What is Quality?

- Quality is described as the degree to which the entire set of characteristics of a product, process, or service satisfies established, predicted, or obvious needs.
- In dentistry there is little consistency in the use of quality measures.
- Differing ideas of what it really is and can be based on individual or group interpretations.
  - In health care, previous descriptions are generally confined to "standard of care".

Jockstad et al. (2001); Shugars & Bader (1996); Poorterman et al. (1998)
What is Quality Assurance?

• Quality assurance (QA) contains the progression of:
  o Quality assessment,
  o Identification of issues,
  o Developing a strategy for resolving problems,
  o Implementation of changes.

Poorterman et al. (1998); Jones et al. (2007)

What is Quality?

• What we should want with QA/QI:
  o Sound data that provides information for operational and clinical decision making
  o Provides information on and allows positive impact for TRIPLE AIM
    • Population Health
    • Experience of Care
    • Per Capita Cost
  o Ultimately leads to:

Practice Translation
What do you measure, right now?

- Gross Charges
- Net Revenue
- Expenses
- Number of visits
- Revenue per visit
- Cost per visit
- # of Unduplicated Patients
- # of New Patients
- # of Transactions
- Broken Appointment Rate
- Emergency Rate
- Payer Mix Percentages
- Scope of Service
- # FTE Providers
- # FTE Billing Staff
- A/R past 90 days
- # of Completed Treatments
- # of children receiving sealants (under 21)
- # of sealants applied
- % Children seen receiving a preventive service

Quality Versus Quantity

- Dentistry traditionally measures quantitative information.
- Works well for financial well being and evaluating access to care
  - Necessary but may not fully reflect clinical care
- Difficult to use this data to alter patient outcomes or determine success/failure of clinical changes, education programs, community outreach
- Difficult to make alterations to plans, protocols, and policies
- How good is the clinical dental care we are providing?
IDEA: EVT Coding

Quality Event Codes

• What is a quality event?
  - An occurrence or consequence relating to the patients' oral health either as a result of oral health care or patient habits/behavior that may result in negative patient outcomes
    • Complications, adverse events, failures
  • Quality Event Codes = EVT Codes (EVT)

• **Aim** is to provide baseline statistics for event reports as a means to gauge, improve, and enhance total quality assurance.

• **Objective** is to determine if relationships exist between event report rates and delivery of care, location of treatment, procedure type, oral health risk, provider, or encounter type or number.
Why EVT Coding?

- We (CSCDM) previously completed several small, clinically specific studies to evaluate quality of care such as: safety and efficacy/successful outcomes
- Needed to streamline evaluation
  - Are we doing what we say we are doing?
  - Are we clinically competent?
  - How are we effecting patient outcomes?
  - HOW CAN WE AFFECT PATIENT AND COMMUNITY OUTCOMES.

Background: How we implemented EVT Coding

- Idea was to develop a system that could review data over three years and provide a simplified method of review (The Prospective Snapshot)
- Identify quality events that occurred over a period of one year to create a baseline that could be used for quality improvement
- Decided to use evaluations to determine percentage of incidence (COE, POE, OE3, and specific LOE)
  - Thus, during examinations how often are these things seen, reported, or recorded.
  - Can also be thought of as how often do these occur with each treatment plan.
Background: How we implemented EVT Coding

• A standardized format was used to input a tracking code into electronic dental software (DENTRIX ENTERPRISE™).
  • The study involved a one year analysis.
• EVT (Quality Event) codes were predetermined and with each occurrence were inserted as a “dummy code” into the EDR.
• Reports were run at the end of the analysis period to determine incidence.
• Specific codes were further evaluated to provide a more positive impact on quality assurance.

EVT Coding

• 106 Total Codes*
  o *8 codes are Rx codes
• Categorical Arrangement
  o Anesthesiology
  o Behavior Management
  o Community Outreach
  o Endodontics
  o Implantology
  o Operative/Restorative
  o Oral Surgery
  o Orthodontics
  o Patient Compliance
  o Periodontology
  o Preventive Care
  o Prosthodontics
  o Systemic
**EVT Coding**

**EDR & EVT Code Entry**

- Creation of Dummy Coding / Tracking Codes

- **EDR Office Manager**
  - Reference
  - Enterprise
  - Database
  - User Interface
  - Change My Password
  - Procedure Code Setup
  - Dental Diagnostic Code Setup
  - Medical Coding Setup
  - Reference Database

- **Date**

- **Operator**

- **Status**
EVT Code Entry

Clinical Entry

Or, if the EVT Code is known, one can manually enter.
EVT Reports

- Clicking on the DXONE icon will open the report selection window. Analysis -> Production Summary (Report that is ran when EVT Codes in Adjustment Categories).

EVT Filters

If you set up a new "category" of which to assign tracking codes (ex."event codes"), this is where you would choose the correct category as a filter.

You can filter the report by ADA codes (previously listed as tracking codes).

Bill Type (Best filter for information we have)
- Include patient names in filter. Once this is clicked, the Report Type needs to match.
EVT Reports

Production Summary

Report Date: 5/2/2014
Report Generated By: RLEYA

<table>
<thead>
<tr>
<th>Event Code</th>
<th>Description</th>
<th>Quantity</th>
<th>Total</th>
<th>Average</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVTUNCP</td>
<td>Uncooperative pt: first visit</td>
<td>4</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00%</td>
</tr>
<tr>
<td>EVTUNCP2</td>
<td>Uncooperative Pt: second visit</td>
<td>3</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00%</td>
</tr>
<tr>
<td>EVTUNCP3</td>
<td>Uncooperative Pt: third visit</td>
<td>1</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

EVT Analysis

- 2473 total evaluations
- 571 Quality Events recorded
- 39 of 98* EVT codes reported
  - *Does not include Rx codes for this analysis
- 23.1% EVT code rate
## EVT Category Report

<table>
<thead>
<tr>
<th>EVT Category</th>
<th>Number of Reports</th>
<th>% of EVT</th>
<th>% of EVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Outreach</td>
<td>206</td>
<td>36.1%</td>
<td>8.3%</td>
</tr>
<tr>
<td>Patient Compliance</td>
<td>168</td>
<td>29.4%</td>
<td>6.8%</td>
</tr>
<tr>
<td>Preventive</td>
<td>106</td>
<td>18.6%</td>
<td>4.3%</td>
</tr>
<tr>
<td>Restorative/Operative</td>
<td>40</td>
<td>7.0%</td>
<td>1.6%</td>
</tr>
<tr>
<td>Anesthesiology</td>
<td>35</td>
<td>6.1%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Behavior Management</td>
<td>9</td>
<td>1.6%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Endodontics</td>
<td>7</td>
<td>1.2%</td>
<td>0.3%</td>
</tr>
</tbody>
</table>

## EVT Report (Top 5)

<table>
<thead>
<tr>
<th>EVT CODE</th>
<th>Number of Reports</th>
<th>% of EVT</th>
<th>% of EVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVTNOTB (No Toothbrush)</td>
<td>206</td>
<td>35.1%</td>
<td>8.3%</td>
</tr>
<tr>
<td>EVTCARSEAL (Loss of sealant due to caries)</td>
<td>55</td>
<td>9.6%</td>
<td>2.2%</td>
</tr>
<tr>
<td>EVTSEAL1Y (Loss of sealant 6-12 months)</td>
<td>45</td>
<td>7.9%</td>
<td>1.8%</td>
</tr>
<tr>
<td>EVTPLAQ (Additional prophylaxis needed due to plaque/calculus build up within 3 months)</td>
<td>44</td>
<td>7.7%</td>
<td>1.8%</td>
</tr>
<tr>
<td>EVTCAREST (Replace/Loss of restoration due to new surface caries)</td>
<td>40</td>
<td>7.0%</td>
<td>1.6%</td>
</tr>
</tbody>
</table>
EVT Report

• COMMUNITY OUTREACH

<table>
<thead>
<tr>
<th>EVT Code</th>
<th>Description</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVTNOTB</td>
<td>No toothbrush reported at home (No toothbrush/shares with other family members/no toothbrush at all residence locations)</td>
<td>206</td>
<td>8.33%</td>
</tr>
</tbody>
</table>

Quality Application / Practice Translation

• No toothbrush report is actually part of our performance improvement plan
• Tracking this since 2012
• Decrease from 30.1% (FY2012) to 13.3% (FY2013) to 9.4% (FY2014) [*based on patient #]
  o 8.3% (based on total evaluation #)
• Try to get as many toothbrushes into community as possible
• Use location data (zip code or billing type (school name)) to determine highest need areas
  o Use limited resources to fullest potential
  o Focus on health fairs in area
  o Local festivals
  o Other community outreach avenues
Process of Quality Evaluation

EVT Report

- PATIENT COMPLIANCE

<table>
<thead>
<tr>
<th>EVT Code</th>
<th>Description</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVTCARSEAL</td>
<td>Loss of sealant due to caries (sealant still present)</td>
<td>55</td>
<td>2.22%</td>
</tr>
<tr>
<td>EVTPLAQ</td>
<td>Patient needs additional prophylaxis within three months due to plaque/calculus build up</td>
<td>44</td>
<td>1.78%</td>
</tr>
<tr>
<td>EVTCAREST</td>
<td>Loss/replacement of restoration due to new surface caries</td>
<td>40</td>
<td>1.62%</td>
</tr>
<tr>
<td>EVTREPAIR</td>
<td>Composite repair contained to enamel due to patient compliance issues</td>
<td>22</td>
<td>0.89%</td>
</tr>
<tr>
<td>EVTCAREXT</td>
<td>Extraction due to new surface caries on tooth with previous restoration</td>
<td>7</td>
<td>0.28%</td>
</tr>
</tbody>
</table>
Quality Application/Practice Translation

- Patient compliance can be the heaviest burden for a dental program
- How do you transform culture or social determinants, remove denial, change priorities?
- Knowledge
  - “Sometimes I’m confused by what I think is really obvious. But what I think is really obvious obviously isn’t obvious...” (Michael Stipe)
  - “Information is not knowledge” (Albert Einstein)
- Educational Protocols
  - Community Outreach
  - Chairside/Clinical
  - During front office patient contact / the subliminal method
  - Through community leadership

EVT Report

- PREVENTIVE

<table>
<thead>
<tr>
<th>EVT Code</th>
<th>Description</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVTSEAL1Y</td>
<td>Loss of sealant 6-12 months</td>
<td>45</td>
<td>1.82%</td>
</tr>
<tr>
<td>EVTSEAL6M</td>
<td>Loss of sealant within 6 mos.</td>
<td>26</td>
<td>1.05%</td>
</tr>
<tr>
<td>EVTSEAL18</td>
<td>Loss of sealant more than 18mos – less than 3 years</td>
<td>21</td>
<td>0.85%</td>
</tr>
<tr>
<td>EVTICALRAD</td>
<td>Radiographic calculus detected less than 6 months of prophylaxis</td>
<td>7</td>
<td>0.28%</td>
</tr>
<tr>
<td>EVTHISEAL</td>
<td>High occlusion on sealant resulting in additional encounter</td>
<td>4</td>
<td>0.16%</td>
</tr>
<tr>
<td>EVTSEA18L</td>
<td>Loss of sealant 1 year – 18 months</td>
<td>3</td>
<td>0.12%</td>
</tr>
</tbody>
</table>
Sealant Retention Rates

• Most evidence states: expected sealant retention rate at approximately 45-65%.
  o A 52.7% retention rate was found with school based placement on children from low income backgrounds

• Most research downplays retention.

• Identified variables include:
  o Patient cooperation
  o Isolation techniques
  o Age of patient
  o Operator experience
  o Tooth location
  o Field of view
  o Number of operators

Mertz Fairhurst et al. (1984); Feigal (1998); Muller-Bolla et al. (2013)

Quality Application/ Practice Translation

• Even though retention was at approx. 85%: CSCDM felt event to address is loss of sealant

• We replace each sealant that is lost (3 year maintenance)
  o Increase time
  o Cost of materials
  o Caries susceptibility
  o Lost revenue

• First make sure all personnel are following evidence based care for placement – interview/ask
  o (prn Training)

• Next step is to identify variables & possible issues to improve these percentages
  o Manually looked at patient base – overweight/obese patients made up approximately 50% of patient’s with lost sealants in first year
    • Obesity/weight a complicating factor in dentistry
    • PRACTICE TRANSLATION– patients that fit Obese/OW status when possible have team to place sealants
  o New technique out of a Texas based school program using Hydrogen Peroxide with cotton tip applicator [prior to etching] for better retention

Boynes et al. (2013); Cheymol (2000); Ebbeling et al. (2002)
### EVT Report

#### RESTORATIVE/OPERATIVE

<table>
<thead>
<tr>
<th>EVT Code</th>
<th>Description</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVTHIOC</td>
<td>High occlusal contract restorative; additional encounter</td>
<td>17</td>
<td>0.69%</td>
</tr>
<tr>
<td>EVTFR2Y</td>
<td>Failed restoration 1Y-2Y</td>
<td>7</td>
<td>0.28%</td>
</tr>
<tr>
<td>EVTFR1Y</td>
<td>Failed restoration 6m-1Y</td>
<td>4</td>
<td>0.36%</td>
</tr>
<tr>
<td>EVTLPAIN</td>
<td>Pain from procedure requiring additional encounter</td>
<td>4</td>
<td>0.16%</td>
</tr>
<tr>
<td>EVTFR3Y</td>
<td>Failed restoration 2Y-3Y</td>
<td>3</td>
<td>0.12%</td>
</tr>
<tr>
<td>EVTREPA</td>
<td>Composite repair due to operative issue</td>
<td>2</td>
<td>0.08%</td>
</tr>
<tr>
<td>EVTFC1Y</td>
<td>Failed SSC crown pedo within 1 Y</td>
<td>1</td>
<td>0.04%</td>
</tr>
<tr>
<td>EVTFC2</td>
<td>Failed SSC crown pedo 1Y – 2Y</td>
<td>1</td>
<td>0.04%</td>
</tr>
<tr>
<td>EVTOVHG</td>
<td>Interproximal restoration with overhang observed at additional encounter</td>
<td>1</td>
<td>0.04%</td>
</tr>
</tbody>
</table>

### Quality Application/Practice Translation

- While there are many other aspects to quality care with operative procedures – the dental profession tends to focus on success/failure of fillings
  - About 60% of all operative work done is attributed to the replacement of restorations.
- While most aspects of operative care QA are limited in literature, annual failure rates with fillings can be ascertained
- The structure of these studies' designs make it difficult to apply with the EVT coding as a direct comparison
  - Limitation in that until concrete benchmarks are established would have to use total fillings placed as comparison and manually calculate using other software.

Mjor (1989)
### Table 1 - Results from the literature search: clinical trials with follow-up periods of at least 5 years published between 1996 and 2011.

<table>
<thead>
<tr>
<th>Author(s) (year)</th>
<th>Evaluation period/year design</th>
<th>Materials tested</th>
<th>Survival rate</th>
<th>AFR(survival)/survival rate of composite</th>
<th>Factors associated with composite failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>DeMarco et al., 2012</td>
<td>2 years, ml</td>
<td>Composite</td>
<td>Class I and II</td>
<td>AFR 2.94; 23.2% mortality</td>
<td>Tooth type, cavity type, residual tooth structure</td>
</tr>
<tr>
<td>DeMarco et al., 2012</td>
<td>2 years, ml</td>
<td>Composite</td>
<td>Class I and II</td>
<td>AFR 3.14; 25.3% mortality</td>
<td>Tooth type, cavity type, residual tooth structure</td>
</tr>
<tr>
<td>DeMarco et al., 2012</td>
<td>2 years, ml</td>
<td>Composite</td>
<td>Class I and II</td>
<td>AFR 3.24; 27.4% mortality</td>
<td>Tooth type, cavity type, residual tooth structure</td>
</tr>
</tbody>
</table>

(Continued...)

### Table 1 (Continued)

<table>
<thead>
<tr>
<th>Author(s) (year)</th>
<th>Evaluation period/year design</th>
<th>Materials tested</th>
<th>Survival rate</th>
<th>AFR(survival)/survival rate of composite</th>
<th>Factors associated with composite failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>DeMarco et al., 2012</td>
<td>2 years, ml</td>
<td>Composite</td>
<td>Class I and II</td>
<td>AFR 3.34; 29.5% mortality</td>
<td>Tooth type, cavity type, residual tooth structure</td>
</tr>
<tr>
<td>DeMarco et al., 2012</td>
<td>2 years, ml</td>
<td>Composite</td>
<td>Class I and II</td>
<td>AFR 3.44; 31.6% mortality</td>
<td>Tooth type, cavity type, residual tooth structure</td>
</tr>
<tr>
<td>DeMarco et al., 2012</td>
<td>2 years, ml</td>
<td>Composite</td>
<td>Class I and II</td>
<td>AFR 3.54; 33.7% mortality</td>
<td>Tooth type, cavity type, residual tooth structure</td>
</tr>
</tbody>
</table>

(Continued...)

---

Demarco et al. (2012)
Restoration Failure

- Reported annual failure rates (AFR): 0-12.4%
- 90% of the clinical studies indicated that annual failure rates between 1% and 3% can be achieved with Class I and II posterior composite restorations (although these evaluations tend to review with ideal conditions during study analysis)
- Variables do exist that can cause AFR to increase:
  - Tooth type and location
  - Cavity size
  - Experience of operator
  - Number of surfaces (each additional surface may increase failure rate by 40%)
  - Patient behavior during care visit
  - Socioeconomic status
  - Caries Risk
  - Bruxism
  - Materials used (minor effect with a cascading change)

Demarco et al. (2012); Hickel & Manhart (2001); Lucarotti et al. (2005)
Opdam et al. (2007); Manhart et al. (2004)

EVT & Restoration Failure

- Total failure data: 14 events
- Mean yearly total fillings placed in analysis period: 1302
- AFR: 1.1%
  - AFR: 1.2% (w/ 16 events if composite repair data is included)
- *Limitation of AFR with this data set is that we are comparing using 5 year data and this analysis looks at 3 years of data
EVT Report

- **ANESTHESIOLOGY**

<table>
<thead>
<tr>
<th>EVT Code</th>
<th>Description</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVTINANES</td>
<td>Inadequate anesthesia; requiring additional injection</td>
<td>21</td>
<td>0.85%</td>
</tr>
<tr>
<td>EVTLBIT</td>
<td>Self-inflicted soft tissue injury – Lip Bite</td>
<td>7</td>
<td>0.28%</td>
</tr>
<tr>
<td>EVTNUMB</td>
<td>Pain report due to feeling numb; additional encounter</td>
<td>4</td>
<td>0.16%</td>
</tr>
<tr>
<td>EVTCBIT</td>
<td>Self-inflicted soft tissue injury – Cheek Bite</td>
<td>1</td>
<td>0.04%</td>
</tr>
<tr>
<td>EVTTBIT</td>
<td>Self-inflicted soft tissue injury – Tongue Bite</td>
<td>1</td>
<td>0.04%</td>
</tr>
<tr>
<td>EVTTRIS</td>
<td>Trismus Report</td>
<td>1</td>
<td>0.04%</td>
</tr>
</tbody>
</table>

**Quality Application/Practice Translation**

- Due to previous anesthesia study, this data allows us to evaluate success/failure of clinical changes.
- Reveals a decrease in overall anesthesia complication rate (5.3% to 3.4% \[1.9% improvement!\])
- Saw an increase in “inadequate anesthesia-need for additional injection” (1.2% to 2.0%)
- Clinical changes
  - ADHD and Obese/Overweight patients receive OraVerse®
  - Elimination of the mandibular inferior alveolar nerve block as standard injection for mandibular procedures

---

Boynes et al. (2013)
## EVT Report

### BEHAVIOR MANAGEMENT

<table>
<thead>
<tr>
<th>EVT Code</th>
<th>Description</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVTUNCP</td>
<td>Uncooperative first visit (no procedures billed – excludes D9920)</td>
<td>4</td>
<td>0.16%</td>
</tr>
<tr>
<td>EVTUNCP2</td>
<td>Uncooperative second visit (no procedures billed – excludes D9920)</td>
<td>3</td>
<td>0.12%</td>
</tr>
<tr>
<td>EVTUNCP3</td>
<td>Uncooperative second visit (no procedures billed – excludes D9920)</td>
<td>1</td>
<td>0.04%</td>
</tr>
<tr>
<td>EVTNN20</td>
<td>Loss of appointment – nitrous oxide inadequate to complete care</td>
<td>1</td>
<td>0.04%</td>
</tr>
</tbody>
</table>

### ENDODONTIC

<table>
<thead>
<tr>
<th>EVT Code</th>
<th>Description</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVTFCAP</td>
<td>Failed pulp cap within 1 Y</td>
<td>4</td>
<td>0.16%</td>
</tr>
<tr>
<td>EVTFCAP3</td>
<td>Failed pulp cap within 2Y-3Y</td>
<td>2</td>
<td>0.08</td>
</tr>
<tr>
<td>EVTFCAP2</td>
<td>Failed pulp cap 1Y-2Y</td>
<td>1</td>
<td>0.04%</td>
</tr>
</tbody>
</table>
Quality Application/Practice Translation

• 0 failed pulpotomies
  o AFR Total Range: 0.3%-18.1%
  o According to evidence based care 5-8% AFR can be achieved
  o *CSC did a decreased number of pulpotomies; instead using evidence based care recommendations of more indirect pulp caps (use of CaOH or BioCap)

• CSC: Failed pulp caps: **7 events (AFR: 2.9%)**
  o AFR Range: 0-6.2%
  o According to evidence based care 2-4.5% AFR can be achieved
  o *Limited number of research reports evaluating pulp capping as a singular investigative procedure

Farooq et al. (2000); Nirschl & Avery (1983); McDonald & Avery (1994)
Indirect Pulp Cap

Farooq et al. (2000)

Table 2. IPT Studies in Chronological Order

<table>
<thead>
<tr>
<th>Study</th>
<th>Sample size</th>
<th>Inclusion criteria</th>
<th>Follow-up</th>
<th>Type of IPT</th>
<th>Sample size at conclusion</th>
<th>Success</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aponte9 1966</td>
<td>30</td>
<td>Deep caries</td>
<td>6-36 months or more</td>
<td>Indirect pulp cap with Ca(OH)₂ base</td>
<td>30</td>
<td>100%</td>
</tr>
<tr>
<td>Kirkhove8 1967</td>
<td>56</td>
<td>Deep caries</td>
<td>12 months</td>
<td>Indirect pulp cap with Ca(OH)₂ Base or ZOE base</td>
<td>25</td>
<td>89%</td>
</tr>
<tr>
<td>Nordstrom7 et al. 1974</td>
<td>25</td>
<td>Deep caries</td>
<td>3 months</td>
<td>Indirect pulp cap with Ca(OH)₂ Or 10 % SnF</td>
<td>25</td>
<td>85%</td>
</tr>
<tr>
<td>Sawasch6 1982</td>
<td>136</td>
<td>Deep caries</td>
<td>12-24 months</td>
<td>Indirect pulp cap with Ca(OH)₂ (Dryad) base</td>
<td>1</td>
<td>96%</td>
</tr>
<tr>
<td>Nirsch and Avery8 1983</td>
<td>35</td>
<td>Deep caries</td>
<td>6 months</td>
<td>Indirect pulp cap with Ca(OH)₂ base</td>
<td>25</td>
<td>94%</td>
</tr>
</tbody>
</table>

Looking at the Future

- **Oral Health Risk Assessment (OHRA Score)**
- An important aspect to total quality assurance
- Used as a measuring tool along side EVT Coding
  - There is a symbiotic relationship
  - One helps support the other
- A standardized process used to score each patient’s risk to poor oral health outcomes
- Developed by merging available CRA forms and using same time data
- Provides a numerical value to the patient’s oral health (caries) risk
Oral Health Risk Assessment Score

• Characteristics of Assessment
  o Contributing Conditions
    • Fluoride Exposure
    • Sugar Consumption
    • Dental Home
    • Dental Knowledge
    • Parental Characteristics
  o Health Conditions
    • Chemo/Rad Therapy
    • Psychological Conditions
    • Diabetes
    • Cardiovascular Disease
    • HIV/AIDS
    • Special Needs
    • Tobacco
  o Clinical Conditions
    • Active Caries
    • Plaque
    • Tooth Morphology
    • Root exposure
    • Dental History
    • Attachment Loss
    • Quality of previous dental care
    • Dry Mouth
    • Timely completion of care

Each Line Item Scored as:
Low = 0
Moderate = 1
High = 5

Pediatric Scale
High Risk: 16 or Higher
Moderate Risk: 7-15
Low Risk: 6 or Lower
OHRA Scoring

- Used as a companion with EVT Coding to help shape clinical and operational decision making
- Evaluate performance of program as a whole
- Determine areas of highest need

OK, So now what?

- First analysis of its type that looks at a snapshot of a year with multiple year data (why we needed to pair with AFR)
- Need larger government/reputable organization supported study with larger sample size to create initial benchmark data and validate measurement tool
- This process can still be used to gauge quality improvement and practice translation
  - Compare and contrast clinics
  - Identify areas of need and areas if needed improvement
  - Evaluation of clinical policies and protocols (or changes in policy/procedure)
  - Compare and contrast providers (Accountability)
Future Considerations

• EDRs currently are WAY BEHIND where we need them to be!!!!!!!!!!!!!!!!!!!!
  o Extreme limitations with reporting of “Dummy codes”
  o Really focus on practice management and not really on clinical translation
• Currently cannot run comparative reports between codes, which requires manual evaluation and additional software (SNS, JMP, EXCEL)
  o Increases time of evaluation
  o Limited geographical information
• No built-in checks and balances to evaluate data entry
  o Have to have own audit procedures and process
• Extremely limited with comparative medical evaluation to improve integration of care
  o Meaningful use for dental lacks imagination and creativity
  o Leads to checking boxes and not to real patient impact

Barriers to Total Quality Implementation

• Changes the scope of service provision for the dental profession
• Everything built for volume and providing as many “high value” services as possible
• Fear of change/ Fear of evaluation / Fear of accountability
• A financial system geared to fee for service or volume of encounters
  o Funding sources
• Last several decades of focusing on quantitative output as success for “quality”
  o LED TO A MISUNDERSTANDING OF WHAT QUALITY MEANS
The Triple Aim

Gauging Impact from this Analysis

**Triple Aim Impact**

- **EXPERIENCE OF CARE**
  - Patient Growth
    - Year 2: 201% Growth
    - Year 3: 148% Growth
  - Patient Satisfaction
    - 97% “Top Box [GREAT/GOOD]” on 19 line-item (Portable) or 24 line-item (Fixed) satisfaction survey
  - Quality of Care
    - Below or at low range level of Complications / AFR / Retention
      - Anesthesia
      - Restorative
      - Sealants (Preventive)
      - Endodontics
      - Oral Surgery
Triple Aim Impact

**POPULATION HEALTH**
- Defined as the health outcomes of a group of individuals, including the distribution of such outcomes within the group
- Linking thread is the common focus on trying to understand the determinants of health of populations (why are some people healthy and others not?)
- Guiding principle is an increased focus on health outcomes (as opposed to quantity, processes, and products) and on determining the degree of change that can actually be attributed to ‘our’ work.

- Inter-linkage of EVT Coding
  - Impact of community outreach and changes on patient compliance to cost and/or AFR/retention
- Measuring tool (OHRA)
  - Using EVT Coding to impact clinical and operational decision making to reduce the oral health risk of the populations we serve
  - Using EDR to identify areas/regions/locations of susceptibility and evaluate cultural and educational issues/impacts/changes

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Evans et al. (1994); Kindig & Stoddart (2003);
Health Canada (1998); Lavis et al. (2002)

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**Triple Aim Impact**

**POPULATION HEALTH (Example: School Based Care)**

<table>
<thead>
<tr>
<th>Description</th>
<th>County</th>
<th>County</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of students seen at schools with services provided</td>
<td>20.4%</td>
<td>18.9%</td>
<td>18.1%</td>
</tr>
<tr>
<td>Encounters per student</td>
<td>2.97</td>
<td>2.53</td>
<td>3.00</td>
</tr>
<tr>
<td>Percentage needing extractions</td>
<td>18.1%</td>
<td>18.6%</td>
<td>19.0%</td>
</tr>
<tr>
<td>Percentage reporting no toothbrush at home</td>
<td>9.4%</td>
<td>9.9%</td>
<td>12.2%</td>
</tr>
<tr>
<td>OHRA Scores</td>
<td>21.0 (High Risk)</td>
<td>21.0 (High Risk)</td>
<td>20.0 (High Risk)</td>
</tr>
</tbody>
</table>
**Triple Aim Impact**

- COST PER PATIENT

![Graph showing cost per patient over time]

**References**


References


Any Questions?