Progress in Dental Quality Measurement

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American Dental Association
Why 'Metrics' Overload Is Bad Medicine

Doctors must focus on lists and box-checking rather than patients.

By VICTORIA MCEVOY
Feb. 12, 2014 6:59 p.m. ET

'Quality' has been the buzzword in health care for a decade, but the worthy goal is driving health-care providers to distraction. All stakeholders—insurers, patients, hospital administrators and government watchdogs—are demanding metrics to ensure that money is spent wisely.
Counting What Counts
MEASURING PROGRESS TOWARD BETTER HEALTH AT LOWER COST

What matters most for improving the health of Americans and the affordability of our health care? Because what gets measured gets done, progress in health and health care depends on the measures used to guide our efforts, and our focus can be blurred without a sense of what’s most important among the thousands of measures in use across the nation. Our challenge is to identify a small, practical set of key indicators of our progress—how we are doing in achieving better health, better care, lower costs, and in involving people more in their own health and care. We need core metrics for continuously learning health and health care in America.

TODAY’S CHALLENGES
- Too many measures
- Uneven relevance
- Little sense of priority
- Uncoordinated efforts
- Limited multi-level comparability

A PATH TO IMPROVEMENT
- Specify a core set of measures
- Align measures to focus on the most important priorities
- Assess progress across the system, from the organizational, community, regional, state to national levels

INFRASTRUCTURE FOR MEASURES
- Build data systems that capture and exchange key data elements
- Integrate measures into processes for reporting, regulation, and payment
- Develop approach to continuously update measures and adapt to new technologies

ANTICIPATED BENEFITS
- Reduce the measurement burden on clinicians and organizations
- Allow for comparisons and identification of best practices
- Promote collaborations and coalitions
- Ensure data systems capture the most important information

BUILDING ON CURRENT INITIATIVES
- Leading Health Indicators for Healthy People
- AHRQ’s National Healthcare Quality Report
- CMS’s ACO Measures
- Consumer Reports health rating metrics
- ONC’s Meaningful Use
- NQF’s Quality Measurement Programs
- NCQA’s Quality Measurement Programs

This graphic summarizes themes that emerged from a workshop. For more information, please visit www.iom.edu/countingwhatcounts.

NOTES: ACO = accountable care organization; AHRQ = Agency for Healthcare Research and Quality; CMS = Centers for Medicare & Medicaid Services; MAP = Measure Applications Partnership; NCQA = National Committee for Quality Assurance; NQF = National Quality Forum; ONC = Office of the National Coordinator for Health Information Technology.

INSTITUTE OF MEDICINE
OF THE NATIONAL ACADEMIES
Advancing the nation • improving health
<table>
<thead>
<tr>
<th>Category</th>
<th>Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linked to Care</td>
<td>• Access; Follow up after ED use</td>
</tr>
<tr>
<td>Diagnosed</td>
<td>• Process</td>
</tr>
<tr>
<td>Treated</td>
<td>• Completion needed treatment plans</td>
</tr>
<tr>
<td></td>
<td>• Safety of care</td>
</tr>
<tr>
<td>Pt. Engaged/Retained in care</td>
<td>• Care Continuity, Usual Sources of Services, Patient engagement, coordination of care</td>
</tr>
<tr>
<td>Prevented</td>
<td>• Fluoride; Sealants, periodontal maintenance</td>
</tr>
<tr>
<td>Healthy</td>
<td>• Disease Status: Tooth loss, New Caries, ED Use, GA Use;</td>
</tr>
<tr>
<td></td>
<td>• Risk Status: Treatments, Behaviors;</td>
</tr>
<tr>
<td></td>
<td>• Functional Status: tooth loss, patient reported outcomes</td>
</tr>
</tbody>
</table>
## Overview

[http://www.ada.org/8472.aspx](http://www.ada.org/8472.aspx)

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Measure</th>
<th>AHRQ Domain</th>
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<tbody>
<tr>
<td>Evaluating Utilization</td>
<td>Use of Services</td>
<td>Use of Services</td>
</tr>
<tr>
<td></td>
<td>Preventive Services</td>
<td>Use of Services</td>
</tr>
<tr>
<td></td>
<td>Treatment Services</td>
<td>Use of Services</td>
</tr>
<tr>
<td>Evaluating Quality of Care (Evidence-Based with link to outcomes)</td>
<td>Oral Evaluation</td>
<td>Access/ Process</td>
</tr>
<tr>
<td></td>
<td>Topical Fluoride Intensity</td>
<td>Access/ Process</td>
</tr>
<tr>
<td></td>
<td>Sealant use in 6 – 9 years</td>
<td>Access/ Process</td>
</tr>
<tr>
<td></td>
<td>Sealant use in 10-14 years</td>
<td>Access/ Process</td>
</tr>
<tr>
<td></td>
<td>Care Continuity</td>
<td>Access/ Process</td>
</tr>
<tr>
<td></td>
<td>Usual Source of Services</td>
<td>Access/ Process</td>
</tr>
<tr>
<td>Evaluating Cost</td>
<td>Per-Member Per-Month Cost</td>
<td>Cost</td>
</tr>
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</table>
Overall Use: Utilization of Services

Access: Oral Evaluation

Source: Herndon, 2013
Topical Fluoride, Elevated Risk, Dental

68% had at least one TF
61% had at least one TF
78% had at least one TF
62% had at least one TF

Enrolled 12 months, allowing a one-month gap

Sealants for 6-9 Years
Elevated Risk, Dental

31%
21% 23% 24% 23%

Enrolled 6 months continuously

Sealants for 10-14 Years
Elevated Risk, Dental

11% 8% 11% 11% 11%

Enrolled 6 months continuously
NQMC is a public resource for evidence-based quality measures and measure sets. NQMC also hosts the HHS Measure Inventory.

Visit the HHS Measure Inventory

New This Week
April 28, 2014
Measure Summaries
• New Dental Quality Alliance (DQA)
  Dental Caries in Children: Prevention & Disease Management Measures
• Updated Institute for Clinical Systems Improvement [ICSI] Preventive Services for Children and Adolescent Measures
• New Spanish Society of Intensive and Critical Care and Units Coronary (SEMIANYUC) Quality Indicators in Critically Ill Patients

New This Week
April 28, 2014
Measure Summaries
• New Dental Quality Alliance (DQA)
  Dental Caries in Children: Prevention & Disease Management Measures

Federal Legislation

There is federal legislation that calls for a "Consensus Based Entity" to endorse measures and to propose measures for use in federal programs. NQF currently has the designation as this consensus based entity.
Additional Pediatric Measures

- Early extraction or pulp therapy
- Treatment in a sealed tooth

Interim report for comment in late spring
### Preliminary Data

#### Age Range

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Health Plan</th>
<th>Members (DEN1)</th>
<th>Patients (DEN2)</th>
<th>Enrollees with Services (NUM)</th>
<th>Percent 1 of Enrollees</th>
<th>Percent 2 of Patients</th>
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</thead>
</table>

#### 0-2

<table>
<thead>
<tr>
<th>Health Plan</th>
<th>Members (DEN1)</th>
<th>Patients (DEN2)</th>
<th>Enrollees with Services (NUM)</th>
<th>Percent 1 of Enrollees</th>
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</thead>
<tbody>
<tr>
<td>Medicaid 1</td>
<td>82,704</td>
<td>25,229</td>
<td>1</td>
<td>0.001%</td>
<td>0.004%</td>
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<td>Medicaid 2</td>
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<tr>
<td>CHIP</td>
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</tbody>
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#### 3-5

<table>
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<th>Health Plan</th>
<th>Members (DEN1)</th>
<th>Patients (DEN2)</th>
<th>Enrollees with Services (NUM)</th>
<th>Percent 1 of Enrollees</th>
<th>Percent 2 of Patients</th>
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<tr>
<td>Medicaid 1</td>
<td>98,095</td>
<td>76,626</td>
<td>4</td>
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<td>285,892</td>
<td>240,091</td>
<td>6</td>
<td>0.002%</td>
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<td>16,503</td>
<td>8,241</td>
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<td>2,349</td>
<td>1,148</td>
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#### 6-10

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<th>Patients (DEN2)</th>
<th>Enrollees with Services (NUM)</th>
<th>Percent 1 of Enrollees</th>
<th>Percent 2 of Patients</th>
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</thead>
<tbody>
<tr>
<td>Medicaid 1</td>
<td>152,007</td>
<td>139,034</td>
<td>373</td>
<td>0.245%</td>
<td>0.268%</td>
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<td>Medicaid 2</td>
<td>386,202</td>
<td>333,027</td>
<td>1,294</td>
<td>0.335%</td>
<td>0.389%</td>
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<td>Medicaid 3</td>
<td>24,746</td>
<td>17,065</td>
<td>106</td>
<td>0.428%</td>
<td>0.621%</td>
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<td>CHIP</td>
<td>41,982</td>
<td>29,108</td>
<td>210</td>
<td>0.500%</td>
<td>0.721%</td>
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#### 11-14

<table>
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<th>Health Plan</th>
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<th>Enrollees with Services (NUM)</th>
<th>Percent 1 of Enrollees</th>
<th>Percent 2 of Patients</th>
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<tbody>
<tr>
<td>Medicaid 1</td>
<td>109,704</td>
<td>99,152</td>
<td>1,159</td>
<td>1.056%</td>
<td>1.169%</td>
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<tr>
<td>Medicaid 2</td>
<td>243,745</td>
<td>203,202</td>
<td>2,474</td>
<td>1.015%</td>
<td>1.218%</td>
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<tr>
<td>Medicaid 3</td>
<td>16,236</td>
<td>10,408</td>
<td>280</td>
<td>1.725%</td>
<td>2.690%</td>
</tr>
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</table>
Figure 3: Dental Emergency Department Visits as a Percent of Total Dental Visits by Age in the United States, 2000 to 2010

**Hospital-based emergency department visits involving dental conditions**

**Profile and predictors of poor outcomes and resource utilization**

**Cover Story**

Dental conditions such as dental caries, periodontal disease, and gingival or periodontal conditions are treated routinely in dental office settings. When neglected, these minor localized infections can progress to form cellulitis or systemic infection and even could result in mortality.** Most of these dental conditions could be avoided altogether or minimized by periodic receipt of preventive oral health care, maintenance of good oral hygiene and adoption of optimal dietary habits.** Limitations in or lack of financial resources, geographical barriers to accessing dental care, and limitations in or lack of oral health care literacy could preclude people from seeking periodic dental care and lead to worsening oral health status.** Results of existing research have shown that about 4.3 percent of all hospital emergency department (ED) visits annually were of dental origin.** Research results suggest that 90 percent of dental-care-related ED visits do not result in performance of dental procedures, and most patients are treated with prescription medication.** Additionally, evidence shows that care provided in hospital settings is less effective in managing oral health complaints and therefore could represent a highly inefficient use of limited hospital resources.** People without health insurance and those who are unemployed are more likely to seek dental care in ED settings.**

**ABSTRACT**

**Background.** Untreated dental conditions may progress to infections that are severe enough to necessitate emergency visits to hospitals. The authors conducted a study to identify nationally representative trends in U.S. hospital-based emergency department (ED) visits involving dental conditions and to examine patient-related characteristics associated with ED charges.

**Methods.** The authors used the Nationwide Emergency Department Sample of the Healthcare Cost and Utilization Project, sponsored by the Agency for Healthcare Research and Quality, for the years 2008 through 2010. They selected all ED visits involving patients with a diagnosis of either dental caries, periodontal disease, gingival or periodontal conditions, or mouth cellulitis or abscess. Outcomes examined included post ED disposition status and hospital ED charges.

**Results.** During the study period, 4,099,364 ED visits involved diagnostic codes of dental conditions, which is about 1 percent of all ED visits occurring in the United States. Uninsured patients made about 4.5 percent of all dental condition-related ED visits. One hundred and twenty patients in the study died in EDs. The mean hospital ED charge per visit was approximately $749 (adjusted to 2010 dollars), and the total ED charges across the entire United States during the three-year study period was $2.7 billion.

**Conclusions.** Patients without insurance are at a high risk of seeking dental care in hospital-based ED settings. A substantial amount of hospital resources are used to treat dental conditions in ED settings. Patients with mouth cellulitis, periodontal conditions, and numerous comorbidities are likely to incur higher ED charges.

**Practical Implications.** Dental conditions can be treated more effectively in a dental office setting than in hospital-based settings. Key Words: Dental emergencies; access to care; hospital costs.
Additional Pediatric Measures

- Emergency department use
- Follow-up after emergency room use
- General Anesthesia use in children

Interim report for comment in early summer
Measurement Dashboard for EHR enabled oral health clinical quality measures: Population Health

- STAGE 3
  - Access: Care Continuity
- STAGE 2
  - Prevention: Fluoride
- STAGE 3
  - Prevention: Sealants
- STAGE 2
  - Outcome: New Caries
<table>
<thead>
<tr>
<th><strong>Primary Caries Prevention Intervention as Offered by Primary Care Providers, including Dentists (Measure)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Definition:</strong></td>
</tr>
<tr>
<td><strong>Improvement Notation:</strong></td>
</tr>
<tr>
<td><strong>Measurement Period:</strong></td>
</tr>
<tr>
<td><strong>Transmission Format:</strong></td>
</tr>
<tr>
<td><strong>Scoring:</strong></td>
</tr>
<tr>
<td><strong>Type:</strong></td>
</tr>
<tr>
<td><strong>ID:</strong></td>
</tr>
<tr>
<td><strong>Version:</strong></td>
</tr>
<tr>
<td><strong>NQF:</strong></td>
</tr>
<tr>
<td><strong>GUID:</strong></td>
</tr>
<tr>
<td><strong>Measure Set:</strong></td>
</tr>
<tr>
<td><strong>Eligibility:</strong></td>
</tr>
<tr>
<td><strong>Domain:</strong></td>
</tr>
</tbody>
</table>

This is a measure developed by CMS through contract with Booz Allen Hamilton for the Meaningful Use program.
**Children Who Have Dental Decay or Cavities (Measure)**

<table>
<thead>
<tr>
<th>Definition:</th>
<th>Percentage of children, age 0-20 years, who have had tooth decay or cavities during the measurement period.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improvement Notation:</td>
<td>A lower score indicates better quality</td>
</tr>
<tr>
<td>Measurement Period:</td>
<td>January 1, 20xx through December 31, 20xx</td>
</tr>
<tr>
<td>Transmission Format:</td>
<td>TBD</td>
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<tr>
<td>Scoring:</td>
<td>Proportion</td>
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<tr>
<td>Type:</td>
<td>Outcome</td>
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<td>ID:</td>
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<td>Version:</td>
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<tr>
<td>Measure Set:</td>
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<tr>
<td>Eligibility:</td>
<td>Eligible Professionals</td>
</tr>
<tr>
<td>Domain:</td>
<td>Clinical Processes/Effectiveness</td>
</tr>
</tbody>
</table>

This is a measure developed by CMS through contract with Booz Allen Hamilton for the Meaningful Use program.
Under development

• Care Continuity

Children with a periodic or comprehensive exam in the measurement year

Children with a limited, problem-focused, periodic or comprehensive exam or oral assessment in year prior to measurement year

Interim report for comment by May 20: http://www.ada.org/7503.aspx
Under development

- Sealants in first permanent molar in children aged 6 – 9 years who are at elevated risk

Interim report for comment by May 20: http://www.ada.org/7503.aspx
DEVELOPMENT OF PEDIATRIC PATIENT REPORTED OUTCOME MEASURES OF ORAL HEALTH

Financial Support: This work is funded by a Pediatric Quality Measures Program grant U18HS20408 from the Agency for Healthcare Research and Quality.
Partners in developing QUALITY METRICS IN ORAL HEALTH

**GOALS**

- To develop a conceptual framework of oral health outcomes
- To produce a patient/clinician informed set of items for patient-reported oral health outcome measures
- To advance oral health performance measurement

**Pediatric Oral Health Working Group**

- Children’s Hospital of Philadelphia
- Penn Dental
- UCLA
- Dental Quality Alliance

**Stakeholders**

- Dental Plans
- Purchasers
- Program Administrators
- Clinicians
- Academicians/Researchers
- State Leaders
- Children & Families

Improve healthcare quality and outcomes in oral health
Overview of Instrument Development Methods

1. CONCEPTUALIZATION
   - Review of theoretical and measurement in the literature
   - Interviews: experts, children, and parents

2. PRIORITIZATION
   - Selection of PRO measures to develop:
     - PAIN-INFLAMMATION
     - ORAL HEALTH AESTHETICS

3. ITEM BANK DEVELOPMENT
   - Item writing
   - Qualitative review: Cognitive interviews/readability
   - Psychometrics: Classical & Item Response Theory
   - Population norming

4. VALIDATION
   - Convergent/Discriminate validity
   - Known-group comparisons
   - Sensitivity to detecting change

DISSEMINATION AND USE
Adult Measures

- Smokers – Oral Evaluation
- Diabetics – Oral Evaluation
- History of treated periodontitis – Oral evaluation and periodontal maintenance

Request for Proposals by July 1: [http://www.ada.org/7503.aspx](http://www.ada.org/7503.aspx)
Nursing Home Population

Challenge: Lack of a data source

Table 1: MDS 3.0 National Totals: Fourth Quarter 2012 Data

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>L0200A</td>
<td>Oral/Dental Status - Dental - Broken or Loosely Fitting Dentures</td>
<td>98.60%</td>
<td>1.40%</td>
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<tr>
<td>L0200B</td>
<td>Oral/Dental Status - Dental - No Natural Teeth or Tooth Fragments</td>
<td>82.69%</td>
<td>17.31%</td>
</tr>
<tr>
<td>L0200C</td>
<td>Oral/Dental Status - Dental - Abnormal Mouth Tissue</td>
<td>99.75%</td>
<td>0.25%</td>
</tr>
<tr>
<td>L0200D</td>
<td>Oral/Dental Status - Dental - Cavity or Broken Natural Teeth</td>
<td>91.64%</td>
<td>8.36%</td>
</tr>
<tr>
<td>L0200E</td>
<td>Oral/Dental Status - Dental - Inflamed or Bleeding Gums or Loose Natural Teeth</td>
<td>99.39%</td>
<td>0.61%</td>
</tr>
<tr>
<td>L0200F</td>
<td>Oral/Dental Status - Dental - Discomfort or Difficulty Chewing</td>
<td>98.66%</td>
<td>1.34%</td>
</tr>
<tr>
<td>L0200G</td>
<td>Oral/Dental Status - Dental - Unable to Examine</td>
<td>98.38%</td>
<td>1.62%</td>
</tr>
<tr>
<td>L0200Z</td>
<td>Oral/Dental Status - Dental - None of the Above</td>
<td>29.19%</td>
<td>70.81%</td>
</tr>
</tbody>
</table>
Healthcare System

- Shared-performance
- Shared responsibility
- Shared accountability

Patient
Purchaser
Provider
Plan
County Health Rankings: Factors Considered

Health Outcomes
- Mortality (length of life): 50%
- Morbidity (quality of life): 50%

Health Factors
- Health behaviors (30%)
  - Tobacco use
  - Diet & exercise
  - Alcohol use
  - Unsafe sex
- Social and economic factors (40%)
  - Education
  - Employment
  - Income
  - Family & social support
  - Community safety
- Physical environment (10%)
  - Environmental quality
  - Built environment

Programs and Policies

Clinical care (20%)
- Access to care
- Quality of care
Measure Implementation

- What are your program’s overall goals for oral health?
- Are there existing measures with specifications?
  - Whom are you measuring: Attribution is important
  - If specifications be modified how can you ensure reliability?
  - Seek clarification if unsure about how to implement measures.
    We are here to help!
- Do you have the data to calculate the measures now?
- Can you get the additional data you need?
  - Assess the steps, relevant stakeholder involvement, and resources required to capture missing data for future measurement
We need your feedback!

Email – aravamudhank@ada.org

Questions, concerns, ideas and thoughts – all welcome!

THANK YOU!