ADA Caries Classification System

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Discussion Topics

- ADA Caries Classification System
- “Real World” implementation and validation of usability, functionality, and interoperability
- Dental concepts in terminologies and code sets

ADA CCS Status May 2012

- Validation Testing
  - PEARL PBRN
  - University of Illinois Chicago
  - Other
- Use Cases
- ADA CCS in FDI Matrix
- ADA CCS Concepts in SNODENT
- Temple Conference May 29-June 1
- ADA HOD Report October 2012

ADA CCS Code Stages - Extent

- No Caries – Sound tooth surface with no lesion
- Initial Enamel Caries – Visible non-cavitated or cavitated lesion limited to enamel
- Moderate Dentin Caries – Enamel breakdown or loss of root cementum with non-cavitated dentin
- Severe Dentin Caries – Extensive cavitation of enamel and dentin

ADA CCS SITE DEFINITIONS - ORIGIN

<table>
<thead>
<tr>
<th>PITS &amp; FISSURES</th>
<th>Lesion arising in the anatomic pits of fissures of teeth, such as occlusal surfaces of posterior teeth or lingual surfaces of maxillary lateral incisors.</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPROXIMAL</td>
<td>Lesion arising in the immediate proximity to the contact area of an adjacent tooth surface. Note: May exist on any surface of the tooth.</td>
</tr>
<tr>
<td>CERVICAL &amp; SMOOTH SURFACE</td>
<td>Lesion arising in the cervical area or any other smooth enamel surface of the anatomic crown adjacent to an edentulous space. Note: May exist anywhere around the full circumference of the tooth.</td>
</tr>
<tr>
<td>ROOT</td>
<td>Lesion arising on the root surface apical to the anatomic crown.</td>
</tr>
</tbody>
</table>

CCS Implementation: Use Cases

- Build Use Case
- Core Caries Findings?
- Paper Records
- Electronic Health Records
- SNODENT Terminology Concepts and Code Sets
Chart Entry Use Cases: Caries by ...

- Tooth
- Surface
- Extent
  - Volume of carious destruction by percent
  - Cavitation
- Origin
  - Root involvement
  - CEJ, etc.
- Intended Restoration
  - Black’s Classification
- Depth relative to exterior surface toward pulp
- Color
- Texture
- Activity and Progression Rate
- And ... ?

ADA CCS Implementation Activities

Also apply to

- Electronic Health Records (EHRs)
  - Imaging Systems and Digital Devices
- Data Exchange for Treatment, Payment, and Operations
  - Teledentistry and Remote Consultation
- Data Aggregation for Public Health and Epidemiology and for Health Care Delivery System Outcomes Analysis and Modeling
- Personal Health Records (PHRs)

Standardized Dental Concepts and Code Sets

- Standardized method to structure concepts and definitions in paper records on in the EHR software database tables
- Important for ensuring that information exchanged has persistent meaning and context, a concept known as “semantic interoperability.”
- Codes may be selected “behind the scenes” automatically using text descriptors or chosen directly by the provider.
- ADA CCS Validation Testing Sample Use Case
### SNODENT, SNOMED, and ICD: Cross-Mapping of Diagnostic Codes with Semantic Interoperability

<table>
<thead>
<tr>
<th>SNODENT</th>
<th>SNOMED</th>
<th>ICD</th>
<th>Fully Specified Concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>0521.02</td>
<td>442551007</td>
<td>521.02</td>
<td>Dental caries extending into dentin</td>
</tr>
</tbody>
</table>

### ADA CCS Use Case: SNODENT Concepts

<table>
<thead>
<tr>
<th>SNODENT ID</th>
<th>SNODENT Concept</th>
<th>Use Case Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>106309D</td>
<td>Dental caries confined to enamel</td>
<td>Use for Extent</td>
</tr>
<tr>
<td>107180D</td>
<td>Extensive cavitated lesion with exposed dentin</td>
<td>Use for Extent</td>
</tr>
<tr>
<td>177167D</td>
<td>Carious lesion of any cervical (gingival) or other smooth surface area of tooth</td>
<td>Use for Origin</td>
</tr>
<tr>
<td>177179D</td>
<td>Carious lesion of any cervical (gingival) or other smooth surface area of tooth</td>
<td>Use for Origin</td>
</tr>
<tr>
<td>255114D</td>
<td>Primary dental caries, root surface origin</td>
<td>Use for Extent</td>
</tr>
</tbody>
</table>

### Technical Points to Consider

- **Items** – data content, structure, context
- **Workflow** – entry through applications and devices
- **Display** – representation of data
- **Data Sharing** – information exchange, including semantic interoperability and integration
- **Data Aggregation and Analysis** – data warehousing and analytic tools
- **Modular Approach** – mix and match the best in breed to meet your needs
- **Usability, Functionality, and Interoperability**

### Thank you!

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