OSCE TEMPLATES
Testing Higher Levels of Knowledge and Combating Cheating

Dr. Bob Loney
Dr. Blaine Cleghorn
WHO IS BOB LONEY?

- Prosthodontist
- Chair, Dental Clinical Sciences
- Chief Examiner, OSCE National Dental Examining Board of Canada (NDEB)
- 20 years with OSCE at NDEB
- Conduct OSCE Workshops
- Use OSCE exams in my courses to teach and test
- Web Master, Removable Prosthodontics Site, Dalhousie
WHO IS BLAINE CLEGHORN?

- Assistant Dean Clinical Affairs
- Chief Examiner, Written Exam National Dental Examining Board of Canada (NDEB)
- 20 years with NDEB
- Conducts Written MC Exam Workshops
- Use OSCE's in courses
- Web Master, BRainelike with Mock OSCE exam (www.brainelike.com)
HALIFAX, NOVA SCOTIA
Faculty of Dentistry, Dalhousie University
YOU

- Used multiple choice written exams? OSCE? Other types?
- Attended any MC question workshops?
- Experience in creating national or state exams?
- Lots of experience/ Less experience?
OVERVIEW

Types of OSCE's
Why OSCE's?
Advantages & Disadvantages

Creating MC OSCE Templates:
Test Blueprints
Principles for Creating OSCE Templates
Cheating & Test Reconstruction
Using OSCE's for Learning
Cooperation and Calibration
WHAT IS AN OSCE?

- **Objective** Structure Clinical Exam (Stations)

- **Objective** = all students tested on same material/skill - *rubric* makes marking more standardized

- **Structured** = each station a specific task

- **Test** Clinical skill & judgment

FEATURES OF AN OSCE

- Originally: candidate with real or simulated patients (actors or electronic dummies) with 1-2 examiners
- Stations short, numerous, highly focused
- Application of knowledge vs recall

FEATURES OF AN OSCE

- Preset, structured marking scheme
- Typically 5 minutes (3-20 minutes)
  
  *Patricio et al, Med Teach, 2013; 35:503*

- Mix of station types/competencies
- If you’ve passed CPR, you’ve taken an OSCE
PURPOSE OF AN OSCE

- Minimize patient & examiner variation in the assessment of clinical skills
- Test some skills and judgement not tested with pen & paper
- Test higher levels of knowledge

*Harden et al. Br Med J. 1975*
LEVELS OF LEARNING in Cognitive Domain

General Principle: Higher Levels Require Lower Levels

From Bloom’s Taxonomy
Often examined:

- Affective Domain
- Psychomotor Domain
- Not exclusively

MC Template OSCE's - Cognitive Domain
COGNITIVE DOMAIN: DENTAL EXAMPLES

Create a Treatment Plan

Evaluate Marginal Integrity of a Crown
Evaluate Root Surface after Curettage

Determine which teeth require restorations based on radiographs + clinical exam

Identify Caries on a Radiograph

Demonstrate how measure BP

Signs of Syncope
Normal BP of An Adult
Melting point of Alloy
TEST HIGHER ORDER KNOWLEDGE

- What you want students to know (application to clinic)
- Less short term memory
- Harder to cheat (not impossible)
- Lower level knowledge is required for higher order skills
- OSCE's can test higher levels
HOW COMMON ARE OSCE'S?

- Average **61.5** studies/year since ’05
- Over **50 countries**
- Studies from 25 professions: Medicine **87%**, Nursing **5%**, Dentistry **3%**, Pharmacy **2%**
- OSCE's performed by students of every curricular year

*Patricio et al, Med Teach, 2013; 35:503*
EXAMPLES OF CLINICAL DENTAL OSCE'S

- **Making a dental impression**  

- **Formative/summative assessment of operative clinical tasks**  
  *Mossey et al, Br Dent J 2001, 190:387*

- **Oral Surgery**  

- **Conservative dentistry, prosthetic dentistry, and dental materials**  
  *Eberhard et al, Eur J Dent Educ 2011, 15:172*

- **Diagnostic & radiographic skills**  
  *Lele, J Dent Educ 2011, 75:1583*
DO OSCE'S HAVE GOOD RELIABILITY & VALIDITY?

Reliability - Consistency of Measurement
Validity - Tests What you Want to Test
OSCE RELIABILITY & VALIDITY

- 4th year dental students, 17 stations - operative, perio & prostho
- OSCE intrinsically valid & better predictor of performance in final examination than 4th-year exam or university entry grades
- High internal consistency (Cronbach's alpha = 0.68)
- Inter-examiner reliability relatively high

OSCE RELIABILITY & VALIDITY

- Undergrad student preparedness for patient care activity
- Classes of 2010 & 2011
- Highly reliable with moderately high correlation predicting future clinical performance ($r=0.540-0.614$, $p<0.0001$)
- OSCE can serve as reliable & predictive assessment in transition from preclinical to clinic

Graham et al, J Dent Educ 2013, 77:161
2,317 students at nine Canadian dental schools who completed NDEB OSCE & Written between 1995-2000.

Positive correlations between students’ scores and final year results (p < .001), for written (r = 0.43) and OSCE (r = 0.46) examinations respectively.

Positive correlations between written & OSCE

Supported concurrent validity of both NDEB examinations

**IS AN OSCE A GOOD PREDICTOR OF PERFORMANCE?**

- Correlation between overall OSCE scores & overall clinical scores
- **No correlation** with interpersonal & communication skills, or professionalism competencies
- **Can predict future performance on global level** and in specific core competencies


- **OSCE can reliable and valid assessment in preclinical dentistry**

*Eberhard et al, Eur J Dent Educ 2011, 15:172*
IS AN OSCE A GOOD PREDICTOR OF PERFORMANCE?

- OSCE can produce reliable results
- Flexibility in the number of students that can be assessed
  
  *Patricio et al, Med Teach 2013, 35:503*

- OSCE dealing with communications in dentistry not successful
  
  *Cannick et al, J Dent Educ 2007, 71:1203*
STRESS RELATED TO OSCE’S

- Anxiety elevated in written, OSCE, preclinical preparation exams
- OSCE most stressful
- Students prepared more for OSCE
- Stress level not predictive of performance in any of the exams

*Brand & Schoonheim-Klein, Eur J Dent Educ 2009, 13:147*
Students thought OSCE better method for evaluating their clinical judgment & skills


Students perceive OSCE to be a meaningful & fair examination

Lele, J Dent Educ 2011, 75:1583

Students found scoring to be transparent and objective
IS AN OSCE A BETTER ASSESSMENT?

- **Maybe** Scott et al, Eur J Dent Educ 2001
- May measure different knowledge & skills
- Quality of exam has effect on assessment
DISADVANTAGES OF TRADITIONAL OSCE'S

- Extensive organization required
- Time, space
- Cost, human resources (std. patients, examiners)

Frye et al, Med Teach 1989
Cusimano et al, Acad Med 1994
Hanson et al, Can J Psychiatry 1998
Eberhard et al, Eur J Dent Educ 2011
DISADVANTAGES OF TRADITIONAL OSCE'S

- OSCE with phantom heads perceived to lack clinical authenticity
- Limitations in examination of invasive operative procedures

Mossey et al, Br Dent J 2001
OSCE'S USING MC QUESTIONS

- Possible to evaluate clinical skills w/o observers or standardized patients?
- Modified OSCE: Diagnostic & radiographic skills. Multiple Choice. Evaluation or Synthesis

Lele, J Dent Educ 2011

Most students (73%) & examiners (91%) preferred m-OSCE to written exam

m-OSCE required more in advance, less work after exam than written examination

Napankangas et al, Eur J Dent Educ 2012, 16:e146
EVOLUTION OF OSCE'S

- Multiple Choice - efficient evaluation for large classes/groups
- Higher levels of knowledge can be evaluate: synthesis, evaluation

Mossey et al, Br Dent J 2001
Arnold & Walmsley, Eur J Dent Educ 2008,
OSCE TESTING LARGE COHORTS

- 463 students took OSCE on different days - can be reliable
- Minimum 17 stations were needed for reliability
- Wide sampling of stations required to obtain reliable scores in OSCE

OSCE: SUMMARY - SO FAR

- Can test higher levels
- Can be reliable and valid
- Students generally like OSCE
OSCE: SUMMARY - SO FAR

- Not panacea - bad test still a bad test
- MC OSCE can be viable, even for large groups
- More stations improves reliability
- Require more work to assemble - even MC OSCE
THE ELEPHANT IN THE ROOM

- Students cheat (50-70% - but varies)
- Your exams have been reconstructed
- Good students will memorize a reconstructed exam if available
CHEATING NEUTERS YOUR EXAMS

- If you re-use questions each year, even high level questions will be reduced to ‘memorization’
- Ethical students are disadvantaged - not everyone gets a copy
- Why spend time making OSCE's if they will be reconstructed?
How to Make an OSCE Cheat Proof

- No sense spending lot of time if OSCE's will be reconstructed
- Use Templates!
POSSIBLE SOLUTION: OSCE TEMPLATES
DEVELOPED BY NATIONAL DENTAL EXAMING BOARD OF CANADA

- Template is a MC question where:
  - **Question** (stem + distractors) **doesn’t change**
    - used every exam
    - can even be published
  - **Props** for question (casts, models, photos, radiographs, case) **change each exam**, so correct answer key is different
The amalgam restoration on tooth # ___:
- a. is acceptable
- b. has a defective margin
- c. has an overhang
- d. has an open proximal contact

**Answer Key changes composed of correct distractor(s)**
SAMPLE TEMPLATE FOR AN EXAM STATION

- **Record Base #** is:
  a. acceptable
  b. unstable
  c. short of the vestibule
  d. too thick
  e. too sharp/rough

Use Actual Casts, Not Photos
QUESTION SUPERFICIALLY LOOKS THE SAME BUT ANSWER IS DIFFERENT

- **Record Base #2 is:**
  - a. acceptable
  - b. unstable
  - c. *short of the vestibule*
  - d. too thick
  - e. too sharp/rough

- **Record Base #5 is:**
  - a. acceptable
  - b. unstable
  - c. *short of the vestibule*
  - d. too thick
  - e. **too sharp/rough**

*Use Actual Casts, Not Photos*
ADVANTAGES OF MC OSCE TEMPLATES

- Can be used for teaching (formative, self-evaluation)
- Can be used to calibrate instructors
- Easily adapted to large groups
- Reduced resources/costs
- Minimizes effect of cheating
- Test higher levels
6 STEPS IN MAKING A TEMPLATE-BASED MCQ OSCE

1. Test Blueprint
2. Question TEMPLATES for each station
3. Select at least 4 ANSWER KEYS for each template
4. Make or find MATERIALS to fit each answer key
5. Calibrate the answers
6. Score & Analyze answers
1. TEST BLUEPRINT

- How many stations (one question/station)?
- How much time each station?
- What proportion each topic?
- Don’t ask written questions

<table>
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<tr>
<th>Topic</th>
<th># Stations (Total =34)</th>
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<tbody>
<tr>
<td>Anatomy</td>
<td>2</td>
</tr>
<tr>
<td>Impressions</td>
<td>2</td>
</tr>
<tr>
<td>Custom Trays</td>
<td>1</td>
</tr>
<tr>
<td>Record Bases</td>
<td>2</td>
</tr>
<tr>
<td>Anterior Tooth Arrangements</td>
<td>3</td>
</tr>
<tr>
<td>Denture Occlusion</td>
<td>4</td>
</tr>
</tbody>
</table>
TEST BLUEPRINT (DETAIL)

- Knowledge?
  - Application? Evaluation?
- What proportion each level?
- Ensures you teach all the topics you plan to test

<table>
<thead>
<tr>
<th>Topic</th>
<th># of Questions</th>
<th>Level</th>
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<tbody>
<tr>
<td>Anatomy</td>
<td>2</td>
<td>1  Knowledge</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1  Application</td>
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<tr>
<td>Impression s</td>
<td>4</td>
<td>2  Evaluation</td>
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<tr>
<td>Custom Trays</td>
<td>1</td>
<td>1  Evaluation</td>
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<tr>
<td>Record Bases</td>
<td>2</td>
<td>2  Evaluation</td>
</tr>
<tr>
<td>Anterior Tooth Arrangements</td>
<td>3</td>
<td>3  Evaluation</td>
</tr>
<tr>
<td>Denture Occlusion</td>
<td>8</td>
<td>4  Evaluation</td>
</tr>
</tbody>
</table>
2. CREATE QUESTION TEMPLATES FOR EACH EXAM STATION

- **Record Base #__ is:**
  a. acceptable
  b. unstable
  c. short of the vestibule
  d. too thick
  e. too sharp/rough
DON’T TEST SEMANTICS!

- Ensure terminology not open to interpretation
- The amalgam restoration on tooth # ___ has:
  a. an overcontour
  b. an overhang
  c. a defective proximal surface
- These distractors can all be different ways to describe the same problem!
USE SAME TOOTH NUMBER FOR MODELS TO MINIMIZE CHEATING

- If preparation/restoration on model is presented, ensure always on SAME TOOTH #
- Avoids students identifying correct answer by tooth #
- Anatomy of memorized exam questions: “MODL Amalgam#4.6 - overcontoured”
3. CREATE ANSWER KEYS

Record Base #__ is:
  a. acceptable
  b. unstable
  c. short of the vestibule
  d. too thick
  e. too sharp/rough

❖ Model #1 - Answer ‘b’
❖ Model #2 - Answer ‘a’
❖ Model #3 - Answer ‘d’
❖ Model #4 - Answer ‘e’

❖ Renumber models for exam
ANSWER KEYS FOR TEMPLATE

- Ensure clearly one error/answer
- Otherwise not reliable
- If several distractors could be correct, change model/template
- Ensure no borderline answers
4. MAKE OR FIND MODELS, PHOTOS, ETC

- Make items to correspond to answer keys you selected
- Make sure only one distractor is correct for each model
- Easier to cheat if the answer is always the same, even if the defects on the models are different
5. CALIBRATE ON THE ANSWER!

- Have several clinicians take test!
  - Without the answer key!
  - You won’t all agree!
  - Redo the photo/model/restoration/question until agreement
- Ensure no borderline answers
CALIBRATING ON THE TEST!

- You’ll become a more reliable marker in the pre-clinic and clinic
- Have clinical instructors help validate templates and assess reliability of answer keys
- Have clinical instructor identify problems in clinic that could be test items to help improve learning
FINDING/MAKING TEST MATERIAL!

- Have clinical instructors help you make preparations, models, photographs
- Keep student projects - you can’t duplicate their mistakes!
- Photoshop radiographs to improve answer keys
- Need to fabricate/duplicate models, restorations (cost)
LARGE GROUP OSCE EXAMS

- Photographic based - easiest
- Physical models with several circles (rooms) with duplicate stations
- Tools that help:
  - Good clinical camera + retractors, mirrors + training
  - Digital photo software (Photoshop Elements, iPhoto, etc) + training
STORAGE

- Keep materials together with templates
- Test Cups
- Boxes
6. SCORING MULTIPLE CHOICE EXAMS

- General Purpose NCS Sheet
- Evaluate/eliminate poor questions
CALIBRATION: LEARNING TOGETHER

- Create OSCE Questions Together
- Mark Assignments Together (it’s Faster) - RPD Designs
CALIBRATION: LEARNING TOGETHER

❖ **Study Clubs** - Get registered, Give CDE credits, use OSCE to calibrate & learn what is expected of students

❖ Working together:

❖ lightens loads
❖ builds teams
❖ improves student experience - assignments graded quickly
❖ everyone calibrated
OSCE'S CAN BE POWERFUL TEACHING TOOLS

Give Formative OSCE's (don’t count)
Allows Students to Get Familiar with Format
Efficient Way to Develop Clinical Judgement
OSCE'S FOR LEARNING

- Ob/Gyn residents created OSCE to prep for certification exams
- Students found OSCE development to be of educational benefit
- Perceived benefits to be greater than equivalent time spent in group study sessions

Windrim et al, J Obstet Gynaecol Can 2004; 26:815
OSCE'S FOR LEARNING

- Very positive response by students and teachers


- OSCE stimulated learning, resulting in greater achievement of specific clinical competence and a greater level of realistic self-assessment

OSCE'S FOR CONTINUED LEARNING

- OSCE has a role in Continuing Dental Education
- Used for self assessment
- GP's use for identifying other CDE programs to enrol in

VARIATIONS AND EXAMPLES

Resource:
NDEB Templates
(On-Line: http://www.ndeb.ca)
Using the probe, cast __, photographs ____, ____ and ____ answer the following question on the answer score sheet.

Question: 30 (Select ONE OR MORE correct answers.)
The all-ceramic restoration on tooth ____

A. is acceptable.
B. is overcontoured on the labial/buccal.
C. is overcontoured on the lingual.
D. has (an) unacceptable interproximal contact(s).
E. is too long incisally/occlusally.
F. is too short incisally/occlusally.
Using the print of radiograph ____, answer the following question on the answer score sheet.

**Question: 34** (Select ONE OR MORE correct answers.)
Based on the radiographic evidence, removal of caries and placement of a restoration is required on the following interproximal surface(s):

A. distal of tooth __.3.
B. mesial of tooth __.4.
C. distal of tooth __.4.
D. mesial of tooth __.5.
E. distal of tooth __.5.
F. mesial of tooth __.6.
G. distal of tooth __.6.
H. mesial of tooth __.7.
I. distal of tooth __.7.
J. mesial of tooth __.8.
K. distal of tooth __.8.
Using the print of radiograph ____ , answer the following question on the answer score sheet.

**Question:** 1 (Select ONE OR MORE correct answers.)
Which of the following may complicate the root canal treatment on tooth ____ ?

A. No complicating factors present.
B. Presence of accessory canals/canal subdivision.
C. Curved/atypical root morphology.
D. Pulp stones/calcification of the pulp chamber.
E. Calcification of root canal(s).
F. Internal resorption.
G. External resorption.
H. Extensive restoration.
I. Caries.
J. Rotated or tipped tooth.
K. Tooth fracture.
L. Open apex.
Using photographs ____ and ____, answer the following question on the answer score sheet. The age-appropriate mean and the patient-specific SNA and SNB measurements are provided.

| Photograph ____  | Photograph ____ |

Mean SNA = 82° Patient’s SNA = ____°
Mean SNB = 80° Patient’s SNB = ____°

**Question 39** (Select ONE correct answer.)
Based on the photographs and measurements provided, which of the following dental and skeletal relationships does the patient have?

A. Angle Class I
B. Angle Class II with maxillary prognathism.
C. Angle Class II with maxillary retrognathism.
D. Angle Class II with mandibular prognathism.
E. Angle Class II with mandibular retrognathism.
F. Angle Class III with maxillary prognathism.
G. Angle Class III with maxillary retrognathism.
H. Angle Class III with mandibular prognathism.
I. Angle Class III with mandibular retrognathism.
### TABLE/VALUE OSCE

<table>
<thead>
<tr>
<th>Photograph</th>
<th>Photograph</th>
<th>Radiograph</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Vestibular**
- Tooth
- Probing depth
- Recession
- Bleeding on probing

**Lingual**
- Tooth
- Probing depth
- Recession
- Bleeding on probing

**Mobility**
- Furcation

---

**Question: 18** (Select **ONE OR MORE** correct answers.)
Which of the following should be performed during the initial (Phase I) periodontal management of this patient?

- A. Periodontal debridement.
- B. Caries management.
- C. Oral hygiene instruction.
- D. Chlorhexidine mouth rinse therapy.
- E. Systemic antibiotic therapy.
- F. Extraction.
- G. Occlusal adjustment.
- H. Bite plane/mouth guard fabrication.
CASE-BASED OSCE'S

❖ History
❖ Signs & Symptoms
❖ Charted findings
❖ Radiograph(s)/Photo(s)
❖ Cast(s)
❖ Question

Patient Information:
- Age:
- Gender:
- Height: cm (ft/ins)
- Weight: kg (lbs)

Blood Pressure: / mmHg
Pulse Rate: bpm
Respiration Rate: /min
Temperature: °C (°F)

Chief Complaint:

History of Chief Complaint:

Dental History:

Medical History:
- Significant Findings:
- Current Medication:
- Allergies:
CASE-BASED HISTORY

- Signs & Symptoms
  - Point form
  - No extraneous info
  - Keep normal values normal

<table>
<thead>
<tr>
<th>Patient Information:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age:</td>
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<tr>
<td>Gender:</td>
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<td>Height: cm (ft/ins)</td>
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<td>Weight: kg (lbs)</td>
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<tr>
<td>Blood Pressure: / mmHg</td>
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<tr>
<td>Pulse Rate: bpm</td>
</tr>
<tr>
<td>Respiration Rate: /min</td>
</tr>
<tr>
<td>Temperature: °C (°F)</td>
</tr>
</tbody>
</table>

Chief Complaint:

History of Chief Complaint:

Dental History:

Medical History:
  - Significant Findings:
  - Current Medication:
  - Allergies:

Social/Family History:
  - Significant Findings:

Clinical Examination:
  - Significant Findings:
    - Extraoral:
    - Intraoral:
Using the following information and the print of radiograph ___, answer the following question on the answer score sheet.

**Patient Information:**
- Age: 58
- Gender: Male
- Height: 180cm (5'11")
- Weight: 70kg (154lbs)
- Blood Pressure: 120/80 mmHg
- Pulse Rate: 72 bpm
- Respiration Rate: 14/min
- Temperature: 37°C (98.6°F)

**Chief Complaint:**
“My dentures are loose.”

**History of Chief Complaint:**
Has noticed looseness increasing for past 2 years.

**Dental History:**
Present dentures 20 years old.

**Medical History:**
- Significant Findings: None
- Current Medication: None
- Allergies: None

**Social/Family History:**
- Significant Findings: Smoker, ½ package/day for past 20 years.
  Alcohol consumption: 7 drinks/week.

**Clinical Examination:**
- Significant Findings:
  - Extraoral: None
  - Intraoral: See chart.

**Sample Question:** 2 (Select ONE correct answer.)
Which of the following is the most likely anatomical structure/diagnosis for the radiographic entity indicated by the arrow(s)?

A. Normal tooth.
B. Calcifying tooth crown.
C. Developing root apex.
D. Hypercementosis.
E. Attrition.
F. Tooth fracture.
G. Rarefying osteitis/periradicular periodontitis.
H. Periapical cemento-osseous dysplasia.
I. Odontoma.
J. Dens invaginatus/dens-in-dente.
K. Dentin dysplasia.
L. Dentinogenesis imperfecta.
M. Amelogenesis imperfecta.
N. Enamel hypoplasia/Turner’s tooth.
O. Regional odontodysplasia.
## CASE - ACTIVITY - PRESCRIPTIONS

### Creation

| DOCTOR XXX XXXX  |
| 100 ANYWHERE STREET |
| ANYWHERE CITY, CANADA |

**NAME:**

**DATE:**

**ADDRESS:**

**Rx**

- [ ] NO REPEAT
- [ ] REPEAT ___ TIME(S)

**SIGNATURE XXXXXXXXXXXX**

(DO NOT SIGN PRESCRIPTION)
### CASE-BASED CHARTS & TABLES

#### Vestibular

<table>
<thead>
<tr>
<th>Tooth</th>
<th>2.4</th>
<th>2.5</th>
<th>2.6</th>
<th>2.7</th>
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<tr>
<td>Probing depth</td>
<td>3.2</td>
<td>4.5</td>
<td>4.4</td>
<td>4.7</td>
<td>4.6</td>
</tr>
<tr>
<td>Recession</td>
<td>3.3</td>
<td>3.3</td>
<td>3.3</td>
<td></td>
<td></td>
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<tr>
<td>Bleeding on probing</td>
<td>• •</td>
<td>• •</td>
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#### Lingual

<table>
<thead>
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<th>Tooth</th>
<th>2.4</th>
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<td>Recession</td>
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#### Mobility

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<tr>
<th>Furcation</th>
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<tbody>
<tr>
<td>Mobility</td>
<td>D-II</td>
<td>B-III</td>
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<tr>
<td></td>
<td>M-III</td>
<td></td>
</tr>
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#### Mover's prediction values (75% level)

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<tr>
<th>Total Mandibular-Incisor Width</th>
<th>19.5</th>
<th>20.0</th>
<th>20.5</th>
<th>21.0</th>
<th>21.5</th>
<th>22.0</th>
<th>22.5</th>
<th>23.0</th>
<th>23.5</th>
<th>24.0</th>
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</thead>
<tbody>
<tr>
<td>Predicted width of canines and premolars Maxilla</td>
<td>20.6</td>
<td>20.9</td>
<td>21.2</td>
<td>21.3</td>
<td>21.8</td>
<td>22.0</td>
<td>22.3</td>
<td>22.6</td>
<td>22.9</td>
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<tr>
<td>Mandible</td>
<td>20.4</td>
<td>20.7</td>
<td>21.0</td>
<td>21.3</td>
<td>21.6</td>
<td>21.9</td>
<td>22.2</td>
<td>22.5</td>
<td>22.8</td>
<td></td>
</tr>
</tbody>
</table>

| Total Mandibular-Incisor Width | 24.5 | 25.0 | 25.5 | 26.0 | 26.5 | 27.0 | 27.5 | 28.0 | 28.5 | 29.0 |
| Predicted width of canines and premolars Maxilla | 23.4 | 23.7 | 24.0 | 24.2 | 24.5 | 24.8 | 25.0 | 25.3 | 25.6 | 25.9 |
| Mandible | 23.4 | 23.7 | 24.0 | 24.3 | 24.6 | 24.8 | 25.1 | 25.4 | 25.7 |
IDEAS FOR OSCE TEMPLATES

- NDEB Templates are online
- Available to all students
- May be helpful for formatting your own
- [http://www.ndeb.ca/sites/default/files/OBJECTIVE%20STRUCTURED%20CLINICAL%20EXAMINATION.pdf](http://www.ndeb.ca/sites/default/files/OBJECTIVE%20STRUCTURED%20CLINICAL%20EXAMINATION.pdf)
CASE-BASED TIPS

- Don’t include distractors that will never be selected
- Don’t include distractors that will almost never be wrong (OHI, nutrition counselling, make radiograph, etc.)
SOME IDEAS

Analysis:

- Which photo shows the best ergonomics for ..... 
- Video of emergency scenario - what next? 
- Your ideas?
OSCE TEMPLATE EXAMS

- Test higher levels of knowledge
- Minimize effect of cheating
- Can be used for teaching, calibration
- Easily adapted to large groups
- Reduced resources/costs for OSCE's
- More time creating than marking
- Once formatted, easy to change each exam

And remember ...
ALL EXAMS ARE AN ESTIMATE OF WHAT A STUDENT KNOWS

You Can’t Test Everything

OSCE exams Can Be Good Tools

Use For Learning & Testing

Assess Many Ways - Not Just OSCE
THANK YOU

Come Visit in Halifax