An Emerging Era in Dentistry—Quality Measurement

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Concerns about the quality of health care, patient safety, and the cost of health care have created a quality movement over the past decade that has affected much of the health care delivery system. Quality assessment through performance measurement is becoming increasingly incorporated into much of the health care sector.

These patient concerns and the quality movement have been slower to reach dentistry, but they have arrived, so it's important that the dental profession define quality in dentistry and lead the development of appropriate performance measures. If dentistry does not lead the dental quality movement, other parties will—and most likely in ways that dentistry does not like.[1]

DEFINITIONS OF QUALITY IN DENTISTRY

Quality in dentistry has traditionally focused on a tooth or procedure. Does the margin on the crown fit properly? How is the retention of a removal denture? Are the completed treatments esthetically pleasing? Is the occlusion correct? No doubt, these are all part of quality, but when looking at quality of oral health care, we must broaden our definition.

The Institute of Medicine (IOM) defines quality of health care as "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge."[2] When applying the IOM definition of quality of care to dentistry, the desired health outcome is improved oral health. The World Health Organization (WHO) defines oral health as "a state of being free from chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal [gum] disease, tooth decay and tooth loss, and other diseases and disorders that affect the oral cavity."[3] To comply with these definitions of improving the oral health of the public, dentistry must evaluate its current practices of delivering care to ensure quality care is being provided.

BACKGROUND ON THE QUALITY MOVEMENT

Over the past few years, there has been tremendous focus on improving quality in the health care industry and this focus is being extended to dentistry, as well. Many stakeholders—insurers, patients, hospital administrators, and government agencies—are demanding metrics to ensure that health care dollars are spent wisely.

According to the Congressional Budget Office, the United States spends a significant amount of dollars on health care, and that figure is projected to increase over time.[4] The Robert Wood Johnson Foundation's 2008 *The State of Health Care Quality in America* reported that the U.S. health care system is the most expensive in the world and consistently underperforms relative to other countries.[5]

According to the U.S. Centers for Medicare and Medicaid Services (CMS), spending on dental care mirrors general health care spending, is rising rapidly, and is projected to increase by nearly 50 percent from $107.6 billion in 2011 to $158.5 billion in 2021.[6] In addition, dental care is among the largest out-of-pocket health expenditures in the United States, second only to prescription drugs.[7] Dental care is very costly for Americans, especially given that dental disease is almost 100% preventable. To address the spending problem, we need to understand what quality of care is, how to measure it, and, ultimately, how to improve it.

As the IOM reported in *Crossing the Quality Chasm: A New Health System for the 21st Century*, "between the health care we have and the care we could have lies not just a gap, but a chasm."[2] Quality improvement measures for health care proposed in the report include providing care that is safe, effective, efficient, patient-centered, timely, and equitable. In efforts to meet the demand to improve quality of care, a new focus is moving health care away from counting procedures as a measure of quality to looking at health outcomes as a measure of quality. This approach applies to dentistry as well, since the dental care system is

challenged with the same problems as the rest of the health care system, which are increasing costs without significant improvement in outcomes.

As a response to these problems, the U.S. Department of Health and Human Services established the National Quality Strategy (NQS) in Healthcare to increase access to high-quality, affordable health care for all Americans. This strategy has been referred to as the "Triple Aim":[8]

1. Improving the health of the populations
2. Improving the patient care experience
3. Reducing per-capita costs of health care

Dentistry is moving away from a surgical model of care, where the focus is on treating disease, to a greater focus on a prevention-oriented model of care. To achieve these goals as dentistry makes this transition, we must have measures that can verify that we are achieving the NQS goals of improved oral health, higher value, and cost-effective care.

Regulations have always been important drivers of change within the health care industry. In 2009, the U.S. Congress mandated as part of the Children Health Insurance Plan Reauthorization Act (CHIPRA) that dentistry must begin measuring quality of care and begin implementing quality improvement programs to improve oral health in children enrolled in Medicaid and CHIP.

In response to the CHIPRA mandate and concerned with the lack of oral health care quality measures, the CMS requested that the American Dental Association (ADA) lead the formation of a group of stakeholders to develop quality improvement methods and performance measurement in dentistry. It is important to the profession that dentistry take the lead in its self-evaluation processes to ensure only appropriate metrics are developed for oral health care quality improvement.[9]

DENTAL QUALITY ALLIANCE (DQA)

The ADA, led by a multi-stakeholder steering committee, formed the Dental Quality Alliance (DQA) in 2010 with a mission to "advance performance measurement as a means to improve oral health, patient care, and safety through a consensus-building process."[10] The establishment of the DQA provided an opportunity to define what quality means in dentistry and create appropriate measures, since measurement forms the basis of evaluation and we can only improve what we can actually measure. We need to be able to measure what works and what doesn't in terms of patient outcomes, cost-effectiveness, and provider behaviors, and we need to innovate changes based on evidence and a renewed commitment to patient-centered care.

Currently, the DQA is an organization of 35 stakeholders from across the oral health community, including members from appropriate ADA councils, all dental specialty organizations, the Academy of General Dentistry, the American Dental Education Association, the American Dental Hygiene Association, CMS, public and private payer organizations, the National Association of Dental Plans, a public member, and others.[10] (See Table 1.)

The DQA has clear objectives, which include:

1. To identify and develop evidence-based oral health care performance measures and measurement resources
2. To advance the effectiveness and scientific basis of clinical performance measurement and improvements
3. To foster and support professional accountability, transparency, and value in oral health care through the development, implementation, and evaluation of performance measurement.[9]

Table 1. Dental Quality Alliance Membership

ORGANIZATIONAL MEMBERS (VOTING)

Academy of General Dentistry
American Academy of Oral & Maxillofacial Pathology
American Academy of Oral & Maxillofacial Radiology
American Academy of Pediatric Dentistry
American Academy of Periodontology
American Association for Dental Research
American Association of Endodontists
American Association of Oral and Maxillofacial Surgeons
American Association of Orthodontists
American Association of Public Health Dentistry
American Board of Pediatric Dentistry
American College of Prosthodontists
American Dental Association's Board of Trustees
American Dental Education Association
American Dental Hygienists' Association
American Medical Association
America's Health Insurance Plans
Council on Access, Prevention and Interprofessional Relations (ADA)
Council on Dental Benefit Programs (ADA)
Council on Dental Practice (ADA)
Council on Government Affairs (ADA)
Delta Dental Plans Association
DentaQuest
Managed Care of North America Dental
Medicaid-CHIP State Dental Association
National Association of Dental Plans
National Network for Oral Health Access
Public Member (an individual)
The Joint Commission

ASSOCIATE ORGANIZATIONAL MEMBERS (NONVOTING)

Adirondack Oral & Maxillofacial Surgery

FEDERAL GOVERNMENT TECHNICAL ADVISORS (NONVOTING)

Agency for Healthcare Research and Quality
Centers for Disease Control and Prevention
Centers for Medicare and Medicaid Services
Health Resources and Services Administration
Veterans Health Administration

The DQA has developed the first set of pediatric dental performance measures, titled "Dental Caries in Children: Prevention and Disease Management." (See Table 2.) This measure set includes 12 performance measures in oral health care: use of services; preventive services; treatment services; oral evaluation; topical fluoride intensity; sealant use in 6–9-year-olds; sealant use in 10–14-year-olds; care continuity; usual source of services; emergency room (ER) visits for dental caries; follow-up after ER visits for dental caries; and per-member per-month cost. These measures have been validated and specified for use at the program and plan level as a mechanism for holding Medicaid, CHIP programs, and dental plans accountable for the quality of care provided to their beneficiaries.

The DQA collaborated with the University of Florida Institute for Child Health Policy, which tested and validated each measure using

Table 2. **Dental Quality Alliance Tested and Approved Pediatric Quality Measures**

EVALUATING UTILIZATION

Measure Name	Measure Description	NQF #	Measure Domains
Utilization of Services	Percentage of all enrolled children under age 21 who received at least one dental service within the reporting year.	2511	Access/Process
Preventive Services for Children at Elevated Caries Risk	Percentage of all enrolled children who are at "elevated" risk (i.e., "moderate" or "high") who received a topical fluoride application and/or sealants within the reporting year.	N/A	Related Health Care D Use of Services
Treatment Services	Percentage of all enrolled children who received a treatment service within the reporting year.	N/A	Related Health Care D y: Use of Services

EVALUATING QUALITY OF CARE

Measure Name	Measure Description	NQF #	Measure Domains
Oral Evaluation	Percentage of enrolled children under age 21 who received a comprehensive or periodic oral evaluation within the reporting year.	2517	Process
Topical Fluoride for Children at Elevated Caries Risk	Percentage of enrolled children aged 1–21 years who are at "elevated" risk (i.e., "moderate" or "high") who received at least two topical fluoride applications within the reporting year.	2528	Process
Sealants for 6–9-Year-Old Children at Elevated Caries Risk	Percentage of enrolled children in the age category of 6–9 years at "elevated" risk (i.e., "moderate" or "high") who received a sealant on a permanent first molar tooth within the reporting year.	2508*	Process
Sealants for 10–14-Year-Old Children at Elevated Caries Risk	Percentage of enrolled children in the age category of 10–14 years at "elevated" risk (i.e., "moderate" or "high") who received a sealant on a permanent second molar tooth within the reporting year.	2509	Process
Care Continuity	Percentage of all children enrolled in two consecutive years who received a comprehensive or periodic oral evaluation in both years.	N/A*	Process
Usual Source of Services	Percentage of all children enrolled in two consecutive years who visited the same practice or clinical entity in both years.	N/A	Access/Process
Ambulatory Care Sensitive Emergency Department Visits for Dental Caries in Children	Number of emergency department visits for caries-related reasons per 100,000 member months for all enrolled children.	2689	Outcome
Follow-Up After Emergency Department Visits for Dental Caries in Children	Percentage of ambulatory care sensitive emergency department (ED) visits for dental caries among children 0–20 years in the reporting period for which the member visited a dentist within (a) 7 days and (b) 30 days of the ED visit.	2695	Process

EVALUATING EFFICIENCY AND COST

Measure Name	Measure Description	NQF #	Measure Domains
Per Member Per Month Cost of Clinical Services	Total amount that is paid on direct provision of care (reimbursed for clinical services) per member per month for all enrolled children during the reporting year.	N/A	Related Health Care Delivery: Efficiency and Cost

NQF # assigned to the measure by the National Quality Forum in endorsing the measure. All measures were tested using administrative enrollment and dental claims data.
* "Sealants for 6–9-year-olds" and "Continuity of care" also tested with electronic health record data, but not yet NQF endorsed for that data source.

administrative enrollment and claims data before issuing final approval. At each step in the testing process, comments from the dental community played an important role in moving the measure forward.[11-13] These measures are not meant to serve as standards of care or guidelines for treatment, but rather as a starting point by giving a broad description of what should be measured when evaluating quality of care.

To date, the DQA has developed and approved 14 measures, of which 12 are administrative claims-based measures and the remaining two are approved as eMeasures that are computed using electronic health records. Seven DQA measures are now endorsed by the National Quality Forum (NQF). NQF endorsement is the gold standard for quality measure development and attests to the caliber of the DQA's measure development processes.[14] The DQA has established a comprehensive measure maintenance protocol and all measures are reviewed on an annual basis.

A quality measure, as developed by the DQA, is a ratio expressed as a percentage using a numerator and a denominator (the numerator is always a subset of the denominator) with exclusions of patients who should not be incorporated for various reasons. One of the DQA measures is for placement of sealants on first molars, which is built from the anticipated outcomes found in the ADA evidence-based clinical recommendations that sealants reduce the incidence of caries.[15] In this example, the numerator is all enrolled children aged 6 to 9 years at elevated caries risk who received a sealant on a permanent first molar, and the denominator includes all enrolled children in the population aged 6 to 9 years and at elevated caries risk.[16]

Use of this DQA sealant measure will provide assessment of program and plan performance that those covered individuals are receiving this evidence-based preventive service.[15] The complete specifications of this measure are in the *DQA User Guide–Version 2016*.[16]

As measures are developed, tested, and approved, the DQA encourages programs and plans to implement their use. The sealant measure and four other DQA pediatric measures are currently being used by Covered California, a state-based marketplace operating in California, and numerous state Medicaid programs.

THE FUTURE OF QUALITY MEASUREMENT

Quality measurement is here to stay and therefore must be controlled by the dental profession and not outside organizations. The DQA and its Advisory Committees will continue to develop, test, and implement new measures that are appropriate, valid, and feasible for the dental profession and dental benefits industry.

Everyone in the dental profession must understand quality measurement and its role in the dental delivery system. Awareness is the first step toward learning anything new. To find out more about the DQA, including its structure and committees and the measure development process, and to obtain educational resources, visit ada.org/dqa. There are several tutorials posted on this website to help dental professionals better understand quality and performance measures. The DQA has also developed a guidebook for those seeking more in-depth information.[9] In addition, the DQA holds a conference on quality measurement every two years with the intent of training thought leaders in dentistry to spread the knowledge about quality measurement. The DQA website has information about the next DQA Conference, scheduled for May 12–13, 2017, in Chicago.

In addition to its measure development work, the DQA will continue to create educational opportunities for members of its many stakeholder organizations and others throughout the dental profession. Through the program and practice information that quality measurement can provide, dentistry can achieve the Triple Aim goals of improved oral health, a better dental patient experience, and more cost-effective care. **JMDS**

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