Defining Quality in the Oral Healthcare Delivery System

Robert Compton, DDS
VP Business Intelligence & Quality Management

DentaQuest
Proven Experts in Dental Program Administration

So Much More than...
Congress Mandates Quality Improvement

- The Children’s Health Insurance Plan Reauthorization Act of 2009 (CHIPRA), mandates that quality assessment programs be implemented to assess and improve the quality of care for children that receive oral health care under the Medicaid and CHIPRA programs.

- In 2008 CMS proposed to the American Dental Association (ADA) that a Dental Quality Alliance be established to develop performance measures for oral health care and that the ADA take a leadership role in its formation.
Dental Quality Alliance

Mission

- The mission of the Dental Quality Alliance is to advance performance measurement as a means to improve oral health, patient care and safety through a consensus-building process.

Objectives

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

http://www.ada.org/5105.aspx
Quality of Care

- The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.

- This prescript contains just two concepts: measurement and knowledge.

Medicare: A Strategy for Quality Assurance. IOM, 1990, p.21
Metric vs. Measure vs. Measurement

- **Metric** is an attribute or a property of something that you’re interested in measuring. For example, height, weight, IQ, quality.

- **Measure** is an operation for assigning a number to something. For example “measure” the percentage of higher risk 6 year olds who received a dental sealant on a first molar.

- **Measurement** is the number obtained from measuring. For example, 25% of higher risk 6 year olds had dental sealants placed in 2011.
Quality and Performance Measures

- A **quality measure** is a mechanism that enables the user to **quantify the quality** of a selected aspect of care by comparing it to a criterion.
  - A subtype of a quality measure is a **clinical performance measure**.
  - A **clinical performance measure** is a mechanism for assessing the degree to which a provider competently and safely delivers clinical services that are appropriate for the patient in the optimal time period.

How Are Quality Measures Used?

- Quality measures are used for three general purposes:
  - Quality improvement,
  - Accountability, and
  - Research.

- Other potential uses:
  - Policy
  - Reimbursement

Quality Assessment & Improvement

- 1966 Avedis Donabedian

**Structure**
- Credentials
- Trained Staff
- Equipment
- Records
- Sterilization
- Location
- Hours

**Process**
- Intake & Assessment
- Treatment Plan
- Treatment Timeliness

**Outcome**
- Validates
- Improved Health
- Attitude about Treatment
- Patient Satisfaction
- Behavioral Change
Unwarranted Variation in Care

- In 1967 John Wennberg, MD began analyzing Medicare data to determine how well hospitals and doctors were performing

- Utilization data from Vermont, Maine & Iowa
  - Hysterectomy by age 70: 20% vs. 70%
  - Prostatectomy by age 85: 15% vs. 60%
  - Tonsillectomy: 8% vs. 70%

- Could find no scientific research on outcomes of care to demonstrate that one population was better off than the other
Evidence-based decision making. Patients should receive care based on the best available scientific knowledge. Care should not vary illogically from clinician to clinician or from place to place.
Today’s Path to Consistent Effective Care

- Basic Research
- Systematic Reviews
- Clinical Guidelines
- Quality Measures
HEALTH CARE SYSTEM

Metrics
- Clinical Quality Measures
  - Outcome of Care
  - Structure
  - Access

Domains
- Use of Services
- Cost of Care
- Management of Care

Related Measures
- Health Status of Patient

Efficiency
- Units of Care per Resource

Aims
- Safe
- Effective
- Patient Centered
- Timely
- Equitable
- Efficient

Outcome of Care

An outcome of care is a health state of a patient resulting from health care.

Outcome measures are supported by evidence that the measure has been used to detect the impact of one or more clinical interventions.

Measures in this domain are attributable to antecedent health care and should include provisions for risk-adjustment.

A structure measure is a feature of a health care organization or clinician relevant to its **capacity to provide health care**.

Structure data describe the **capability of organizations or professionals** rather than care provided to, or results achieved for, specific patients or groups of patients.

For example, dentist/patient ratio or provider credentials are structure-based measures because they do not describe care given to specific patients or specific groups of patients.

Process of Care

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

**Use of Services**

The provision of a service to, on behalf of, or by a group of persons identified by enrollment in a health plan or through use of clinical services.

Use of service measures can assess encounters, tests, or interventions that are not supported by evidence of the appropriateness of the service for the specified individuals.

Access to Care

- An access measure assesses the patient's attainment of timely and appropriate health care.
- Barriers to access may include
  - Inability to pay for health care,
  - Difficulty traveling to health care facilities,
  - Unavailability of health care facilities,
  - Lack of a "medical home,"
  - Cultural and health beliefs that prevent recognition of the need for and benefits of health care, and
  - Disparities in responding to persons seeking health care.

Quality Improvement Initiative

Improve the **structures** of care, access to care and/or **processes** of care as needed in order to improve the health state of individuals or populations as well as their experience with the healthcare system.

Clinical Quality Measures

Measures used to assess the performance of individual clinicians, clinical delivery teams, delivery organizations, or health insurance plans in the provision of care to their patients or enrollees, which are supported by evidence demonstrating that they indicate better or worse care.

http://www.qualitymeasures.ahrq.gov/about/domain-definitions.aspx
Interpreting Quality Measures

- The measure result is often composed of a **number** and **unit of measure**.
- The number provides the magnitude, and the unit provides a context for interpreting the number.
- Often require **summing data** about the health care given to many patients and expressing the results as a **rate**, **ratio**, **frequency distribution**, or **score** for **average performance**.
- It is difficult to interpret the result of a quality measure as good or poor unless there is a **standard of comparison** by which it can be compared.

Comparison to a Standard Value

- 99.7%
- 95.4%
- 68.2%

Percentage
10% 20% 30% 40% 50% 60% 70%
Standard Score: -3σ -2σ -1σ μ 1σ 2σ 3σ
Percentile: 0.1% 2.1% 13.6% 34.1% 34.1% 13.6% 2.1% 0.1%
# Provider Performance Scorecard

<table>
<thead>
<tr>
<th>State</th>
<th>Network</th>
<th>Reporting Period</th>
<th>Specialty</th>
<th>Geographic Location</th>
<th>Provider Information</th>
<th>Annual Oral Evaluations</th>
<th>Preventive Care</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>County</td>
<td>City Name</td>
<td>Total Score</td>
<td>% of children receiving evaluation</td>
<td>% of children receiving fluoride</td>
</tr>
</tbody>
</table>

All the scores in these boxes would be percentile scores so you would know how the provider compared to other similar dentists in the network.
# Rating System for Scientific Evidence

## TABLE 1

<table>
<thead>
<tr>
<th>GRADE</th>
<th>CATEGORY OF EVIDENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ia</td>
<td>Evidence from systematic reviews of randomized controlled trials</td>
</tr>
<tr>
<td>Ib</td>
<td>Evidence from at least one randomized controlled trial</td>
</tr>
<tr>
<td>Ila</td>
<td>Evidence from at least one controlled study without randomization</td>
</tr>
<tr>
<td>Iib</td>
<td>Evidence from at least one other type of quasi-experimental study</td>
</tr>
<tr>
<td>III</td>
<td>Evidence from nonexperimental descriptive studies, such as comparative studies, correlation studies, cohort studies and case-control studies</td>
</tr>
<tr>
<td>IV</td>
<td>Evidence from expert committee reports or opinions or clinical experience of respected authorities</td>
</tr>
</tbody>
</table>

*Amended with permission of the BMJ Publishing Group from Shekelle and colleagues.²⁷*

## TABLE 2

<table>
<thead>
<tr>
<th>CLASSIFICATION</th>
<th>STRENGTH OF RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Directly based on category I evidence</td>
</tr>
<tr>
<td>B</td>
<td>Directly based on category II evidence or extrapolated recommendation from category I evidence</td>
</tr>
<tr>
<td>C</td>
<td>Directly based on category III evidence or extrapolated recommendation from category I or II evidence</td>
</tr>
<tr>
<td>D</td>
<td>Directly based on category IV evidence or extrapolated recommendation from category I, II or III evidence</td>
</tr>
</tbody>
</table>

*Amended with permission of the BMJ Publishing Group from Shekelle and colleagues.²⁷*
# Sealant Recommendation

**TABLE 3**

<table>
<thead>
<tr>
<th>TOPIC</th>
<th>RECOMMENDATION</th>
<th>GRADE OF EVIDENCE</th>
<th>STRENGTH OF RECOMMENDATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caries Prevention</td>
<td>Sealants should be placed in pits and fissures of children’s primary teeth when it is determined that the tooth, or the patient, is at risk of developing caries†</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. Sealants should be placed on pits and fissures of children’s and adolescents’ permanent teeth when it is determined that the tooth, or the patient, is at risk of developing caries†</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Sealants should be placed on pits and fissures of adults’ permanent teeth when it is determined that the tooth, or the patient, is at risk of developing caries†</td>
<td>Ia</td>
<td>B</td>
</tr>
</tbody>
</table>

# Fluoride Recommendation

<table>
<thead>
<tr>
<th>RISK CATEGORY</th>
<th>AGE CATEGORY FOR RECALL PATIENTS</th>
<th>&lt; 6 Years</th>
<th>6 to 18 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Recommendation</td>
<td>Grade of Evidence</td>
<td>Strength of Recommendation</td>
</tr>
<tr>
<td>Low</td>
<td>May not receive additional benefit from professional topical fluoride application*</td>
<td>Ia</td>
<td>B</td>
</tr>
<tr>
<td>Moderate</td>
<td>Varnish application at 6-month intervals</td>
<td>Ia</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>Varnish application at 6-month intervals OR Varnish application at 3-month intervals</td>
<td>Ia Ia</td>
<td>A D*</td>
</tr>
</tbody>
</table>

*American Dental Association. Evidence-based clinical recommendations. JADA 2006;137;1151-1159
Frequency for Periodontal Maintenance

- Many patients presenting with recurrent gingivitis without additional attachment loss after definitive periodontal therapy may be adequately maintained with PM performed semiannually. However, for most patients with a history of periodontitis, numerous clinical studies suggest that PM should be performed at intervals of less than 6 months.

- In general, data suggest that most patients with a previous history of periodontitis should obtain PM at least four times per year, since that interval will result in a decreased likelihood of progressive disease, compared to patients receiving PM on a less frequent basis.

Perio Patients Use of Perio Maintenance

First goal is to increase the percentage of perio patients receiving at least 2 maintenances per year.
Need Diagnostic Codes for Risk

Children with disease indicators and risk factors, including socio-economic factors
Use for sealant program in Medicaid population

Children who have had a restoration placed in the past three years.
Use for fluoride measure in Commercially insured population

All Children
- Higher Risk Children
- Carious Lesions
- Recently Filled Teeth
# The Preventistry Incentive

**Preventistry Patient Report for Higher-Risk Children and Adults**

**Erica Martin, DMD, PC**

602-287-9319 - 311

Treatment from January 1, 2010, through June 30, 2010

## Children at Higher Risk for Caries

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Date of Birth</th>
<th>Treatment</th>
<th>Date of Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arenas</td>
<td>Maria</td>
<td>2/3/095</td>
<td>Fluoride Treatment</td>
<td>6/30/10</td>
</tr>
<tr>
<td>Barstow</td>
<td>Jessica</td>
<td>3/8/96</td>
<td>Fluoride Treatment</td>
<td>6/11/10</td>
</tr>
<tr>
<td>Connors</td>
<td>Owen</td>
<td>3/15/91</td>
<td>Fluoride Treatment</td>
<td>2/16/10</td>
</tr>
<tr>
<td>Dustin</td>
<td>Harry</td>
<td>11/12/93</td>
<td>Fluoride Treatment</td>
<td>3/3/10</td>
</tr>
<tr>
<td>Dreon</td>
<td>Trever</td>
<td>9/15/02</td>
<td>Fluoride Treatment</td>
<td>4/21/10</td>
</tr>
<tr>
<td>Hearn</td>
<td>Evelyn</td>
<td>8/19/91</td>
<td>Fluoride Treatment</td>
<td>5/21/10</td>
</tr>
<tr>
<td>Lewis</td>
<td>Connor</td>
<td>8/1/94</td>
<td>Fluoride Treatment</td>
<td>d</td>
</tr>
<tr>
<td>Nette</td>
<td>David</td>
<td>10/7/99</td>
<td>Fluoride Treatment</td>
<td>e</td>
</tr>
</tbody>
</table>

**Number of Higher-Risk Children:** 12

**Number of Higher-Risk Children Treated:** 10

**Percent of Higher-Risk Children Treated:** 83.3%

*Includes claims processed through July 31, 2010*

## Adults at Higher Risk for Periodontal Disease

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Date of Birth</th>
<th>Treatment</th>
<th>Date of Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amelyn</td>
<td>Vanessa</td>
<td>3/10/55</td>
<td>Maintenance</td>
<td>2/11/10</td>
</tr>
<tr>
<td>Dosantos</td>
<td>Steven</td>
<td>7/31/72</td>
<td>Maintenance</td>
<td>5/12/10</td>
</tr>
<tr>
<td>Gregorio</td>
<td>Vladimir</td>
<td>8/26/99</td>
<td>Maintenance</td>
<td>3/28/10</td>
</tr>
<tr>
<td>Kouznetsov</td>
<td>Megan</td>
<td>3/18/77</td>
<td>Maintenance</td>
<td>6/17/10</td>
</tr>
<tr>
<td>Kelly</td>
<td>Michael</td>
<td>1/4/53</td>
<td>Maintenance</td>
<td>1/25/10</td>
</tr>
<tr>
<td>Mazza</td>
<td>Barbara</td>
<td>11/19/56</td>
<td>Maintenance</td>
<td>1/15/10</td>
</tr>
<tr>
<td>Mellon</td>
<td>Sophia</td>
<td>10/10/43</td>
<td>Maintenance</td>
<td>1/15/10</td>
</tr>
<tr>
<td>Osterhaus</td>
<td>Maureen</td>
<td>12/14/41</td>
<td>Maintenance</td>
<td>1/15/10</td>
</tr>
<tr>
<td>Pratt</td>
<td>Helen</td>
<td></td>
<td></td>
<td>1/15/10</td>
</tr>
</tbody>
</table>

**Number of Adults at Risk for Periodontal Disease:** 10

**Number of Adults Treated for Periodontal Disease:** 6

**Percent of Adults at Risk for Periodontal Disease Treated:** 60%

*Includes claims processed through July 31, 2010*
# Preventistry Incentive Results

For the period January 1 thru June 30, 2012

## Topical Fluoride for Higher Risk Children

<table>
<thead>
<tr>
<th>Description</th>
<th>Goal</th>
<th>Potential</th>
<th>Awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Higher Risk Children</td>
<td>152</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number Treated</td>
<td>105</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage Treated</td>
<td>69.1%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Bonus Calculation

**Fluoride Bonus**

<table>
<thead>
<tr>
<th>Level</th>
<th>Goal</th>
<th>Potential</th>
<th>Awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>45%</td>
<td>$684.00</td>
<td>$684.00</td>
</tr>
<tr>
<td>Level 2</td>
<td>65%</td>
<td>$684.00</td>
<td>$684.00</td>
</tr>
</tbody>
</table>

**Total Fluoride Bonus**

- **Potential**: $1,368.00
- **Awarded**: $1,368.00
- **Percent of Potential**: 88.7%

## Perio Maintenance for Adults with Periodontal Disease

<table>
<thead>
<tr>
<th>Description</th>
<th>Goal</th>
<th>Potential</th>
<th>Awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Adults with Perio Disease</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number Treated</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage Treated</td>
<td>70.0%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Bonus Calculation

**Perio Bonus**

<table>
<thead>
<tr>
<th>Level</th>
<th>Goal</th>
<th>Potential</th>
<th>Awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>50%</td>
<td>$200.00</td>
<td>$200.00</td>
</tr>
<tr>
<td>Level 2</td>
<td>75%</td>
<td>$200.00</td>
<td>$0.00</td>
</tr>
</tbody>
</table>

**Total Perio Bonus**

- **Potential**: $400.00
- **Awarded**: $200.00

## Total Bonus

**Potential**: $1,768.00

**Awarded**: $1,568.00

The Preventistry Program rewards dentists with financial incentives for achieving or exceeding specific goals based on the percentage of higher risk children and/or adults with periodontal disease who received the recommended preventive treatment. The results for your practice are above. Please note that we respect the confidentiality of your office’s data and will not share this information.

We would like to thank you for your participation in and dedication to the Preventistry Program. Our goal is to ensure that our higher risk members receive the preventive care that will help to keep them healthy. With your continued support we can achieve that goal. We look forward to sharing your results for the next six month time frame with you.

A check is enclosed in the amount of **$1,568.00**
Network Average Performance for Fluoride and Perio Maintenance

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluoride</td>
<td>46.3%</td>
<td>59.9%</td>
<td>61.0%</td>
</tr>
<tr>
<td>Perio Maintenance</td>
<td>49.1%</td>
<td>61.8%</td>
<td>63.6%</td>
</tr>
</tbody>
</table>
Network Performance for Fluoride on Higher Risk Children

- Jan-Jun 2011
- Jul-Dec 2011
- Jan-Jun 2012
Network Performance for Perio Maintenance

Jan-Jun11  | Jul-Dec11  | Jan-Jun12

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100% 110%
Results

- The highest bonuses are in $7,000 - $8,000 range
- Around 60% of dentist achieve the fluoride goal
- Around 75% of dentists achieve the perio goal
- Around 85% of dentists receive a financial bonus
Dr. Rob Compton
rob.compton@greatdentalplans.com

QUESTIONS?