DQA
DENTAL QUALITY ALLIANCE™
Improving Oral Health Through Measurement

Please read the DQA Measures User Guide prior to implementing this measure.

DQA Measure Technical Specifications: Administrative Claims-Based Measures: Follow-Up after Emergency Department Visits for Dental Caries in Children

Description: The percentage of caries-related emergency department visits among children 0 through 20 years in the reporting period for which the member visited a dentist within (a) 7 days and (b) 30 days of the ED visit
Numerators: Number of caries-related ED visits in the reporting period for which the member visited a dentist within (a) 7 days (NUM1) and (b) 30 days (NUM2) of the ED visit
Denominator: Number of caries-related ED visits in the reporting period
Rates: NUM1/DEN and NUM2/DEN

Rationale: Rationale: There are approximately 1 million ED visits per year for non-traumatic dental conditions in the United States and more than 200,000 visits are made by children (1, 2, 3). Untreated dental caries (tooth decay) and its sequelae (e.g., dental infections) account for almost 80% of these visits (2, 3). Dental caries is preventable, and use of the ED for dental caries related conditions results in substantial costs (1, 3) with 70% of ED visits for dental conditions among children in the United States being paid for by Medicaid (4). Because dental caries can be reduced and managed through outpatient care processes, caries-related ED visits represent "ambulatory care sensitive" visits - visits that are potentially avoidable through timely and effective use of the ambulatory health care system. Moreover, ED care for dental caries-related conditions is generally not definitive compared to that provided in primary care dental settings and often results in referral to primary care dental sites (5, 6, 7). This process of care measure can be used to assess if the patient had timely follow-up with a dentist for more definitive care.

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2. Seu K, Hall KK, Moy E. Emergency Department Visits for Dental-Related Conditions, 2009. Healthcare Cost and Utilization Project Statistical Brief #143. Rockville, MD: Agency for Healthcare Research and Quality; November 2012. URL: http://www.hcup-us.ahrq.gov/reports/statbriefs/sb143.pdf [accessed on May 25, 2021].
3. Allareddy V, Nalliah RP, Haque M, Johnson BS, Rampa SB, Lee MK. Hospital-based emergency department visits with dental conditions among children in the United States: nationwide epidemiological data. Pediatr Dent 2014;37(5):393-9.
4. Wall T, Nasseh K, Vujicic M. Majority of dental-related emergency department visits lack urgency and can be diverted to dental offices. Health Policy Institute Research Brief. American Dental Association.
5. Cohen LA, Bonito AJ, Eicheldinger C, Manski RJ, Macek MD, Edwards RR, Khanna N. Comparison of patient visits to emergency departments, physician offices, and dental offices for dental problems and injuries. J Public Health Dent. 2011;71(1):13-22.
6. Hocker MB, Villani JJ, Borawski JB, Evans CS, Nelson SM, Gerardo CJ, Limkaken AT. Dental visits to a North Carolina emergency department: a painful problem. N C Med J. 2012; 73(5):346-51.
7. Lewis C, Lynch H, Johnston B. Dental complaints in emergency departments: a national perspective. Ann Emerg Med. 2003; 42(1):93-9.

National Quality Measures Clearinghouse Domain: Process[1]

National Quality Forum Domain: Process

Institute of Medicine Aims: Equity, Safety, Timeliness

National Quality Strategy Priority: Health and Wellbeing

[1] **Process (measure type):** "A process of care is a health care-related activity performed for, on behalf of, or by a patient. Process measures are supported by evidence that the clinical process—that is the focus of the measure—has led to improved outcomes. These measures are generally calculated using patients eligible for a particular service in the denominator, and the patients who either do or do not receive the service in the numerator." NQMC Measure Domain Definitions. Available at: **https://www.ahrq.gov/gam/summaries/domain-definitions/index.html**. Accessed May 25, 2021.

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Level of Aggregation: Program *(NOTE: This measure only applies to programs such as Medicaid that provide both medical insurance and dental benefits. Use of this measure as a requirement for stand-alone dental benefit plans will result in feasibility issues due to lack of access to appropriate data. Use by health plans that provide both medical insurance and dental benefits to a population may be considered after assessment of data element feasibility within the plans databases*).

Improvement Noted As: A higher rate indicates better quality.

Data Required: Administrative enrollment and claims data (medical and dental); single year. When using claims data to determine service receipt, include only paid claims.

Measure Purpose: Examples of questions that can be answered through this measure at each level of aggregation:

1. What is the percentage of ED visits for caries-related reasons for which children see a dentist for follow-up within 7 days and 30 days, respectively?
2. Does the percentage caries-related ED visits that are followed up by visit with a dentist within 7 days and 30 days, respectively, stay stable, increase or decrease over time?

Applicable Stratification Variables

1. Age: <1; 1-2; 3-5; 6-7; 8-9; 10-11; 12-14; 15-18; 19-20

Follow-up after Emergency Department Visit for Dental Caries Calculation:

1. Identify all emergency department visits for caries-related reasons occurring during eligible member months <u>between January 1 and December 1</u> of the reporting year:

   a. Identify a health care encounter as an ED visit if <u>ANY</u> of the following are met:

      - CPT codes 99281-99285 (ED visit for patient evaluation/management); **OR**
      - Revenue codes 0450-0459 (Emergency Room) or 0981 (professional fees for ER services); **OR**
      - CMS place of service code for professional claims - 23 (Emergency Room)

   b. Exclude visits that result in inpatient admissions where inpatient admissions are identified as:

      (i) the patient has an inpatient admission defined by UB Type of Bill = 11x OR 12x OR 41x

      AND

      (ii) that admission occurred within 48 hours:

      [inpatient admit date] – [ED admit date] >= 0 days AND <= 2 days.

   c. Member must be <21 years on date of visit.

      Reporting note: Age stratifications will be based on subject's age on date of ED visit.

   d. Identify an ED visit as being caries related if:

      i. any of the ICD-10-CM diagnosis codes in Table 1 is listed as a FIRST-LISTED diagnosis code associated with the visit

      OR

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ii. (a) any of the ICD-10-CM diagnosis codes in Table 2 is listed as a FIRST-LISTED diagnosis **AND** (b) any of the ICD-10-CM diagnosis codes in Table 1 is listed as an ADDITIONAL LISTED diagnosis. (Codes from Table 2 must be accompanied by a code from Table 1 to qualify.)

e. Count only one visit per member per day.

f. Member must be enrolled on date of ED visit and through 30 days following the visit.

g. Sum the number of ED visits for caries-related reasons.

YOU NOW HAVE THE DENOMINATOR (DEN): Number of ED visits for caries-related reasons

2. Check if subject had a visit with a dentist (dental service) within 30 days of the ED visit:

a. If [CDT CODE] = D0100 – D9999 (any dental service), AND;

b. [DATE OF ED VISIT]-[DATE OF DENTAL VISIT] <=30 days, AND;

Note: If two or more caries-related ED visits occur for same child within 30 days of one another, then use the first ED visit as the index date for follow-up. Both ED visits will count in the denominator. A follow-up dental visit within 30 days of the first ED visit will be counted once in the numerator.

c. If [RENDERING PROVIDER TAXONOMY] code = any of the NUCC maintained Provider Taxonomy Codes in Table 3 below,[2] then proceed to next step (#3).

d. If a **AND** b **AND** c are not met, then the service was not a "follow-up dental service"; STOP processing. This ED visit is already included in the denominator but will not be included in the subsequent counts.

Note: In this step, all **claims** with missing or invalid CDT CODE, missing or invalid NUCC maintained Provider Taxonomy Codes, or NUCC maintained Provider Taxonomy Codes that do not appear in Table 3 should be excluded.

YOU NOW HAVE NUMERATOR 2 (NUM2): ED visits for caries-related reasons for which the child had a visit with a dentist within 30 days

3. Among the ED visits identified in Step 2, check if the subject had a visit with a dentist (dental service) within 7 days of the ED visit: [DATE OF ED VISIT]-[DATE OF DENTAL VISIT] <=7 days

YOU NOW HAVE NUMERATOR 1 (NUM1): ED visits for caries-related reasons for which the child had a visit with a dentist within 7 days

[2] **Identifying "dental" services**: Programs and plans that do not use standard NUCC maintained provider taxonomy codes should use a valid mapping to identify providers whose services would be categorized as "dental" services. Stand-alone dental plans that reimburse ONLY for services rendered by or under the supervision of the dentist can consider all claims as "dental" services.

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4. Report
   a. Unduplicated count of caries-related ED visits with 7-day dentist visit follow-up in numerator (NUM1)
   b. Unduplicated count of caries-related ED visits with 30-day dentist visit follow-up in numerator (NUM2)
   c. Unduplicated count of caries-related ED visits in denominator (DEN)
   d. Rates: (NUM1/DEN), (NUM2/DEN)

Table 1. Caries-Related ICD-10-CM Diagnosis Codes
(NOTE: Please reference the User Guide for ICD-9 CM and ICD-10 CM cross-mapping)

ICD-10 CODE	DESCRIPTION
KØ2.3	Arrested dental caries
KØ2.51	Dental caries on pit and fissure surface limited to enamel
KØ2.52	Dental caries on pit and fissure surface penetrating into dentin
KØ2.53	Dental caries on pit and fissure surface penetrating into pulp
KØ2.61	Dental caries on smooth surface limited to enamel
KØ2.62	Dental caries on smooth surface penetrating into dentin
KØ2.63	Dental caries on smooth surface penetrating into pulp
KØ2.7	Dental root caries
KØ2.9	Dental caries, unspecified
KØ3.89	Other specified diseases of hard tissues of teeth
KØ4.Ø	Pulpitis
KØ4.Ø1	Reversible Pulpitis
KØ4.Ø2	Irreversible pulpitis
KØ4.1	Necrosis of pulp
KØ4.2	Pulp degeneration
KØ4.3	Abnormal hard tissue formation in pulp
KØ4.4	Acute apical periodontitis of pulpal origin
KØ4.5	Chronic apical periodontitis
KØ4.6	Periapical abscess with sinus
KØ4.7	Periapical abscess without sinus
KØ4.8	Radicular cyst
KØ4.9Ø	Unspecified diseases of pulp and periapical tissues
KØ4.99	Other diseases of pulp and periapical tissues
KØ8.131	Complete loss of teeth due to caries, class I

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KØ8.132	Complete loss of teeth due to caries, class II
KØ8.133	Complete loss of teeth due to caries, class III
KØ8.134	Complete loss of teeth due to caries, class IV
KØ8.139	Complete loss of teeth due to caries, unspecified class
KØ8.3	Retained dental root
KØ8.431	Partial loss of teeth due to caries, class I
KØ8.432	Partial loss of teeth due to caries, class II
KØ8.433	Partial loss of teeth due to caries, class III
KØ8.434	Partial loss of teeth due to caries, class IV
KØ8.439	Partial loss of teeth due to caries, unspecified class
KØ8.5Ø	Unsatisfactory restoration of tooth, unspecified
KØ8.51	Open restoration margins of tooth
KØ8.53Ø	Fractured dental restorative material without loss of material
KØ8.531	Fractured dental restorative material with loss of material
KØ8.539	Fracture dental restorative material, unspecified
KØ8.8	Other specified disorders of teeth and supporting structures
KØ8.89	Other specified disorders of teeth and supporting structures
KØ8.9	Disorder of teeth and supporting structures, unspecified
K12.2	Cellulitis and abscess of mouth
M26.79	Other specified alveolar anomalies
M27.2	Inflammatory conditions of jaws
M27.3	Alveolitis of jaws
M27.51	Perforation of root canal space due to endodontic treatment
M27.52	Endodontic overfill
M27.53	Endodontic underfill
M27.59	Other periradicular pathology associated with previous endodontic treatment

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Table 2. Additional First-Listed ICD-10-CM Diagnosis Codes to Identify Caries-Related Visits when Paired with an Additional Listed Diagnosis Code from the Caries-Related ICD-10-CM Codes in Table 1
(NOTE: Please reference the User Guide for ICD-9 CM and ICD-10 CM cross-mapping)

ICD-10 CODE	DESCRIPTION
LØ3.211	Cellulitis of face
LØ3.212	Acute lymphangitis of face
LØ3.213	Periorbital cellulitis
LØ3.221	Cellulitis of neck
LØ3.222	Acute lymphangitis of neck
LØ3.9Ø	Cellulitis, unspecified
LØ3.91	Acute lymphangitis, unspecified
R22.Ø	Localized swelling, mass and lump, head
R22.1	Localized swelling, mass and lump, neck
R6Ø.Ø	Localized edema
R6Ø.1	Generalized edema
R6Ø.9	Edema, unspecified

Table 3: NUCC maintained Provider Taxonomy Codes classified as "Dental Service"*

122300000X	1223P0106X	1223X0008X	125Q00000X	126800000X
1223D0001X	1223P0221X	1223X0400X	261QF0400X	261QD0000X
1223D0004X	1223P0300X	124Q00000X+	261QR1300X	204E00000X
1223E0200X	1223P0700X	125J00000X	1223X2210X	261QS0112X
1223G0001X	1223S0112X	125K00000X	122400000X	

*Services provided by County Health Department dental clinics may also be included as "dental" services.
+Only dental hygienists who provide services under the supervision of a dentist should be classified as "dental" services.

*** Note: Reliability of the measure score depends on quality of the data that are used to calculate the measure. The percentages of missing and invalid data for these data elements must be investigated prior to measurement. Data elements with high rates of missing or invalid data will adversely affect the accuracy and reliability of the measure score. ***

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Check qualifying ED Visits

No/ Missing/ Invalid field codes

ED visit for caries-related reason?

NC Not Counted

Yes

DEN Total number of ED visits for caries-related reasons

Yes

No/ Missing/ Invalid Field Codes

Visit to a dentist following ED visit within 30 days?

Medicaid/CHIP use < 21; Exchange plans use <19; others consult program officials.

Yes

Visit to a dentist following ED visit within 7 days?

No

Yes

NUM 1: Caries-related ED visits with follow-up dental visit within 30 days

NUM 2: Caries-related ED visits with follow-up dental visit within 7 days

STOP

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