Dental Screening Calibration and Data Collection

October 2019
Importance of Data Calibration

Caries diagnosis varies among clinicians
  • 10 clinicians – 1 patient = 10 different treatment plans
Purpose of training is to assure consistency
Calibration Acknowledgements

Thank you to...

• The Association of State and Territorial Dental Directors (ASTDD) for developing this slide set, which we adapted slightly.

• Drs. John Warren, Amid Ismail and Eugenio Beltran for providing the clinical photos.
Dental Screening: Primary Indicators

<table>
<thead>
<tr>
<th>Mark to indicate primary to treat</th>
<th>Treatment Urgency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suspected decay</td>
<td>No obvious problem</td>
</tr>
<tr>
<td>Suspected arrested decay</td>
<td>Early dental care</td>
</tr>
<tr>
<td>Missing</td>
<td>Urgent care</td>
</tr>
<tr>
<td>Filled</td>
<td></td>
</tr>
<tr>
<td>Partially erupted</td>
<td></td>
</tr>
<tr>
<td>Sealant present</td>
<td></td>
</tr>
<tr>
<td>Prescribe sealant</td>
<td></td>
</tr>
<tr>
<td>Recommend reseal</td>
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</tbody>
</table>

- Open mouth screening
- Clinical exam
Consistency Versus Perfection

Consistency Is The Key

The idea of perfection is so imperfect.
<table>
<thead>
<tr>
<th>Consistency</th>
<th>Perfection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is possible if simple diagnostic criteria are used</td>
<td>Probably not possible</td>
</tr>
<tr>
<td></td>
<td>Dentists do not agree</td>
</tr>
</tbody>
</table>
Screening Logistics
Set Your Clinical Hat Aside

**NOT** a clinical exam with diagnosis and treatment planning

The assumption is that you are doing an open mouth screening. If you are a dentist and using this form and doing a clinical exam, there is a spot on the form to mark that under **Screening:**

- Open mouth screening
- Clinical exam
Put on Your Public Health Hat

Quick screening with recording of obvious findings
About 1 minute per child
Good Lighting is Essential

NEVER RELY ON NATURAL LIGHT.
Retraction & Visualization
Removing Food Debris

Toothbrush
Toothpick

Sealants or Crackers?
Caries or Oreos?
Instrumentation

Dental explorers will NOT be used.
Damaged Enamel From Explorer

Photo courtesy of Professor Ekstrand.
What About My Loupes?

**NOT recommended**
- Use only if your eyesight is so bad that you absolutely can’t see the teeth without them
Infection Control
Avoid touching the child
Don’t let the flashlight touch the child
Infection Control Protocol

Wear gloves
  • Not required by CDC but good for public relations
  • Change gloves between each child – good for public relations

If you *do not* touch the child
  • No need to wash hands

If you *do* touch the child
  • Use antiseptic agent

*NOT* necessary ...
  • Masks, gown, eye protection
Criteria
Suspected Untreated Decay

A measure of untreated disease

*Does this child have any cavities that have not been treated?*
Untreated Decay

A tooth has untreated decay when you can easily see breakdown of the enamel surface

*Only cavitated lesions are considered untreated decay*
Untreated Decay

Reference – detectable using PSR/CPI perio probe
If you gently moved the PSR/CPI perio probe over a lesion, the probe would “catch” a cavitated lesion.
Untreated Decay

Pits & Fissures
Untreated Decay

Smooth Surface
Untreated Decay

Retained roots = untreated decay

Decayed
Mark the appropriate teeth that have suspected untreated decay.

The default for these boxes is permanent teeth. If there are primary teeth, be sure to mark the circle for the corresponding primary teeth.
Suspected Arrested Decay
Marking Arrested Decay

Mark the appropriate teeth that have arrested decay.

The default for these boxes is permanent teeth. If there are primary teeth, be sure to mark the circle for the corresponding primary teeth.
Proximal Surface Caries
Broken fillings without recurrent decay are coded as treated not untreated decay
Untreated Decay

Teeth with stained pits & fissures and NO enamel break are considered sound

This tooth has stain but NO enamel break so it is SOUND.
NOT Untreated Decay

“White spot” lesions are not untreated decay

These teeth have “white spots” but no break in the enamel surface. Do not code as untreated decay.
Arrested decay is **not** untreated decay

This tooth has black-brown staining, suggestive of SDF treatment; the caries lesion is no longer active. Do not code as untreated decay.
Rule of Thumb

When in doubt, be conservative. That means that if you are not sure if a cavity is present, assume it is not.
### Universal Visual Scoring System for pits and fissures (UniViSS occlusal)

#### First step: Lesion Detection & Severity Assessment

<table>
<thead>
<tr>
<th></th>
<th>Score F</th>
<th>Score E</th>
<th>Score M</th>
<th>Score D</th>
<th>Score L</th>
<th>Score P</th>
</tr>
</thead>
<tbody>
<tr>
<td>First visible signs of a caries lesion</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Established caries lesion</td>
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<td></td>
<td></td>
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<tr>
<td>Microcavity and/or localised enamel breakdown</td>
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<tr>
<td>Dentin exposure</td>
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<tr>
<td>Large cavity</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pulp exposure</td>
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</tbody>
</table>

#### Second step: Discoloration Assessment

<table>
<thead>
<tr>
<th>Surface Type</th>
<th>Score 0</th>
<th>Score 1</th>
<th>Score 2</th>
<th>Score 3</th>
<th>Score 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sound surface</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>No cavitations or discolorations are detectable</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>White-brown</td>
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<tr>
<td>(Dark) Brown</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Greyish translucency</td>
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</tbody>
</table>

Source: www.univiss.net
White Discoloration

- Not visible without prolonged air drying
  Untreated caries = NO

- May be visible without drying, fissures appear wider but no “break” in enamel integrity
  Untreated caries = NO

- Has definitive break in enamel surface
  Untreated caries = YES

Source: www.univiss.net
White-Brown Discoloration

Not visible without prolonged air drying
Untreated caries = NO

Visible without drying, fissures appear dark & wider but no “break” in enamel integrity
Untreated caries = NO

Has definitive break in enamel surface
Untreated caries = YES

Source: www.univiss.net
Dark Brown Discoloration

Visible without air drying, stain
Untreated caries = NO

Visible without air drying, stain
Untreated caries = NO

Has definitive break in enamel surface
Untreated caries = YES

Source: www.univiss.net
Treated Decay

Has the child had dental treatment because of decay?

Includes

- Amalgam and composite restorations
- Glass ionomer restorations
- Temporary restorations
- Crowns placed because of decay
- Extractions because of decay
Treated Decay

Teeth with temporary fillings are classified as filled. This includes glass ionomers placed for palliative reasons.
Be Aware of Composites!
Amalgam Fillings

Composite Fillings

SAME INDIVIDUAL
Crowns placed because of trauma are not treated decay
Extracted Teeth

Has a tooth been extracted because of decay?

• Do NOT include teeth extracted for orthodontic reasons
Marking Treated Decay

Mark the appropriate teeth that have treated decay.

The default for these boxes is permanent teeth. If there are primary teeth, be sure to mark the circle for the corresponding primary teeth.
Special Circumstances
Marking Missing

Mark the appropriate teeth that are missing.

The default for these boxes is permanent teeth. If there are primary teeth, be sure to mark the circle for the corresponding primary teeth.
Congenitally Missing Teeth

Ignore congenitally missing teeth
Teeth Extracted for Ortho Reasons

Teeth extracted for orthodontics are not treated decay

This person has missing premolars because of orthodontics so they do NOT have treated decay.

Treated Decay = NO
Injured Teeth

Do not code teeth that are injured or treated because of injury.

Not Untreated Decay

Not Treated Decay
Enamel Hypoplasia

Opaque Defect  Pitted Defect

Also referred to as Developmental Enamel Defects.
Generalized Lack of Enamel

7 year old
Untreated Caries = No
Pitted Hypoplasia

8 year old
Untreated Caries = No
Molar-incisor hypomineralisation (MIH)
Enamel Hypoplasia & Decay

Untreated Decay = Yes
Enamel Hypoplasia & Caries

Linear EHP
Untreated Decay = No

Linear EHP plus caries
Untreated Decay = Yes
Enamel Hypoplasia & Caries

Untreated Decay = Yes
Dental Sealants

The presence of dental sealants is an oral health indicator for children in elementary, middle and high school. If you are only screening preschool children, delete this section of the presentation.
Dental Sealants

**Permanent molars only**

Can use toothpick to lightly “feel” occlusal surface for sealants

- Transparent
- Opaque
- Glass Ionomer
Dental Sealants

Partially and fully retained sealants

Partially Retained Sealant

Fully Retained Sealant
<table>
<thead>
<tr>
<th></th>
<th>Column 1</th>
<th>Column 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sealant present</td>
<td></td>
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Is it a PRR or a Dental Sealant?

It can be difficult to determine if a tooth has a preventive resin restoration (PRR) or a sealant. If you see a definitive cavity preparation, code the tooth as having treated decay. A PRR is treated decay.

Preventive Resin Restorations
Treated Decay = Yes
Treatment Urgency

3 levels based on how soon a child should visit the dentist for a clinical diagnosis and any necessary treatment

- Urgent need
- Early care needed
- No obvious problem (None)
Treatment Urgency

Urgent need

• Needs dental care within the next week because of signs or symptoms that include pain, infection, or swelling
• A child with an abscess should always be coded as urgent
  • Even if the abscess is draining
This child has an abscess so they need URGENT care
Treatment Urgency

This child has a draining abscess and should be coded as URGENT care.
Early dental care

• Needs to see a dentist because of untreated decay or broken restorations but they do not have pain or an infection
• Should see a dentist within the next several weeks or before their next regularly scheduled dental appointment
Treatment Urgency

This child needs EARLY dental care
Treatment Urgency

No obvious problems

• Individuals with no cavitated decay or other dental problems requiring early attention are considered to have no obvious problem, which means that they should receive routine dental checkups

• Decay only on primary teeth about to be exfoliated
  • Child can have decayed teeth but not need treatment
This child has no obvious need for dental care
Codes for Treatment Urgency

- No obvious problem
- Early dental care
- Urgent care

Referred for treatment
- Yes
- No
Screening Protocol

Arrive at site 30 minutes early
Check-in at school office
Get class rosters
Find out about recess/lunch
Set up screening site & equipment
Screening Protocol

Have child bring consent form to screening

Check for positive consent

Review demographic information & fill in missing items (if possible)

• Age, gender, race/ethnicity
Screening Protocol

Complete direct observation portion of screening
Enter results on oral health screening form
Complete referral letter
Give child/teacher letter, toothbrush, etc
Thank staff - remove garbage
Providing services and/or follow-up?

See instructions for completing forms for more information.
A training test is not required but we have included one in case you think it might be helpful. Please note that the answers may not be obvious, although an answer key is included. The purpose of the training test is to highlight the differences that may still occur even after the didactic training. The goal, to make screeners realize that only cavitated lesions are considered untreated decay.
Training Test
Do These Teeth Have Untreated Decay?
No/Yes
#1: Untreated Decay?
#2: Untreated Decay?
#3: Untreated Decay?
#4: Untreated Decay?
#5: Untreated Decay?
#6: Untreated Decay?
#7: Untreated Decay?
#8: Untreated Decay?
#9 & #10: Untreated Decay?
#11-#14: Untreated Decay?
#15: Untreated Decay?
#16: Untreated Decay?
#17: Untreated Decay?
#19: Untreated Decay?
#20: Untreated Decay?
Answer Key

1: Enamel hypoplasia  
2: Yes  
3: No  
4: Yes  
5: No  
6: No  
7: No  
8: Yes  
9: No  
10: No  
11: No  
12: No  
13: No  
14: Yes  
15: No  
16: Yes  
17: No  
18: Yes  
19: No  
20: No
1: Enamel Hypoplasia

Untreated = No (enamel hypoplasia)
Treated = Yes (molars have PRRs)
Tx Urgency = None
2: Obvious Break in Enamel

Untreated = Yes
Treated = Yes
Tx Urgency = None (decayed tooth about to exfoliate)
3: Stain but no Break in Enamel

Arrested Decay = Yes
Tx Urgency = None
4: Break in Enamel & Shadow

Untreated = Yes
Treated = No
Tx Urgency = Early
5: Fracture Due to Accident - No Caries

Untreated = No
Treated = No
Sealants = Yes
Tx Urgency = Early (child is not in pain)
6: Abscess but No Caries

Untreated = No
Treated = Yes
Tx Urgency = Urgent
7: “White Spot” but no Break in Enamel

Untreated = No
Tx Urgency = None
8: Break in Enamel

Untreated = Yes
Tx Urgency = Early
No Break in Enamel

Untreated = No
Tx Urgency = None
These are Tricky - Only 14 is Caries
15: Discoloration but No Enamel Break

Untreated = No (no enamel break)
Treated = No
Tx Urgency = None
16: Enamel Break & Discoloration

Untreated = Yes
Tx Urgency = Early
17: No Caries

Untreated = No
Treated = No
Tx Urgency = None
18: Enamel Break

Untreated = Yes
Tx Urgency = Early
19: Demineralization But no Enamel Break

Untreated = No  
Tx Urgency = None
20: Discoloration But no Enamel Break

Untreated = No
Tx Urgency = None
Following are a few more examples that you can use if you have time.
Untreated Decay = Yes
Treated Decay = No
Tx Urgency = ?? (Is child in pain)
Untreated Decay = Yes
Treated Decay = No
Tx Urgency = Urgent
Untreated Decay = No
Treated Decay = Yes
Tx Urgency = 0
Untreated Decay = Yes (enamel break on 2\textsuperscript{nd} premolar)
Treated Decay = Yes (1\textsuperscript{st} molars extracted)
Sealants = No
Tx Urgency = Early
Untreated Decay = No
Treated Decay = No
Sealants = Yes (partially retained sealant)
Tx Urgency = 0
Untreated Decay = No
Treated Decay = Yes
Sealants = No
Tx Urgency = Early (Broken filling)
Untreated Decay = No
Treated Decay = No
Tx Urgency = None

Individual has dental fluorosis
Untreated Decay = No
Treated Decay = No
Sealants = Yes
Tx Urgency = None

Individual has enamel hypoplasia but no caries