinciding with the onset of winter and the peak deer hunting season, SARS-CoV-2 RNA was detected in 80 of 97 (82.5%) RPLN samples collected over a 7-wk period. Whole genome sequencing of all 94 positive RPLN samples identified 12 SARS-CoV-2 lineages, with B.1.2 (n = 51; 54.5%) and B.1.311 (n = 19; 20%) accounting for 75% of all samples. The geographic distribution and nesting of clusters of deer and human lineages strongly suggest multiple human-to-deer transmission events followed by subsequent deer-to-deer spread. These discoveries have important implications for the long-term persistence of the SARS-CoV-2 pandemic. Our findings highlight an urgent need for a robust and proactive "One Health" approach to obtain enhanced understanding of the ecology, molecular evolution, and dissemination of SARS-CoV-2.

**The impact of COVID-19 on U.S. adolescents: loss of basic needs and engagement in health risk behaviors DOI: [10.1007/s12144-021-02411-1](https://doi.org/10.1007/s12144-021-02411-1)**

Across the United States, the COVID-19 pandemic created myriad challenges for youth and families, including losses of basic needs which may be associated with increased use of maladaptive coping behaviors. In a sample of 2491 U.S. youth (ages 13–16), demographic differences in loss of basic needs and maladaptive coping were assessed using regression models. More than 21% of adolescents endorsed losing one or more basic needs (e.g., loss of access to food or shelter) and 83% endorsed use of maladaptive coping strategies (e.g., using drugs or alcohol; self-harming behaviors) during the COVID-19 pandemic. Although adolescents with both majority and minority identities reported losing basic needs and engaging in maladaptive coping behaviors, minoritized youth reported more basic needs losses ( $p < 0.05$ ) and greater reliance on maladaptive coping strategies ( $p < .05$ ) than their non-minoritized peers. Furthermore, adolescents who endorsed losing basic needs were more likely to also endorse engaging in maladaptive coping behaviors ( $p < .05$ ). Healthcare providers and teachers must consider basic need losses while structuring emotional and behavioral supports for youth during and beyond the COVID-19 pandemic.

**Food and COVID-19 Lit Review: Weeks ending 01/21/2022 and 1/28/2022**

DNPAO

- Implementing healthy food environment policies in New Zealand: nine years of inaction. <https://dx.doi.org/10.1186/s12961-021-00809-8>
- Micronutrient Deficiency as a Confounder in Ascertaining the Role of Obesity in Severe COVID-19 Infection <https://doi.org/10.3390/ijerph19031125>
- Changes in Total Energy, Nutrients and Food Group Intake among Children and Adolescents during the COVID-19 Pandemic—Results of the DONALD Study <https://doi.org/10.3390/nu14020297>

- EatLOCAL: a platform that connects local farmers, consumers, municipalities and non-governmental organisations
- A trade war and a pandemic: Disruption and resilience in the food bank supply chain <https://doi.org/10.1016/j.indmarman.2022.01.002>

#### DFWED

- Review on irradiation effects on quality of frozen meat food <https://doi.org/10.11889/j.0253-3219.2022.hjs.45.010002>
- Water safety management during the initial phase of the Covid-19 pandemic: challenges, responses and guidance <https://doi.org/10.1080/07900627.2021.2016378>
- Factors influencing SARS-CoV-2 RNA concentrations in wastewater up to the sampling stage: A systematic review. <https://dx.doi.org/10.1016/j.scitotenv.2022.153290>
- Respiratory Syncytial Virus (RSV) RNA in Wastewater Settled Solids Reflects RSV Clinical Positivity Rates <https://doi.org/10.1021/acs.estlett.1c00963>

#### NIOSH

- Historical Rice Farming Explains Faster Mask Use During Early Days of China's COVID-19 Outbreak <https://doi.org/10.1016/j.cresp.2022.100034>

#### NCEH

- COVID-19 prevention and control measures and infection risks in a boarding school <https://doi.org/10.11918/202103108>
- Key factors driving customers' restaurant dining behavior during the COVID-19 pandemic <https://doi.org/10.1108/IJCHM-07-2021-0831>
- Environmental Surveillance for SARS-CoV-2 in Two Restaurants from a Mid-scale City that Followed U.S. CDC Reopening Guidance. <https://dx.doi.org/10.4209/aaqr.210304>

#### Essential Workers/Food/Farm/Ag/Migrant

- Health Inequalities amongst Refugees and Migrant Workers in the Midst of the COVID-19 Pandemic: a Report of Two Cases. <https://dx.doi.org/10.1007/s41649-021-00198-8>
- Testing strategies to contain COVID-19 in migrant worker dormitories <https://doi.org/10.1016/j.jmh.2022.100079>
- Risk of SARS-CoV-2 infection in migrants and ethnic minorities compared with the general population in the European WHO region during the first year of the pandemic: a systematic review. <https://dx.doi.org/10.1186/s12889-021-12466-1>

#### Other

- Sustainability and authenticity: are they food risk relievers during the COVID-19 pandemic? <https://doi.org/10.1108/BFJ-05-2021-0495>
- Recover the food-energy-water nexus from COVID-19 under Sustainable Development Goals acceleration actions. <https://dx.doi.org/10.1016/j.scitotenv.2022.153013>
- Summer crowds: An analysis of USFS campground reservations during the COVID-19 pandemic. <https://dx.doi.org/10.1371/journal.pone.0261833>
- Is restaurant crowdfunding immune to the COVID-19 pandemic? <https://doi.org/10.1108/IJCHM-06-2021-0817>
- Prevalence of risk behaviors and correlates of SARS-CoV-2 positivity among in-school contacts of confirmed cases in a Georgia school district in the pre-vaccine era, December 2020-January 2021. <https://dx.doi.org/10.1186/s12889-021-12347-7>
- Agricultural commodity supply chain during the covid-19 pandemic <https://doi.org/10.1088/1755-1315/951/1/012109>

- Sustainability Recommendations and Practices in School Feeding: A Systematic Review. <https://dx.doi.org/10.3390/foods11020176>

## **DNPAO**

### **Implementing healthy food environment policies in New Zealand: nine years of inaction.**

<https://dx.doi.org/10.1186/s12961-021-00809-8>

BACKGROUND: The INFORMAS [International Network for Food and Obesity/Non-communicable Diseases (NCDs) Research, Monitoring and Action Support] Healthy Food Environment Policy Index (Food-EPI) was developed to evaluate the degree of implementation of widely recommended food environment policies by national governments against international best practice, and has been applied in New Zealand in 2014, 2017 and 2020. This paper outlines the 2020 Food-EPI process and compares policy implementation and recommendations with the 2014 and 2017 Food-EPI. METHODS: In March-April 2020, a national panel of over 50 public health experts participated in Food-EPI. Experts rated the extent of implementation of 47 "good practice" policy and infrastructure support indicators compared to international best practice, using an extensive evidence document verified by government officials. Experts then proposed and prioritized concrete actions needed to address the critical implementation gaps identified. Progress on policy implementation and recommendations made over the three Food-EPIs was compared. RESULTS: In 2020, 60% of the indicators were rated as having "low" or "very little, if any" implementation compared to international benchmarks: less progress than 2017 (47%) and similar to 2014 (61%). Of the nine priority actions proposed in 2014, there was only noticeable action on one (Health Star Ratings). The majority of actions were therefore proposed again in 2017 and 2020. In 2020 the proposed actions were broader, reflecting the need for multisectoral action to improve the food environment, and the need for a mandatory approach in all policy areas. CONCLUSIONS: There has been little to no progress in the past three terms of government (9 years) on the implementation of policies and infrastructure support for healthy food environments, with implementation overall regressing between 2017 and 2020. The proposed actions in 2020 have reflected a growing movement to locate nutrition within the wider context of planetary health and with recognition of the social determinants of health and nutrition, resulting in recommendations that will require the involvement of many government entities to overcome the existing policy inertia. The increase in food insecurity due to COVID-19 lockdowns may provide the impetus to stimulate action on food policies.

### **Micronutrient Deficiency as a Confounder in Ascertaining the Role of Obesity in Severe COVID-19 Infection** <https://doi.org/10.3390/ijerph19031125>

Food insecurity in the United States has been exacerbated due to the socioeconomic strain of the coronavirus disease 2019 (COVID-19) pandemic. Populations experiencing poverty and, as a consequence, food insecurity in the United States are disproportionately affected by obesity, which was identified early in the pandemic as a major risk factor for increased susceptibility to COVID-19 infection and mortality. Given the focus on obesity and its role in immune dysregulation, it is also important to note the role of micronutrient deficiency, another sequelae of food insecurity. Micronutrients play an important role in the ability of the immune system to mount an appropriate response. Moreover, OBESE individuals are more likely to be micronutrient deficient. This review will explore the role of micronutrients, vitamin A, vitamin D, vitamin C, and zinc in respiratory immunity and COVID-19 and how micronutrient deficiency may be a possible confounder in obesity's association with severe outcomes. By illuminating the role of micronutrients in COVID-19, this paper expands the discussion from food insecurity and obesity to include micronutrient deficiency and how all of these interact in respiratory illnesses such as COVID-19. © 2022 by the authors. Licensee MDPI, Basel, Switzerland.



## **Changes in Total Energy, Nutrients and Food Group Intake among Children and Adolescents during the COVID-19 Pandemic—Results of the DONALD Study <https://doi.org/10.3390/nu14020297>**

The COVID-19 pandemic may have changed the habitual lifestyles of children and adolescents, in particular, due to the closure of kindergartens and schools. To investigate the impact of the pandemic on nutrients and food intake of children and adolescents in Germany, we analyzed repeated 3-day weighed dietary records from 108 participants (3–18 years; females: n = 45, males: n = 63) of the Dortmund Nutritional and Anthropometric Longitudinally Designed (DONALD) study. Polynomial mixed-effects regression models were used to identify prospective changes in dietary intake (total energy (TEI), carbohydrates, fat, protein, free sugar, ultra-processed foods, fruits and vegetables, sugar sweetened beverages and juices) before and during the first months of the COVID-19 pandemic. For the current analysis, we have chosen the first months of the pandemic (March 2020–August 2020), as this was the period with the most restrictions in Germany so far (kindergarten, school and restaurant closures; contact and outdoor activity restrictions). No significant changes in either the selected nutrients or food groups were observed. However, children and adolescents recorded a significantly lower TEI during the pandemic ( $\beta = -109.65$ ,  $p = 0.0062$ ). Results remained significant after the exclusion of participants with under-reported records ( $\beta = -95.77$ ,  $p = 0.0063$ ). While macronutrient intake did not change, descriptive data indicate a non-significant decrease in sugar sweetened beverages and ultra-processed foods intake. We suggest that children and adolescents from high socioeconomic families may have adapted lifestyle changes during the pandemic.

## **EatLOCAL: a platform that connects local farmers, consumers, municipalities and non-governmental organisations**

The COVID-19 pandemic has brought unprecedented challenges to public health and supply chain systems around the globe. Local farmers businesses were impacted by the lockdowns and they still face difficulties in commercializing their production while requests for social, economic and food support pile up at municipalities and non-governmental organisations (NGOs). Meanwhile, working from home, constraints to workout, business and social life, are impacting citizens' work-life balance, eating habits and impacting populations' physical and mental health globally. EatLOCAL proposes to address this issue by providing a service that is supported in an innovative digital platform that strengthens connections between suppliers, consumers, municipalities and NGOs working on food privation issues. Besides maximizing the opportunities for business to local farmers, this platform also creates a facilitated channel that promotes de access to fresh food by citizens and minimizes the social impact of the pandemic in most vulnerable groups.

## **A trade war and a pandemic: Disruption and resilience in the food bank supply chain**

<https://doi.org/10.1016/j.indmarman.2022.01.002>

Supply chain turbulence has become the new normal – and understanding supply chain resilience is essential for business-to-business firms. Dynamic capabilities theory provides the foundation for examining three literature gaps on supply chain resilience: resource reconfiguration during high impact disruptions; resilience across multiple supply chain levels; and resilience when government is involved. The food bank supply chain is examined during the turbulence of 2018–2020 from the U.S.-China trade war and the COVID-19 pandemic. Due to the trade war, the U.S. Department of Agriculture (USDA) shifted agricultural commodities intended for export to food banks, creating scale and scope supply shocks, and this was followed by food demand and supply shocks from the pandemic. In-depth interviews were conducted with supply chain members, from farmers to processing firms to food banks. Qualitative analysis provides detailed perspectives on three stages of supply chain resilience: anticipating, adapting and responding, and recovery and learning. The trade war responses built resilience during the pandemic by leveraging dynamic capabilities and frugal innovation, and by building

social capital and public/private partnerships. From the specific insights for food banks emerged broader insights for business-to-business firms, in the form of twelve propositions for building supply chain resilience to high impact disruptions.

### **DFWED**

#### **Review on irradiation effects on quality of frozen meat food <https://doi.org/10.11889/j.0253-3219.2022.hjs.45.010002>**

Irradiation technology has been widely used in the field of food processing. It is urgent to figure out whether the quality of frozen meat food would change after irradiation, when the SARS-CoV-2 was detected in the imported cold-chain meat. The effects of irradiation on the quality of frozen meat are summarized from the aspects of food sensory, protein decomposition, fat oxidation, vitamin content and so on, providing reference for the formulation of irradiation for the elimination of SARS-CoV-2 and other viruses on frozen food, as well as the study of irradiated frozen meat and the industrial development of irradiated frozen food.

#### **Water safety management during the initial phase of the Covid-19 pandemic: challenges, responses and guidance <https://doi.org/10.1080/07900627.2021.2016378>**

Water safety plans address both routine operations and incident responses to support risk management in drinking water utilities. Their use and relevance in facing the challenges of the Covid-19 crisis were investigated via a survey distributed to water utilities and health or environmental agencies across the globe. Responses from 86 respondents from 38 countries were analysed to identify the water safety challenges faced and responses. Water safety plans appear to provide some preparedness and organizational advantages to utilities in facing the Covid-19 crisis, including stronger communication links between utilities and governing agencies. Guidance for future water safety planning is provided. [ FROM AUTHOR] Copyright of International Journal of Water Resources Development is the property of Routledge and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use. This may be abridged. No warranty is given about the accuracy of the copy. Users should refer to the original published version of the material for the full . (Copyright applies to all s.)

#### **Factors influencing SARS-CoV-2 RNA concentrations in wastewater up to the sampling stage: A systematic review. <https://dx.doi.org/10.1016/j.scitotenv.2022.153290>**

Wastewater-based surveillance (WBS) for SARS-CoV-2 RNA is a promising complementary approach to monitor community viral circulation. A myriad of factors, however, can influence RNA concentrations in wastewater, impeding its epidemiological value. This article aims to provide an overview and discussion of factors up to the sampling stage that impact SARS-CoV-2 RNA concentration estimates in wastewater. To this end, a systematic review was performed in three databases (MEDLINE, Web of Science and Embase) and two preprint servers (MedRxiv and BioRxiv). Two authors independently screened and selected articles published between January 1, 2019 and May 4, 2021. A total of 22 eligible articles were included in this systematic review. The following factors up to sampling were identified to have an influence on SARS-CoV-2 RNA concentrations in wastewater and its interpretation: (i) shedding-related factors, including faecal shedding parameters (i.e. shedding pattern, recovery, rate, and load distribution), (ii) population size, (iii) in-sewer factors, including solid particles, organic load, travel time, flow rate, wastewater pH and temperature, and (iv) sampling strategy. In conclusion, factors influencing SARS-CoV-2 RNA concentration estimates in wastewater were identified and research gaps were discussed. The identification of these factors supports the need for further research on WBS for COVID-19.

**Respiratory Syncytial Virus (RSV) RNA in Wastewater Settled Solids Reflects RSV Clinical Positivity Rates** <https://doi.org/10.1021/acs.estlett.1c00963>

Wastewater-based epidemiology (WBE) uses concentrations of infectious agent targets in wastewater to infer infection trends in the contributing community. To date, WBE has been used to gain insight into infection trends of gastrointestinal diseases, but its application to respiratory diseases has been limited. Here, we report that respiratory syncytial virus (RSV) genomic ribonucleic acid can be detected in wastewater settled solids at two publicly owned treatment works. We further show that its concentration in settled solids is strongly associated (Kendalls tau = 0.65-0.77,  $p < 10^{-7}$ ) with clinical positivity rates for RSV at sentinel laboratories across the state in 2021, a year with anomalous seasonal trends of RSV disease. Given that RSV infections have similar clinical presentations to COVID-19, can be life threatening for some, and immunoprophylaxis distribution for vulnerable people is based on outbreak identification, WBE represents an important tool to augment current RSV surveillance and public health response efforts.

**NIOSH**

**Historical Rice Farming Explains Faster Mask Use During Early Days of China's COVID-19 Outbreak** <https://doi.org/10.1016/j.cresp.2022.100034>

In the early days of the coronavirus outbreak, we observed mask use in public among 1,330 people across China. People in regions with a history of farming rice wore masks more often than people in wheat regions. Cultural differences persisted after taking into account objective risk factors such as local COVID cases. The differences fit with the emerging theory that rice farming's labor and irrigation demands made societies more interdependent, with tighter social norms. Cultural differences were strongest in the ambiguous, early days of the pandemic, then shrank as masks became nearly universal (94%). Separate survey and internet search data replicated this pattern. Although strong cultural differences lasted only a few days, research suggests that acting just a few days earlier can reduce deaths substantially.

**NCEH**

**COVID-19 prevention and control measures and infection risks in a boarding school** <https://doi.org/10.11918/202103108>

Boarding school is one of the places where people usually live in densely crowded conditions. In order to control the risk of COVID-19 epidemic in boarding schools, five levels of practicable pandemic prevention measures and their effects on infection risks in five typical campus living scenes, including going to washroom, going out, going to class, having meal, and returning to dormitory were proposed, and the susceptible-infective (SI) model based on statistics and probability hypotheses was developed. Then the SARS-CoV-2 infection rates among students in 14 days were simulated in two typical apartment types: four-person dormitory with two public washrooms on each floor (apartment A) and six-person dormitory with a private washroom (apartment B). Results show that for apartment A, once there was an infected person, the epidemic spread rapidly in the whole building even under the most stringent prevention and control measures (level V). While for apartment B, when the most stringent prevention and control measures (level V) were taken, the epidemic could be controlled within the range of less than 10 people in two weeks. In addition, full vaccination would significantly inhibit the infection rate, and the number of washrooms would no longer be a significant factor. Even if no prevention and control measures were taken, the number of infected people would decrease significantly, and the number of persons in one dormitory became the main factor affecting the spread of the virus. The research results can provide information support for campus epidemic prevention and control. Copyright ©2022 Journal of Harbin Institute of Technology. All rights reserved.

## **Key factors driving customers' restaurant dining behavior during the COVID-19 pandemic**

<https://doi.org/10.1108/IJCHM-07-2021-0831>

**Purpose**This study aims to identify key factors that affected US respondents' dining behavior at restaurants during the midst of the COVID-19 pandemic.**Design/methodology/approach**Due to the lack of a prior framework or model to test customers' perceptions of dining-out behavior during this unprecedented time, this study used a mixed-methods approach, conducting two focus group discussions to generate potential restaurant attributes, followed by a US-based survey using an online panel. Using structural equation modeling, this study tested eight developed propositions.**Findings**The findings of this study indicated that the three key factors (i.e. restaurant dining environment, communication and hygiene and contactless features) made customers feel comfortable dining in the restaurant during the pandemic. Out of these three factors, only the restaurant dining environment and communication and hygiene were essential predictors for customers' perceived trust toward the restaurant, leading to their willingness to pay more. This study used two moderators, customers' perceived risk and support for restaurants to examine how they affected customers' perceived trust and willingness to pay, respectively.**Practical implications**This study provides both theoretical and practical implications to the current body of knowledge in customers' dining-out behavior and the development of operational strategies for restaurants to accommodate customers' changing dining-out behavior due to the COVID-19 pandemic. To develop a holistic conceptual framework, this study incorporates two COVID-19-focused measurement items, perceived risk and support of the restaurant, to identify their moderating roles in the relationships among the five proposed measurement items. This study provides restaurant operators with insights into the altered dining-out behavior of their customers due to the COVID-19 pandemic and prepares them for the post pandemic environment.**Originality/value**During the unprecedented pandemic situation, few customers are willing to dine in restaurants. As local and national governments lifted the mandated COVID-19 protocols, restaurants opened their business slowly to cater to customers in compliance with the centers for disease control's health and safety regulations. It is of utmost importance for restaurant operators to accommodate their customers' needs when they dine in the middle of the COVID-19 pandemic. There is a paucity of research that has examined customers' comfort level when dining in restaurants and customers' preferred dining environment during the pandemic.

## **Environmental Surveillance for SARS-CoV-2 in Two Restaurants from a Mid-scale City that Followed U.S. CDC Reopening Guidance. <https://dx.doi.org/10.4209/aaqr.210304>**

Since mask use and physical distancing are difficult to maintain when people dine indoors, restaurants are perceived as high risk for acquiring COVID-19. The air and environmental surfaces in two restaurants in a mid-scale city located in north central Florida that followed the Centers for Disease Control and Prevention (CDC) reopening guidance were sampled three times from July 2020 to February 2021. Sixteen air samples were collected for 2 hours using air samplers, and 20 surface samples by using moistened swabs. The samples were analyzed by real-time reverse transcriptase-polymerase chain reaction (RT-PCR) for the presence of SARS-CoV-2 genomic RNA. A total of ~550 patrons dined in the restaurants during our samplings. SARS-CoV-2 genomic RNA was not detected in any of the air samples. One of the 20 surface samples (5%) was positive. That sample had been collected from a plastic tablecloth immediately after guests left the restaurant. Virus was not isolated in cell cultures inoculated with aliquots of the RT-PCR-positive sample. The likelihood that patrons and staff acquire SARS-CoV-2 infections may be low in restaurants in a mid-scale city that adopt CDC restaurant reopening guidelines, such as operation at 50% capacity so that tables can be spaced at least 6 feet apart, establishment of adequate mechanical ventilation, use of a face covering except while eating or drinking, and implementation of disinfection measures.

### **Essential Workers/Food/Farm/Ag/Migrant**

#### **Health Inequalities amongst Refugees and Migrant Workers in the Midst of the COVID-19 Pandemic: a Report of Two Cases. <https://dx.doi.org/10.1007/s41649-021-00198-8>**

Malaysia hosts a significant number of refugees, asylum-seekers and migrant workers. Healthcare access for these individuals has always proved a challenge: language barriers, financial constraints and mobility restrictions are some of the frequently cited hurdles. The COVID-19 pandemic has exacerbated these existing inequalities, with migrants and refugees bearing the brunt of chronic systemic injustices. Providing equitable healthcare access for all, regardless of their citizenship and social status remains an ethical challenge for healthcare providers, particularly within the framework of a resource-limited healthcare system. Inclusive healthcare and socio-economic policies are necessary to ensure every individual's equal opportunity to attain good health. The collective experiences of refugees and migrants in the pursuit of healthcare, as highlighted by the two cases described, showcases the importance of equity in healthcare access and the detrimental implications of non-inclusive healthcare and socio-economic policies.

#### **Testing strategies to contain COVID-19 in migrant worker dormitories**

<https://doi.org/10.1016/j.jmh.2022.100079>

Introduction COVID-19 transmission within overcrowded migrant worker dormitories is an ongoing global issue. Many countries have implemented extensive control measures to prevent the entire migrant worker population from becoming infected. Here, we explore case count outcomes when utilising lockdown and testing under different testing measures and transmissibility settings. Methods We built a mathematical model which estimates transmission across 10 different blocks with 1000 individuals per block under different parameter combinations and testing conditions over the period of 1 month. We vary parameters including differences in block connectivity, underlying recovered proportion at the time of intervention, case importation rates and testing protocols using either PCR or rapid antigen testing. Results We estimate that in a relatively transmissible environment, fortnightly PCR testing at a relatively low initial recovered proportion at 40%, low connectivity where 10% of contacts occurred outside of the infected individuals' block and high importation rate of 1100000 per day, results in an average of 39 (95%Interval: 9–121) new COVID-19 cases after one month of observation. Similar results were observed for weekly rapid antigen testing at 33 (9–95) cases. Interpretation Our findings support the need for either fortnightly PCR testing or weekly rapid antigen testing in high population density environments such as migrant worker dormitories. Repeated mass testing is highly effective, preventing localized site outbreaks and reducing the need for site wide lockdowns or other extensive social distancing measures within and outside of dormitories. Funding This research is supported by DEMOS funding from Saw Swee Hock School of Public Health, National University of Singapore, the COVID-19 grant under Singapore's National Medical Research Council Centre Grant Programme – the Singapore Population Health Improvement Centre (NMRC/CG/C026/2017\_NUHS) and COVID-19 Research Fund (COVID19RF-004).

#### **Risk of SARS-CoV-2 infection in migrants and ethnic minorities compared with the general population in the European WHO region during the first year of the pandemic: a systematic review.**

<https://dx.doi.org/10.1186/s12889-021-12466-1>

BACKGROUND: Migrants and ethnic minorities have suffered a disproportionate impact of the COVID-19 pandemic compared to the general population from different perspectives. Our aim was to assess specifically their risk of infection in the 53 countries belonging to the World Health Organization European Region, during the first year of the pandemic. METHODS: We conducted a systematic review

following Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines (PROSPERO CRD42021247326). We searched multiple databases for peer-reviewed literature, published on Medline, Embase, Scisearch, Biosis and Esbiobase in 2020 and preprints from PubMed up to 29/03/2021. We included cross-sectional, case-control, cohort, intervention, case-series, prevalence or ecological studies, reporting the risk of SARS-CoV-2 infection among migrants, refugees, and ethnic minorities. RESULTS: Among the 1905 records screened, 25 met our inclusion criteria and were included in the final analysis. We found that migrants and ethnic minorities during the first wave of the pandemic were at increased exposure and risk of infection and were disproportionately represented among COVID-19 cases. However, the impact of COVID-19 on minorities does not seem homogeneous, since some ethnic groups seem to be more at risk than others. Risk factors include high-risk occupations, overcrowded accommodations, geographic distribution, social deprivation, barriers to access to information concerning preventive measures (due to the language barrier or to their marginality), together with biological and genetic susceptibilities. CONCLUSIONS: Although mixed methods studies will be required to fully understand the complex interplay between the various biological, social, and cultural factors underlying these findings, the impact of structural determinants of health is evident. Our findings corroborate the need to collect migration and ethnicity-disaggregated data and contribute to advocacy for inclusive policies and programmatic actions tailored to reach migrants and ethnic minorities.

## **Other**

### **Sustainability and authenticity: are they food risk relievers during the COVID-19 pandemic?**

<https://doi.org/10.1108/BFJ-05-2021-0495>

Purpose: The study jointly investigates sustainability and authenticity concepts in the food context during the COVID-19 outbreak with a fourfold objective: (1) understanding whether sustainability and authenticity are equivalent concepts in consumers' perceptions;(2) advancing knowledge on the role played by them about food frauds' perception;(3) investigating whether these concepts are considered as “risk relievers” by consumers, (4) comparing the concepts to understand which one has a greater weight on the consumer's perception. Design/methodology/approach: The study adopts a Combination of a Uniform and a shifted Binomial distribution (CUB models) on data gathered in Spain between June and August 2020 through an online questionnaire. Findings: The findings reveal that: (1) consumers perceive sustainability and authenticity as different concepts in the food context and (2) as two important indicators of fraud protection of a product for consumers;(3) besides, authenticity is seen as a “risk reliever” in buying a food product, as well as sustainability, (4) although results underline high uncertainty in the latter case. Originality/value: By considering that the COVID-19 outbreak seriously threatens food safety, security and nutrition, this research elucidates the relevant role of food sustainability and authenticity concepts as “risk relievers” in terms of food frauds and negative issues related to COVID-19. © 2021, Emerald Publishing Limited.

### **Recover the food-energy-water nexus from COVID-19 under Sustainable Development Goals acceleration actions. <https://dx.doi.org/10.1016/j.scitotenv.2022.153013>**

The interwoven relationship between food, energy, and water (FEW) is described as the FEW nexus. The COVID-19 pandemic has interrupted the FEW nexus and impeded the progress of FEW-related Sustainable Development Goals (SDGs) (SDG 2: Zero Hunger; 6: Clean Water and Sanitation; 7: Affordable and Clean Energy). We aim to find solutions to recover the FEW nexus from COVID-19. First, we discussed the challenges faced by FEW amid COVID-19. Second, we observed responses of the FEW nexus under COVID-19's interference. Finally, we proposed the solutions that guide the FEW nexus in recovery from the pandemic by mining 164 FEW-related SDG Acceleration Actions. The key solutions

include 1) building or upgrading FEW facilities and infrastructure, 2) improving nature's contribution to the FEW nexus, 3) developing digital technologies, 4) innovating the source and production of FEW, and 5) promoting community production and transforming the lifestyle. Our work highlights the importance of feasible and accelerated actions that recover the FEW nexus in the post-pandemic era.

**Summer crowds: An analysis of USFS campground reservations during the COVID-19 pandemic.**

<https://dx.doi.org/10.1371/journal.pone.0261833>

During the COVID-19 pandemic, US public land managers faced the challenge of catering to large increases in camping demand, while maintaining social distancing guidelines. In this paper, we use multivariate linear regression to analyze weekly changes in reservations to US Forest Service (USFS) campgrounds between 2019 and 2020. The regression models estimate the impact of local COVID infection rates, public health restrictions, and spatial spillovers from proximity to National Parks (NPs), metropolitan areas and wildfire on camping demand. Our sample includes 1,688 individual USFS campgrounds from across the contiguous US. The results illustrate the dramatic increases in camping on USFS land that occurred in the summer of 2020 and demonstrate that increases in local infection rates led to significant increases in camping nights reserved in the summer. The results also illustrate that the increase in camping nights reserved at USFS campgrounds was particularly dramatic for campgrounds located near large metropolitan areas and near NPs that saw increases in overall recreational visits. These results point to the important role that public lands played during the pandemic and can help guide public land resource allocations for campground maintenance and operation.

**Is restaurant crowdfunding immune to the COVID-19 pandemic?** <https://doi.org/10.1108/IJCHM-06-2021-0817>

**Purpose:** In 2020, the COVID-19 pandemic had a devastating impact on global health care and the economy. The restaurant industry has been especially hit hard by the statewide “stay-at-home” orders. To get back on track, many of these businesses need capital. A new and effective form of fundraising for business startups is crowdfunding (CF). However, there has been little research on the pandemic impact on CF. This study aims to fill this gap by investigating the pandemic-related impact on restaurant CF. **Design/methodology/approach:** This study extracted all 2,686 restaurant CF projects in the USA from the Kickstarter platform from April 2010 to January 2021. By conducting descriptive analyses and multiple logistic regression models, this study examined the pandemic impact on CF success. **Findings:** This study finds that, while controlling the effects of other determinants, businesses in the midst of the pandemic are more likely to be successfully funded than businesses unaffected by the pandemic. Findings also reveal that restaurant startups lowered their funding goals and posted more updates/comments/pledge levels during the pandemic, which made projects more likely to be selected as a “Project We Love” and increased the odds of funding success. However, mentioning COVID-19-related information or locating projects in “red zones” are not found to have any significant direct or moderating impact on the funding success. **Research limitations/implications:** This study pioneers the research topic restaurant CF and attempts to raise the research attention of small- and medium-sized enterprises and entrepreneurial financing. Using quantitative methods, it provides a new perspective on pandemic-impact research. Social exchange theory is extended to the context of reward-based CF under crisis. Finally, to the best of the authors’ knowledge, this is the first investigation of the possible moderating effect of project location on the relationship between restaurant CF characteristics and success. **Practical implications:** The findings of this study suggest restaurateurs to be confident about the fundraising of their startup business through reward-based CF, even when located within so-called pandemic red zones, and perform appropriate communication strategies while using the reward-based CF. **Originality/value:** This study is one of the earliest to examine the main and moderating effects of the

pandemic-related factors on business CF in the hospitality realm. The findings are reference for researchers and restaurateurs on fundraising in a crisis context. © 2021, Emerald Publishing Limited.

**Prevalence of risk behaviors and correlates of SARS-CoV-2 positivity among in-school contacts of confirmed cases in a Georgia school district in the pre-vaccine era, December 2020-January 2021.**

<https://dx.doi.org/10.1186/s12889-021-12347-7>

**BACKGROUND:** There is a continuing risk for COVID-19 transmission in school settings while transmission is ongoing in the community, particularly among unvaccinated populations. To ensure that schools continue to operate safely and to inform implementation of prevention strategies, it is imperative to gain better understanding of the risk behaviors of staff and students. This secondary analysis describes the prevalence of COVID-19 risk behaviors in an exposed population of students and school staff in the pre-vaccine era and identifies associations between these behaviors and testing positive for SARS-CoV-2. **METHODS:** From December 2020-January 2021, school staff and students exposed to confirmed COVID-19 cases in a Georgia school district were tested for SARS-CoV-2 and surveyed regarding risk behaviors in and out of school. Prevalence of risk behaviors was described by age group and school level, and associations with SARS-CoV-2 positivity were identified using chi squared tests. **RESULTS:** Overall, 717 students and 79 school staff participated in the investigation; SARS-CoV-2 positivity was 9.2%. In the 2 weeks prior to COVID-19 exposure, 24% of participants reported unmasked indoor time at school, 40% attended social gatherings with non-household members, and 71% visited out-of-school indoor locations, including 19% who ate indoors in restaurants. Frequencies of risk behaviors increased by age. Among students, 17% participated in school sports, of whom 86% participated without a mask. SARS-CoV-2 positivity was significantly associated with school sports and unmasked time in sports. Among K-5 students, positivity was associated with exposure to a teacher index case. **CONCLUSIONS:** This analysis highlights the high prevalence of risk behaviors in an unvaccinated population exposed to COVID-19 in school and identifies an association between student sports participation and SARS-CoV-2 positivity. These findings illustrate the importance of school-level prevention measures to reduce SARS-CoV-2 transmission, including limiting close-contact indoor sports and promoting consistent mask use in unvaccinated individuals. Future research could explore the role of community vaccination programs as a strategy to reduce COVID-19 transmission and introductions into school settings.

**Agricultural commodity supply chain during the covid-19 pandemic** <https://doi.org/10.1088/1755-1315/951/1/012109>

This study aims to analyze the agricultural commodity supply chain during the Covid-19 pandemic. The data used in this paper is secondary data and analyzed descriptively. The effects of Covid-19 pandemic on agricultural supply chains are discussed, including transportation barriers during the pandemic and government programs to find a way out. Finally, this study showed the policy formula from government to maintain the national food security chain especially agricultural commodity such as guarantee transportation and distribution of food from surplus provinces to deficit provinces to achieve adequate food availability in each province, innovation strategies in the distribution of agricultural products, and create an intelligent and accurate information system.

**Sustainability Recommendations and Practices in School Feeding: A Systematic Review.**

<https://dx.doi.org/10.3390/foods11020176>

Considering the importance of schools for sustainable food offers and the formation of conscientious citizens on sustainability, this systematic review aimed to verify the recommendations on sustainability in school feeding policies and the sustainability practices adopted in schools. The research question that guided this study is "what are the recommendations on sustainability in school feeding policies and the



sustainability practices adopted in schools?". This systematic review was prepared according to PRISMA, and its checklist was registered in PROSPERO. Specific search strategies for Scopus, Web of Science, Pubmed, Lilacs, Google Scholar, and ProQuest Dissertations & Theses Global were developed. The included studies' methodological quality was evaluated using the Meta-Analysis Statistical Assessment and Review Instrument (MASTARI). A total of 134 studies were selected for a full reading. Of these, 50 met the eligibility criteria and were included in the systematic review. Several sustainability practices were described. The most cited are school gardens and education activities for sustainability. However, actions carried out in food services were also mentioned, from the planning of menus and the purchase of raw materials (mainly local and organic foods, vegetarian/vegan menus) to the distribution of meals (reduction of organic and inorganic waste: composting, recycling, donating food, and portion sizes). Recommendations for purchasing sustainable food (organic, local, and seasonal), nutrition education focused on sustainability, and reducing food waste were frequent; this reinforces the need to stimulate managers' view, in their most varied spheres, for the priority that should be given to this theme, so that education for sustainability is universally part of the curricula. The importance of education in enabling individuals to promote sustainable development is reaffirmed in Sustainable Development Goal 4 (SDG 4). The development of assessment instruments can help monitor the evolution of sustainable strategies at schools and the main barriers and potentialities related to their implementation.

## **Food and COVID-19 Lit Review: Week ending 01/07/2022**

### **DNPAO**

- Why should obese youth be prioritized in COVID-19 vaccination programs? A nationwide retrospective study <https://doi.org/10.1016/j.lana.2021.100167>
- Impact of Consumer Health Awareness on Dairy Product Purchase Behavior during the COVID-19 Pandemic <https://doi.org/10.3390/su14010314>

### **DFWED/food safety**

- SARS-CoV-2 circulation in Croatian wastewaters and the absence of SARS-CoV-2 in bivalve molluscan shellfish <https://doi.org/10.1016/j.envres.2021.112638>
- Assessing the Impact of COVID-19 on Sustainable Food Supply Chains <https://doi.org/10.3390/su14010143>

### **NIOSH/worker-Safety**

- Mental Health Impacts of Wildfire, Flooding and COVID-19 on Fort McMurray School Board Staff and Other Employees: A Comparative Study <https://doi.org/10.3390/ijerph19010435>
- A descriptive analysis of 2020 California Occupational Safety and Health Administration covid-19-related complaints. <https://dx.doi.org/10.1016/j.ssmph.2021.101016>

### **NCEH**

- Social distancing and store choice in times of a pandemic <https://doi.org/10.1016/j.jretconser.2021.102860>
- Covid-19, urban economic resilience and the pandemic pivot: Toronto's restaurant scene <https://doi.org/10.1080/21681376.2021.2013732>
- The Sustainable Innovation Design in Catering Service <https://doi.org/10.3390/su14010278>

#### Essential Workers/Food/Farm/Ag/Migrant

- Covid is Background for Strike <https://doi.org/10.1002/mare.30795>
- Essential Farmworkers and the Pandemic Crisis: Migrant Labour Conditions, and Legal and Political Responses in Italy and Spain [https://doi.org/10.1007/978-3-030-81210-2\\_8](https://doi.org/10.1007/978-3-030-81210-2_8)

#### Other

- Effect of the COVID-19 pandemic on Social Determinants of Health in Non-Hispanic Black pregnant women <https://doi.org/10.1016/j.ajog.2021.11.814>
- Elementary schools' response to student wellness needs during the COVID-19 shutdown: A qualitative exploration using the R = MC2 readiness heuristic <https://doi.org/10.3390/ijerph19010279>
- Plant Health in a One Health context Special Issue <https://doi.org/10.1111/ppa.13487>

#### DNPAO

- **Why should obese youth be prioritized in COVID-19 vaccination programs? A nationwide retrospective study** <https://doi.org/10.1016/j.lana.2021.100167>  
Summary Background The dominant effect of age on COVID-19 mortality obscures the impact of other risk factors. Although the elderly is at a greater risk of severe disease and death due to COVID-19, the interaction of obesity and age was not carefully assessed. This analysis is especially critical for prioritizing groups to receive COVID-19 vaccination. Methods Starting with 1,120,767 unvaccinated individuals registered in a Brazilian surveillance system, we selected 313,898 hospitalized COVID-19 patients aged 20 to 89 who had a BMI  $\geq$  25 kg/m<sup>2</sup> and cardiovascular diseases (CVD) or diabetes, as well as individuals with no risk factors associated with severe COVID-19. Patient data were stratified by age, obesity, BMI, and comorbidities, and subsequently, subjected to crude and adjusted odds ratio, hazard ratio, and Kaplan–Meier curves. Disease outcomes were invasive and non-invasive ventilatory support, intensive care unit (ICU) admission, and death. Findings Obesity alone is a risk factor for in-hospital mortality and is more significant than cardiovascular disease and diabetes. Furthermore, obesity, cardiovascular disease, and diabetes increase the risk of severity and death by COVID-19 more significantly in young adults than in the elderly. When categorizing patients by obesity classes, the severity of obesity was found to be associated with a higher risk of admission to the ICU and death from COVID-19 than the non-obese young adults or elderly population. Interpretation Our findings highlight the increased risk of severe COVID-19 on the Brazilian obese youth. As SARS-CoV-2 may become a recurrent seasonal infection, future vaccination campaigns against COVID-19 should prioritize obese young individuals.
- **Impact of Consumer Health Awareness on Dairy Product Purchase Behavior during the COVID-19 Pandemic** <https://doi.org/10.3390/su14010314>  
Corona Virus Disease 2019 (COVID-19) has led to a reduction in the overall consumption of dairy products in China. How to restore the consumption potential of dairy products and alleviate the serious impact on the dairy market in the post-epidemic period is an urgent problem that needs to be resolved. Based on the survey data of 1780 consumers in 31 provinces (municipalities and autonomous regions) of China, the Heckman two-stage model was used to empirically test the impact of consumer health awareness on dairy product purchase behavior during the COVID-19 pandemic and to further analyze the differences in factors affecting dairy product purchase behavior with the restriction of consumer health awareness. The results showed that the overall

level of consumer health awareness after the outbreak of COVID-19 was relatively high. A total of 79% of consumers preferred to buy dairy products after the COVID-19 outbreak, and the proportion of purchased dairy products increased by an average of 17.49%, compared with that before the COVID-19 outbreak. Health change perception, health concern degree, and health habit development in consumer health awareness all have important impacts on the purchase behavior of dairy products. Among them, health change perception and health habit development both positively and significantly affected the purchase intention. Moreover, all three aspects of consumer health awareness positively increased the proportion of dairy product purchases. Difference analysis showed that there were obvious differences among consumer groups with different health awareness in dairy product purchase decisions. Component factor analysis found that, overall, consumer health awareness directly affected the purchase intention and increased the purchase proportion of dairy products. Therefore, policy recommendations are proposed to increase the consumption momentum of dairy products by raising consumer health awareness in the post-epidemic period.

#### DFWED/food safety

- **SARS-CoV-2 circulation in Croatian wastewaters and the absence of SARS-CoV-2 in bivalve molluscan shellfish** <https://doi.org/10.1016/j.envres.2021.112638>

The circulation of SARS-CoV-2 in the environment has been confirmed numerous times, whilst research on the bioaccumulation in bivalve molluscan shellfish (BMS) has been rather scarce. The present study aimed to fulfil the knowledge gap on SARS-CoV-2 circulation in wastewaters and surface waters in this region and to extend the current knowledge on potential presence of SARS-CoV-2 contamination in BMS. The study included 13 archive wastewater and surface water samples from the start of epidemic and 17 influents and effluents from nine wastewater treatment plants (WWTP) of different capacity and treatment stage, sampled during the second epidemic wave. From that period are the most of 77 collected BMS samples, represented by mussels, oysters and warty venus clams harvested along the Dalmatian coast. All samples were processed according to EN ISO 15216-1 2017 using Mengovirus as a whole process control. SARS-CoV-2 detection was performed by real-time and conventional RT-PCR assays targeting E, N and nsp14 protein genes complemented with nsp14 partial sequencing. Rotavirus A (RVA) real-time RT-PCR assay was implemented as an additional evaluation criterion of virus concentration techniques. The results revealed the circulation of SARS-CoV-2 in nine influents and two secondary treatment effluents from eight WWTPs, while all samples from the start of epidemic (wastewaters, surface waters) were negative which was influenced by sampling strategy. All tertiary effluents and BMS were SARS-CoV-2 negative. The results of RVA amplification were beneficial in evaluating virus concentration techniques and provided insights into RVA dynamics within the environment and community. In conclusion, the results of the present study confirm SARS-CoV-2 circulation in Croatian wastewaters during the second epidemic wave while extending the knowledge on wastewater treatment potential in SARS-CoV-2 removal. Our findings represent a significant contribution to the current state of knowledge that considers BMS of a very low food safety risk regarding SARS-CoV-2.

- **Assessing the Impact of COVID-19 on Sustainable Food Supply Chains** <https://doi.org/10.3390/su14010143>

Recently, it has become an important issue to ensure sustainability, especially in food supply chains, against the rapidly growing population, increasing demand, and sudden disruptions caused by uncertain times such as that caused by COVID-19. Since food supply chains has vulnerable products and processes, it is critical to understand the sustainability factors of food supply chains especially in uncertain times such during the COVID-19 pandemic. This study aims

to determine sustainability factors of food supply chains. An Interpretive Structural Modelling method is used to state the relations between sustainability factors of food supply chains. As a result of the study, Information Sharing and Managerial Approaches are classified as driving factors; Food Safety and Security, Know-How Transfer, Logistics Networking, Risk Mitigation, Employee Commitment, Innovation, Traceability and Responsiveness are categorized as linkage factors. This article will be beneficial for managers in helping them develop sustainable food supply chains during uncertain times by focusing on traceability, information sharing, know-how transfer, food safety and security.

#### NIOSH/worker-Safety

- **Mental Health Impacts of Wildfire, Flooding and COVID-19 on Fort McMurray School Board Staff and Other Employees: A Comparative Study** <https://doi.org/10.3390/ijerph19010435>  
Background: Fort McMurray, a city in northern Alberta, Canada, has experienced multiple traumas in the last five years, including the 2016 wildfire, the 2020 floods, and the COVID-19 pandemic. Eighteen months after the wildfire, major depressive disorder (MDD), generalized anxiety disorder (GAD), and Post Traumatic Stress Disorder (PTSD) symptoms were elevated among school board employees in the city. Objective: This study aimed to compare employees of the school board and other employees of Fort McMurray in respect to the impact the 2016 wildfires, the 2019 COVID pandemic, and the 2020 floods had on their mental health. Methodology: A quantitative cross-sectional survey was conducted in Fort McMurray from 24 April to 2 June 2021. Online questionnaires were administered through REDCap and were designed to capture socio-demographic characteristics, clinical as well as wildfire, COVID-19, and flooding-related variables. Mental health outcome variables were captured using self-reported standardized assessment scales. Data were analysed with descriptive statistics, Chi-square/Fisher's Exact tests, and binary regression analysis. Results: Of the 249 residents who accessed the online survey, 186 completed the survey, giving a response rate of 74.7%. Of these respondents, 93.5% (174) indicated their employment status and were included in the Chi-square analysis. Most of the respondents were female (86.2%, (150)), above 40 years (53.4%, (93)), and were in a relationship (71.3%, (124)). The prevalence values for MDD, GAD and PTSD among respondents were 42.4%, 41.0, and 36.8%, respectively. There was a statistically significant difference between employees of the school board and other employees with respect to likely PTSD prevalence (28% vs. 45%, respectively,  $p < 0.05$ ), although with other factors controlled for, in a binary logistic regression model, employer type did not significantly predict likely PTSD. Conclusions: The study has established that likely PTSD symptoms were significantly higher in other employees compared to those of school board employees. Greater exposure to the traumatic events and a greater perceived lack of support from other employers might have contributed to the significantly higher prevalence of PTSD in other employees.
- **A descriptive analysis of 2020 California Occupational Safety and Health Administration covid-19-related complaints.** <https://dx.doi.org/10.1016/j.ssmph.2021.101016>  
COVID-19 mortality has disproportionately affected specific occupations and industries. The Occupational Safety and Health Administration (OSHA) protects the health and safety of workers by setting and enforcing standards for working conditions. Workers may file OSHA complaints about unsafe conditions. Complaints may indicate poor workplace safety during the pandemic. We evaluated COVID-19-related complaints filed with California (Cal)/OSHA between January 1, 2020 and December 14, 2020 across seven industries. To assess whether workers in occupations with high COVID-19-related mortality were also most likely to file Cal/OSHA complaints, we compared industry-specific per-capita COVID-19 confirmed deaths from the California Department of Public Health with COVID-19-related complaints. Although 7820 COVID-19-

related complaints were deemed valid by Cal/OSHA, only 627 onsite inspections occurred, and 32 citations were issued. Agricultural workers had the highest per-capita COVID-19 death rates (402 per 100,000 workers) but were least represented among workplace complaints (44 per 100,000 workers). Health Care workers had the highest complaint rates (81 per 100,000 workers) but the second lowest COVID-19 death rate (81 per 100,000 workers). Industries with the highest inspection rates also had high COVID-19 mortality. Our findings suggest complaints are not proportional to COVID-19 risk. Instead, higher complaint rates may reflect worker groups with greater empowerment, resources, or capacity to advocate for better protections. This capacity to advocate for safe workplaces may account for relatively low mortality rates in potentially high-risk occupations. Future research should examine factors determining worker complaints and complaint systems to promote participation of those with the greatest need of protection.

#### NCEH

- **Social distancing and store choice in times of a pandemic**  
<https://doi.org/10.1016/j.jretconser.2021.102860>  
Public health officials enforced several measures to contain the COVID-19 pandemic that affected grocery stores, such as limits on store capacities and enforcement of masks and physical distancing among customers. Nevertheless, these measures can provoke queues, which could drive customers away from stores. In this study, we investigate how customers trade off between social distancing measures and increased waiting times during the peak of the COVID-19 pandemic. Our data comes from an online survey applied in New York City in May 2020. This survey included a set of discrete choice experiments framed in virtual stores, as well as a set of psychometric indicators regarding the pandemic. With this data, we estimated a latent class conditional logit model where assignment to classes is correlated with COVID-19 latent variables. We identified three latent classes with preference structures that valued social distancing to varying degrees. In spite of this heterogeneity in preferences, we found that customers were willing to wait longer to access stores with better social distancing measures. This result suggests that stores could increase, rather than decrease, their sales if they enforce public health measures at the expense of longer waiting times.
- **Covid-19, urban economic resilience and the pandemic pivot: Toronto's restaurant scene**  
<https://doi.org/10.1080/21681376.2021.2013732>  
Restaurants, fundamental to Toronto's urban and cultural economy, experienced significant disruption because of extended closures during the Covid-19 pandemic. We examine data harvested from Yelp Business Search Endpoint on restaurant openings and closures in Toronto between May 2020 and May 2021. Our analysis shows that, despite expectations to the contrary, more restaurants opened than closed during this time. Geographically, similar numbers of restaurants both opened and closed in the city's downtown core, demonstrating that early pandemic predictions suggesting the end of concentration are exaggerated. Overall, restaurants and restaurateurs exhibited resilience during the pandemic. We attribute this resilience, in part, to an ability to pivot to takeout-friendly foods, digital ordering and delivery and because of government funding supports.
- **The Sustainable Innovation Design in Catering Service** <https://doi.org/10.3390/su14010278>  
COVID-19 has impacted the whole world since 2019, especially the dietary patterns of customers. Before the pandemic, some companies had been monitoring the operation data for health and food safety situations. It has become a vital mission to improve the food production and service process if the companies wish to pursue the sustainability of their businesses due to the general environment being changed by the epidemic. The sustainability of food systems

inherently implies not only customer satisfaction but also the saving of costs. The catering service must find new ways to increase customer loyalty and satisfaction while implementing improved practices for building their brand image and modern decoration. The objective of this article is to discuss the service innovation process in order to investigate the interrelationships of catering environmental policy and psychological effects in the service function. The data were collected from a DINESERV questionnaire, comprised service quality standards, to increase the customer satisfaction for a mobile dining car. Finally, the TRIZ or Kano is a standardized measure designed to improve the idealization of strategy for selecting the most appropriate service quality model. This study presents the results from the survey and discusses future perspectives of increasing the sustainability of service within a catering information system.

#### Essential Workers/Food/Farm/Ag/Migrant

- **Covid is Background for Strike** <https://doi.org/10.1002/mare.30795>  
Members of UFC Local 555 staged a one week strike through December 24 at Fred Meyer and Quality Food Centers stores across Oregon. They allege that the grocery chains are unlawfully withholding information at the bargaining table. The strike was intended to squeeze the grocery chains through the end of the year's busiest shopping season. Fred Meyer and QFC are owned by Kroger, the nation's largest supermarket chain. Stores will remain open, the company said.
- **Essential Farmworkers and the Pandemic Crisis: Migrant Labour Conditions, and Legal and Political Responses in Italy and Spain** [https://doi.org/10.1007/978-3-030-81210-2\\_8](https://doi.org/10.1007/978-3-030-81210-2_8)  
The agri-food system across Europe relies heavily on migrant labour. Border lockdowns during the Covid-19 pandemic immobilised thousands of foreign farmworkers, giving rise to fears of labour shortages and food production losses in EU countries. Farmers' organisations sought institutional interventions to address this labour demand. Although migrant workers have become a fundamental component of core sectors in recent decades, it is only in the current health emergency that they were recognised as 'essential' workers. The chapter analyses the working conditions of migrant farmworkers alongside national debates and institutional interventions in Italy and Spain during the pandemic. It provides a critical comparative analysis of legal and policy interventions to address migrants' situations of vulnerability. Both countries depend on important contingents of EU and non-EU migrant farmworkers, especially in fruit and vegetable production; moreover, they present common aspects in supply chain dynamics and labour market policies, but also specific differences in labour, migration and social policies. Both adopted measures to face the condition of irregularity of migrant workers in order to respond to labour demand in the agri-food sector and to provide these workers with safe working and living conditions during the pandemic. However, these interventions reveal shortcomings that significantly limit their impact and outcomes, calling into question to what extent migrant workers are really considered as 'essential' in a long-term perspective and, therefore, to what extent the current pandemic constitutes an opportunity for a new push to enforce labour and migrant rights.

#### Other

- **Effect of the COVID-19 pandemic on Social Determinants of Health in Non-Hispanic Black pregnant women** <https://doi.org/10.1016/j.ajog.2021.11.814>  
Objective: To examine the difference in social determinants of health (SDH) for non-Hispanic Black pregnant women during the COVID-19 pandemic compared to pre-pandemic. Study Design: Retrospective cohort analyzing SDH in postpartum Black women in Hamilton County, OH. Women were considered to experience pregnancy during the COVID-19 pandemic if delivery occurred after March 30, 2020. The referent group were postpartum Black women who

delivered from 2011-March 29, 2020. Sociodemographic, pregnancy, and infant data were collected from participants' medical records. Structured interviews measured participants' social determinants of health. Generalized linear regression estimated the association between birth during the pandemic and SDH. Results: 285 Non-Hispanic Black mothers were enrolled in the study. Of these, 239 (84%) delivered prior to the pandemic and 46 (16%) delivered during the pandemic. Baseline characteristics were similar between groups with few differences noted in Table 1. Black mothers who delivered during the pandemic were more likely to have access to transportation and had more frequent and earlier onset prenatal visits. They were also less likely to use food stamps during the pandemic. Women with pregnancies during the pandemic had more job opportunities and worked more hours during the week. However, Black women who delivered during the pandemic felt less safe in their neighborhood and faced more discrimination based upon their race (Table 2). No mothers in this cohort received the COVID-19 vaccine during pregnancy. Conclusion: Non-Hispanic Black women who experienced pregnancies during the pandemic had more job opportunities and more prenatal care than prior to the pandemic, yet they experienced more race-based discrimination and felt less safe in their neighborhoods. 2020 saw the lowest Black infant mortality on record in Hamilton County. Initiatives during the pandemic may have helped mothers achieve more optimal prenatal care and it is critical we examine the initiatives which mitigated SDH for this population. However, more needs to be done to improve vaccination and neighborhood safety.

- **Elementary schools' response to student wellness needs during the COVID-19 shutdown: A qualitative exploration using the R = MC2 readiness heuristic**

<https://doi.org/10.3390/ijerph19010279>

During spring of 2020, the COVID-19 pandemic and accompanying public health advisories forced K-12 schools throughout the United States to suspend in-person instruction. School personnel rapidly transitioned to remote provision of academic instruction and wellness services such as school meals and counseling services. The aim of this study was to investigate how schools responded to the transition to remote supports, including assessment of what readiness characteristics schools leveraged or developed to facilitate those transitions. Semi-structured interviews informed by school wellness implementation literature were conducted in the spring of 2020. Personnel (n = 50) from 39 urban and rural elementary schools nationwide participated. The readiness = motivation capacity<sup>2</sup> (R = MC2) heuristic, developed by Scaccia and colleagues, guided coding to determine themes related to schools' readiness to support student wellness in innovative ways during the pandemic closure. Two distinct code sets emerged, defined according to the R = MC2 heuristic (1) Innovations: roles that schools took on during the pandemic response, and (2) Readiness: factors influencing schools' motivation and capacity to carry out those roles. Schools demonstrated unprecedented capacity and motivation to provide crucial wellness support to students and families early in the COVID-19 pandemic. These efforts can inform future resource allocation and new strategies to implement school wellness practices when schools resume normal operations.

- **Plant Health in a One Health context Special Issue** <https://doi.org/10.1111/ppa.13487>

This issue encompasses how the health of plants influences wider elements of ecosystems, including our own food and health, while at the same time being affected by broad factors such as climate, pollution, and agricultural practices.

## Food and COVID-19 Lit Review: Weeks ending 12/10/21 and 12/17/21

### DNPAO

- Brief Research Commentary: The US Indigenous Food Sovereignty Movement's Impact on Understandings of COVID-19 in Indian Country <https://doi.org/10.1111/cuag.12280>
- The Social Practices of Food Bank Volunteer Work <https://doi.org/10.1017/S1474746421000555>
- Digital Interventions to Promote Healthy Eating in Children: Umbrella Review. <https://dx.doi.org/10.2196/30160>
- Approaches of Landscape Architects to Applications for the Use of Open and Green Spaces in Conditions of Covid-19 Pandemic <https://doi.org/10.14744/megaron.2021.90699>
- Community-oriented actions by food retailers to support community well-being: a systematic scoping review <https://doi.org/10.1016/j.puhe.2021.09.029>
- Older Adults With Chronic Disease and Food Insecurity in the United States. <https://dx.doi.org/10.3928/00989134-20211109-02>
- Older Adults With Chronic Disease and Food Insecurity in the United States. <https://dx.doi.org/10.3928/00989134-20211109-02>
- COVID-19 Pandemic as Risk Factors for Excessive Weight Gain in Pediatrics: The Role of Changes in Nutrition Behavior. A Narrative Review <https://doi.org/10.3390/nu13124255>
- Shifts in Sources of Food but Stable Nutritional Outcomes among Children in the Early Months of the COVID-19 Pandemic <https://doi.org/10.3390/ijerph182312626>
- Physical activity and COVID-19. The basis for an efficient intervention in times of COVID-19 pandemic <https://doi.org/10.1016/j.physbeh.2021.113667>
- Lessons learned from implementing SNAP-Ed in a nursing/K-8 partnership school during the pandemic <https://doi.org/10.1111/phn.13031>
- The National Health and Nutrition Examination Survey (NHANES), 2021–2022: Adapting Data Collection in a COVID-19 Environment <https://doi.org/10.2105/AJPH.2021.306517>
- The Impact of COVID-19 on Breastfeeding Rates in a Low-Income Population <https://doi.org/10.1089/bfm.2021.0238>
- Experiences of increased food insecurity, economic, and psychological distress during the COVID-19 pandemic among SNAP-enrolled food pantry clients <https://doi.org/10.1017/S1368980021004717>
- Food Insecurity in the Households of Children with Autism Spectrum Disorders and Intellectual Disabilities in the U.S.: Analysis of the National Survey of Children's Health Data 2016 – 2018 <https://doi.org/10.1101/2021.03.29.21254546>

### DFWED

- COVID-19 abatement measures and declines in food-borne illnesses: what is the evidence?
- 2020 Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS): 38th Annual Report <https://doi.org/10.1080/15563650.2021.1989785>
- 

### NIOSH/Worker-safety health

- COVID-19 policies and recommendations for foodservice reopening: An integrative review <https://doi.org/10.1080/15378020.2021.2006035>
- Impact of natural ventilation on exposure to SARS-CoV 2 in indoor/semi-indoor terraces using CO2 concentrations as a proxy <https://doi.org/10.1016/j.jobe.2021.103725>



- Burnout and workplace dehumanization at the supermarket: A field study during the COVID-19 outbreak in Italy <https://doi.org/10.1002/casp.2588>
- Surviving the hectic early phase of the COVID-19 pandemic: a qualitative study to the supply chain strategies of food service firms in times of a crisis <https://doi.org/10.1108/ijlm-01-2021-0013>
- The Achilles Heel of the U.S. Food Industries: Exposure to Labor and Upstream Industries in the Supply Chain <https://doi.org/10.2139/ssrn.3957604>

#### NCEH

- Food allergen ladders: A need for standardization? <https://doi.org/10.1111/pai.13714>
- Restaurant patronage during the COVID-19 pandemic and the protection motivation theory: influence of consumers' socio-demographic, situational, and psychographic factors <https://doi.org/10.1080/15378020.2021.2006036>

#### Other

- The Association of Social Factors and Health Insurance Coverage with COVID-19 Vaccinations and Hesitancy, July 2021. <https://dx.doi.org/10.1007/s11606-021-07213-6>
- The Role of the California Tier System in Controlling Population Mobility During the COVID-19 Pandemic (preprint) <https://doi.org/10.21203/rs.3.rs-1072338/v1>
- Are we approaching peak meat consumption? Analysis of meat consumption from 2000 to 2019 in 35 countries and its relationship to gross domestic product <https://doi.org/10.3390/ani11123466>
- School Districts Have Expanded Their Nonacademic Services for 2021-2022, While Academic Offerings Remain Much the Same: Selected Findings from the Third American School District Panel Survey. Data Note: Insights from the American Educator Panels. Research Report. RR-A956-4 <https://doi.org/10.7249/RRA956-4>
- Impact of the COVID-19 pandemic on food production and animal health <https://doi.org/10.1016/j.tifs.2021.12.003>
- Overstocked Agricultural Produce and Emergency Supply System in the COVID-19 Pandemic: Responses from China <https://doi.org/10.3390/foods10123027>

#### DNPAO

- **Brief Research Commentary: The US Indigenous Food Sovereignty Movement's Impact on Understandings of COVID-19 in Indian Country** <https://doi.org/10.1111/cuag.12280>  
This research commentary provides an overview of contemporary anthropological research regarding the US Indigenous food sovereignty movement and demonstrates how it informs the impacts of COVID-19 on Indian Country. Past anthropological research on US Indigenous foodways, while useful, has lacked US Indigenous voices and in-depth political context. Alternatively, many current Indigenous scholars prioritize integration of this crucial political landscape, thus increasing the relevancy and application of this work. For this review, I begin by coalescing a selection of these recent research developments, primarily focusing on research undertaken by Indigenous scholars currently in, and affiliated with, anthropology. I then connect the ways in which their ethnographic and community-based findings shed insight into challenges that arose during the Covid-19 pandemic in 2020. Finally, I critique anthropology's lack of support for these research projects and offer suggestions regarding future US Indigenous food sovereignty research directions.

- **The Social Practices of Food Bank Volunteer Work**

<https://doi.org/10.1017/S1474746421000555>

The on-going rise in demand experienced by voluntary and community organisations (VCOs) providing emergency food aid has been described as a sign of a social and public health crisis in the UK (Loopstra, 2018; Lambie-Mumford, 2019), compounded since 2020 by the impact of (and responses to) Covid 19 (Power et al.2020). In this article we adopted a social practice approach to understanding the work of food bank volunteering. We identify how 'helping others', 'deploying coping strategies' and 'creating atmospheres' are key specific (and connected) forms of shared social practice. Further, these practices are sometimes suffused by faith-based practice. The analysis offers insights into how such spaces of care and encounter (Williams et al.2016; Cloke et al.2017) function, considers the implications for these distinctive organisational forms (the growth of which has been subject to justified critique) and suggests avenues for future research.

- **Digital Interventions to Promote Healthy Eating in Children: Umbrella Review.**

<https://dx.doi.org/10.2196/30160>

BACKGROUND: eHealth and web-based service delivery have become increasingly common during the COVID-19 pandemic. Digital interventions may be highly appealing to young people; however, their effectiveness compared with that of the usual face-to-face interventions is unknown. As nutrition interventions merge with the digital world, there is a need to determine the best practices for digital interventions for children. OBJECTIVE: The aim of this study is to examine the effectiveness of digital nutrition interventions for children on dietary outcomes compared with status quo interventions (eg, conventional face-to-face programming or nondigital support). METHODS: We conducted an umbrella review of systematic reviews of studies assessing primary research on digital interventions aimed at improving food and nutrition outcomes for children aged <18 years compared with conventional nutrition education were eligible for inclusion. RESULTS: In total, 11 systematic reviews published since 2015 were included (7/11, 64%, were of moderate quality). Digital interventions ranged from internet, computer, or mobile interventions to websites, programs, apps, email, videos, CD-ROMs, games, telehealth, SMS text messages, and social media, or a combination thereof. The dose and duration of the interventions varied widely (single to multiple exposures; 1-60 minutes). Many studies have been informed by theory or used behavior change techniques (eg, feedback, goal-setting, and tailoring). The effect of digital nutrition interventions for children on dietary outcomes is small and inconsistent. Digital interventions seemed to be the most promising for improving fruit and vegetable intake compared with other nutrition outcomes; however, reviews have found mixed results. CONCLUSIONS: Owing to the heterogeneity and duration of digital interventions, follow-up evaluations, comparison groups, and outcomes measured, the effectiveness of these interventions remains unclear. High-quality evidence with common definitions for digital intervention types evaluated with validated measures is needed to improve the state of evidence, to inform policy and program decisions for health promotion in children. Now is the time for critical, robust evaluation of the adopted digital interventions during and after the COVID-19 pandemic to establish best practices for nutrition interventions for children.

- **Approaches of Landscape Architects to Applications for the Use of Open and Green Spaces in Conditions of Covid-19 Pandemic** <https://doi.org/10.14744/megaron.2021.90699>

Open and green areas, including areas such as parks, urban forests, daily recreation areas, residential gardens, can take on the task of changing the spatial system. Especially during epidemic/pandemic periods, people's longing for nature gradually increases and this situation can lead to the emergence of various social problems. This study tried to put forward the views

of Landscape Architects, who undertake important duties in the planning, design, implementation and sustainability of open and green spaces offered to the public, on the use of open and green spaces during the pandemic process and applications made in this regard through a survey. As a result of the survey conducted with 400 Landscape Architects, it was emphasized that the use of open and green areas is necessary in order to support public health during the pandemic period, but the necessity of various measures such as disinfection, physical distance, and re-handling of the use of urban furniture has been acknowledged. Understanding the socio-spatial consequences of the measures taken to prevent the spread of the epidemic and determining new concepts related to lifestyles that combine working and life patterns and arising from new spatial environments are among the benefits to be gained from the study. Based on the findings obtained through this study, it can be stated that Landscape Architects need to gain experience in nature, natural factors and health relations in order to be able to design urban green spaces in harmony with nature and with consideration to public health.

- **Community-oriented actions by food retailers to support community well-being: a systematic scoping review** <https://doi.org/10.1016/j.puhe.2021.09.029>

Objectives Growing inequalities, austerity public funding, and the COVID-19 pandemic have contributed to heightened interest in mobilising the assets and resources within communities to support health and well-being. We aimed to identify the type of actions or initiatives by food retail stores intended to support local communities and contribute to well-being. Study design A Scoping Review. Method A scoping review was conducted in Scopus, Web of Science, and of grey literature to identify the extent of study of food retail stores in supporting community well-being, types and outcomes recorded from community-oriented actions. Data extraction included: population targeted, the content of initiative/action, outcomes recorded and key insights. Studies were grouped into broad categories relating to their actions and objectives. Results Actions were associated with either strengthening communities or public health prevention or promotion. Few studies reported clearly on impact, and most accounts of impact on well-being and broader community outcomes were narrative accounts rather than objectively measured. Although rigorous capture of outcomes was absent, there were consistent themes around partnership and community insights that are relevant to the development and implementation of future actions in communities. Conclusions This is an under-researched area that may nevertheless hold potential to support the broader public health effort in communities. To provide clear recommendations for specific investments, there is merit in identifying a subset of health and well-being outcomes most likely to be associated with food retailer community actions in order to assess and capture impact in future. We propose that the theoretical underpinning associated with asset-based approaches, which take account of context and community conditions, would be a useful framework for future study.

- **Older Adults With Chronic Disease and Food Insecurity in the United States.**

<https://dx.doi.org/10.3928/00989134-20211109-02>

Food insecurity has emerged as a significant problem for older adults in the United States. Older adults with chronic conditions are particularly vulnerable, as they face a number of physical, psychological, social, and economic barriers related to food purchasing options. The purpose of the current article is to examine the significance of food insecurity in older adults with chronic disease, highlight the barriers and determinates that contribute to the problem, and offer interventions to impact the disparity of food insecurity in this population.

- **The Impact of the COVID-19 Pandemic on Food Distribution at Emergency Food Assistance Organizations in the Southwestern United States: A Qualitative Investigation**

<https://doi.org/10.3390/nu13124267>

This study aimed to identify changes in food distribution operations at emergency food assistance organizations (EFAOs) during the COVID-19 pandemic. EFAOs across the Houston metro area, TX (human service centers and food pantries) as well as the Houston Food Bank (HFB) participated in the qualitative study. Data were collected via individual semi-structured interviews and focus group (December 2020&ndash;February 2021), and coded using semi-structured thematic analysis. Categories were pre-identified based on the interview questions. Direct quotes supported subcategories. Directors from 18 EFAOs were interviewed; 8 HFB leadership staff participated in a focus group. Four major categories of change due to COVID-19 included new safety measures, changes in food distribution process, changes in volunteerism and staffing, and changes in amounts of food distributed. This study helps identify susceptibilities in EFAOs; food distribution chain should be addressed to manage future emergency food insecurity crises more effectively. An understanding of the changes/challenges incurred by EFAOs during the COVID-19 pandemic can inform policymakers to ensure local food distribution organizations are prepared to fill the needs during future a crisis of food insecurity.

- **COVID-19 Pandemic as Risk Factors for Excessive Weight Gain in Pediatrics: The Role of Changes in Nutrition Behavior. A Narrative Review** <https://doi.org/10.3390/nu13124255>  
During the coronavirus disease 2019 (COVID-19) pandemic, social isolation, semi-lockdown, and stay at home orders were imposed upon the population in the interest of infection control. This dramatically changes the daily routine of children and adolescents, with a large impact on lifestyle and wellbeing. Children with obesity have been shown to be at a higher risk of negative lifestyle changes and weight gain during lockdown. Obesity and COVID-19 negatively affect children and adolescents; wellbeing, with adverse effects on psychophysical health, due in large part to food choices, snacking between meals, and comfort eating. Moreover, a markable decrease in physical activity levels and an increase in sedentary behavior is associated with weight gain, especially in children with excessive weight. In addition, obesity is the most common comorbidity in severe cases of COVID-19, suggesting that immune dysregulation, metabolic unbalance, inadequate nutritional status, and dysbiosis are key factors in the complex mechanistic and clinical interplay between obesity and COVID-19. This narrative review aims to describe the most up-to-date evidence on the clinical characteristics of COVID-19 in children and adolescents, focusing on the role of excessive weight and weight gain in pediatrics. The COVID-19 pandemic has taught us that nutrition education interventions, access to healthy food, as well as family nutrition counselling should be covered by pediatric services to prevent obesity, which worsens disease outcomes related to COVID-19 infection.
- **Shifts in Sources of Food but Stable Nutritional Outcomes among Children in the Early Months of the COVID-19 Pandemic** <https://doi.org/10.3390/ijerph182312626>  
Early in the COVID-19 pandemic, the U.S. Department of Agriculture (USDA), State governments, and school districts took unprecedented steps to mitigate the pandemic impact on students; nutrition. To examine the effect of emergency responses on 6-year-old children nutritional outcomes, this study analyzed longitudinal data from a national study of childrens feeding practices, the Special Supplemental Nutrition Program for Women, Infants, and Children; Infant and Toddler Feeding Practices Study-2 (WIC ITFPS-2). Findings include no differences in food insecurity prevalence; however, there were shifts in sources of food, with children in the post-COVID-emergency-declaration (post-ED) group consuming more dietary energy from stores and community food programs and less from restaurants and schools than children in the pre-COVID-emergency-declaration (pre-ED) group ( $p < 0.01$  for all comparisons). Examination of within-person mean differences in 2015 Healthy Eating Index scores and nutrient intakes between ages 5 and 6 years revealed few statistically significant differences between the two groups: children in the post-ED group consumed slightly fewer vegetables ( $p = 0.02$ ) and less

sodium ( $p = 0.01$ ) than their pre-ED peers. Findings suggest emergency efforts to maintain children's nutrition were largely successful in the early months of the pandemic. Research is needed to understand the mechanisms by which emergency efforts contributed to these findings.

- **Physical activity and COVID-19. The basis for an efficient intervention in times of COVID-19 pandemic** <https://doi.org/10.1016/j.physbeh.2021.113667>

The Coronavirus Disease 2019 (COVID-19) pandemic has shocked world health authorities generating a global health crisis. The present study aimed to analyze the different factors associated with physical activity that could have an impact in the COVID-19, providing a practical recommendation based on actual scientific knowledge. We conducted a consensus critical review using primary sources, scientific articles, and secondary bibliographic indexes, databases, and web pages. The method was a narrative literature review of the available literature regarding physical activity and physical activity related factors during the COVID-19 pandemic. The main online database used in the present research were PubMed, SciELO, and Google Scholar. COVID-19 has negatively influenced motor behavior, levels of regular exercise practice, eating and nutritional patterns, and the psychological status of citizens. These factors feed into each other, worsening COVID-19 symptoms, the risk of death from SARS-CoV-2, and the symptoms and effectiveness of the vaccine. The characteristics and symptoms related with the actual COVID-19 pandemic made the physical activity interventions a valuable prevention and treatment factor. Physical activity improves body composition, the cardiorespiratory, metabolic, and mental health of patients and enhancing antibody responses in vaccination.

- **Lessons learned from implementing SNAP-Ed in a nursing/K-8 partnership school during the pandemic** <https://doi.org/10.1111/phn.13031>

The COVID-19 pandemic had forced schools and school-based partnerships in the US to re-imagine extracurricular activities while schools were closed for in-person learning. We highlight lessons learned from implementing the Supplemental Nutrition Assistance Education Program (SNAP-Ed) virtually, a nutrition education program to improve nutrition literacy and skills among children, in a Maryland School of Nursing/K-8 Partnership school amid in-person school closures.

- **The National Health and Nutrition Examination Survey (NHANES), 2021–2022: Adapting Data Collection in a COVID-19 Environment** <https://doi.org/10.2105/AJPH.2021.306517>

The National Health and Nutrition Examination Survey (NHANES) is a unique source of national data on the health and nutritional status of the US population, collecting data through interviews, standard exams, and biospecimen collection. Because of the COVID-19 pandemic, NHANES data collection was suspended, with more than a year gap in data collection. NHANES resumed operations in 2021 with the NHANES 2021–2022 survey, which will monitor the health and nutritional status of the nation while adding to the knowledge of COVID-19 in the US population. This article describes the reshaping of the NHANES program and, specifically, the planning of NHANES 2021–2022 for data collection during the COVID-19 pandemic. Details are provided on how NHANES transformed its participant recruitment and data collection plans at home and at the mobile examination center to safely collect data in a COVID-19 environment. The potential implications for data users are also discussed. (Am J Public Health.

2021;111(12):2149–2156. <https://doi.org/10.2105/AJPH.2021.306517>) [ FROM AUTHOR]

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- **The Impact of COVID-19 on Breastfeeding Rates in a Low-Income Population**

<https://doi.org/10.1089/bfm.2021.0238>

Objective: To examine the impact of the coronavirus disease 2019 (COVID-19) pandemic on breastfeeding outcomes among participants of the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) in Southern California. Materials and Methods: Data from the 2020 Los Angeles County triennial WIC Survey were used to examine the impact of COVID-19 on breastfeeding outcomes among WIC participants. Chi-square tests were used to explore the association between the COVID-19 pandemic and breastfeeding outcomes along with hospital-friendly practices. Results: Compared with infants born before March 2020, the percentage of infants who received any breastfeeding at 1 month decreased from 79.66% to 76.96% ( $p = 0.139$ ). The percentage of infants who received any breastfeeding at 3 and 6 months significantly decreased from 64.57% to 56.79% ( $p = 0.001$ ) and from 48.69% to 38.62% ( $p = 0.0035$ ), respectively. The percentage of infants fully breastfed at 1, 3, and 6 months significantly decreased at all time points. Examining hospital practices, there were no differences between the before and during COVID-19 groups. Conclusions: The prevalence of any breastfeeding at 3 and 6 months and fully breastfeeding at 1, 3, and 6 months was significantly lower among mothers who gave birth during the pandemic compared with mothers who gave birth before the pandemic. The shift to remote services delivery and the corresponding reduction in live support of WIC services owing to the pandemic may explain the decline in the breastfeeding rate. As the nation and the WIC program prepare for the postpandemic life, it is critical to ensure that breastfeeding support is met in a hybrid of remote and face-to-face settings.

- **Experiences of increased food insecurity, economic, and psychological distress during the COVID-19 pandemic among SNAP-enrolled food pantry clients**

<https://doi.org/10.1017/S1368980021004717>

OBJECTIVE: The COVID-19 pandemic initially doubled the rates of food insecurity across the United States, and tripled rates among households with children. Despite the association among food insecurity, chronic disease and psychological distress, narratives depicting the experiences of already-food insecure populations are notably underrepresented in the literature. This study assessed the impact of COVID-19 on clients of a food pantry who were also enrolled in the Supplemental Nutrition Assistance Program (SNAP). DESIGN: A qualitative study probing the effects of the pandemic on daily living, food needs, food buying, and food insecurity. Interview transcripts were analyzed using a combined deductive and inductive approach. SETTING: Interviews were conducted via telephone between May-June of 2020. PARTICIPANTS: Equal numbers of English- and Spanish-speaking clients ( $n=40$  total). RESULTS: Three main findings emerged: (1) The pandemic increased economic distress, such as from job loss or increased utility bills due to sustained home occupancy;(2) The pandemic increased food needs, food prices and food shortages. In combination with economic stressors, this led to greater food insecurity;(3) Increased economic stress and food insecurity contributed to increased psychological stress, such as from fear of infection, isolation, and children being confined at home. CONCLUSIONS: Despite federal legislation and state and local programs to alleviate food insecurity, COVID-19 exacerbated economic hardship, food insecurity, and psychological distress among urban SNAP and food pantry clients. Additional research is needed to identify the most effective policies and programs to ameliorate the short- and long-term health and economic inequities exacerbated by the pandemic.

- **Food Insecurity in the Households of Children with Autism Spectrum Disorders and Intellectual Disabilities in the U.S.: Analysis of the National Survey of Children's Health Data 2016 – 2018**

<https://doi.org/10.1101/2021.03.29.21254546>

Individuals with Autism Spectrum Disorder and co-occurring Intellectual Disabilities (ASD + ID) experience substantial challenges in accessing needed supports. This research aimed to understand the prevalence and factors associated with food insecurity among families of children with ASD + ID. Utilizing the National Survey of Children's Health (2016-18) data, this paper illustrated that the households of children with ASD + ID were about two times more likely to be food insecure than the households of children without disabilities. Further, the households of children with ASD were 1.5 times more likely, and those with other disabilities were 1.3 times more likely to be food insecure than the households of children without disabilities. Implications of these findings in the context of the COVID19 pandemic are discussed. Lay Abstract Families of children with ASD are more likely to experience financial strain and resulting food insecurity due to additional cost of care, disparate access to needed services, and loss of income resulting from job loss. Utilizing nationally representative data, this analysis indicates that the families of children with ASD + ID are twice as likely to experience food insecurity than families of children without disabilities after adjusting for various factors. Several factors, ranging from state-level policies such as Medicaid expansion to individual-level factors such as higher utilization of emergency room services, were associated with the higher prevalence of food insecurity in families of children with ASD + ID. Implications of these findings on programs and policies supporting families in the COVID19 pandemic are discussed.

#### DFWED

- **COVID-19 abatement measures and declines in food-borne illnesses: what is the evidence?** Coronavirus Disease 2019 (COVID-19) is a current pandemic infection caused by a positive-sense RNA virus named the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) which is quickly spread through the air that has fueled the current pandemic. Public health government agencies in various countries have made dramatic measures, such as a full lockout. Nevertheless, limited consideration has been devoted to food safety and security, and its possible association with the coronavirus (COVID-19) pandemic. The COVID-19 outbreak has given birth to a new age throughout the world, though we already see the implications of various facets of our everyday lives. The agricultural manufacturing process and the food processing industry do not form the exception. For the time being, the risk of transmission via the food industry is considered marginal and the detection of SARS-CoV-2 in the working setting is not perceived to be a problem for government authorities. Nevertheless, the adverse impacts on the climate, food processes and individuals in the food industry are also clear. Reducing contamination during food production, processing, and preparation will require more widespread implementation of known prevention measures and of new strategies that target particular pathogens and serotypes. The health agency suggests that the safety and health programs that have already been placed in motion since the pandemic may play an important role in the prevention of foodborne disease outbreaks. The aim of this review article is to discuss an indirect evidence about the decline in food-borne outbreaks during the COVID-19 pandemic.
- **2020 Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS): 38th Annual Report** <https://doi.org/10.1080/15563650.2021.1989785>  
INTRODUCTION: This is the 38(th) Annual Report of the American Association of Poison Control Centers' (AAPCC) National Poison Data System (NPDS). As of 1 January, 2020, all 55 of the nation's poison centers (PCs) uploaded case data automatically to NPDS. The upload interval was 6.15 [4.60, 8.62] (median [25%, 75%]) minutes, effectuating a near real-time national exposure and information database and surveillance system. METHODS: We analyzed the case data tabulating specific indices from NPDS. The methodology was similar to that of previous years. Where changes were introduced, the differences are identified. Cases with medical

outcomes of death were evaluated by a team of medical and clinical toxicologist reviewers using an ordinal scale of 1-6 to assess the Relative Contribution to Fatality (RCF) of the exposure. RESULTS: In 2020, 3,316,738 closed encounters were logged by NPDS: 2,128,198 human exposures, 66,745 animal exposures, 1,116,568 information requests, and 5,160 human confirmed nonexposures. Total encounters showed a 28.9% increase from 2019, while health care facility (HCF) human exposure cases decreased by 10.6%. While all information requests increased by 218.0%, medication identification (Drug ID) requests decreased by 31.5%, and human exposure cases decreased by 0.928%. Medical Information requests showed a 32.6-fold increase, reflecting COVID-19 pandemic calls to PCs. Human exposures with less serious outcomes have decreased 1.90% per year since 2008, while those with more serious outcomes (moderate, major or death) have increased 4.59% per year since 2000. Consistent with the previous year, the top 5 substance classes most frequently involved in all human exposures were analgesics (10.3%), household cleaning substances (8.37%), cosmetics/personal care products (6.53%), antidepressants (5.30%), and sedatives/hypnotics/antipsychotics (4.92%). As a class, antidepressant exposures increased most rapidly, by 1,793 cases/year (5.84%/year) over the past 10 years for cases with more serious outcomes. The top 5 most common exposures in children age 5 years or less were cosmetics/personal care products (11.8%), household cleaning substances (11.3%), analgesics (7.57%), foreign bodies/toys/miscellaneous (6.71%), and dietary supplements/herbals/homeopathic (6.44%). Drug identification requests comprised 2.89% of all information contacts. NPDS documented 4,488 human exposures resulting in death; 3,869 (86.2%) of these were judged as related (RCF of 1-Undoubtedly responsible, 2-Probably responsible, or 3-Contributory). CONCLUSIONS: These data support the continued value of PC expertise and need for specialized medical toxicology information to manage more serious exposures. Unintentional and intentional exposures continue to be a significant cause of morbidity and mortality in the US. The near real-time status of NPDS represents a national public health resource to collect and monitor US exposure cases and information contacts. The continuing mission of NPDS is to provide a nationwide infrastructure for surveillance for all types of exposures (e.g., foreign body, infectious, venomous, chemical agent, or commercial product), and the identification and tracking of significant public health events. NPDS is a model system for the near real-time surveillance of national and global public health.

#### NIOSH/Worker-safety health

- **COVID-19 policies and recommendations for foodservice reopening: An integrative review**  
<https://doi.org/10.1080/15378020.2021.2006035>

This study aims to present and discuss the different COVID-19 policies and recommendations for food service reopening. We aimed to understand each plan's profile, showing the most prominent concerns and summarizing the strategies. This study was carried out using an integrative review strategy of documents written in English, Spanish, Portuguese, Italian, French, and German. We found 17 guides, 15 from the countries' health departments and institutions. The findings suggested four main categories reflecting the main concerns about safety regarding the resumption of food services during the pandemic: 1. Physical distancing; 2. environmental aspects and safety; 3. personal hygiene and occupational health; and 4. educational and legal measures. Because COVID-19 is a new disease, the measures were designed and adapted to a scenario full of uncertainties and improved information for each discovery. All the categories are grounded on recent or late biomedical literature. Some minor recommendations are based on the precautionary principle. The practical and policy implications are discussed. Health agencies



in countries that do not yet have their regulations or guidelines for operating food services can use the categories described here as a basis for suggestions

- **Impact of natural ventilation on exposure to SARS-CoV 2 in indoor/semi-indoor terraces using CO2 concentrations as a proxy** <https://doi.org/10.1016/j.jobe.2021.103725>

Nowadays, it is necessary a better airborne transmission understanding of respiratory diseases in shared indoor and semi-indoor environments with natural ventilation in order to adopt effective people's health protection measures. The aim of this work is to evaluate the relative exposure to SARS-CoV 2 in a set of virtual scenarios representing enclosed and semi-enclosed terraces under different outdoor meteorological conditions. For this purpose, indoor CO2 concentration is used as a proxy for the risk assessment. Airflow and people exhaled CO2 in different scenarios are simulated through Computational Fluid Dynamics (CFD) modelling with Unsteady Reynolds-Averaged Navier-Stokes (URANS) approach. Both spatial average concentrations and local concentrations are analyzed. In general, spatial average concentrations decrease as ventilation increases, however, depending on the people arrangement inside the terrace, spatial average concentrations and local concentrations can be very different. Therefore, for assessing the relative exposure to SARS-CoV 2 it is necessary to consider the indoor flow patterns between infectors and susceptibles. This research provides detailed information about CO2 dispersion in enclosed/semi-enclosed scenarios, which can be very useful for reducing the transmission risk through better natural ventilation designs and improving the classic risk models since it allows to check their hypotheses in real-world scenarios. Although CFD ventilation studies in indoor/semi-indoor environments have been already addressed in the literature, this research is focused on restaurant terraces, scenarios scarcely investigated. Likewise, one of the novelties of this study is to take into account the outdoor meteorological conditions to appropriately simulate natural ventilation.

- **Burnout and workplace dehumanization at the supermarket: A field study during the COVID-19 outbreak in Italy** <https://doi.org/10.1002/casp.2588>

This study explores the psychological effects of the COVID-19 emergency on workers employed in the supermarket sector by analysing their levels of burnout and the relationship between the burnout syndrome and employees' workplace experiences. A sample of 422 Italian workers answered a survey addressing the burnout dimensions (i.e., exhaustion, cynicism, and professional inefficacy) along with perceived organizational factors and dehumanizing representations. Results showed that 32% of the respondents had symptoms of severe burnout, and 41% had symptoms of exhaustion and cynicism. More specifically, through cluster analysis, four burnout profiles were identified: "burnout" (high on all three dimensions), "engagement" (low on all three dimensions), "overextended" (high on exhaustion), and "disengaged" (moderate on exhaustion and cynicism). Each cluster showed a different pattern of correlates with the organizational and dehumanizing perceptions. Our findings contribute to the knowledge gaps of burnout and workplace experiences by providing insights into the ongoing health emergency among supermarket clerks. Please refer to the Supplementary Material section to find this article's Community and Social Impact Statement

- **Surviving the hectic early phase of the COVID-19 pandemic: a qualitative study to the supply chain strategies of food service firms in times of a crisis** <https://doi.org/10.1108/ijlm-01-2021-0013>

Purpose The COVID-19 pandemic and the subsequent lockdown have hit the food service industry very hard. The COVID-19 outbreak has created a sharp downturn for firms in the food service industry, compelling actors across the whole food service supply chain to rethink their strategies. The purpose of this paper is to document the impact of COVID-19 on the food service supply chain, as well as to identify crisis management strategies food service firms use during

the hectic early phase of the COVID-19 pandemic to survive the current and prepare for future pandemics. Design/methodology/approach We performed a qualitative descriptive study using 21 semi-structured interviews with actors across the food service supply chain (i.e. farmers, wholesalers and food service providers). Data were collected to shed light on food service firms' decision making during the hectic early phase of the COVID-19 pandemic to uncover various crisis management strategies used. Findings By integrating the disaster and crisis pyramid and resilience theory, four core crisis management strategies to respond to the COVID-19 pandemic are conceptualized, i.e. (1) managing resources, (2) diversifying strategically, (3) prioritizing long-term outcomes and (4) bonding socially. Originality/value The theoretical contributions include documenting the performance impact of the COVID-19 pandemic on the food service supply chain and exploring crisis management strategies food service firms employed during the hectic early phase of the COVID-19 pandemic. Thus, functioning and survival during a pandemic, an emerging field in literature, are central to this study. Additionally, while recent research suggests that integrating crisis management and resilience literature may provide a more complete understanding of the organization-crisis relationship, these literature streams mainly developed in isolation. By integrating the literature streams of crisis management and resilience and applying these theories to the COVID-19 crisis, our study provides specific managerial guidelines.

- **The Achilles Heel of the U.S. Food Industries: Exposure to Labor and Upstream Industries in the Supply Chain** <https://doi.org/10.2139/ssrn.3957604>

The modern day food industries are part of a complex agri-food supply chain, where food production has become efficient, yet potentially vulnerable to supply chain risks. The COVID-19 pandemic is a testament to that end. This article measures and identifies the U.S. food manufacturing industries' vulnerability to upstream industries and labor occupations by (i) calculating a food industry's diversification of intermediate input purchases across upstream industries, (ii) quantifying the relative exposure of food manufacturing in a given industry and location to upstream input suppliers and labor occupations, and (iii) estimating each food industry's gross output elasticity of inputs. Among our results, we find the evidence that the animal processing industry's output is relatively vulnerable to production labor which is consistent with the observed disruptions to the meat packing sector during COVID19, which were largely caused by labor issues. Our results may help academics and practitioners to understand food industries' vulnerabilities to upstream industries and labor occupations.

#### NCEH

- **Food allergen ladders: A need for standardization?** <https://doi.org/10.1111/pai.13714>

INTRODUCTION: The process of gradually reintroducing food allergens into an individual's diet is referred to as food allergen "ladders". There remain many questions regarding the foods chosen, structure and composition of the ladder, and medical and safety considerations. The COVID-19 pandemic has propelled us into an era where medicine is increasingly practiced via online platforms, highlighting the need for standardized food allergen ladder approaches for successful and safe introduction of food allergens. METHODS: We performed a search of currently published food allergen ladders and obtained published information and clinical expertise to summarize current knowledge and suggest future standardized approaches for using food allergen ladders. RESULTS: There are currently a limited number of published milk, egg, wheat and soy ladders. We suggest the following points should be considered when developing food ladders: 1) Food allergen: dose, time and temperature of heating of the food allergen, simplicity of the ladder and recipes, the possible role of the wheat matrix and testing for allergenic protein levels to standardize doses; 2) Nutritional factors: health and nutritional

value of the foods in the ladder, taste, texture and cultural appropriateness of foods should be considered;3) Medical aspects: consideration of which patients are safe to undergo ladders outside of the clinical setting, other safety aspects and risk factors for severe reactions, number of days suggested per steps and availability and provision of rescue medication. Written instructions and recipes should be provided to families who wish to use food allergen ladders. DISCUSSION: Food allergen ladders used for gradual reintroduction of food allergens into a food allergic individual's diet are increasingly being used internationally. Standardization regarding the foods included in the ladder and medical considerations are required to practice patient-centered care, best assist patients and families, and ensure safety.

- **Restaurant patronage during the COVID-19 pandemic and the protection motivation theory: influence of consumers' socio-demographic, situational, and psychographic factors**

<https://doi.org/10.1080/15378020.2021.2006036>

To systematically investigate factors affecting consumers' restaurant patronage decisions during the COVID-19 pandemic, this study drew on the Protection Motivation Theory (PMT) to (1) evaluate how threat and coping appraisal (i.e., PMT factors) may vary based on socio-demographics and COVID-19 situational characteristics, and (2) determine if PMT factors influence actual restaurant patronage behaviors. Furthermore, the current study examined consumers' perceptions of health-protective actions that restaurateurs could take to minimize consumer risk of contracting COVID-19. Data were collected from U.S. adults (N = 627) using an online crowdsourcing platform in early May 2020. Findings showed significant relationships between socio-demographic factors and perceived severity and/or vulnerability to COVID-19, along with concerns of coping with the virus for in-restaurant dining. For take-out/delivery patronage, coping concerns were greater for those with lower education levels and those with more health concerns than their counterparts. Furthermore, consumers' higher levels of coping appraisal predicted their higher take-out/delivery frequency. Results also suggested actions that restaurateurs could take that would influence consumers' restaurant patronage decisions. This study provides new insights related to PMT in the context of restaurants in a pandemic situation and practical information for restaurateurs to recover and prepare for future pandemics or similar crises.

#### Other

- **The Association of Social Factors and Health Insurance Coverage with COVID-19 Vaccinations and Hesitancy, July 2021.** <https://dx.doi.org/10.1007/s11606-021-07213-6>

BACKGROUND: There are racial differences in COVID-19 vaccination rates, but social factors, such as lack of health insurance or food insecurity, may explain some of the racial disparities. OBJECTIVE: To assess social factors, including insurance coverage, that may affect COVID-19 vaccination as of June-July 2021 and vaccine hesitancy among those not yet vaccinated, and how these may affect racial equity in vaccinations. DESIGN: Cross-sectional analysis of nationally representative survey data. PARTICIPANTS: Adults 18 to 64 participating in the Census Bureau's Household Pulse Survey for June 23 to July 5, 2021. MAIN MEASURES: Vaccination: receipt of at least one dose of a COVID-19 vaccine. Vaccine hesitancy: among those not yet vaccinated, intent to definitely or probably not get vaccinated. KEY RESULTS: In unadjusted analyses, black adults were less likely to be vaccinated than other respondents, but, after social factors were included, including health insurance status, food sufficiency, income and education, and state-level political preferences, differences between black and white adults were no longer significant and Hispanics were more likely to be vaccinated (OR = 1.87,  $p < .001$ ). Among those not yet vaccinated, black and Hispanic adults were vaccine hesitant than white adults (ORs = .37 and .45, respectively, both  $p < .001$ ) and insurance status and food insufficiency were not

significantly associated with vaccine hesitancy. The percent of state voters for former President Trump in 2020 was significantly associated with lower vaccination rates and with increased vaccine hesitancy. DISCUSSION: The results indicate that much of the gap in COVID vaccination rates for minority adults are due to social barriers, rather than differences in racial attitudes. Unvaccinated minority adults expressed less vaccine hesitancy than white adults. Social barriers like food insecurity and insurance coverage could have deterred prompt COVID-19 vaccinations. Reducing these problems might help increase vaccination rates.

- **The Role of the California Tier System in Controlling Population Mobility During the COVID-19 Pandemic (preprint)** <https://doi.org/10.21203/rs.3.rs-1072338/v1>

Policies to restrict population mobility are a commonly used strategy to limit the transmission of contagious diseases. Among measures implemented during the COVID-19 pandemic were dynamic stay-at-home orders informed by real-time, regional-level data. California was the only state in the U.S. to implement this novel approach; however, the effectiveness of California's four-tier system on population mobility has not been quantified. Utilizing data from mobile devices and county-level demographic data, we evaluated the impact of policy changes on population mobility and explored whether demographic characteristics explained variability in responsiveness to policy changes. For each Californian county, we calculated the proportion of people staying home and the average number of daily trips taken per 100 persons, across different trip distances and compared this to pre-COVID-19 levels. We found that overall mobility decreased when counties moved to a more restrictive tier and increased when moving to a less restrictive tier, as the policy intended. When placed in a more restrictive tier, the greatest decrease in mobility was observed for shorter and medium-range trips, while there was an unexpected increase in the longer trips. The mobility response varied by geographic region, as well as county-level median income, gross domestic product, the prevalence of farms, and recent election results. This analysis provides evidence of the effectiveness of the tier-based system in decreasing overall population mobility to ultimately reduce COVID-19 transmission. Results demonstrate that economic and political indicators drive important variability in such patterns across counties.

- **Are we approaching peak meat consumption? Analysis of meat consumption from 2000 to 2019 in 35 countries and its relationship to gross domestic product** <https://doi.org/10.3390/ani11123466>

Growing prosperity, but also disease outbreaks, natural disasters, and consumer preferences are changing global meat consumption. We investigated the 2000–2019 trends in 35 countries monitored by the Food and Agriculture Organization and the Organisation for Economic Cooperation and Development. We also tested relationships with Gross Domestic Product (GDP). Several countries appeared to be reaching peak consumption of some meats, and three (New Zealand, Canada, and Switzerland) have reached this. Poultry consumption increased over time in most countries, and beef and mutton/lamb consumption decreased in many. Using cluster analysis, we divided countries into two clusters: one in which increases in GDP per capita matched increases in meat consumption; and a second one of nine countries, for which there was no association between per capita change in GDP and meat consumption. There was evidence of a tipping point around USD 40,000 of GDP per capita, after which increases in economic well-being do not lead to increased meat consumption. © 2021 by the authors. Licensee MDPI, Basel, Switzerland.

- **School Districts Have Expanded Their Nonacademic Services for 2021-2022, While Academic Offerings Remain Much the Same: Selected Findings from the Third American School District Panel Survey. Data Note: Insights from the American Educator Panels. Research Report. RR-A956-4** <https://doi.org/10.7249/RR956-4>

School districts in the United States are responding to the coronavirus disease 2019 (COVID-19) pandemic in significantly different ways. The authors of this report fielded the third American School District Panel (ASDP) survey in June 2021 to discover what changes districts are making to their academic and nonacademic offerings for the upcoming 2021-2022 school year, and whether parental demand has played any role in prompting districts to make these changes. In this report, the authors summarize key ASDP findings based on the responses of 292 district leaders, after weighting their responses to make them nationally representative. Survey results suggest that while public schools are expanding their nonacademic offerings, much of their academic offerings for 2021-2022 remain the same. The authors examine differences between pre-pandemic and 2021-2022 offerings among district subgroups in the areas of summer programming, tutoring, grade retention practices, technology-related services, student health and weekend meals, academic recovery measures, and scheduling. The authors also found that most district leaders did not perceive a strong parental demand for changes to their children's schooling; however, there were some notable exceptions among leaders of urban, suburban, and majority-students of color districts, even though the correlation between perceived demand and district provision is currently weak. Parents' demands may still change public education in the long run, but the authors did not find evidence for this thus far. [This report was prepared by the RAND American Educator Panels.]

- **Impact of the COVID-19 pandemic on food production and animal health**

<https://doi.org/10.1016/j.tifs.2021.12.003>

**Background** The new coronavirus, named the severe acute respiratory coronavirus syndrome 2 (SARS-CoV-2) is the etiological agent of coronavirus disease 2019 (COVID-19). COVID-19 originated in China and spread to other countries and continents causing a variety of respiratory and non-respiratory symptoms that led to death in severe cases. **Scope and approach** In this review, we discuss and analyze the impact of the COVID-19 pandemic on animal production systems and food products including meat, dairy, eggs, and processed food, in addition to assessing the pandemic's impact on animal health care systems, animal health care quality, animal welfare, food chain sustainability, and the global economy. We also provide effective recommendations to animal producers, veterinary healthcare professionals, workers in animal products industries, and governments to alleviate the effects of the pandemic on livestock farming and production systems. **Key findings and conclusions** Port restrictions, border restrictions, curfews, and social distancing limitations led to reduced quality, productivity, and competitiveness of key productive sectors. The restrictions have hit the livestock sector hard by disrupting the animal feed supply chain, reducing animal farming services, limiting animal health services including delays in diagnosis and treatment of diseases, limiting access to markets and consumers, and reducing labor-force participation. The inhumane culling of animals jeopardized animal welfare. Egg smashing, milk dumping, and other animal product disruptions negatively impacted food production, consumption, and access to food originating from animals. In summary, COVID-triggered lockdowns and limitations on local and international trade have taken their toll on food production, animal production, and animal health and welfare. COVID-19 reverberations could exacerbate food insecurity, hunger, and global poverty. The effects could be massive on the most vulnerable populations and the poorest nations.

- **Overstocked Agricultural Produce and Emergency Supply System in the COVID-19 Pandemic: Responses from China** <https://doi.org/10.3390/foods10123027>

The spread of COVID-19 has affected not only public health but also agriculture, raising global concerns regarding the food system. As an immediate impact of COVID-19, farmers around the globe have had difficulties with sales, resulting in large amounts of overstocked agricultural products and food loss. This further threatens the livelihood of rural, poor farmers and impacts

sustainable production. To provide a better understanding of the overstocking situation after the outbreak of the pandemic, this study depicts the distribution characteristics of overstocked agricultural products in China. After analyzing a nationwide data set collected from 3482 individuals/organizations by the Chinese Agri-products Marketing Association after the outbreak of the pandemic, we found that some of the initial prevention and control measures disrupted sales channels, and in turn, caused the farmers to suffer losses. The impact was more severe in perishable products and their production areas, as well as in poverty-stricken regions. Then, we identified China quick and effective actions to match the supply and demand. These findings suggest that emergency responses should coordinate the relationship between emergency actions and the necessary logistics of agricultural production. To prepare for the possibility of such shock in the future, the government should take actions to clear logistics obstacles for necessary transportation, keep enhancing the fundamental infrastructure and effective mechanism of the food supply chain, and actively include innovative techniques to build a more resilient food system.

## Food and COVID-19 Lit Review: Week ending December 3 2021

### DNPAO

- Effect of physical activity on COVID-19 symptoms: A narrative review <https://doi.org/10.14198/jhse.2021.16.Proc4.51>
- The exercise dependence at the time of COVID-19 pandemic: The role of psychological stress among adolescents <https://doi.org/10.14198/jhse.2021.16.Proc4.40>
- Perceived stress and emotional overeating during COVID-19 pandemic [https://doi.org/10.4103/aip.aip\\_18\\_21](https://doi.org/10.4103/aip.aip_18_21)
- The Nutritional Content of Rescued Food Conveyed by a Food Aid Organization <https://doi.org/10.3390/ijerph182212212>
- Accelerating Evaluation of Financial Incentives for Fruits and Vegetables: A Case for Shared Measures <https://doi.org/10.3390/ijerph182212140>
- Citizen Science in Vegetable Garden Cultivar Evaluation in Tennessee <https://doi.org/10.3390/horticulturae7110422>
- Urban Networks, Micro-agriculture, and Community Food Security <https://doi.org/10.1007/S43615-021-00117-X>
- Providing Food Assistance During the COVID-19 Pandemic: A Case Study of a Free Produce Market at a Health Care Center. <https://dx.doi.org/10.1353/hpu.2021.0198>
- Changes in body mass index (BMI) in an inner city at risk pediatric population during the COVID 19 pandemic

### Worker-Safety/NIOSH

- Occupational stress among farm and ranch operators in the midwestern United States. <https://dx.doi.org/10.1186/s12889-021-12053-4>
- COVID-19 working paper: meatpacking working conditions and the spread of COVID-19. (COVID-19 Working Paper No. AP-092.)
- The vaccination threshold for SARS-CoV-2 depends on the indoor setting and room ventilation <https://doi.org/10.1186/s12879-021-06884-0>

### Essential Workers/Food/Farm/Ag/Migrant

- COVID-19 and systemic racism pandemics impact daily life for immigrant/refugees, Minneapolis, USA <https://doi.org/10.5334/aogh.3411>
- The Direct and Indirect Effects of a Global Pandemic on US Fishers and Seafood Workers (preprint) <https://doi.org/10.1101/2021.11.16.21266427>

### Other

- Worldwide COVID-19 Vaccines Sentiment Analysis Through Twitter Content <https://doi.org/10.29333/ejgm/11316>
- Trust and responsibility in food systems transformation. Engaging with Big Food: marriage or mirage? <https://dx.doi.org/10.1136/bmjgh-2021-007350>
- Homeless people and health: vulnerability and risks during the COVID-19 pandemic. Pilot study <https://doi.org/10.3306/ajhs.2021.36.04.136>

### **Effect of physical activity on COVID-19 symptoms: A narrative review**

<https://doi.org/10.14198/jhse.2021.16.Proc4.51>

In 2019, a new condition caused by the COVID-19, became a global pandemic, presenting a disparate symptomatological picture. The immune response to the virus depends on multiple factors, making the practice of physical exercise an important enhancer of the immune system, but it is unknown what effects it could have on the very different symptoms. In order to achieve and summarize the most outstanding information on the influence of the different types and parameters of physical exercise on the immune system and symptoms presented by COVID-19, it was decided to carry out a review of the literature in the databases PubMed and Medline until August 2020. The results showed that while high intensity and prolonged volume exercise produces counterproductive alterations in the immune system, increasing the possibility of contracting infections; low and moderate intensity exercise reverses these effects, increasing the benefits, providing the body with better protection against viruses. For the symptoms of COVID-19 related to cough, dyspnea, pulmonary obstruction, hypoxia, muscle pain and neuromuscular conditions, exercise at low and moderate intensity is recommended, while those people who present gastrointestinal symptoms and fatigue are recommended to exercise at low intensity. Exercise is completely contraindicated in case of fever and myocarditis.

### **The exercise dependence at the time of COVID-19 pandemic: The role of psychological stress among adolescents**

<https://doi.org/10.14198/jhse.2021.16.Proc4.40>

The outbreak of COVID-19 disease caused not only unprecedented concerns about public health but also critic stress-related disorders, especially in the younger population. Several studies have found a close connection between psychological stress and exercise dependence, resulting from coping strategies such as excessive perfectionism in controlling external factors, performance, controlling food intake, weight, and body image. Moderate amounts of exercise have been demonstrated to reduce psychological distress. Thus, the aim of the present study has been to analyse the relationship between psychological stress and exercise dependence symptoms in adolescent, concerning the COVID-19 period. Participants were 50 adolescents (aged 15-17) who trained twice a week for 90 minutes per session. They were randomly assigned to participate in either a highly controlled and supervised recreational physical activity program associated with theoretical lessons that were intended to provide information regarding nutritional education (EG;n = 25) or a waitlist control group (CG;n = 25). The physical activity program involved: joint mobility exercises, low-to-moderate intensity aerobic exercise, team-building activities, exercise stations, cardio workout. At baseline and after intervention programs we administered the Exercise Dependence Scale-21, a 21-items scale designed to assess exercise dependence symptoms, and the Perceived Stress Scale that measures the level at which situations in life are perceived as stressful ( $p < .01$ ). The findings have suggested that after a 12-week recreational physical activity and food re-education, adolescents felt a greater sensation of psycho-physical well-being and that this phenomenon was closely linked to an improvement of the symptoms of exercise dependence.

### **Perceived stress and emotional overeating during COVID-19 pandemic**

[https://doi.org/10.4103/aip.aip\\_18\\_21](https://doi.org/10.4103/aip.aip_18_21)

Background: Obesity due to inappropriate eating habits, including overeating, has recently been discussed during this COVID pandemic crisis in the context of stress. Emotional overeating (EOE) is sometimes considered as a strategy for emotion regulation. Considering this fact, this study used a snowball technique to analyze the prevalence of EOE caused due to stress during this pandemic situation. Methodology: The present cross-sectional online study of 607 respondents across all regions of India attempts to assess the perceived stress levels during COVID-19, evaluate their tendency to engage in emotional eating, and examine the relationship between perceived stress and emotional



eating during COVID-19 situation. Results: Stress perception is significantly associated with EOE and such phenomenon is marginally more prominent in females more than males. A negative association of age, though weak ( $r = -0.34$ ,  $p < 0.05$ ), has been found with both perceived stress levels and EOE, signifying that the youngsters are more prone to stress and overeating than older persons, during these COVID times. The study also evidenced that people with psychiatric conditions are significantly more affected than others. Similarly, the average EOE scores for such persons were also higher, and they may be more vulnerable to emotional eating. Conclusion: EOE is significantly associated with perceived stress; the association is more prominent in females. Younger people and people with mental illness display significantly more emotional eating behavior during stress.

### **The Nutritional Content of Rescued Food Conveyed by a Food Aid Organization**

<https://doi.org/10.3390/ijerph182212212>

Background: The number of food-insecure families in the European Union has increased, resulting in an increasing number of households depending on food assistance programs. The aim in this study was to evaluate the nutrient content of food rescued by a food aid organization that rescues and redistributes fresh or freshly cooked food to low-income households. Methods: To determine the nutritional content of food hampers provided by our case study organization, we weighed all items of food hampers in three weighing rounds over a period of four months. The Food Insecurity Experience Scale (FIES) was applied to measure households' food insecurity. Results: Our results show that, at our case study food aid organization, food donations substantially contribute to energy, macro, and micronutrient dietary recommendation intake (DRI). Conclusions: When evaluating how these nutrients contribute to alleviating food insecurity of the beneficiary households, we found that the perception of food insecurity is independent of the amount of nutrients served. To the best of our knowledge, this is the first study measuring the nutritional content of fresh or freshly cooked rescued food conveyed by a food aid organization.

### **Accelerating Evaluation of Financial Incentives for Fruits and Vegetables: A Case for Shared Measures**

<https://doi.org/10.3390/ijerph182212140>

Food insecurity, or lack of consistent access to enough food, is associated with low intakes of fruits and vegetables (FVs) and higher risk of chronic diseases and disproportionately affects populations with low income. Financial incentives for FVs are supported by the 2018 Farm Bill and United States (U.S.) Department of Agriculture's Gus Schumacher Nutrition Incentive Program (GusNIP) and aim to increase dietary quality and food security among households participating in the Supplemental Nutrition Assistance Program (SNAP) and with low income. Currently, there is no shared evaluation model for the hundreds of financial incentive projects across the U.S. Despite the fact that a majority of these projects are federally funded and united as a cohort of grantees through GusNIP, it is unclear which models and attributes have the greatest public health impact. We explore the evaluation of financial incentives in the U.S. to demonstrate the need for shared measurement in the future. We describe the process of the GusNIP NTAE, a federally supported initiative, to identify and develop shared measurement to be able to determine the potential impact of financial incentives in the U.S. This commentary discusses the rationale, considerations, and next steps for establishing shared evaluation measures for financial incentives for FVs, to accelerate our understanding of impact, and support evidence-based policymaking.

### **Citizen Science in Vegetable Garden Cultivar Evaluation in Tennessee**

<https://doi.org/10.3390/horticulturae7110422>

Edible food production is a growing area of horticultural interest that can engage multiple generations of rural to urban residents with varying levels of experience. Residential or community garden food

production can provide many benefits, including the production of healthy produce, establishment of community or social connections, and increased physical activity. Regardless of experience, food gardeners are interested in growing crops and cultivars well-suited to their region and which provide both productivity and crop quality. This means that cultivar selection is a common question for gardeners. However, formal cultivar evaluation is relatively rare in the non-commercial food production sector due to the number of cultivars, the challenges of replicated trial management, and the scarcity of public researchers focused on consumer horticulture. This limits the information available to support new gardeners, which lowers the chances of overall success including high-quality harvests. Such crop and variety selection questions are common for Extension personnel in the United States as well as many others who work with gardeners. Even with this high level of interest, funding for consumer garden trials is limited and the cost of replicated trials across various geographical sites is high. To fill this gap in research and address the need for high-quality data to support education, University of Tennessee Extension and research faculty have developed a citizen science approach called the Home Garden Variety Trial (HGVT) program. The HGVT is a collaborative effort between Extension and research faculty and educators, who select trials, provide seeds, and compile data, and citizen scientists around the state, who conduct the trials using their usual gardening practices in their own home or community gardens. Beginning in 2017, the collaborators have conducted five years of research involving over 450 individual gardeners in more than half of the counties in Tennessee. The HGVT is a novel and effective tool to introduce gardeners to new crops and cultivars while providing previously unavailable data to researchers. Together, researchers and home gardeners collect and compile data that supports residential and community food production success while engaging new and experienced gardeners in participatory science research.

**Urban Networks, Micro-agriculture, and Community Food Security** <https://doi.org/10.1007/S43615-021-00117-X>

The white paper first outlines the state of inequity in food security/sovereignty in our area of focus, taking into account historical context as well as emerging and ongoing effects of the COVID-19 pandemic and community and policy responses to it. We then discuss a food acquisition intervention, structured as a longitudinal, collaborative research, and service-learning effort known as Everybody Eats. The white paper provides detailed discussion of competing understandings of agriculture, horticulture, and the social problem of food insecurity; the preliminary data that has led to a current collaborative effort to enhance the skillset of people previously not understood as food producers and provisioners, but only as end-user consumers; and the new iteration of the project wherein specific sets of expertise from diverse disciplines are deployed both to offer a more robust intervention, and bring new methodologies to bear in assessing the ecology of a local foodshed. We propose mobilizing existing resources and expertise of the Land Grant/Cooperative Extension system to act as a regional hub for facilitating full community food security (caloric and nutritional adequacy) and food sovereignty (participatory decision-making regarding living spaces and culturally appropriate foodways). Finally, we illustrate how a nexus of faculty, working from a service-learning advocacy perspective and embedded in a participatory action framework, provides a mechanism for bringing together and sustaining a community of intellectually diverse researchers and stakeholders.

**Providing Food Assistance During the COVID-19 Pandemic: A Case Study of a Free Produce Market at a Health Care Center.** <https://dx.doi.org/10.1353/hpu.2021.0198>

The COVID-19 pandemic has worsened economic precarity and nearly doubled food insecurity in the United States. We describe how a free produce market at a Massachusetts health center adapted to exponentially increase its reach and offerings while continuing to safely distribute food to a low-income community during the pandemic.

## **Changes in body mass index (BMI) in an inner city at risk pediatric population during the COVID 19 pandemic**

Background: The prolonged course of the COVID 19 pandemic has numerous social, economic and health consequences. Few studies so far have evaluated the metabolic changes in pediatric populations throughout the pandemic. School provides structure and routine for children and regulates mealtimes, physical activity and sleep schedule, all of which are lifestyle factors that can contribute to obesity if poorly regulated. As per the New Jersey Childhood Obesity Study, 44.2% of children in the city of Newark, are overweight and obese, 25.2% of whom are obese and 18.3% are very obese. The Newark population in 2018 saw 2,069 violent crimes per 100,000 people, approximately twice the national average. As a result of unsafe neighborhoods, most of the physical activity for children in Newark is limited to sports or physical activity organized by institutions, primarily its school system. The switch from in-person to online school during the COVID pandemic along with, increases in screen time due to online classes and homework, as well as increased social activity through video games and virtual outlets can lead to disrupted sleep cycles and increased BMI. The lack of structure and routine in combination with increased screen time, increased snacking and consumption of processed food, as well as limited access to fresh food may have had detrimental metabolic effects particularly on an already high risk urban pediatric population. Objective: To quantify the changes in BMI among overweight and obese children and adolescents before and after the pandemic-associated lockdown. Study Design/Methods: A retrospective chart review for ages 2 to 19 years with BMI  $\geq$  85th %tile seen in outpatient pediatric clinic of University Hospital located in Newark from March 2019 to April 2021 (n=84) was performed. The executive order to close schools issued on March 16th, 2020 was considered as start date of the pandemic. Visits within 9 months prior to 03/16/20 were counted as pre-pandemic. On January 2, 2021, organized sports were allowed to resume in public schools and this date was used to set the post-pandemic mark. Visits from 1/2/2021 until 4/2021 were counted as post-pandemic. Comparison of pre and post BMI was performed via paired sample t-tests with significance as  $p < 0.05$ . Average pre and post pandemic BMI was compared between ethnic groups and gender using ANOVA. Results: There was a statistically significant increase in BMI from pre-pandemic visits to post-pandemic ( $p < 0.05$ ) across ages 5-19: ages 5-8 (n=17; average increase = 1.88;  $p = 0.003$ ); ages 9-13 (n=47; average BMI increase = 2.1;  $p < 0.0001$ ); ages 14-19 (n=14; average BMI increase = 1.54;  $p = 0.01$ ). For ages 2-4 there was an increase in BMI, however it did not reach statistical significance (n=4; BMI increase = 1.69;  $p = 0.051$ ). There was an equal distribution of females (n=40) and males (n=44). There was no significant difference in BMI among male and female subjects pre and post pandemic. The average pre-pandemic BMI in females was 28.29 and in males was 26.74 ( $p = 0.258$ ). Similarly, the average post-pandemic BMI in females was 30.01 and in males was 28.86 ( $p = 0.422$ ). Majority of the subjects were primarily Hispanic (n=45) and African American (n=29). There were 10 subjects classified as other or unknown. There was no statistically significant difference in pre-pandemic BMI between Hispanic (mean = 27.01) and African-American (mean = 28.32) children ( $p = 0.377$ ) but there was a statistically significant difference in post pandemic BMI between Hispanic (mean = 28.34), and African American (mean = 31.47) children ( $p = 0.041$ ). Conclusions: We found a statistically significant increase in BMI across all age cohorts in our pediatric population except the 2-4-year age group. The BMI increase was significantly higher among the African American as compared to the Hispanic children. These results may be attributed to the negative effects of school shut-downs and shelter-in-place orders, increased screen times, lack of physical activity and increased consumption of processed foods. The adverse effects of the COVID-19 pandemic on childhood obesity, not only demand maximum efforts to support families and children by appropriate policy changes but also increase awareness among physicians to counsel families and screen for metabolic dysfunction.

**Occupational stress among farm and ranch operators in the midwestern United States.**

<https://dx.doi.org/10.1186/s12889-021-12053-4>

**BACKGROUND:** This study used surveillance data from 2018 and 2020 to test the stability of work-related strain symptoms (high stress, sleep deprivation, exhaustion) with demographic factors, work characteristics, and musculoskeletal symptoms among farm and ranch operators in seven midwestern states of the United States. **METHODS:** Cross-sectional surveys were conducted among farm and ranch operators in 2018 (n = 4423) and 2020 (n = 3492). Operators were asked whether, in the past 12 months, they experienced extended work periods that resulted in high stress levels, sleep deprivation, exhaustion/fatigue, or other work-related strain symptoms. Covariates included personal and demographic factors, work characteristics, number of injuries, work-related health conditions, and exposures on the operation. Summary statistics were tabulated for explanatory and outcome variables. The classification (decision) tree approach was used to assess what variables would best separate operators with and without reported strain symptoms, based on a set of explanatory variables. Regularized regression was used to generate effect estimates between the work strain variables and explanatory variables. **RESULTS:** High stress level, sleep deprivation, and exhaustion were reported more frequently in 2018 than 2020. The classification tree reproduced the 2018 model using 2020 data with approximately 80% accuracy. The mean number of reported MSD symptoms increased slightly from 1.23 in 2018 to 1.41 in 2020. Older age, more time spent in farm work, higher gross farm income (GFI), and MSD symptoms in six body regions (ankles/feet, knees, lower back, neck, shoulders, wrists/hands) were associated with all three work strain symptoms. **CONCLUSIONS:** Musculoskeletal pain and discomfort was a strong predictor for stress, sleep deprivation, and exhaustion among farmers and ranchers. This finding indicates that reducing MSD pain and discomfort is beneficial for both physical and mental health.

**COVID-19 working paper: meatpacking working conditions and the spread of COVID-19. (COVID-19 Working Paper No. AP-092.)**

This preliminary analysis explores how working conditions in meatpacking plants might have contributed to the spread of the Coronavirus (COVID-19). Data from the Occupational Information Network (O\*NET) was used to construct a set of industry-level working condition variables and compare meatpacking to the sample of other manufacturing industries in our comparison group. This novel approach showed that proximity to others in the meatpacking industry is likely the main factor that influenced the spread of COVID-19, nearly three standard deviations higher in meatpacking than our comparison sample of other manufacturing industries. Overall exposure to disease was also found to be 2.5 standard deviations higher in the meatpacking industry compared to other manufacturing industries. Subsequently, we performed a county-level analysis on COVID-19 spread, comparing rural counties that have a large number of meatpacking plants to other nonmetropolitan counties that were dependent on a single manufacturing industry, using the time frame of mid-March to mid-September of 2020. Data analysis begins in mid-March since confirmed cases became national in scope at this point. In mid-April 2020, COVID-19 cases in meatpacking-dependent rural counties rose to nearly 10 times the number in comparison to rural counties dependent on other single manufacturing industries. This difference disappears completely by mid-July, driven by a reduction in COVID-19 cases in the meatpacking industry rather than an increase in other industries, and holds steady through mid-September. The paper concludes by collating evidence from other studies to infer that the meatpacking industry's increased precautions to protect workers help explain why no difference was observed between meatpacking-dependent counties and our comparison group for the final 2 months of the study period. However, this

inference should be viewed as suggestive since it cannot formally test using the data referenced in the working paper.

### **The vaccination threshold for SARS-CoV-2 depends on the indoor setting and room ventilation**

<https://doi.org/10.1186/s12879-021-06884-0>

**BACKGROUND:** Effective vaccines are now available for SARS-CoV-2 in the 2nd year of the COVID-19 pandemic, but there remains significant uncertainty surrounding the necessary vaccination rate to safely lift occupancy controls in public buildings and return to pre-pandemic norms. The aim of this paper is to estimate setting-specific vaccination thresholds for SARS-CoV-2 to prevent sustained community transmission using classical principles of airborne contagion modeling. We calculated the airborne infection risk in three settings, a classroom, prison cell block, and restaurant, at typical ventilation rates, and then the expected number of infections resulting from this risk at varying percentages of occupant immunity. **RESULTS:** We estimate the setting-specific immunity threshold for control of wild-type SARS-CoV-2 to range from a low of 40% for a mechanically ventilation classroom to a high of 85% for a naturally ventilated restaurant. **CONCLUSIONS:** If vaccination rates are limited to a theoretical minimum of approximately two-thirds of the population, enhanced ventilation above minimum standards for acceptable air quality is needed to reduce the frequency and severity of SARS-CoV-2 superspreading events in high-risk indoor environments.

## **Essential Workers/Food/Farm/Ag/Migrant**

### **COVID-19 and systemic racism pandemics impact daily life for immigrant/refugees, Minneapolis, USA**

<https://doi.org/10.5334/aogh.3411>

**Background:** The pandemics of COVID-19 and systemic racism have a deleterious impact on the daily life experiences and health for populations of color. The experiences are compounded for immigrant/refugee communities that may have other barriers such as English language literacy or trauma. Cumulative stress due to everyday racism is harmful for health. **Objectives:** This study describes the impact of day-to-day lived experiences of Karen, Somali, and Latinx communities during the COVID-19 pandemic and aftermath of the police murder of George Floyd in the Minneapolis/St. Paul metro area. **Methods:** In-depth interviews were conducted over three weeks in September and October 2020 to understand the daily life experiences of Karen, Somali and Latinx adults drawn from community contacts during the COVID-19 pandemic and the aftermath of the police murder of George Floyd. Interviewers were bilingual and from the communities they interviewed. Nine questions were asked, ranging from their knowledge of COVID-19, prevention practices, experiences during shelter-in-place, and the perceptions of the police murder of George Floyd. Qualitative analysis included transcript review, coding facilitated by Atlas.ti Cloud software, summaries, and validation by interviewers. **Findings:** Thirty-two adults were interviewed (Latinx = 10, Karen = 10, Somali = 12). One-third were in person per participant request and complying with COVID-19 precautions, and the remainder were remote. The average age recorded was 37 years (range 20–66 years), 43.8% males and 56.3% females. Respondents reported experiences of discrimination and systemic racism while engaging in daily life activities, including accessing foods and common goods, school, work, transportation, and healthcare, all of which were exacerbated by COVID-19 and the police murder of George Floyd. **Conclusions:** Immigrant/refugee communities of color in Minneapolis/St. Paul face daily experiences of racism that were compounded by the events of 2020. Discrimination and systemic racism contribute to the persistent health inequities among populations of color.

## **The Direct and Indirect Effects of a Global Pandemic on US Fishers and Seafood Workers (preprint)**

<https://doi.org/10.1101/2021.11.16.21266427>

The United States' seafood industry experienced major shifts in consumer demand and COVID-19 social-distancing restrictions starting in March 2020, when the early stages of the pandemic were unfolding. However, the specific effects on workers across seafood value chains are less well known. According to the US Centers for Disease Control and Protection (CDC), fishers and seafood workers face an increased risk of workplace exposure to COVID-19 given the close proximity to others in processing facilities and on fishing vessels, long work hours, and communal housing, living, and transportation arrangements associated with seasonal employment. To explore this hypothesis, and given a lack of data on the sector, we reviewed news articles, scientific articles, and white papers to identify the various effects of COVID-19 on US seafood workers and to track COVID-19 cases and outbreaks. Here, we show that most COVID-19 cases among seafood workers were reported during the summer of 2020 and during the beginning of 2021 with outbreaks primarily occurring in seafood processing. COVID-19 cases were documented throughout coastal areas, with Alaska experiencing the largest number of cases and outbreaks. Based on news reports, seafood workers were about twice as likely to contract COVID-19 as workers in other parts of the overall US food system. By examining news articles and scientific literature, we also documented a number of indirect effects of the pandemic. Social-distancing restrictions limited crew size and number of workers on processing lines, resulting in longer work hours and more physical and mental taxation. Economic consequences of the pandemic were reportedly a primary concern for fishers and aquaculture businesses, including changes in markets, supply and demand, in addition to revenue loss, price fluctuations, supply chain issues, and labor shortages. Fewer outlets interviewed workers in seafood processing; however, concerns about workplace safety, contracting COVID-19, access to medical services, vaccination, and paid sick leave were all noted. We also highlight a number of inequities in COVID-19 responses within the seafood sector, both along racial and gender lines. Peer-reviewed studies and news coverage all point to diverse direct and indirect effects of the COVID-19 pandemic on workers across seafood value chains. The summary of these effects can serve as a foundation for future work on infection control and occupational outreach to workers in the seafood sector.

## **Other**

### **Worldwide COVID-19 Vaccines Sentiment Analysis Through Twitter Content**

<https://doi.org/10.29333/ejgm/11316>

One year during the pandemic of COVID 19, numerous viable possibilities have been created in worldwide efforts to create and disseminate a viable vaccine. The rapid development of numerous vaccinations is remarkable; generally, the procedure takes 8 to 15 years. The vaccination of a critical proportion of the global population, which is vital for containing the pandemic, is now facing a new set of hurdles, including hazardous new strains of the virus, worldwide competition over a shortage of doses, as well as public suspicion about the vaccinations. A safe and efficacious vaccine COVID-19 is borne fruit globally. There are presently more than a dozen vaccinations worldwide authorized; many more continue to be developed. This paper used COVID-19 vaccine related tweets to present an overview of the public's reactions on current vaccination drives by using thematic sentiment and emotional analysis, and demographics interpretation to people. Further, experiments were carried out for sentiment analysis in order to uncover fresh information about the effect of location and gender. Overall Tweets were generally negative in tone and a huge vaccination trend can be seen in global health perspectives, as evidenced by the analysis of the role of comprehensive science and research in vaccination.

### **Trust and responsibility in food systems transformation. Engaging with Big Food: marriage or mirage?**

<https://dx.doi.org/10.1136/bmjgh-2021-007350>

Concentration of power among transnational 'Big Food' companies has contributed to food systems that are unsustainable, unhealthy and inequitable for people and planet. Given these commercial determinants of health, if 'food systems transformation' is to be authentic-more than a passing narrative-then leveraging Big Food is paramount. To this end, researchers, practitioners and policy-makers are increasingly encouraged to engage with these powerful entities. However, given the conflicts of interest at stake, engagement relies on trust and transparency, that all stakeholders take responsibility for their actions and demonstrate commitment to do no harm. Given Big Food's track record in influencing policy, shifting costs and responsibility for their harms-and while profit primarily drives business decision making-we question whether it is logical to expect trust. This analysis explores concepts of responsibility and trust in relation to food systems transformation involving public-private partnerships. Through short cautionary case studies-looking at the United Nations Food Systems Summit, and Big Food's plastic burden-it argues that unless such companies take responsibility for their cross-cutting effects and earn authentic trust through demonstrably doing no harm, their participation in evidence generation and policy processes should be limited to responding to information requests and adhering to regulation. Any involvement in research agenda-setting or formulating policy solutions introduces conflicts of interest, legitimises corporate irresponsibility and jeopardises scientific integrity. Big Food has dynamism and power to address food system problems, but while it contributes to so many of these problems it should follow-not formulate-transformational evidence, policies and regulations.

### **Homeless people and health: vulnerability and risks during the COVID-19 pandemic. Pilot study**

<https://doi.org/10.3306/ajhs.2021.36.04.136>

Background: Homelessness is a complex phenomenon characterized by extreme vulnerability. The objective of the present study was to know the health status and use of the health system by homeless people (HP) in Palma de Mallorca, as well as to describe how the actual pandemic modified the needs of this population. Subjects and method: Descriptive cross-sectional study with 31 HP from Palma de Mallorca. A questionnaire that included sociodemographic profile, social support (SSQ-6), health problems, infectious diseases, mental health (PHQ-9), drug abuse (DAST-10) and basic needs (hygiene, food, safety, etc.) was administered. In addition, serology test for SARS-CoV-2, syphilis, hepatitis and HIV was performed, also their computerized medical records were reviewed. Results: The mean age was 52 +/- 8 years and 87% (27/31) were men. 48.4% had some chronic disease, 51.6% had some infectious disease and 42% had mood disorders. 96.8% of the HP used Primary Care services in 2020 versus 71% in 2019. The needs most affected by the pandemic were: hygiene (41.9%), access to public toilets (29%) and access to food (25.8%). Conclusions: HP have high rates of comorbidity. Our results suggest that the health status of HP may have worsened during the pandemic. In addition, vital needs have been affected and their vulnerability could increase.

### **Food and COVID-19 Lit Review: November 26<sup>th</sup> 2021**

- DNPAO
  - SNAP participation and the health and health care utilisation of low-income adults and children. <https://dx.doi.org/10.1017/S1368980021003815>
  - The Influence of the COVID-19 Pandemic on the Food Supply in the Emergency Food System: A Case Study at 2 Food Pantries. <https://dx.doi.org/10.1093/cdn/nzab115>
  - "It Was Actually Pretty Easy": COVID-19 Compliance Cost Reductions in the WIC Program. <https://dx.doi.org/10.1111/puar.13423>

- Race and Hispanic-origin disparities in underlying medical conditions associated with severe COVID-19 illness: U.S. adults, 2015-2018 <https://doi.org/10.15620/cdc:104188>
- Racial and Ethnic Disparities in Health-Related Socioeconomic Risks During the Early COVID-19 Pandemic: A National Survey of U.S. Women. <https://dx.doi.org/10.1089/jwh.2021.0230>
- 6-10-14 for Health - as an example of an interdisciplinary model of care for a patient with obesity <https://doi.org/10.1093/eurpub/ckab165.186>
- Do social isolation and neighborhood walkability influence relationships between COVID-19 experiences and wellbeing in predominantly Black urban areas? <https://doi.org/10.1016/j.lurbplan.2021.104264>
- European food banks and COVID-19: Resilience and innovation in times of crisis <https://doi.org/10.1016/j.seps.2021.101187>
- Identifying Critical Thresholds for Resilient Regional Food Flows: A Case Study From the U.S. Upper Midwest <https://doi.org/10.3389/fsufs.2021.684159>
- The underlying mechanisms for severe COVID-19 progression in people with diabetes mellitus: a critical review. <https://dx.doi.org/10.3934/publichealth.2021057>
- Worker-Safety/NIOSH
  - Exposure to a SARS-CoV-2 infection at work: development of an international job exposure matrix (COVID-19-JEM). <https://dx.doi.org/10.5271/sjweh.3998>
  - Assessment of Environmental and Occupational Risk Factors for the Mitigation and Containment of a COVID-19 Outbreak in a Meat Processing Plant. <https://dx.doi.org/10.3389/fpubh.2021.769238>
- DFWED/Food Safety
  - Multistate Salmonella infection outbreaks in United States, 2006 to 2020 <https://doi.org/10.3784/jbjc.202103260160>
- Essential Workers/Food/Farm/Ag/Migrant
  - Vaccinations for migrants during and beyond the COVID-19 pandemic <https://doi.org/10.1093/eurpub/ckab165.150>
  - 'Stressed, uncomfortable, vulnerable, neglected': a qualitative study of the psychological and social impact of the COVID-19 pandemic on UK frontline keyworkers. <https://dx.doi.org/10.1136/bmjopen-2021-050945>
  - Impact of COVID-19 on migrant populations in high-income countries: a systematic review <https://doi.org/10.1093/eurpub/ckab164.882>
  - COVID-19 and systemic racism pandemics impact daily life for immigrant/refugees, Minneapolis, USA <https://doi.org/10.5334/aogh.3411>
- Other
  - How COVID-19 Exposed Water Supply Fragility in Florida, USA <https://doi.org/10.3390/urbansci5040090>
  - SARS-CoV-2 Cumulative Incidence and Period Seroprevalence: Results From a Statewide Population-Based Serosurvey in California. <https://dx.doi.org/10.1093/ofid/ofab379>
  - The impact of behavioural risk factors on communicable diseases: a systematic review of reviews. <https://dx.doi.org/10.1186/s12889-021-12148-y>
  - The effect of allergy and asthma as a comorbidity on the susceptibility and outcomes of COVID-19. <https://dx.doi.org/10.1093/intimm/dxab107>
  - Socio-economic disparities in self-reported, tested, and diagnosed COVID-19 status <https://doi.org/10.1093/eurpub/ckab164.883>



### **SNAP participation and the health and health care utilisation of low-income adults and children.**

<https://dx.doi.org/10.1017/S1368980021003815>

**OBJECTIVE:** This article examined whether participation in the Supplemental Nutrition Assistance Program (SNAP) produced changes to adult and child health and health care utilisation during a period of economic recession. **DESIGN:** Instrumental variables analysis relying on variation in state SNAP policies to isolate exogenous variation in household SNAP participation. **SETTING:** Nationally representative data on child and adult health from the 2008 to 2013 National Health Interview Survey. **PARTICIPANTS:** Participants were 92 237 adults and 45 469 children who were either eligible for SNAP based on household income and state eligibility rules or were low income but not eligible for SNAP benefits. **RESULTS:** For adults, SNAP participation increased the probability of reporting very good or excellent health, and for both adults and children, reduced needing but having to go without dental care or eyeglasses. The size of these benefits was especially pronounced for children. However, SNAP participation increased the probability of needing but not being able to afford prescription medicine, and increased psychological distress for adults and behavioural problems for children under age 10. **CONCLUSIONS:** SNAP's benefits for adult health and improved access to dental and vision care for adults and children suggest benefits from the program's expansions during the current COVID-induced crisis. Predicted negative effects of SNAP participation suggest the need for attention to program and benefit structure to avoid harm and the need for continued research to explore the causal effects of program participation.

### **The Influence of the COVID-19 Pandemic on the Food Supply in the Emergency Food System: A Case Study at 2 Food Pantries.**

<https://dx.doi.org/10.1093/cdn/nzab115>

**Background:** The onset of the coronavirus disease 2019 (COVID-19) pandemic increased demand for emergency food assistance and has caused operational shifts in the emergency food system. **Objective:** This research explored how the initial phase of the COVID-19 pandemic influenced the food supply of 2 food pantries. **Methods:** A case study approach was applied to collect data during the initial phase of the COVID-19 pandemic. Food supply data were collected weekly at 2 food pantries in southwest Montana for 17 wk in 2020. Surveys and interviews were conducted with food pantry clients and staff, respectively. Descriptive statistics and inferential statistics were applied to analyze quantitative data. Food supply data were analyzed using the Healthy Eating Index (HEI)-2015, NOVA system, and Unprocessed Pantry Project (UP3) Framework. Thematic analysis was applied to qualitative data. **Results:** The food boxes collected between the 2 food pantries (n = 43) had a mean ( $\pm$  SD) total HEI-2015 score of  $76.41 \pm 7.37$  out of a possible score of 100. According to both the NOVA and the UP3 Framework, 23.4% of the total food distributed was ultra-processed food. Of the food distributed, 50.0% and 48.3% was fresh, unprocessed food according to NOVA and UP3 Frameworks, respectively. From staff interviews, 3 themes arose that describe the food pantry operations that experienced change during the COVID-19 pandemic, including food procurement, distribution preparation, and food distribution. Nine supporting subthemes describing the causes and consequences of the operational themes were identified. Staff perceived that the nutrient quality of the food boxes increased from food distributed previously to the COVID-19 pandemic, whereas over one-third (39.4%) of food pantry clients who responded to surveys preferred the food box model. **Conclusions:** The COVID-19 pandemic has caused enormous operational challenges within food pantries. Food pantries overcame these challenges by swiftly and effectively altering operations so as to continue to distribute nutritious food boxes to pantry clients.

### **"It Was Actually Pretty Easy": COVID-19 Compliance Cost Reductions in the WIC Program.**

<https://dx.doi.org/10.1111/puar.13423>

In recent years, scholars have examined the barriers to accessing public assistance benefits. Research identifies learning, compliance, and psychological costs as deterring program use. Compliance costs reflect the burdens of following program rules, which may entail providing documentation, responding to discretionary demands of bureaucrats, or attending appointments to maintain benefits. Studies identify one element of compliance costs—quarterly appointments—as a barrier to continued WIC participation. This article draws on 44 in-depth qualitative interviews with participants in the Special Supplemental Nutrition Assistance Program for Women, Infants, and Children (WIC). We examine how WIC participants perceive the reduction of compliance costs following the implementation of remote appointments in response to the COVID-19 pandemic. WIC participants report satisfaction with remote appointments and a reduction in the compliance costs of accessing and maintaining benefits. We conclude by recommending longer term changes to policy and practices to increase access and continuity in WIC receipt.

**Race and Hispanic-origin disparities in underlying medical conditions associated with severe COVID-19 illness: U.S. adults, 2015-2018** <https://doi.org/10.15620/cdc:104188>

**Objective** - This report calculates the prevalence of selected conditions by race and Hispanic origin among U.S. adults (aged 20 and over) during 2015-2018. **Methods** - Interview, physical examination, and laboratory data were used from the National Health and Nutrition Examination Survey. Conditions included asthma, chronic obstructive pulmonary disease, and heart disease based on self-report; and obesity, severe obesity, diabetes, chronic kidney disease, smoking, and hypertension based on physical measurements. Estimates accounted for survey design. **Results** - Seventy-six percent of adults and 86.4% (95% CI: 83.5-89.0) of non-Hispanic black adults had at least one condition. Obesity and diabetes were highest among non-Hispanic black (47.9% CI: 45.0-50.8; 19.2% CI: 16.7-21.8, respectively) and Hispanic adults (45.7% CI: 42.9-48.6; 21.3% CI: 19.0-23.7, respectively). **Conclusions** - Non-Hispanic black and Hispanic adults had a disproportionate burden of some conditions, including obesity and diabetes. Understanding populations at highest risk for severe coronavirus disease 2019-related illness could help inform prevention strategies.

**Racial and Ethnic Disparities in Health-Related Socioeconomic Risks During the Early COVID-19 Pandemic: A National Survey of U.S. Women.** <https://dx.doi.org/10.1089/jwh.2021.0230>

**Background:** Nearly half of U.S. women experienced new or worsening health-related socioeconomic risks (HRSRs) (food, housing, utilities and transportation difficulties, and interpersonal violence) early in the COVID-19 pandemic. We sought to examine racial/ethnic disparities in pandemic-related changes in HRSRs among women. **Materials and Methods:** We conducted a cross-sectional survey (04/2020) of 3200 women. Pre- and early pandemic HRSRs were described by race/ethnicity. Weighted, multivariable logistic regression models generated odds of incident and worsening HRSRs by race/ethnicity. **Results:** The majority of Black, East or Southeast (E/SE) Asian, and Hispanic women reported ≥1 pre-pandemic HRSR (51%-56% vs. 38% of White women,  $p < 0.001$ ). By April 2020, 68% of Black, E/SE Asian, and Hispanic women and 55% of White women had ≥1 HRSR ( $p < 0.001$ ). For most HRSRs, the odds of an incident or worsening condition were similar across racial/ethnic groups, except Black, E/SE Asian and Hispanic women had 2-3.6 times the odds of incident transportation difficulties compared with White women. E/SE Asian women also had higher odds of worsening transportation difficulties compared with White women (adjusted odds ratios = 2.5, 95% confidence interval 1.1-5.6). In the early pandemic, 1/19 Hispanic, 1/28 E/SE Asian, 1/36 Black and 1/100 White women had all 5 HRSRs (extreme health-related socioeconomic vulnerability). **Conclusions:** Pre-pandemic racial/ethnic disparities in HRSRs persisted and prevalence rates increased for all groups early in the pandemic. Disparities in transportation difficulties widened. White women were much less likely than others to experience

extreme health-related socioeconomic vulnerability. An equitable COVID-19 response requires attention to persistent and widening racial/ethnic disparities in HRSRs among women.

### **6-10-14 for Health - as an example of an interdisciplinary model of care for a patient with obesity**

<https://doi.org/10.1093/eurpub/ckab165.186>

Issue Overweight and obesity are public health challenges of growing importance in Poland. The fastest increase has been observed in children and adolescents. Some studies show that 22% of elementary school children are currently (2013) overweight or have obesity (IZZ), compared with no more than 15% in 1990 (WHO Europe, 2012). Description of the problem The “6-10-14 for Health” is the first comprehensive health programme implemented in Poland, focused on long-term health behaviour change both among children with obesity and their families. Screening tests are carried out at Gdańsk schools. Children who are diagnosed with excess body weight are invited to the second level of programme. Target groups are children in Gdansk, aged 6, 9-11 and 14 years, their parents and the school environment. Timeline: 2011-2021 Results effects: Approximately 400-450 new patients join the programme every year. Programme participants receive annual care from an interdisciplinary team of specialists including a paediatrician, dietitian, specialist in physical activity and a psychologist. The effect of one year's participation in the programme is the reduction of excess body weight in 75% of participants. More than 2000 patients have completed the Programme. The programme is accredited by the European Association for the Study of Obesity and is funded by the City of Gdańsk. changes: Further implementation of the Programme depends on providing funds from the City of Gdańsk. However, it seems that the 6-10-14 for Health is one of the city's health priorities. The challenge in the field of weight reduction programs is to provide care that will not lead to stigmatization of patients Lessons The work on designing the model has already resulted in creation of network of specialists from different backgrounds and allowed sharing different scopes, how to use limited resources for the benefit of children and adolescents. Key messages The proposed care model is fully possible to implement in the care system. So far, sharing knowledge and experience, the program has been implemented in several other local governments. In the era of the COVID19 pandemic, all activities aimed at the prevention and early treatment of obesity become even more important.

### **Do social isolation and neighborhood walkability influence relationships between COVID-19 experiences and wellbeing in predominantly Black urban areas?**

<https://doi.org/10.1016/j.lurbplan.2021.104264>

Black Americans have been disproportionately affected by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2 or COVID-19) pandemic. Since the pandemic's start, we have observed compounded health, social, and economic impacts for communities of color, fueled in part by profound residential segregation in the United States that, for centuries prior to the pandemic, created differences in access to opportunity and resources. Based on a longitudinal cohort of Black residents living in two racially isolated Pittsburgh neighborhoods, we sought to: 1) describe the experiences of behavioral responses to COVID-19 conditions (e.g., closures of businesses, schools, government offices) and illness experiences reported by residents within these disinvested, urban areas and 2) determine if these experiences were associated with perceptions of risk, negative mental health outcomes, and food insecurity; and 3) examine whether any of the associations were explained by social isolation or modified by neighborhood walkability. We found direct associations between residents' experience with COVID-19-related closures and with the illness, with perceived risk, and change in psychological distress, sleep quality, and food insecurity from pre-COVID-19 levels. Social isolation was a statistically significant mediator of all of these associations, most strongly mediating the pathway to psychological distress. We found neighborhood walkability to be a significant moderator of the association between closure experiences and sleep quality. The results suggest that experiences of COVID-19 closures and illness

were associated with serious threats to public health in Black, disinvested, urban neighborhoods, beyond those caused directly by the virus. Outcomes of the pandemic appear very much dependent on the extent to which social and physical resources are available to meet the demands of stress.

### **European food banks and COVID-19: Resilience and innovation in times of crisis**

<https://doi.org/10.1016/j.seps.2021.101187>

This paper examines the impact of the COVID-19 crisis on the functioning of European food banks and how resilient European food banks were in coping with the pandemic in 2020. We apply a multiple case study to assess how the first year of the pandemic affected European food banks' operations and the amount of redistributed food. We further investigate innovation practices that have been developed to cope with the new situation, hoping to draw lessons for imminent future waves of the pandemic and other social crises. Our study finds that, compared to 2019, in 2020 food banks were able to redistribute a significantly higher amount of food despite numerous social restrictions and other challenges associated with the pandemic. To explain this, we delve into the organizational innovations implemented by the studied food banks and find that the introduction of new strategies and new internal structures, as well as the establishment of new types of external network relations with other firms and/or public organizations, proved to be particularly important, enabling food banks to respond quickly and effectively to the new emergency. The study thus highlights the role of food banks in food redistribution and food waste reduction in times of crisis.

### **Identifying Critical Thresholds for Resilient Regional Food Flows: A Case Study From the U.S. Upper Midwest**

<https://doi.org/10.3389/fsufs.2021.684159>

Improving the regional organization of food flow requires an understanding of system constraints. System transformation is necessary if the system is to include regional, independent wholesale food suppliers and to distribute food in an equitable and sustainable manner. Regional suppliers play a pivotal role in overall food system resilience, an emerging issue in wake of the numerous failures in conventional food supply chains exacerbated by COVID-19-related disruptions. Yet alternative supply chains that link local producers with towns and urban centers regionally, represent a small fraction of our nation's food suppliers. They struggle to compete with larger distribution networks that can supply products in-and out-of-season by global procurement. The upper Midwest harbors numerous local and regional food supply chains consisting of farms, processors, trucking companies, wholesalers and other firms that share a commitment to sustainability and local economic development. A constellation of challenges hamper their emergence, however, even as larger scale food supply chains flounder or fail to effectively serve communities. Informed by Donella Meadows's work on leverage points for systemic change, a collaborative, transdisciplinary and systems research effort examined conventional food supply networks and identified key opportunities for shifting food supply chain relationships. System concepts such as stock and flow, leverage points, and critical thresholds helped us to frame and identify challenges and opportunities in the current system. The second and third phase of our collaborative research effort occurred over 4 years (2013–2016) and involved twenty-six people in co-generation of knowledge as a loose-knit team. The team included farmers, supply chain practitioners, students, academic staff and faculty from multiple departments and colleges. Our primary method was to host public workshops with practitioner speakers and participants to identify dominant narratives and key concepts within discourses of different participants in distribution networks. The literature review was iterative, based on challenges, ideas and specific questions discussed at workshops. Our research exposed two meta-narratives shaping the supply chain: diversity and efficiency. In addition to these high-leverage narratives, we identified and examined five key operational thresholds in the Upper Midwest regional food system that could be leveraged to improve food flow in the region. Attention to

these areas makes it possible for businesses to operate within environmental limits and develop social structures that can meet scale efficiencies necessary for economic success. We iteratively shared this co-produced knowledge with decision-makers via local food policy councils, local government, and national policy circles with the goal of supplying actionable information. This phased action research project created the environment necessary for a group of food system entrepreneurs to emerge and collaborate, poised to improve system resilience in anticipation of food system disruptions. It forms the basis for on-going research on food flow, regional resilience, and supply chain policy.

**The underlying mechanisms for severe COVID-19 progression in people with diabetes mellitus: a critical review.** <https://dx.doi.org/10.3934/publichealth.2021057>

Diabetes mellitus (DM) has a high incidence of comorbidities among patients with severe coronavirus disease 2019 (COVID-19). The elevated prevalence of DM in the world population makes it a significant risk factor because diabetic individuals appear to be prone to clinical complications and have increased mortality rates. Here, we review the possible underlying mechanisms involved in DM that led to worse outcomes in COVID-19. The impacts of hyperglycemia side effects, secondary comorbidities, weakened innate and adaptive immunity, chronic inflammation, and poor nutritional status, commonly present in DM, are discussed. The role of the SARS-CoV-2 receptor and its polymorphic variations on higher binding affinity to facilitate viral uptake in people with DM were also considered. Clinical differences between individuals with type 1 DM and type 2 DM affected by COVID-19 and the potential diabetogenic effect of SARS-CoV-2 infection were addressed.

**Worker-Safety/NIOSH**

**Exposure to a SARS-CoV-2 infection at work: development of an international job exposure matrix (COVID-19-JEM).** <https://dx.doi.org/10.5271/sjweh.3998>

**Objective** This study aimed to construct a job exposure matrix (JEM) for risk of becoming infected with the SARS-CoV-2 virus in an occupational setting. **Methods** Experts in occupational epidemiology from three European countries (Denmark, The Netherlands and the United Kingdom) defined the relevant exposure and workplace characteristics with regard to possible exposure to the SARS-CoV-2 virus. In an iterative process, experts rated the different dimensions of the COVID-19-JEM for each job title within the International Standard Classification of Occupations system 2008 (ISCO-08). Agreement scores, weighted kappas, and variances were estimated. **Results** The COVID-19-JEM contains four determinants of transmission risk [number of people, nature of contacts, contaminated workspaces and location (indoors or outdoors)], two mitigation measures (social distancing and face covering), and two factors for precarious work (income insecurity and proportion of migrants). Agreement scores ranged from 0.27 [95% confidence interval (CI) 0.25-0.29] for 'migrants' to 0.76 (95% CI 0.74-0.78) for 'nature of contacts'. Weighted kappas indicated moderate-to-good agreement for all dimensions [ranging from 0.60 (95% CI 0.60-0.60) for 'face covering' to 0.80 (95% CI 0.80-0.80) for 'contaminated workspaces'], except for 'migrants' (0.14 (95% CI -0.07-0.36)). As country differences remained after several consensus exercises, the COVID-19-JEM also has a country-axis. **Conclusions** The COVID-19-JEM assesses the risk at population level using eight dimensions related to SARS-COV-2 infections at work and will improve our ability to investigate work-related risk factors in epidemiological studies. The dimensions of the COVID-19-JEM could also be valuable for other future communicable diseases in the workplace.

**Assessment of Environmental and Occupational Risk Factors for the Mitigation and Containment of a COVID-19 Outbreak in a Meat Processing Plant.** <https://dx.doi.org/10.3389/fpubh.2021.769238>

Throughout the COVID-19 pandemic, meat processing plants have been vulnerable to outbreaks of SARS-CoV-2 infection. Transmission of the virus is difficult to control in these settings because of a combination of factors including environmental conditions and the specific nature of the work. This paper describes a retrospective outbreak investigation in a meat processing plant, a description of the measures taken to prevent or contain further outbreaks, and insights on how those with specific knowledge of the working environment of these plants can collaborate with public health authorities to ensure optimal outbreak control. The plant experienced 111 confirmed positive asymptomatic cases in total with an estimated attack rate of 38% during a five-week period. 4 weeks after the first case, mass screening of all workers was conducted by the public health authorities. Thirty-two workers tested positive, of which 16 (50%) worked in one particular area of the plant, the boning hall (n = 60). The research team prepared and carried out semi-structured interviews with the plant personnel who were charged with COVID control within the plant. They carried out assessments of operational risk factors and also undertook air quality monitoring in the boning hall and abattoir. The air quality measurements in the boning hall showed a gradual build-up of carbon dioxide and aerosol particles over the course of a work shift, confirming that this poorly ventilated area of the plant had an environment that was highly favorable for aerosol transmission of SARS-CoV-2. Assessment of operational conditions incorporated visual surveys of the plant during the working day. Prior to and during the first 2 weeks of the outbreak, multiple measures were introduced into the plant by management, including physical distancing, provision of educational material to workers, visitor restrictions, and environmental monitoring. After the implementation of these measures and their progressive refinement by plant management, the factory had no further linked cases (clusters) or outbreaks for the following 198 days. The tailored approach to risk mitigation adopted in this meat processing plant shows that generic risk mitigation measures, as recommended by public health authorities, can be successfully adapted and optimized by designated plant emergency response teams.

## **DFWED/Food Safety**

### **Multistate Salmonella infection outbreaks in United States, 2006 to 2020**

<https://doi.org/10.3784/jbjc.202103260160>

Foodborne and pet-borne Salmonella infectious diseases have become a major public health problem in the United States. By collecting the data and information of the epidemiological investigations of 153 Salmonella multistate foodborne disease (SMSFBD) outbreaks and 34 Salmonella multistate pet-borne disease (SMSPBD) outbreaks in the United States from 2006 to 2020, we analyzed the distribution of Salmonella serotypes, characteristics of disease burden, food attribution and the corresponding response outcomes, and described the trend of changes in food consumption of processed food among different groups in the United States at different social-economic development stages. We also observed that a series of lifestyle changes, such as passive reduction of food exposure risk caused by decreasing social activities and food procurement frequency and increased home stay time due to coronavirus disease 2019 (COVID-19) pandemic. New backyard poultry raising which was popular from 2018 might be potential cause of an outbreak of SMSPBD with the most extensive coverage, the largest number of cases and the most complex Salmonella serotype in the United States in 2020. The results showed that it is necessary to learn from the active surveillance strategies and experiences in the prevention and control of SMSFBD and SMSPBD outbreaks in developed countries to establish the tailored food and cultivation early warning system based on local epidemiological characteristics of the diseases, capacity of the diseases control and prevention, economic and social development level to response the rising challenges of new type salmonellosis.

## Essential Workers/Food/Farm/Ag/Migrant

### **Vaccinations for migrants during and beyond the COVID-19 pandemic**

<https://doi.org/10.1093/eurpub/ckab165.150>

Issue Migrants have suboptimal vaccination coverage compared to the general population in destination countries due to several factors -administrative barriers or lack of legal entitlements to health -health system barriers (language, lack of cultural sensitivity and community engagement capacity, vaccination costs) -lack of trust in the health system and misconceptions about vaccines due to misinformation or beliefs Problem Countries should develop national policies and ensure an inclusive, free of charge and proactive vaccination offer to migrants, irrespective of their legal status;and to extend this approach beyond the current pandemic and the sole COVID-19 vaccine Results To achieve COVID-19 global herd immunity all population groups, including migrants, needs to access vaccination. Tailored vaccination strategies, once devised, shall be applied to routine national vaccination plan to tackle health inequalities Lessons The following actions shall be implemented at national level Action 1. Develop tailored and equitable approaches for PH vaccination services targeting migrants through: -free of charge access -decentralization and outreach capacity of the health system -innovative service delivery models (mobile clinics, combined health services, mass vaccination) -health personnel and migrants participatory approach and engagement strategies Action 2. Increase staff engagement through: - increasing health personnel's difference sensitivity -strengthening health personnel's communication capacities Action 3. Increase migrants' health and vaccine literacy through: -establishing vaccine literacy education programmes and strategies -offering health promotion educational interventions Action 4. Monitor progress of inclusive vaccination offer by: -setting strategic goals, targets and indicators for national vaccination plans -expanding immunization information systems to monitor vaccination coverage, with appropriate disaggregation by migration status core variables Key messages Explicitly and proactively include migrants and displaced communities in vaccination plans and set up, test and implement new approaches in primary prevention and vaccination services. Extend this approach beyond the current pandemic and the sole COVID-19 vaccine in order to enhance preparedness to present and future health threats.

### **'Stressed, uncomfortable, vulnerable, neglected': a qualitative study of the psychological and social impact of the COVID-19 pandemic on UK frontline keyworkers.** <https://dx.doi.org/10.1136/bmjopen-2021-050945>

OBJECTIVES: Non-healthcare keyworkers face distinct occupational vulnerabilities that have received little consideration within broader debates about 'essential' work and psychological distress during the COVID-19 pandemic. The aim of this study was therefore to explore the impact of the pandemic on the working lives and mental health and well-being of non-healthcare keyworkers in the UK. DESIGN: In-depth, qualitative interviews, analysed using a reflexive thematic analysis. SETTING: Telephone or video call interviews, conducted in the UK between September 2020 and January 2021. PARTICIPANTS: 23 participants aged 26-61 (mean age=47.2) years employed in a range of non-healthcare keyworker occupations, including transport, retail, education, postal services, the police and fire services, waste collection, finance and religious services. RESULTS: Keyworkers experienced adverse psychological effects during the COVID-19 pandemic, including fears of COVID-19 exposure, contagion and subsequent transmission to others, especially their families. These concerns were often experienced in the context of multiple exposure risks, including insufficient personal protective equipment and a lack of workplace mitigation practices. Keyworkers also described multiple work-related challenges, including increased workload, a lack of public and organisational recognition and feelings of disempowerment. CONCLUSIONS: In efforts to reduce psychosocial concerns among non-healthcare keyworkers, there is a

need for appropriate support during the COVID-19 pandemic and in preparation for other infections (eg, seasonal influenza) in the future. This includes the provision of psychological and workplace measures attending to the intersections of personal vulnerability and work conditions that cause unique risks and challenges among those in frontline keyworker occupations.

### **Impact of COVID-19 on migrant populations in high-income countries: a systematic review**

<https://doi.org/10.1093/eurpub/ckab164.882>

**Background** Migrants in high-income countries (HICs) may have been disproportionately affected by the COVID-19 pandemic, yet the extent to which they are impacted, and their predisposing risk factors, are not clearly understood. We did a systematic review to assess clinical outcomes, indirect health and social impacts, and key risk factors in migrants. **Methods** Our systematic review following PRISMA guidelines (PROSPERO CRD42020222135) identified peer-reviewed and grey literature relating to migrants (foreign-born) and COVID-19 in 82 HICs. Primary outcomes were cases, hospitalisations and deaths from COVID-19 involving migrants; secondary outcomes were indirect health and social impacts and risk factors. **Results** 3016 data sources were screened with 158 from 15 countries included in the analysis. We found migrants are at increased risk of SARS-CoV-2 infection and are over-represented among cases (e.g. constituting 42% of cases in Norway [to 27/4/2020], 26% in Denmark [to 7/9/2020], and 32% in Sweden [to 7/5/2020]); some datasets from Europe show migrants may be over-represented in deaths with increased all-cause mortality in migrants in some countries in 2020. Undocumented migrants, migrant health and care workers, and migrants housed in camps have been especially affected, with certain nationality groups disproportionately impacted. Migrants experience a range of risk factors for COVID-19, including high-risk occupations, overcrowded accommodation, and barriers to healthcare including inadequate information, language barriers, and reduced entitlement. **Conclusions** Migrants in HICs are at high risk of COVID-19, with a range of specific risk factors that have not been well-considered in the public health response to date. These data are of immediate relevance to the policy response to the pandemic, with strategies urgently needed to reduce transmission. Migrant populations must also be better considered in national plans for COVID-19 vaccination roll-out. **On behalf of ESGITM Key messages** Migrants in high-income countries may be disproportionately represented in COVID-19 infections and deaths, with higher levels of many vulnerabilities and risk factors. Migrants must be better included in all aspects of the pandemic response, including vaccination roll-out.

### **COVID-19 and systemic racism pandemics impact daily life for immigrant/refugees, Minneapolis, USA**

<https://doi.org/10.5334/aogh.3411>

**Background:** The pandemics of COVID-19 and systemic racism have a deleterious impact on the daily life experiences and health for populations of color. The experiences are compounded for immigrant/refugee communities that may have other barriers such as English language literacy or trauma. Cumulative stress due to everyday racism is harmful for health. **Objectives:** This study describes the impact of day-to-day lived experiences of Karen, Somali, and Latinx communities during the COVID-19 pandemic and aftermath of the police murder of George Floyd in the Minneapolis/St. Paul metro area. **Methods:** In-depth interviews were conducted over three weeks in September and October 2020 to understand the daily life experiences of Karen, Somali and Latinx adults drawn from community contacts during the COVID-19 pandemic and the aftermath of the police murder of George Floyd. Interviewers were bilingual and from the communities they interviewed. Nine questions were asked, ranging from their knowledge of COVID-19, prevention practices, experiences during shelter-in-place, and the perceptions of the police murder of George Floyd. Qualitative analysis included transcript review, coding facilitated by Atlas.ti Cloud software, summaries, and validation by interviewers. **Findings:** Thirty-two adults were interviewed (Latinx = 10, Karen = 10, Somali = 12). One-third were in



person per participant request and complying with COVID-19 precautions, and the remainder were remote. The average age recorded was 37 years (range 20–66 years), 43.8% males and 56.3% females. Respondents reported experiences of discrimination and systemic racism while engaging in daily life activities, including accessing foods and common goods, school, work, transportation, and healthcare, all of which were exacerbated by COVID-19 and the police murder of George Floyd. Conclusions: Immigrant/refugee communities of color in Minneapolis/St. Paul face daily experiences of racism that were compounded by the events of 2020. Discrimination and systemic racism contribute to the persistent health inequities among populations of color. © 2021 The Author(s).

## **Other**

### **How COVID-19 Exposed Water Supply Fragility in Florida, USA**

<https://doi.org/10.3390/urbansci5040090>

Healthcare demand for liquid oxygen during the COVID-19 pandemic limited the availability of oxygen needed for ozone disinfection of drinking water in several urban areas of Florida. While the situation reduced the state's capacity to provide normal drinking water treatment for millions of people, calls for water conservation during the emergency period resulted in virtually no change in water consumption. Here, we point out that 38–40% of the potable water produced by one of the major utilities in Florida is not used for drinking water but instead is used for outdoor landscape irrigation. This suggests that emergency-level calls for reduced water use could have been made if outdoor irrigation was limited, but we present data showing that there was little change in public behavior, and the state was unable to meet necessary water use reductions during the emergency. This inability to meet short-term emergency water conservation needs foretells a long-term lack of resilience against other global change scenarios and suggests that much work is still needed to build resilience into Florida's water future. We conclude this Viewpoint paper by calling for more urgent sociohydrological research to understand the coupled human-natural drivers of how water supplies respond to global change.

### **SARS-CoV-2 Cumulative Incidence and Period Seroprevalence: Results From a Statewide Population-Based Serosurvey in California.**

<https://dx.doi.org/10.1093/ofid/ofab379>

Background: California has reported the largest number of coronavirus disease 2019 (COVID-19) cases of any US state, with more than 3.5 million confirmed as of March 2021. However, the full breadth of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) transmission in California is unknown as reported cases only represent a fraction of all infections. Methods: We conducted a population-based serosurvey, utilizing mailed, home-based SARS-CoV-2 antibody testing along with a demographic and behavioral survey. We weighted data from a random sample to represent the adult California population and estimated period seroprevalence overall and by participant characteristics.

Seroprevalence estimates were adjusted for waning antibodies to produce statewide estimates of cumulative incidence, the infection fatality ratio (IFR), and the reported fraction. Results: California's SARS-CoV-2 weighted seroprevalence during August-December 2020 was 4.6% (95% CI, 2.8%-7.4%). Estimated cumulative incidence as of November 2, 2020, was 8.7% (95% CrI, 6.4%-11.5%), indicating that 2 660 441 adults (95% CrI, 1 959 218-3 532 380) had been infected. The estimated IFR was 0.8% (95% CrI, 0.6%-1.0%), and the estimated percentage of infections reported to the California Department of Public Health was 31%. Disparately high risk for infection was observed among persons of Hispanic/Latinx ethnicity and people with no health insurance and who reported working outside the home. Conclusions: We present the first statewide SARS-CoV-2 cumulative incidence estimate among

adults in California. As of November 2020, ~1 in 3 SARS-CoV-2 infections in California adults had been identified by public health surveillance. When accounting for unreported SARS-CoV-2 infections, disparities by race/ethnicity seen in case-based surveillance persist.

### **The impact of behavioural risk factors on communicable diseases: a systematic review of reviews.**

<https://dx.doi.org/10.1186/s12889-021-12148-y>

**BACKGROUND:** The coronavirus (COVID-19) pandemic has highlighted that individuals with behavioural risk factors commonly associated with non-communicable diseases (NCDs), such as smoking, harmful alcohol use, obesity, and physical inactivity, are more likely to experience severe symptoms from COVID-19. These risk factors have been shown to increase the risk of NCDs, but less is known about their broader influence on communicable diseases. Taking a wide focus on a range of common communicable diseases, this review aimed to synthesise research examining the impact of behavioural risk factors commonly associated with NCDs on risks of contracting, or having more severe outcomes from, communicable diseases. **METHODS:** Literature searches identified systematic reviews and meta-analyses that examined the association between behavioural risk factors (alcohol, smoking, illicit drug use, physical inactivity, obesity and poor diet) and the contraction/severity of common communicable diseases, including infection or associated pathogens. An a priori, prospectively registered protocol was followed (PROSPERO; registration number CRD42020223890). **RESULTS:** Fifty-three systematic reviews were included, of which 36 were also meta-analyses. Reviews focused on: tuberculosis, human immunodeficiency virus, hepatitis C virus, hepatitis B virus, invasive bacterial diseases, pneumonia, influenza, and COVID-19. Twenty-one reviews examined the association between behavioural risk factors and communicable disease contraction and 35 examined their association with communicable disease outcomes (three examined their association with both contraction and outcomes). Fifty out of 53 reviews (94%) concluded that at least one of the behavioural risk factors studied increased the risk of contracting or experiencing worse health outcomes from a communicable disease. Across all reviews, effect sizes, where calculated, ranged from 0.83 to 8.22. **CONCLUSIONS:** Behavioural risk factors play a significant role in the risk of contracting and experiencing more severe outcomes from communicable diseases. Prevention of communicable diseases is likely to be most successful if it involves the prevention of behavioural risk factors commonly associated with NCDs. These findings are important for understanding risks associated with communicable disease, and timely, given the COVID-19 pandemic and the need for improvements in future pandemic preparedness. Addressing behavioural risk factors should be an important part of work to build resilience against any emerging and future epidemics and pandemics.

### **The effect of allergy and asthma as a comorbidity on the susceptibility and outcomes of COVID-19.**

<https://dx.doi.org/10.1093/intimm/dxab107>

The coronavirus disease 2019 (COVID-19) pandemic causes an overwhelming number of hospitalization and deaths with a significant socioeconomic impact. The vast majority of studies indicate that asthma and allergic diseases do not represent a risk factor for COVID-19 susceptibility nor cause a more severe course of disease. This raises the opportunity to investigate the underlying mechanisms of the interaction between an allergic background and SARS-CoV-2 infection. The majority of patients with asthma, atopic dermatitis, allergic rhinitis, chronic rhinosinusitis, food and drug allergies exhibit an overexpression of type 2 immune and inflammatory pathways with the contribution of epithelial cells, innate lymphoid cells (ILC), dendritic cells, T cells, eosinophils, mast cells, basophils and the type 2 cytokines interleukin (IL)-4, IL-5, IL-9, IL-13, and IL-31. The potential impact of type 2 inflammation-related allergic diseases on susceptibility to COVID-19 and severity of its course have been reported. In this review, the prevalence of asthma and other common allergic diseases in COVID-19 patients is addressed. Moreover, the impact of allergic and non-allergic asthma with different severity and control

status, currently available asthma treatments such as inhaled and oral corticosteroids, short- and long-acting  $\beta$ 2 agonists, leukotriene receptor antagonists and biologicals on the outcome of COVID-19 patients is reviewed. In addition, possible protective mechanisms of asthma and type 2 inflammation on COVID-19 infection, such as the expression of SARS-CoV-2 entry receptors, antiviral activity of eosinophils, cross-reactive T cell epitopes are discussed. Potential interactions of other allergic diseases with COVID-19 are postulated, including recommendations for their management.

### **Socio-economic disparities in self-reported, tested, and diagnosed COVID-19 status**

<https://doi.org/10.1093/eurpub/ckab164.883>

**Backgrounds** Studies in clinical settings showed a potential relationship between Socio-Economic Status (SES) and lifestyle factors with COVID-19, but it is still unknown whether this holds in the general population. In this study we investigated the associations of SES with self-reported, tested, and diagnosed COVID-19 status in the general population. **Methods** Participants were 49,474 men and women ( $46 \pm 12$  yrs) residing in the Northern Netherlands from the Lifelines cohort study. SES indicators and lifestyle factors (i.e., smoking status, physical activity, alcohol intake, diet quality, sleep time, and TV watching time) were assessed by questionnaire from the Lifelines Biobank. Self-reported, tested, and diagnosed COVID-19 status were obtained from the Lifelines COVID-19 questionnaire. **Results** There were 4,711 participants who self-reported having had a COVID-19 infection, 2,883 participants tested for COVID-19, and 123 positive cases diagnosed in this study population. After adjustment for age, sex, lifestyle factors, BMI, and ethnicity, we found that participants with low education or low income were less likely to self-report a COVID-19 infection (OR [95%CI]: low education 0.78 [0.71-0.86]; low income 0.86 [0.79-0.93]), and be tested for COVID-19 (OR [95%CI]: low education 0.58 [0.52-0.66]; low income 0.86 [0.78-0.95]) compared with high education or high income groups, respectively. **Conclusions** Our findings suggest that the low SES group was the most vulnerable population to COVID-19 infection and self-reported and tested COVID-19 status in the general population was better predicted by SES than by lifestyle factors. **Key messages** This study innovatively included a broader range of COVID-19 status, including self-reported and tested COVID-19 status, to better understand COVID-19 related socio-economic factors. This study added evidence to the socio-economically patterned COVID-19 status in a general population instead of in clinical settings.