



CENTRAL REGIONAL DENTAL TESTING SERVICE, INC.

**SIMULATED PATIENT EXAMINATIONS
FOR DENTAL AND DENTAL HYGIENE**

CRDTS SIMULATED PATIENT EXAMINATIONS 2020

- **7 DENTAL SIMULATED PATIENT EXAMS ADMINISTERED**
- **12 DENTAL HYGIENE SIMULATED PATIENT EXAMS IN 2020 EXAM SEASON**
- **PASS RATES IN LINE WITH CURRENT PATIENT-BASED RATES OR BETTER**
- **MULTI-LEVEL FEED BACK FROM FACULTY, EXAMINERS & CANDIDATES = GOOD SIMULATION**
 - **2021 GOALS – color & placement of calculus, hardness of teeth**
- **CURRENTLY ACCEPTED BY ~16 STATES, MORE TO FOLLOW**

CRDTS SIMULATED PATIENT EXAMINATIONS 2020

MEAN SCORE BY PROC

Ant Composite Prep	90.4
Ant Composite Finish	96.3
Amalgam Prep I	97.4
Amalgam Finish I	87.9
Amalgam Prep II	93.0
Amalgam Finish II	96.2
Class II Comp Prep	89.1
Class II Comp Finish	94.7
Class II Comp Prep	94.5
Class II Comp Finish	91.4
Perio	94.2

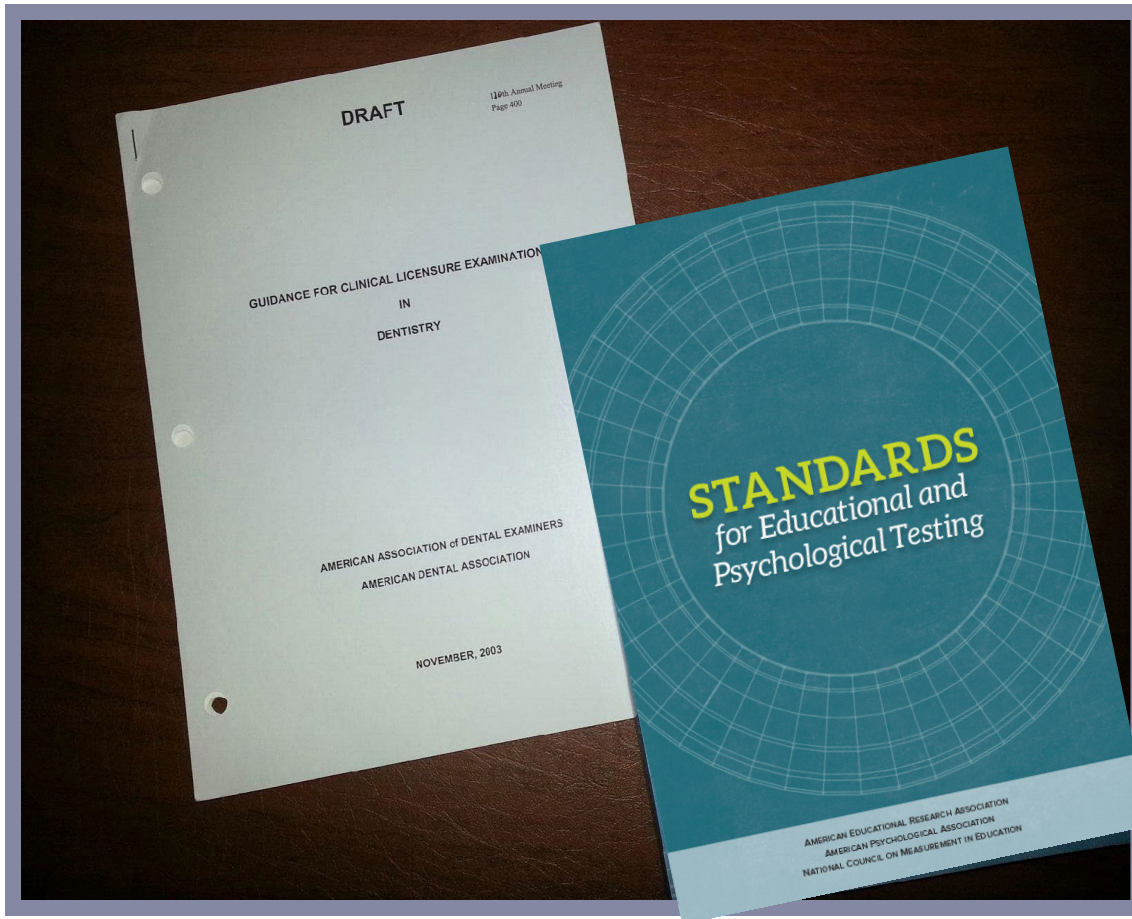
DENTAL

DENTAL HYGIENE

MEAN SCORE BY PROC

Oral Evaluation (16)	13.01
Calculus Detection (16)	10.37
Perio Measures (12)	10.87
Scaling (60)	56.47
Total Clinical	90.72

Clinical Licensure Exams: Examination Development



Reference book:
*Standards for Educational
& Psychological Testing
(2014)*

AADB used to develop:
*Guidance for Clinical
Licensure Examinations
in Dentistry (2003)*

Examination Development

Content

- Knowledge, Skills, Abilities and Judgments to be Evaluated

Performance Criteria

Scoring System

Administrative Format

Examiner Calibration

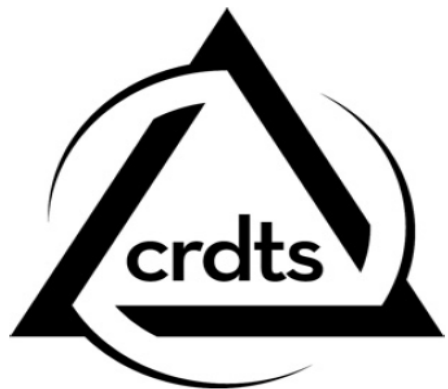
Occupational Analysis Conducted every 8-10 years – determines content

- » 2018 Dental & Dental Hygiene Occupational Analysis
- » Joint project with Western Regional Examining Board (WREB)

OCCUPATIONAL ANALYSIS

As recommended by Dr. Thomas Haladyna in the 2010 Technical Reports, CRDTS has launched separate, simultaneous projects to complete an Occupational Analysis for both dentistry and dental hygiene. In a conference call meeting May 10, the Steering Committee approved a proposed budget, a contract with a measurement specialist and a list of nominees to serve as Subject Matter Experts (SME's). Dr. Gene Kramer, whom many may know as the former measurement specialist for the ADA Joint Commission on National Dental Examinations, has retired from the ADA and has been retained to serve as the measurement specialist for these projects.

Seven dental hygienists were approved to serve as SME's. They are Diann Bomkamp, Penny Fudally, Jane Lott, Denise Maus, Joan McKee, Marti Pollard and Liz Thompson. Dr. Kramer suggested that two SME's be selected to represent each of the disciplines in the dental exam. The eight dental SME's are *Endodontics*: Drs. Clyde Andrews and Bob Patta-lochi; *Prosthodontics*: Drs. Steve Holcomb and Myron Pudwill; *Periodontics*: Drs. Gay Derderian and Joe Unger; *Restorative*: Drs. John Cosby and Tom Cavel. Both our professional and administrative staff will be providing support for the two groups.



CRDTS' National Dental Examination

Technical Report

for the

Year Ending 2017

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Technical Report 3rd Party Evaluation of Examinations, CRDTS publishes online

Examiners

State Board Members from Member States

Deputy Examiners referred to CRDTS by Member State Boards

Exchange Examiners from other Regional Testing Agencies

Selection Criteria

- Experienced practitioners and/or educators w/ acceptable credentials
- Available and willing to participate in 2-3 exams/year
- Demonstrate the ability to be calibrated
- Understand and apply CRDTS criteria appropriately
- Accept critique feedback and adjust accordingly

3 examiners independently evaluate all candidate performance

Observers often present

Examiner Profiles

Electronic Scoring Devices (ESD's) capture and record every mark made by each and every examiner during an examination.

Every examiner's performance is analyzed and profiled each year to assess their reliability.

Examiner Assignment and Evaluation Committee reviews each individual profile every year before assigning examiners.

- May remediate, reassign or terminate an examiner.

Examiners receive their individual profiles at CRDTS' annual meeting and use them as a self-assessment.

Comprehensive Statistical Analysis

ERC ANALYSIS

- Evaluates each section of the exam
- Screens for Construct Irrelevant Variance

ANNUAL SCHOOLS' REPORT

- Failure Rates, Average Scores, Frequency of Specific Errors, Penalties

EXAMINER PROFILES

- Hygiene, Perio, Restorative, Manikin
- Pass/Fail Agreement, Error Detection, Peer Evaluations

TECHNICAL & OCCUPATIONAL REPORTS

CRDTS SIMULATED PATIENT EXAMINATIONS

History & Development

Initially developed as a remediation/re-licensure resource for State Boards

Content, criteria and scoring are identical to current dental examination components

Psychometric data dating back to 2006

Procedures supported by data from current Occupational Analysis

**CRDTS
SIMULATED
PATIENT
DENTAL
EXAMINATION
SECTIONS**

**PART II - ENDODONTIC
PROCEDURES**

**PART III - PROSTHODONTIC
PROCEDURES***

**PART IV - PERIODONTAL
PROCEDURES**

**PART V - RESTORATIVE
PROCEDURES**

***Moving to all zirconia materials for 2021**

Scoring System

Criterion based

Conjunctive Scoring System

4 Levels for Rating Restorative Competency

Periodontal – dichotomous scoring (Yes/No)

3 independent scorers

Competency Levels & Criteria

Satisfactory

**Minimally
Acceptable**

**Marginally
Substandard**

**Critically
Deficient**

Objective, measurable criteria developed for each rating by a panel of experts consisting of examiners, practitioners, and educators

SCORING

Scoring methodologies were developed with consultation from various measurement specialists such as the Rand Corporation and with input from studies completed by testing specialists from the University of Chicago

- Continual review of these items is conducted independently as well

3 examiners conduct separate, independent evaluations & assign a score for each criteria rating

Corroboration by at least 2 of the 3 examiners before points deducted or zero/failing score assigned

- Median score is assigned in the absence of corroboration for Restorative Procedures

**CRDTS
SIMULATED
PATIENT DENTAL
EXAMINATION:**

**PART II -
ENDODONTIC
SECTION**

- ▶ **ANTERIOR ENDODONTIC PROCEDURE**
 - ▶ **TOOTH # 8**
- ▶ **ACCESS OPENING**
- ▶ **INSTRUMENTATION**
- ▶ **OBTURATION**

- ▶ **POSTERIOR ENDODONTIC PROCEDURE**
 - ▶ **TOOTH #14**
- ▶ **ACCESS OPENING ONLY**

- ▶ **TREATMENT MANAGEMENT FOR ALL PROCEDURES**
 - ▶ **PENALTY ONLY**

ENDODONTIC MODULES



**TOOTH # 8 OPENING
AND OBTURATION OF
CANAL GRADED**



ENDODONTIC TYPODONT

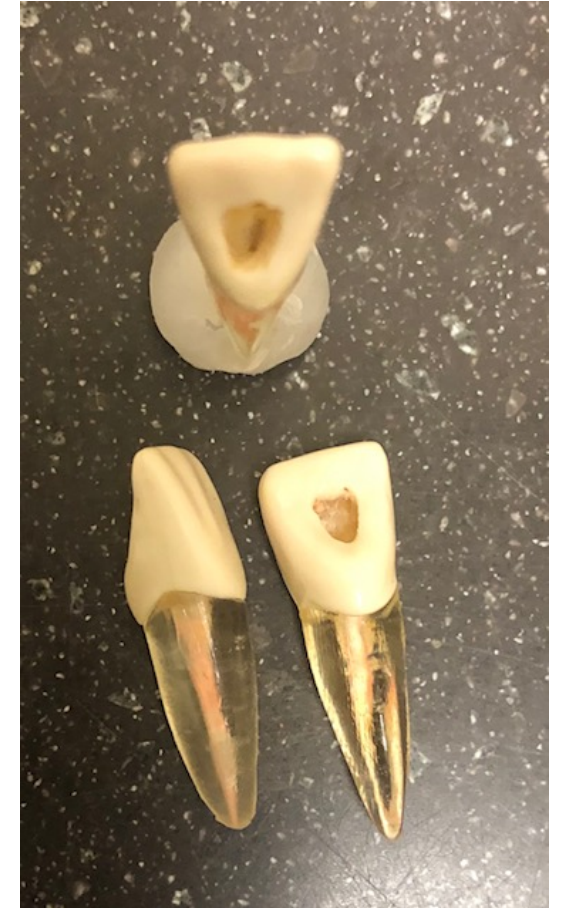


**TOOTH # 14 OPENING
AND DEBRIDMENT OF THE
PULP CHAMBER GRADED**

ANTERIOR ENDODONTIC CRITERIA CATEGORIES

- ▶ **ACCESS OPENING**
- ▶ **PLACEMENT OF OPENING**
- ▶ **SIZE OF OPENING**
- ▶ **INTERNAL FORM**
- ▶ **PULP HORN REMOVAL**
- ▶ **CANAL INSTRUMENTATION**
- ▶ **CERVICAL PORTION**
- ▶ **MID-ROOT PORTION**
- ▶ **APICAL PORTION**
- ▶ **ROOT CANAL OBTURATION**
- ▶ **OVERFIL/UNDERFIL**
- ▶ **EXTRUDED SEALER**
- ▶ **VOIDS IN GUTTA PERCHA**
- ▶ **CORONAL FILL/APICAL TO CEJ**
- ▶ **SEPARATED FILE**

ANTERIOR ENDODONTIC MODULES TOOTH # 8



**POSTERIOR
ENDODONTIC
CRITERIA
CATEGORIES**

ACCESS OPENING ONLY

PLACEMENT

SIZE

INTEGRITY OF OCCLUSAL ANATONY

INTERNAL FROM

PULP HORN REMOVAL

POSTERIOR ENDODONTIC MODULES TOOTH # 14



CRDTS SIMULATED PATIENT DENTAL EXAMINATION:

PART III - PROSTHODONTIC SECTION*

- ▶ CERAMIC CROWN PREPARATION
 - ▶ TOOTH # 9
- ▶ PORCELAIN FUSED TO METAL PREPARATION
 - ▶ TOOTH # 5
- ▶ CAST CROWN PREPARATION
 - ▶ TOOTH # 3
- ▶ BRIDGE DRAW FACTOR
 - ▶ TEETH # 3 - # 5
- ▶ TREATMENT MANAGEMENT FOR ALL PROCEDURES
 - ▶ PENALTY ONLY

***Moving to all zirconia materials in 2021**

CRDTS SIMULATED PATIENT DENTAL EXAMINATION: PART III - PROSTHODONTIC SECTION MODULES



**CERAMIC
CROWN # 9
CRITERIA
CATEGORIES**

MARGIN EXTENTION

MARGIN DEFINITION

LINE OF DRAW

AXIAL WALLS – SMOOTHNESS/UNDERCUTS

TAPER

CERVICAL MARGIN WIDTH

INCISAL REDUCTION

LINGUAL FOSSA REDUCTION

LINGUAL WALL HEIGHT

FACIAL AXIAL REDUCTION

EXTERNAL/INTERNAL LINE ANGLES

ALL CERAMIC CROWN #9



**PORCELAIN
FUSED TO
METAL
CRITERIA
CATEGORIES**

MARGIN EXTENTION

MARGIN DEFINITION

LINE OF DRAW

AXIAL WALLS – SMOOTHNESS/UNDERCUT

TAPER

FACIAL SHOULDERWIDTH

FACIAL AXIAL REDUCTION

OCCUSAL AXIAL REDUCTION

INTERNAL LINE ANGLES

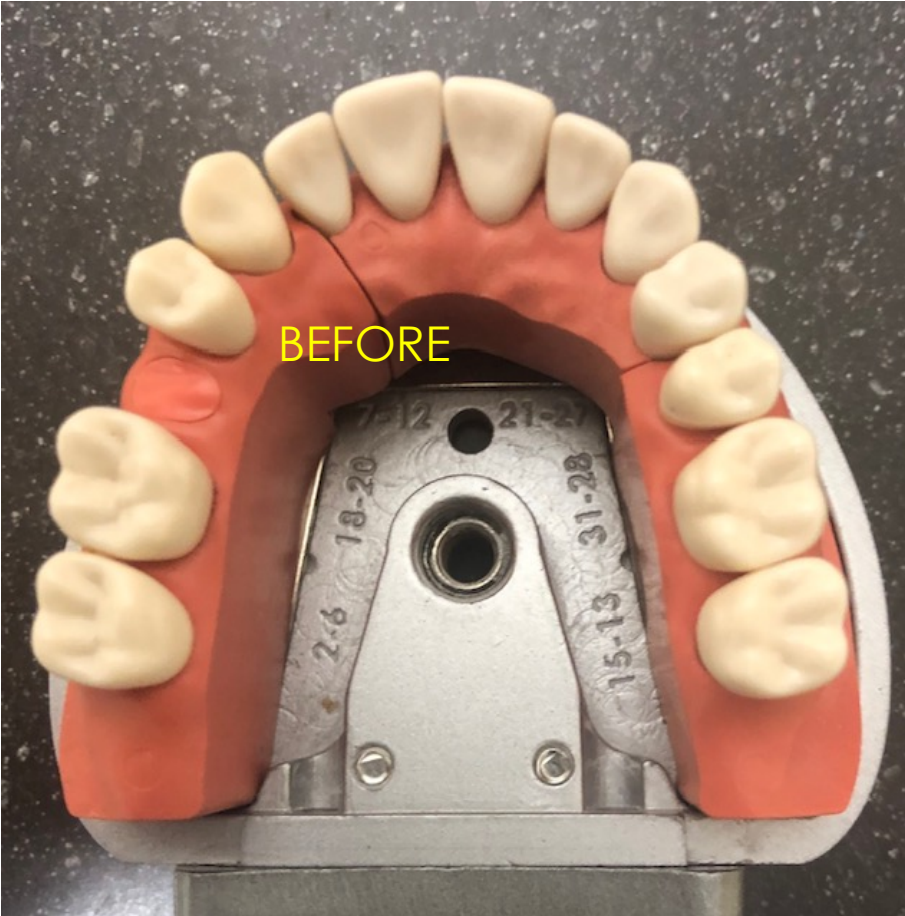
OCCLUSAL ANATOMY

MARGIN EXTENTION

MARGINDEFINITION

LINE OF DRAW

PORCELAIN FUSED TO METAL PREPARATION TOOTH # 5



**CAST GOLD
CROWN # 3
CRITERIA
CATEGORIES**

MARGIN EXTENTION

MARGIN DEFINITION

LINE OF DRAW

AXIAL WALLS – SMOOTHNESS/UNDERCUT

TAPER

CERVICAL FINISH LINE

OCCLUSAL/AXIAL REDUCTION

INTERNAL LINE ANGLES

OCCLUSAL ANATOMY

CAST GOLD CROWN TOOTH # 3



BRIDGE
FRACTOR
CRITERIA
CATEGORIES

BRIDGE DRAW FACTOR

BRIDGE WILL DRAW

BRIDGE WILL DRAW WITH ALTERED PATH

OF INSERTION

**BRIDGE WILL NOT DRAW DUE TO
UNDERCUTS**

**OR ANY ALTERED PATH OF INSERTION -
100 Point Deduction**

BRIDGE FACTOR TEETH # 3 - # 5



CRDTS SIMULATED PATIENT DENTAL EXAMINATION PART IV - PERIODONTAL SECTION



PART IV - PERIODONTAL SECTION CONTENT

- ▶ **CALCULUS DETECTION**
- ▶ **PROBING DEPTHS**
- ▶ **CALCULUS REMOVAL**
- ▶ **SUPRAGINGIVAL DEPOSIT REMOVAL**
- ▶ **TISSUE AND TREATMENT MANAGEMENT**

CRDTS SIMULATED PATIENT DENTAL EXAMINATION:

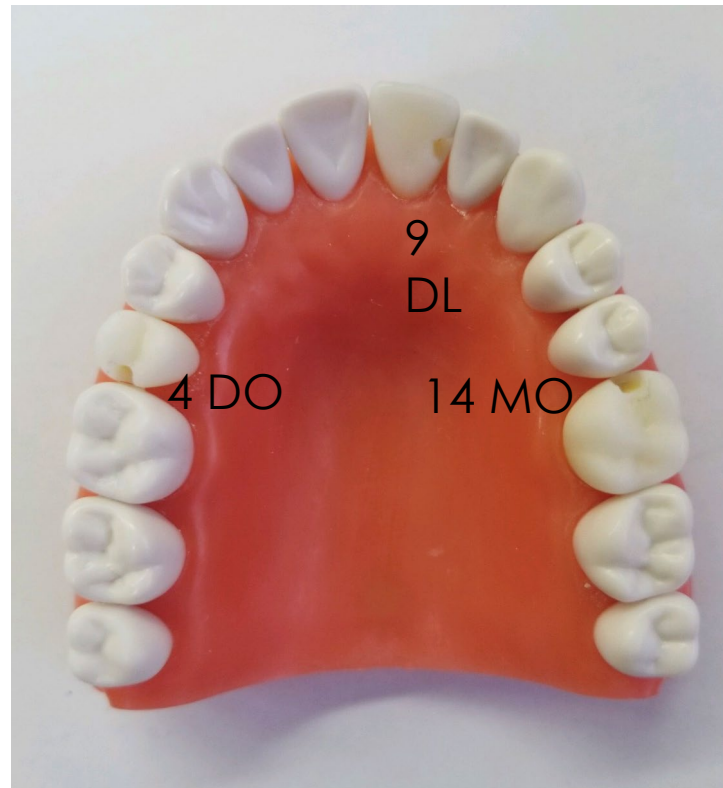
PART V - RESTORATIVE SECTION

- ▶ CLASS II PREPARATION DO #4 WITH SIMULATED DECAY
- ▶ CLASS II PREPARATION MO # 14 WITH SIMULATED DECAY
- ▶ CLASS III PREPARATION DL # 9 TOOTH WITH SIMULATED DECAY
- ▶ CLASS II RESTORATION MO #18 STANDARDIZED PREPARATION
- ▶ CLASS II RESTORATION DO # 28 STANDARDIZED PREPARATION
- ▶ CLASS III RESTORATION DL # 23 STANDARDIZED PREPARATION
- ▶ TREATMENT MANAGEMENT FOR ALL PROCEDURES
 - ▶ PENALTY ONLY

CRDTS RESTORATIVE ACADENTAL ModuPro TYPODONT



UNPREPARED MAXILLARY TYPODONT



PREPS TO BE GRADED



STANARDIZED PREPS TO BE RESTORED
WITH AMALGAM OR COMPOSITE AND
GRADED

RESTORATIVE MANIKIN PREPARATIONS

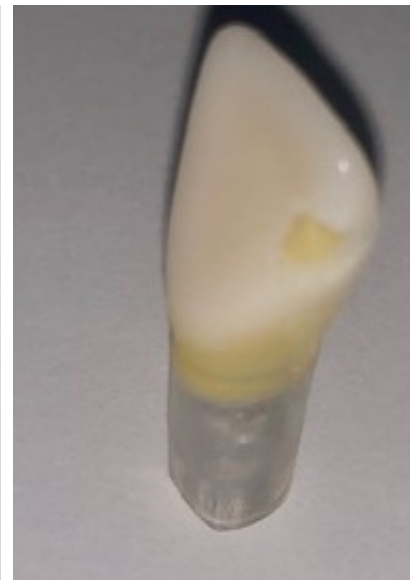
▶ TOOTH # 4 MESIAL OCCUSAL



UNPREPARED TOOTH

PREPARED TOOTH

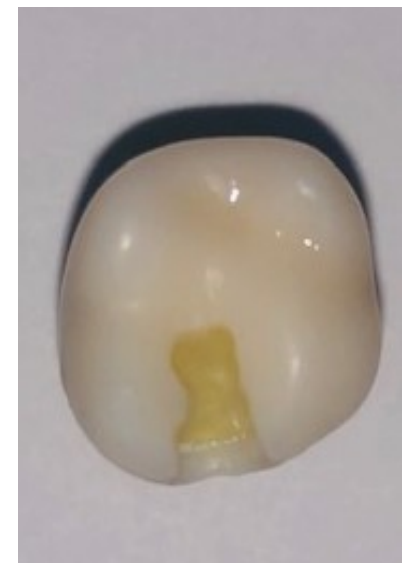
▶ TOOTH # 9 DISTAL LINGUAL



UNPREPARED TOOTH

PREPARED TOOTH

▶ TOOTH #14 MESIAL OCCUSAL



UNPREPARED TOOTH

PREPARED TOOTH

Candidates are informed that decay extends to or beyond DEJ radiographically

**CLASS II
PREPARATION
CRITERIA
CATEGORIES**

PROXIMAL CLEARANCE

GINGIVAL CLEARANCE

OUTLINE SHAPE/CONTINUITY/EXTENSION

ISTHMUS

CAVOSURFACE MARGIN

SOUND MARGINAL TOOTH STRUCTURE

INTERPROXIMAL CONTACT

ANATOMY/CONTOUR

AXIAL WALLS

PULPAL FLOOR

CARIES REMAINING

PROXIMAL BOX WALLS

PREPARED SURFACES

**CLASS III
PREPARATION
CRITERIA
CATEGORIES**

OUTLINE EXTENTION

GINGIVAL CONTACT

MARGIN SMOOTHNESS/CONTINUITY/BEVELS

SOUND MARGINAL TOOTH STRUCTURE

AXIAL WALLS

INTERNAL RESISTANCE

CARIES REMAINING

MANDIBULAR MANIKIN RESTORATIONS PLACED ON PRE-PREPARED TEETH

**TOOTH # 18
MESIAL OCCUSAL
AMALGAM OR COMPOSITE**



**TOOTH # 29
DISTAL OCCUSAL
AMALGAM OR COMPOSITE**



**TOOTH # 23
DISTAL LINGUAL
COMPOSITE**



**CLASS II
RESTORATION
CRITERIA
CATEGORIES**

MARGIN DEFICIENCY

MARGIN EXCESS

GINGIVAL OVERHANG

SURFACE FINISH

CONTIGUOUS TOOTH STRUCTURE

INTERPROXIMAL CONTACT

CENTRIC/EXCURSIVE CONTACTS

ANATOMY/CONTOUR

**CLASS III
RESTORATION
CRITERIA
CATEGORIES**

MARGIN DEFICIENCY

MARGIN EXCESS

GINGIVAL OVERHANG

SURFACE FINISH

CONTIGIOUS TOOTH STRUCTURE

SHADE SELECTION

INTERPROXIMAL CONTACT

CENTRIC/EXCURSIVE CONTACTS

ANATOMY/CONTOUR

SIMULATED PATIENT DENTAL EXAMINATION SCHEDULE

- ▶ **PART II – ENDODONTIC PROCEDURES**
 - ▶ **3 HOURS**
- ▶ **PART III – PROSTHODONTIC PROCEDURES**
 - ▶ **4 HOURS**
- ▶ **PART IV – PERIODONTAL PROCEDURES**
- ▶ **PART V – RESTORATIVE PROCEDURES**
 - ▶ **Open Schedule Format 8-5 PM**
- ▶ **PERIODONTAL ONLY – 3 HOURS**
- ▶ **RESTORATIVE ONLY – 6 HOURS**

CRDTS SIMULATED PATIENT DENTAL HYGIENE EXAMINATION



**CRDTS
SIMULATED
PATIENT DH
EXAM
CONTENT**

- ▶ **EXTRA/INTRA-ORAL ASSESSMENT**
 - ▶ **Written Exam during COVID**
- ▶ **CALCULUS DETECTION**
- ▶ **PROBING DEPTHS**
- ▶ **CALCULUS REMOVAL**
- ▶ **TISSUE AND TREATMENT MANAGEMENT**

**CENTRAL REGIONAL DENTAL TESTING SERVICE
ALL MANIKIN DENTAL
EXAMINATION**

QUESTIONS?

Kimber Cobb, Executive Director
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October 16, 2020

Members of the Utah Dental Board,

Thank you for allowing us to meet and discuss the future of licensure examination with you. The Covid-19 pandemic has brought with it many challenges involving patient care, and that includes the administering of licensure exams. Due to this unique situation, we are advocating for solutions that not only address the concerns posed by covid, but that are also a higher standard than the live-patient exams used currently. As dental school clinics operate with modified schedules, it is critical to change the current licensure requirements to ensure students can obtain a licensure in a timely, ethical, and reliable manner now and in the future.

We urge you to consider accepting the following alternatives:

- American Board of Dental Examiners (ADEX) CompeDont DTX.
- Central Regional Dental Testing Services (CRDTS) all manikin exam.
- Southern Regional Testing Agency (SRTA) manikin-based restorative skills module.
- Western Regional Examining Board (WREB) manikin simulation exam.
- Dental Licensure Objective Structured Clinical Examination (DLOSCE).
- Post doctoral training (12 month General Practice Residency and Advanced Education in General Dentistry completion).

Introduction

COVID-19 continues to devastate the country and may continue to prevent the standard administration of traditional patient-based exams. In response to these extraordinary times, we appreciated your willingness to accept some of these alternative examinations for the graduating class of 2020.

However, the current human-based licensure examinations have significant shortcomings. The use of human subjects in live clinical testing scenarios should no longer have a place in the dental profession's new normal. Eighty-two percent of surveyed dental school deans agree it's time to move forward and studies continuously demonstrate the inherent flaws in patient-based exams.³ It is time to modernize the dental licensure process and eliminate the use of live patients in the licensure process. An ideal licensure exam does not use human subjects in a live clinical testing scenario, is psychometrically valid and reliable, is reflective of the scope of current dental practice, and is universally accepted. We would like to expand upon these as the board makes the decision for licensure requirements.

Human Subjects are Inadequate at Measuring Competence

Using human subjects in a live clinical testing scenario poses complications immediately. We will discuss the impossibility to standardize human-based examinations, the ethical dilemmas posed from human-based examinations, and the professional isolation created.

Standardization

No two human patients are anatomically, physiologically, pathologically, and psychologically identical, making standardization impossible. This lack of standardization is seen in a study that examined the reliability coefficients of clinical licensure exams. A test with a reliability coefficient of 0.70 would fail about 3 percent of those who should have passed. However, a reliability coefficient of 0.70 is considered acceptable. The current testing system uses a reliability coefficient of 0.40, which misclassifies at least 20 percent of candidates who must retake the examination, plus an unknown number of candidates who pass the tests by luck and should not have been granted a license.⁷ It is safe to say an outcome determined by luck should not result in being granted a dental license.

Utilizing human patient examinations results in every candidate being administered a different test with unpredictable outcomes. Studies have shown that dental students who performed at the top of their class would still fail the licensure examinations on live patients. Regional boards reported that most candidates that failed their licensure exams were able to pass within 12 months of their failed result.¹⁴ This is concerning as these candidates have usually already

graduated from their dental program and have not needed to do any remedial work to prove competence. This further emphasizes that lack of reliability to the test results.

An ideal licensure exam is standardized across the board for all candidates taking the examination. Only in this way can the results of the examination be trusted, and the public can be fully protected from incompetence.

Ethical Dilemmas

“Is it ethical to use human subjects for the purpose of discovering incompetence?”²⁰ ADEA put out a statement in 2011, “by the year 2015, the live patient exam for dental licensure should be eliminated, and all states should offer methods of licensure in dentistry that include advanced education of at least one year, portfolio assessment, and/or other non-live patient-based methods and include independent third-party assessment.”⁹ ASDA put forth a statement as well, stating “ASDA continues to fully support the elimination of live patients in its current format for the use of initial clinical licensure. How can we continue to allow an examination process that encourages marginally unethical behavior from students?” and, “ASDA believes a one-shot, high-stakes examination places undue stress on the candidate, and this stress can play a negative role in achieving competent care for the patient. These stresses are not typically encountered in a normal practice setting and therefore decrease both the ethical integrity and reliability of the exam.”^{4,3} The American Dental Association Council on Ethics and Bylaws and Judicial Affairs stated their position for the “elimination of human subjects/patients in the clinical licensure examination process.”⁸ The statement was based upon ethical concerns related to live patient examinations. These include disrupting timeliness of treatment, the controversy of unnecessary treatment, obtaining appropriate patient informed consent, the barriers to patient follow-up care, and moral distress placed upon students.

Live patient exams disrupt the timeliness of necessary treatments, where patient needs may be placed in a lower level of priority in order to prioritize an ideal carious lesion for a board examination. Basic principles of comprehensive treatment is to address the patient’s chief concern and then address more urgent needs in order of priority and urgency. Carious lesions needed for licensure examinations could be classified as initial or moderate, and are usually of

not top treatment priority for patients that qualify to be treated. If an examination is meant to assess the competence of the candidates taking the exam, then appropriately sequenced patient care should not be overlooked during these examinations.

It is known that up to 10 percent of teeth with enamel radiolucencies are cavitated, and the other 90 percent could have arrested carious lesions, active caries, or remineralization. For the WREB class II requirements, caries must have penetrated the DEJ or be clearly definable in the enamel reaching the DEJ radiographically, allowing E2, D1, D2, or D3 lesions for the exam. Because a timeline cannot be established to assess growth, or lack thereof, of a carious lesion, doing class II or class III restorations on these radiographic lesions can be unnecessary treatment for patients. For lesions that are in the enamel that extend to the DEJ, there is a 4 percent chance that lesion is cavitated, and the percentage doubles after a 30 month follow-up period. At this stage of carious progression, remineralization is possible. If the lesion is in dentin radiographically, there is a 20 percent chance the lesion is cavitated, and that percentage increases to 44 percent chance of cavitation after 30 months.⁵ Using a radiolucent lesion to justify restorative treatment is not adequate, or ethical, on its own to justify treatment. Radiographs are a diagnostic tool that should be coupled with the dentist's critical thinking and assessment of the patient. With the paradigm of dentistry shifting to minimally invasive restorative care, it is even more important to emphasize these principles during licensing examinations.

Demineralized surfaces of teeth can be remineralized using biochemical principles. If the enamel surface is not cavitated in E1, E2, and D1 lesions, then remineralization is possible. In fact, "surgical treatment when the sub-surface of enamel is demineralized but the surface remains intact is neither necessary nor ethical."²⁹ Evidence-based dentistry points to treating a tooth when caries extends to the D1 classification in a high caries risk individual, or the D2 classification for all caries risk groups.¹⁸ Therefore, patients can be overtreated for the purposes of being an ideal patient for the licensing examination situation. Usually, these patients are not told there are other treatment options besides restorative treatment, including the means to remineralize the tooth. Because of this, informed consent isn't properly obtained for the sake of having a patient be present for the high-stakes examination.

Since the dental student who performs the procedure on the patient will be graduating shortly, follow-up care with the patient is hindered. It is common for board patients to only come to receive free dental care during the board examination, and their comprehensive treatment will not be followed up with. Comprehensive treatment is not emphasized with this method of examination and patients can suffer for it.

Each time a candidate fails a clinical licensure examination on a patient, that patient is potentially left with a restoration or periodontal condition that is below the standard of care. Failures in restorative procedures typically mean that the patient has had irreversible harm rendered to them. Is there justification for examinations that carry the potential for corruption and may not always have the patient's best interests in mind? Are there processes in place to ensure these patients are followed up with for the time following the exam? ^{13,21,28}

These types of examinations needlessly place candidates in positions of moral distress and ethical shortcomings. By taking the importance away from comprehensive treatment planning ethical burdens arise. Candidates may perform the following questionable practices in order to meet the requirements of having a qualified board patient. A study regarding ethical lapses on licensure examinations reported the following:

- 19.3 percent of students were aware of classmates who prematurely treated a lesion for examination purposes
- 8 percent reported knowing classmates who purposefully created a lesion for the exam
- 32.5 percent reported knowledge of unnecessary radiographs
- 13.7 percent reported knowledge of instances where a patient was coerced into a treatment choice that would have otherwise not been recommended
- 23.9% reported they had neglected to make arrangements for follow-up care despite the fact that it was necessary for the patient¹³

An ideal licensure exam would not pose ethical dilemmas because it will not involve the use of human-subjects to test for competence. Human patients should not be given borderline unethical treatment recommendations, overlooked for comprehensive patients, and possibly harmed due to incompetence. Even though not every patient receives unethical treatment, even one patient

being exposed to unethical treatment is enough to stop the practice of using human subjects. Although patient-based exams have historically been the norm for dentistry, it is time to catch up with the available evidence and modernize the way dentistry assesses competence and delivers clinical licensure exams.

Professional Isolation

The goal of licensing healthcare providers is to protect the public from unqualified practitioners.¹ Using live patients for licensing exams isolates dentistry from other professionals of the healthcare community. No state in the United States of America requires live patient licensure exams for physicians to practice, and this includes medical surgeons.²⁰ However, Cosmetology licenses in Utah require a live-patient examination.²⁷ With the modernization of dentistry representing oral healthcare, it is even more important to be united with other healthcare colleagues and professions. Throughout the four-year program of dental school, typically a minimum of two years are spent treating patients in a clinical setting. Dental students are attended by licensed dentists who ensure the student is able to reach a level of competence before graduation. Dental students are adequately trained if they are in a CODA-accredited program to treat patients that are anatomically, physiologically, pathologically, and psychologically different. The dental school curriculum, which must conform to the standards set by CODA, is robust and thorough. The breadth and depth of the education is continually scrutinized and modified to ensure that new dentists have the knowledge and skills to practice to the standard of care in each and every discipline of dentistry. Patient management is an integral part of dental curriculum and is reinforced daily in the dental clinic under the supervision of teaching dentists. This holds more bearing than a one-time, high-stakes examination in proving competence. Therefore, the patient-based dental licensure examinations are not testing candidates on their ability to treat patients, but rather their ability to handle a high-stakes, one-time examination.

Rather than isolating dentistry from the rest of the healthcare world, we should aim to join arms. The public deserves to see dentistry as oral healthcare rather than tooth carpentry. Oral health is an integral part to overall health, and there is more to dentistry than the hand-skills involved. Dental students have three to four years to hone in on their hand-eye coordination in simulated exercises and on live patients. This hand-eye coordination is a large requirement to getting

accepted into a dental program initially, giving attention to applicants' Perceptual Ability Test scores on the Dental Admissions Test. However, the true challenge comes from critical thinking, treatment planning, and patient management. An ideal licensure exam will focus on assessing those components of a candidate.

Psychometric Validity and Reliability

Validity

An examination with high validity means the findings truly represent what they claim. Predictive validity means the findings will represent a future behavior or observation. This means that a clinical licensure examination should predict a dentist's future practice. However, a survey of practicing dentists who took a clinical licensing exam resulted in 51.6 percent saying they did not believe their licensing exam was a valid assessment of their clinical abilities.¹³

There have been numerous studies conducted assessing the validity of the current regional examinations. All of the studies, conducted years apart, verify the same finding. The exams have not been shown to be valid, they have been shown to be rather unpredictable. Some studies show that class rank had no bearing on the passing or failing of a clinical licensing exam.^{6,11,15,16,17,24,26} Internal analysis of regional testing agencies claim validity, but none of these claims can be proven by external study or analysis.^{11,12,23}

An ideal licensure exam would be valid and also have predictive validity. The exam should be representative of the future practice of the candidates. An ideal exam would truly separate the incompetent from the competent candidates without the influence of luck or chance in the results.

Reliability

Reliability is the idea that the results are stable and consistent. Dr. David Chambers, a dental educator and the editor for the American College of Dentists, states the idea of reliability in examinations like this, "When a measure is reliable, that means there is agreement on what the results are... A reliable test will give similar people similar scores. A reliable practical examination will be scored similarly by different people at different times."⁷ However, in the

present time, clinical licensure exams have large variation in pass rates.¹⁰ As discussed earlier, the correlation coefficients that are acceptable for clinical licensure exams result in one out of every five dentists being misclassified due to poor reliability, with an unknown number receiving their licence when they are not ready.³

Reflective of the Scope of Dental Practice

The current exam tests a narrow scope of practice. Dentists are expected to perform—or at least be knowledgeable in—restorative dentistry, periodontics, diagnosis and treatment planning, endodontics, prosthodontics, oral surgery, orthodontics, pathology, implantology, pharmacology, case management and proper relationships with patients. The narrow scope of live-patient licensing exams make it unreliable for determining whether or not a candidate is competent to practice general dentistry.

With such a narrow scope of procedures tested, the current system is unreliable in determining whether a new dentist is truly competent to practice dentistry and is not reflective of contemporary practice.¹⁴ If the results of the examination cannot glean this information, then a new means of entry to dental practice must be instituted.

Universal Acceptance

The statements from ASDA, ADEA, and the ADA on their stance for license examination reform have already been shared. If the associations that represent dentistry as a whole are encouraging this change in licensure, then there is sufficient evidence to support that claim.

In 2003, fifty dental school deans were surveyed on licensure reform. The last question of the survey was a free-response area where the deans could comment. The three major categories in order of number of responses that were repeatedly discussed were: 1. Removing patients from the examination process. 2. A general need for change [in licensure]. 3. A desire to move toward a national licensing process.²⁵

An ideal licensure examination would be accepted across the United States and would not be region specific. The same dentists practicing in Alaska, New York, Florida, and Utah should

have dental licenses that are universally accepted. However, because of the number of regional testing facilities, this goal is harder to obtain due to the difference in standards and quality across regional testing organizations. If even one of these organizations began to adapt to the changes described in this letter, more state dental boards may be willing to accept their licensure examination results. Utah seems to already be approaching this idea of universal acceptance with positivity, accepting five regional licensure examinations for licensing.

Conclusion

Based on the reasoning presented in this letter, we ask the Utah Dental Board to accept the following options for clinical licensure for the class of 2021 and all future graduating classes:

- American Board of Dental Examiners (ADEX) CompeDont DTX.
- Central Regional Dental Testing Services (CRDTS) all manikin exam.
- Southern Regional Testing Agency (SRTA) manikin-based restorative skills module.
- Western Regional Examining Board (WREB) manikin simulation exam.
- Dental Licensure Objective Structured Clinical Examination (DLOSCE).
- Post doctoral training (12 month General Practice Residency and Advanced Education in General Dentistry completion).

The manikin options for clinical licensure provide an opportunity for candidates to demonstrate their hand-skills. Hand-skills can be demonstrated in a more standardized, valid, and reliable manner. It also avoids any ethical considerations regarding human subjects. However, they each possess a portion of the examination meant to assess a candidate's critical thinking, dental education, patient management, and treatment planning. The NBDE part 1 and 2 board examinations are required, where part 2 focuses on treatment planning, patient management, and other areas of critical thinking necessary to be a practitioner. WREB has a Comprehensive Treatment Planning examination. ADEX has an OSCE portion to their exam. WREB has also published data on the manikin simulation exam that will be attached to the end of this letter for reference.

The DLOSCE is a relatively new clinical licensing exam that is currently accepted in Alaska, Colorado, Indiana, Iowa, Oregon, and Washington State. Since it is a newer format, a

description of the DLOSCE will be given. The DLOSCE has been professionally developed and validated, and it is overseen by the JCNDE, which has a long history of providing examinations for licensure purposes. Those on the committee for the DLOSCE are general practitioners in private practice, dental educators, and state dental board members. The examination itself assesses the clinical skills that entry-level general dentists need to be competent and practice safely. The examination is thorough in assessing clinical judgement of all types of patients in every area of dentistry, including restorative dentistry, prosthodontics, oral pathology, pain management, TMD, periodontics, oral surgery, endodontics, orthodontics, medical emergencies, and prescriptions. The content is developed by highly qualified subject matter experts through a multistep process that ensures quality, which includes the use of 3-dimensional models. The DLOSCE claims standardization through testing experience due to the fact each patient case is standardized, including the models used for the patient cases.¹⁹

The completion of a General Practice Residency or Advanced Education in General Dentistry residency is an even more lengthy and comprehensive way to assess competence. Currently, California, Colorado, Connecticut, Delaware, New York, and Ohio accept completion of postgraduate residency to obtain licensure. This is a similar process for our medical colleagues, where licensure is granted after the completion of a residency. GPRs and AEGDs are composed of continual education, continual observation and supervision, and the opportunity to practice the broader scope of dentistry and enhance skills initially developed in dental school. Residencies also require applications and require screening of future residents, meaning that residents are hand-selected among applicants and the process is relatively competitive.

Utah has already demonstrated throughout the years the willingness to stay up-to-date on the evidence and to make changes as necessary. This was very evident during the summer of 2020 when the board worked diligently to secure paths to licensure for their new dental student graduates. We want to end this letter by again expressing our gratitude for this opportunity to have open dialogue.

Best Regards,

Shaylee Avery

Utah ASDA President

Class of 2021

University of Utah School of Dentistry

Jacob Caldwell

Utah ASDA Legislative Liaison

Class of 2023

University of Utah School of Dentistry

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October 16, 2020

Dear Members of Utah State Board,

The Utah chapter of the American Student Dental Association (ASDA) and the University of Utah School of Dentistry urge you to change the requirements for initial licensure for the class of 2021.

Throughout this pandemic graduating students have struggled to obtain their license due to dental school closures. As dental school clinics begin to reopen with modified schedules, it is critical to change the current licensure requirements to ensure students can obtain a license in a timely, ethical, and reliable manner, now and in the future.

We urge you to consider accepting the following alternatives to live-patient examinations for the class of 2021:

- American Board of Dental Examiners (ADEX) CompeDont DTX.
- Central Regional Dental Testing Services (CRDTS) all manikin exam.
- Southern Regional Testing Agency (SRTA) manikin-based restorative skills module.
- Western Regional Examining Board (WREB) manikin simulation exam.
- Dental Licensure Objective Structured Clinical Examination (DLOSCE).
- Post doctoral training (12 month General Practice Residency and Advanced Education in General Dentistry completion).

Each regional testing agency promotes the manikin exam's ability to simulate a live patient treatment experience. These alternatives ensure a timely, ethical, and reliable pathway to licensure while protecting the public during a global pandemic. Also, the DLOSCE is an innovative examination process that is overseen by the JCNDE, which has a long history of

providing examinations for licensure purposes. GPRs and AEGDs require an additional 12 months of training, refining a recent graduate's treatment skills and competence.

COVID-19 continues to devastate the country and may continue to prevent the standard administration of traditional patient-based exams. In response to these extraordinary times, we appreciate your willingness to accept these alternative examinations. The use of human subjects in live clinical testing scenarios should no longer have a place in the dental profession's new normal. 82% of surveyed deans agree it's time to move forward and studies continuously demonstrate the inherent flaws in patient-based exams. This includes the inability to standardize and assess the knowledge and abilities of each candidate to ensure only competent practitioners are receiving passing scores. Thorough research was undertaken during the preparation of this letter. Attached to this letter is a paper detailing the available evidence and recommendations based on that evidence. It is time to modernize the dental licensure process and eliminate the use of live patients in the licensure process.

Although our goal would be for permanent licensure change, we are aware of the complexity of this issue. The Utah Dental Board has already shown its willingness to utilize the available evidence to make informed decisions on licensure requirements. We saw this for the class of 2020, and we are grateful for the haste shown by the board to help those recent graduates become licensed. It is advantageous that these discussions are beginning early for the class of 2021 and we hope to continue to work with you to discuss this important topic.

We urge you to continue to accept the above-referenced examinations as an alternative to patient based examinations for future graduates.

Best regards,

Shaylee Avery

Utah ASDA President

Class of 2021

University of Utah School of Dentistry

Jacob Caldwell

Utah ASDA Legislative Liaison

Class of 2023

University of Utah School of Dentistry

WREB Dental Examination Results 2020 Year-to-Date (YTD)
September 03, 2020

In response to limits on patient-based assessment options posed by the COVID-19 pandemic, WREB began administering an alternative dental clinical examination to dental licensure candidates in the spring of 2020. The first entirely non-patient WREB Dental Examination was administered in early June of 2020. The examination season is not yet over until early November but twenty-two non-patient examinations have already been held in twelve states between early June and the end of August (1,635 exam attempts). The first six examinations of the season administered in six states between February and early March included patient-based sections (298 exam attempts).

A comparison of pass or fail outcomes on the Dental Examination between the 2019 season (32 examinations; 2,411 exam attempts) and the 2020 season, year-to-date (28 examinations, 2,198 exam attempts) indicates no statistically significant difference in proportion passing between 2019 (85.6% passing) and 2020 YTD (85.0% passing)¹. Figure 1 displays passing percentages for 2019 and 2020 YTD for each Dental exam section and for overall passing status. Section passing percentages are higher than overall passing percentages due to the requirement that all sections attempted must be passed to attain overall success on the Dental exam.

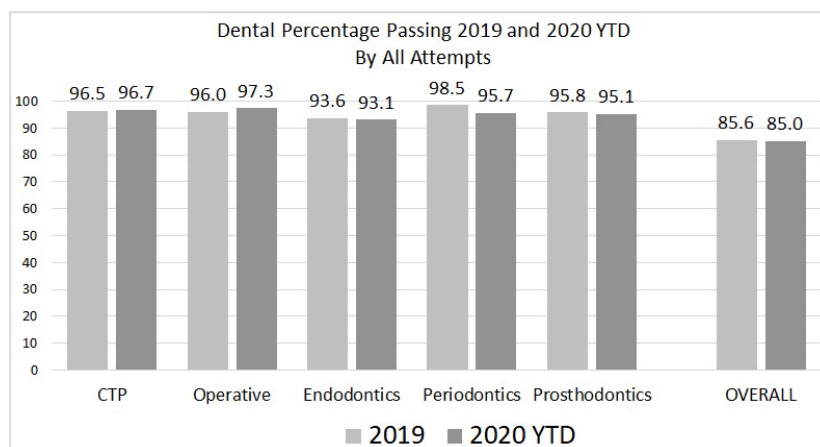
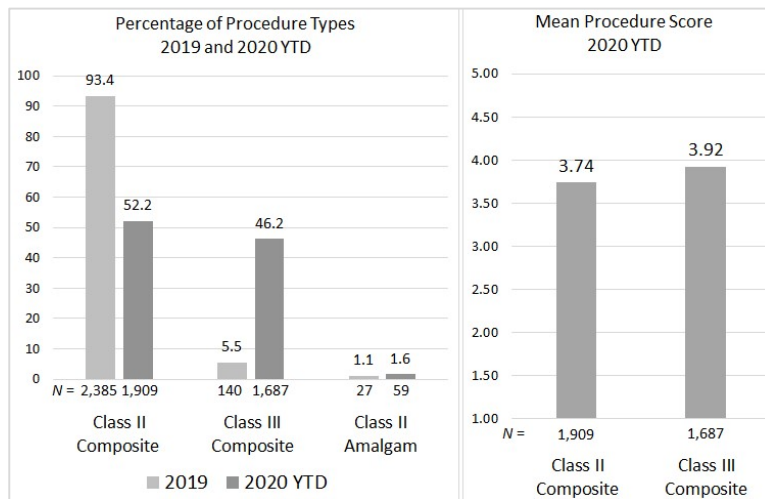


Figure 1. Dental passing percentages for 2019 (2,411 exam attempts) and for 2020 year to date (2,198 exam attempts by September 1, 2020). Note that section passing percentages are higher than the overall percentages because passing the Dental exam requires passing all sections attempted.

Two exam sections show differences for 2020 that are greater than expected across seasons. The patient-based Periodontic section was included in only 15.3% of examination attempts making the impact of individual school performance a highly influential factor in comparison. The Operative Dentistry passing percentage is 96.0% for 2019 and 97.3% for 2020 YTD. The difference does not appear to be due to a significant difference in the level of challenge between the manikin and patient-based examination, but rather is due to an extremely large difference in the proportion of Class III procedures completed for the manikin Operative exam compared to

previous exam seasons. The Class III procedure was optional until the introduction of the manikin exam in 2020, which requires completion of one Class II procedure and one Class III procedure. In 2019, only 13.7% of procedures completed were Class III, compared to 46.2% of procedures in 2020 YTD, where 84.6% of all 2020 YTD attempts have been manikin-based. Figure 2a displays the percentage of procedure types completed in 2019 and 2020 YTD. Candidate performance on the Class III procedure has been slightly but consistently higher since 2008, when the Class III became a regular procedure option (i.e., an average of 4.3% higher mean scores per season on Class III than Class II). Figure 2b shows the mean procedure scores for the Class II and Class III composite procedures. The Class III mean is 4.8% higher in 2020 YTD, which is consistent with past results for the Class III procedure and provides evidence that the increase in Operative passing percentage from 96.0% to 97.3% is likely due to the abundance of Class III procedures performed rather than the introduction of the manikin version of the Operative section.



Figures 2a and 2b. (a) Percentage of procedure types completed in 2019 and 2020 YTD. Class III procedures are optional in the patient-based exam (only 15.4% of 2020 YTD attempts were patient-based). Every attempt in the manikin exam (84.6% of 2020 YTD attempts) includes a Class II and Class III. (b) Mean (average) procedure score for Class II and Class III Composite procedures. Number of procedures is provided by “N=” for both graphs.

In addition to comparability in candidate performance, the non-patient dental examination is also showing comparability in examiner quality, exam site comparability, and technical indicators. Additional details of WREB Dental Examination content, results, and technical quality are available upon request.

¹ Results of chi-square analysis [Dental Pass/Fail and 2019/2020 YTD]: χ^2 ($df=1$, $N = 4,609$, $\alpha = 0.05$) = 0.35; Fisher’s Exact significance $p = 0.56$; effect size Cramér’s $V < 0.01$

WREB Dental Examination Sections 2021

Comprehensive Treatment Planning (CTP) Section. CTP is a performance-based, examiner-graded section that requires candidates to review three patient cases and create treatment plans, construct responses to questions, and perform tasks (e.g., write prescriptions). CTP requires a broad understanding of diagnosis, prevention, restoration, endodontics, periodontics, prosthodontics, oral surgery, radiology, pediatric dentistry, and patient-management procedures. Failure can result if a candidate commits a critical error, i.e., constructs a response that could result in life-threatening harm, e.g., administering more than the upper limit of a safe dose of local anesthetic to a pediatric patient.

Endodontics Simulation Section. The Endodontics Section is a performance-based, examiner-graded clinical simulation examination. Candidates must perform two endodontic procedures on simulated teeth mounted in a segmented arch within a manikin that is positioned to simulate working on a patient. The teeth, scanned from human teeth and produced via 3-D printing, replicate internal and external anatomy, including polymer hardness for enamel, dentin, and pulp tissue. The anterior tooth procedure requires treatment of a maxillary central incisor, including access, instrumentation and obturation. The posterior tooth procedure requires access of a mandibular first molar tooth. Access of the posterior tooth must enable grading examiners to identify all canal orifices. Candidates are also required to provide post-operative radiographic images for examiner grading.

Prosthodontics Simulation Section. The Prosthodontics Section is a performance-based, examiner-graded clinical simulation examination. Candidates complete two prosthodontic procedures (three preparations) on simulated teeth in a mounted articulator and manikin that is positioned to simulate working on a patient. Candidates are required to prepare an anterior tooth for a full-coverage crown and prepare two abutments to support a posterior three-unit fixed partial denture prosthesis (i.e., bridge). The three-unit bridge must have a path of insertion that allows full seating of the restoration.

Periodontics Section. The Periodontics section will be available in either a patient-based form or simulation form. The patient-based form is unchanged. The simulation form will not involve qualifying a patient but will involve the removal of subgingival calculus on teeth in an assigned quadrant mounted in a manikin to simulate performing the procedure on a patient. WREB has worked to develop a realistically colored calculus for the simulation. Grading criteria and scoring for the removal of calculus are as published for performance of the same task on a patient.

Operative Dentistry Section. The Operative section will be available in either a patient-based form or simulation form. The patient-based form is unchanged. The simulation form involves performing a Class II (composite or amalgam) and a Class III composite restoration on a posterior tooth and anterior tooth, respectively. The teeth for preparation have simulated caries, a DEJ, dentin, enamel, and a pulp chamber. The exam will involve limited radiographic interpretation and the depth of the simulated caries will require candidates to modify their preparations. As in the patient-based form, modifications will be initially reviewed by a Floor Examiner. Both preparation and restoration will be accomplished with full clinical simulation and with rubber-dam isolation.

WREB Dental Hygiene Examination 2021

Dental Hygiene Clinical Examination. The Dental Hygiene Clinical Examination will be available in either a patient-based form or manikin-based form. The patient-based form is unchanged. The manikin exam is comprised of two exercises: 1) Assessment and Detection, and 2) Removable Calculus. Each exercise is completed on a simulated quadrant mounted in a typodont/manikin, positioned to simulate the treatment of a patient. Periodontal features of the Assessment and Detection model are unique in design and the color of the calculus on the Removable Calculus typodont has been changed to reflect a more natural appearance than the calculus currently being utilized in educational programs and by other testing agencies.

- The Assessment and Detection exercise requires the candidate to assess periodontal conditions, accurately record periodontal measurements, and note the presence of subgingival calculus on a maxillary quadrant.
- The Removable Calculus exercise requires candidates to thoroughly remove subgingival calculus from all teeth in the assigned quadrant using ultrasonic and/or hand instrumentation.

Dental Hygiene Objective Structured Clinical Examination (DH OSCE). The DH OSCE will continue to be offered as a stand-alone examination for those states that do not require a demonstration of hand skills or as a psychometrically sound alternative in the event that the pandemic impacts the delivery of alternative forms of the exam.

The DH OSCE examination is a standardized, multiple-choice examination that employs images and radiographs to replicate authentic oral conditions and clinical situations. DH OSCE content focuses on the clinical aspects and knowledge-based skills necessary to safely treat a patient in a clinical setting. The content categories assessed are medical history, risk assessment, extraoral/intraoral examination, periodontal assessment, dental hygiene care/treatment plan, and instrumentation. The DH OSCE is tailored to specific clinical aspects of dental hygiene care in order to evaluate critical thinking skills that cannot be assessed comprehensively on the clinic-based examination. The examination is administered at dental hygiene schools by WREB personnel with social distancing and adherence to current COVID-19 guidelines. Site-based administration eliminates the need for students to wait for availability at a testing center.

CDCA (ADEX) DENTAL HYGIENE MANIKIN EXAM

Pro's	Con's
Reliable	Tooth structure softer
Standardized exam for all candidates	Extracted teeth and broken root tips possible
Ethical	Calculus colored black(currently)
No Added cost to compensate patient	Gingiva is firm
Competence tested: Probing Technique Calculus Detection Calculus Removal Oral Assessment component (CSCE)(OSCE)	Ultrasonic destruction of teeth and tissue. Causing concavities and ledges. Deduction given (if agreed by 2 examiners) not because of calculus, but feels like sub gingival calculus.

Exam consists of:

Calculus Detection: Maxillary

Calculus Removal: Mandibular: candidate is assigned right or left Quad

Post Probing: (1) anterior tooth and (1) posterior tooth assigned in the same Quad
6 probings recorded for each tooth.

Grading:

Calculus detection is graded from key

Calculus removal is graded by 3 examiners:

- by feel not sight (due to current black)
- evaluate entire Quad Selection for supra and subgingival calculus.
- 2020 exams: no tissue trauma is graded

Post Probing is graded by 3 examiners:

- examiners probe and document their own findings on the 2 assigned teeth

Manikin upgrades and changes with CDCA for 2021
No Black Calculus
Teeth will be harder
More calculus present for calculus detection and calculus removal
Minor and Major tissue trauma deduction

31 states are accepting CDCA manikin exams for 2020

CDCA and CITA exams are ADEX and are similar exams.

Using the same manikin for Dental Perio Exam

*****Both Board Hygienist's are in agreement with this information.**

Kathy H participated in the field test and grading session of the manikin

Kathy Y observed and helped at an exam site of the manikin. Evaluated the pre manikin.

What states at HERB meeting are doing:

This will give you an idea of what some states are doing

Alaska: No graduating class for 2020.

Pt based clinical exam, no manikin at this time

Arizona: Accepting everything WREB offers

Hawaii: Exploring the Manikin Exam

Idaho: Not accepting OSCE or Manikin, will discuss in 2021

Iowa: Accept Pt Based, Manikin by waiver. Will be looking at manikin as Agencies develop

Kansas: Accept OSCE 2020, back to Pt Based 2021

**Minnesota: Accept CDCA Compedont for dental, Manikin for D.H. 2020
Will discuss manikin for 2021**

Mississippi: Waived Dental Hygiene Clinical Exam, restricted license, Direct supervision until can take Clinical Exam. Revisit as needed 2021

New Mexico: Accept Pt based only

North Dakota: Accept Manikin 2020, back to Pt based exam 2021

Oklahoma: Director or Dean documentation of completion, back to patient based exam 2021

Oregon: OSCE accepted 2020, 2021 must have hands on component exam, patient or manikin

Texas: 2020 OSCE and manikin

Wyoming: Manikin or Pt based exam, WREB only, need clinical component

Exhibit A

Typodont/Mannequin Tooth Characteristics

A typodont/Mannequin Tooth to be used for a Non-patient based Board Examination for Class II and Class III preparations **must**, at a **minimum**, have **all** the following characteristics/attributes in order to be accepted as qualifying for acceptance by this board to be used in such an examination for licensure:

- 1) Discrete caries contained within the enamel and dentin
- 2) Obvious Dentin-Enamel interface (a definite DEJ) that is detectable visually
- 3) Diagnostic Caries visually and tactilely detected, that can be detected and removed with dental instruments (explorer, dental burrs, hand instruments, etc.)
- 4) Variability in the caries:
 - a. Placement within the tooth surfaces
 - b. Amount of caries present – accurate in the amount tooth to tooth when reproduced for utilization in an examination setting
 - c. Models the biologic variability of caries, e.g. frank caries, affected dentin, and unsound demineralized enamel each presenting a different tactile “feel” to an explorer as would be presented by a human tooth with caries
- 5) Caries models natural pathways of infection within the tooth in both depth and the way it spreads along the DEJ in a natural tooth
- 6) Life like enamel – cuts like human tooth enamel (is not softer), does not chip at the margins when cut with standard dental burrs or diamonds
- 7) The material is restorable just as if it was human tooth structure:
 - a. Composite can be bonded to the tooth’s material with the same materials that are used in normal clinical practice methods
 - b. Composite/Amalgam can be finished to the margins with standard clinical instruments and methods to achieve proper results
- 8) Provides the following clinically:
 - a. Diagnostic challenges to discover and properly remove caries
 - b. Amount of caries placed in the tooth necessitates preparation modification(s) from and “ideal” preparation design
- 9) Tooth must have a pulp:
 - a. That accurately reflects the pulp size and shape as the same tooth would in a human tooth of the same description (tooth #3, 7, or 8 etc.)
 - b. Contains a pulp, pink to red in color such that a pulp exposure can be easily detected by a candidate and/or an examiner
- 10) Tooth identifies the same critical types of deficiencies identified in a patient based examination as shown/demonstrated by data analysis comparisons between patient based and non-patient based examinations to verify the fidelity of the typodont/mannequin tooth as compared to a human tooth used in the same circumstance

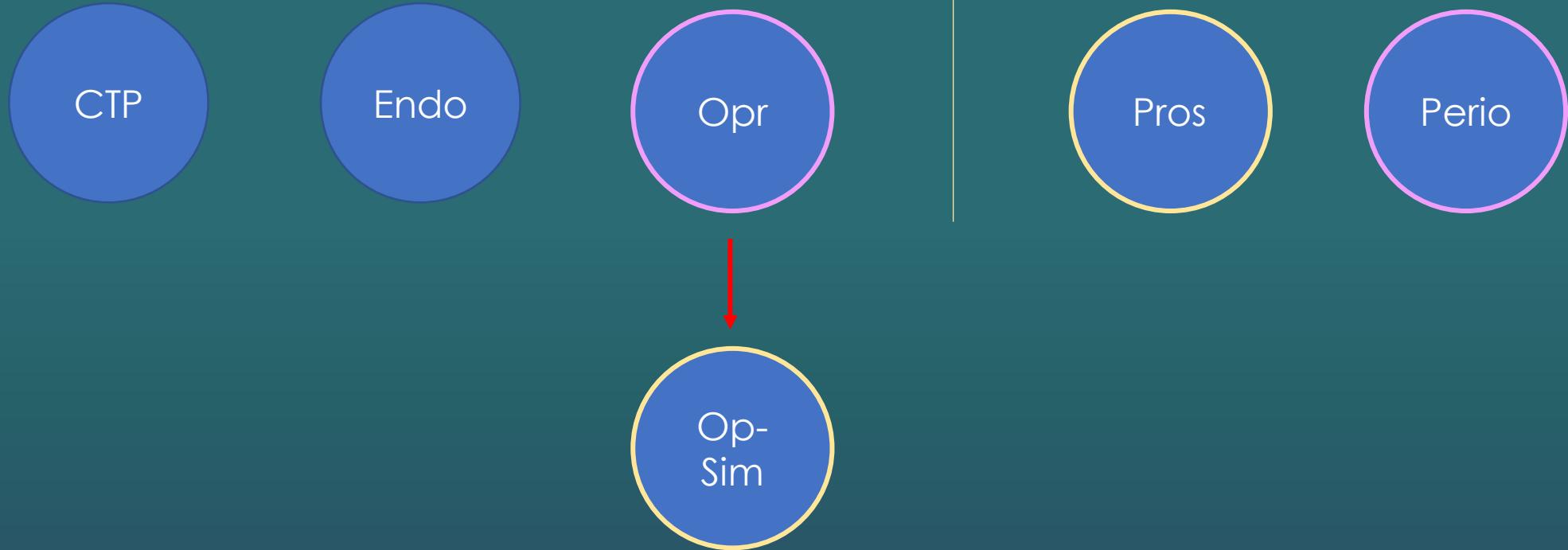
Dental 2021

WREB
Utah Dentist and Dental Hygienist Board
October 30, 2020

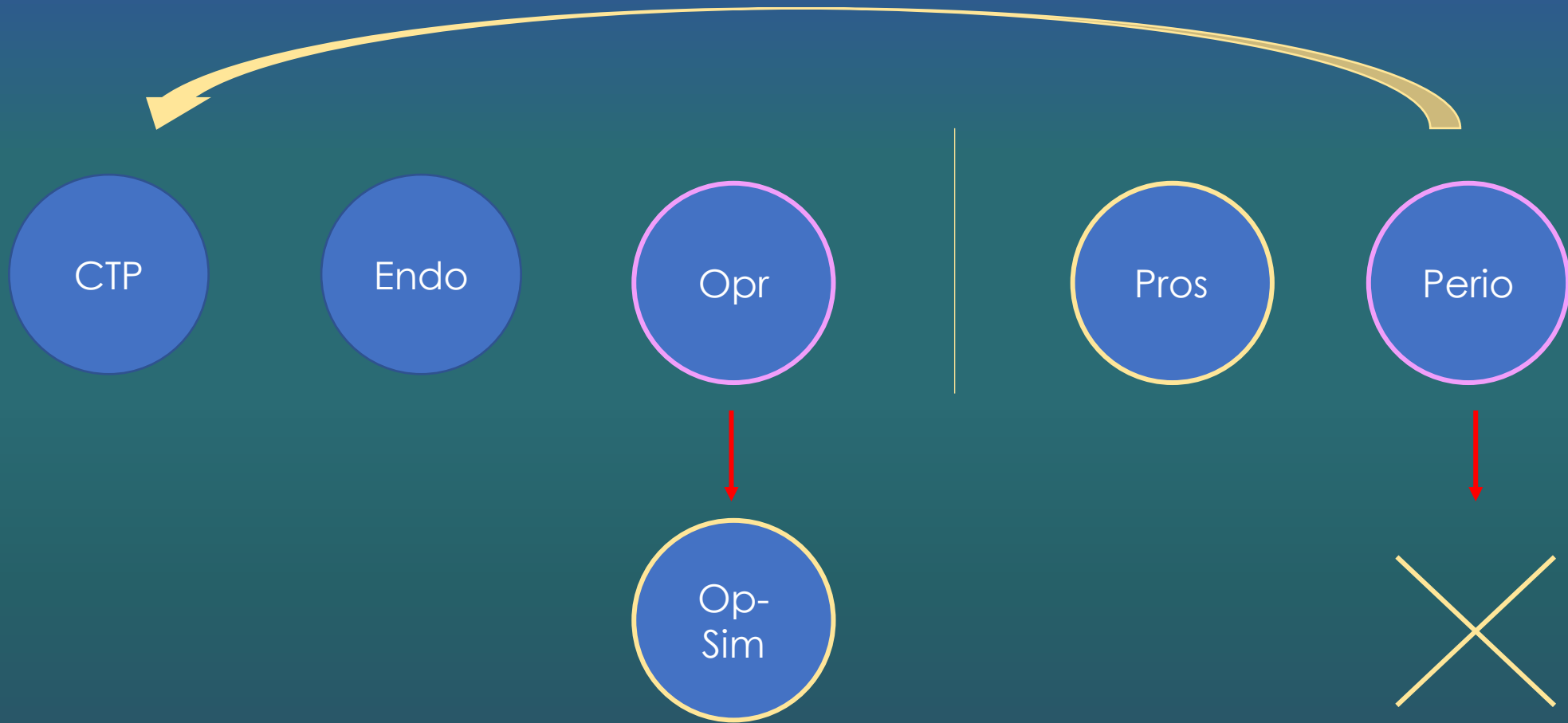
Bruce Horn, DDS
Mark Christensen, DDS MBA

© WREB 2020

2020 and COVID19

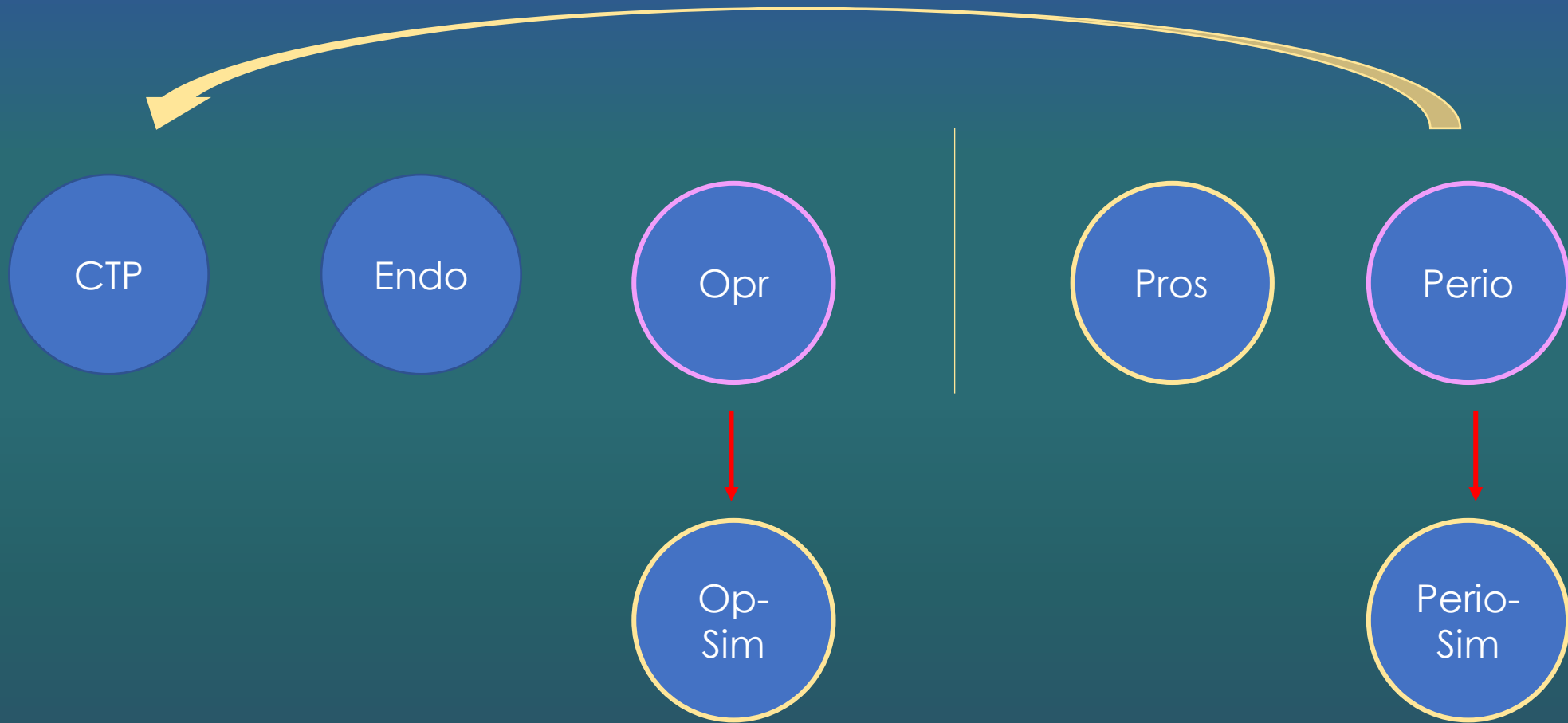


2020



WREB continues to assert that recent practice analysis no longer supports testing scaling and root-planning for dentist licensing. While periodontal treatment remains highly rated in terms of importance (frequency and criticality), scaling and root-planning no longer is a clinical procedure frequently performed by dentists.

2021



WREB continues to assert that recent practice analysis no longer supports testing scaling and root-planning for dentist licensing. While periodontal treatment remains highly rated in terms of importance (frequency and criticality), scaling and root-planning no longer is a clinical procedure frequently performed by dentists.

Dental Examination Detail and Changes for 2021

CTP – no change

Operative Simulation - changed

Endodontics – no change

Periodontics Simulation - new

Prosthodontics – no change

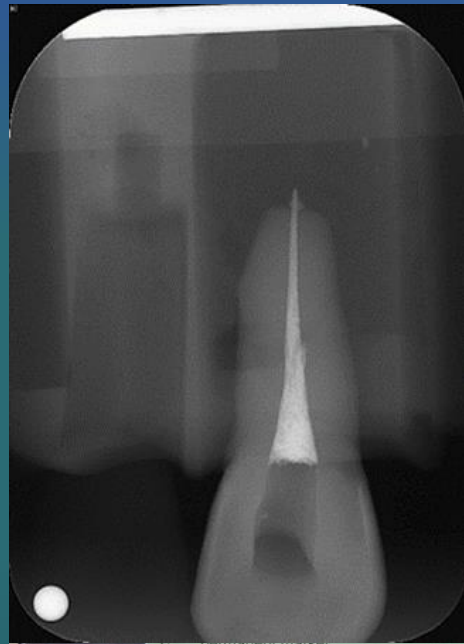
Operative Patient – no change

Periodontal Treatment – no change

CTP

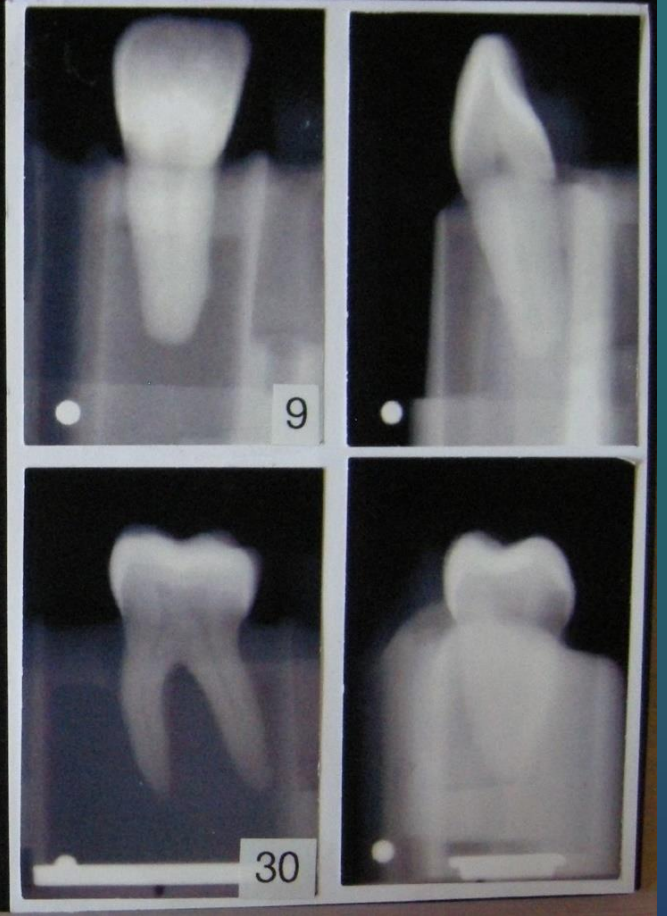
Treatment Plan

	2020		2021
<input type="checkbox"/> Treatment Modifications	20%		15%
<input type="checkbox"/> Inclusiveness	20%		31%
<input type="checkbox"/> Overtreatment	20%	→	31%
<input type="checkbox"/> Sequence	20%		15%
<input type="checkbox"/> Concise, well-organized, easily interpreted	20%		8%



Worksheet
Candidate ID #: A-101
Date: Today

Check
... in manikin
... on lingual with Sharpie



permanent marker

Manikin in correct path
vertical dimension

Light on and mirror on

Endodontics Worksheet

Treatment - Note to Graduate

Checklist of requirements

The two sextants with

Candidate ID printed

Endodontics Worksheet

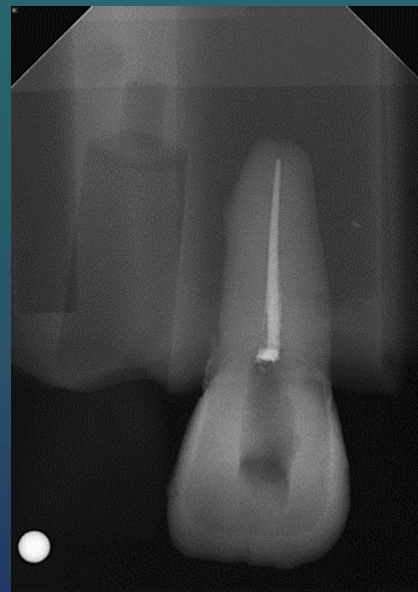
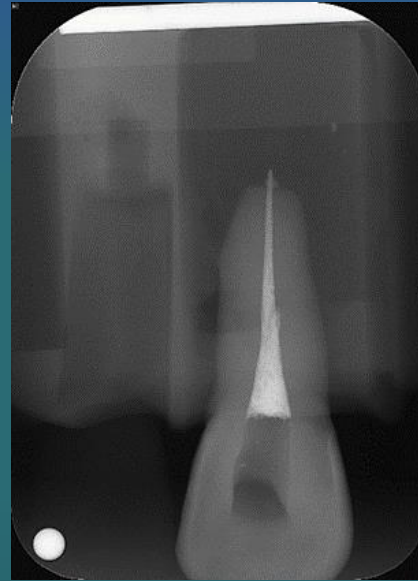
Preoperative radiograph

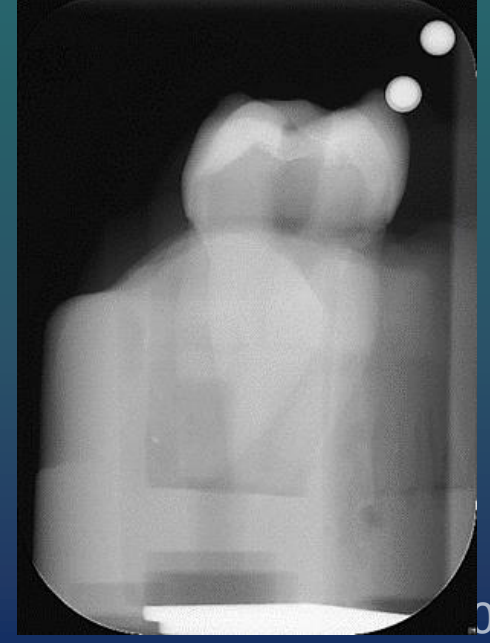
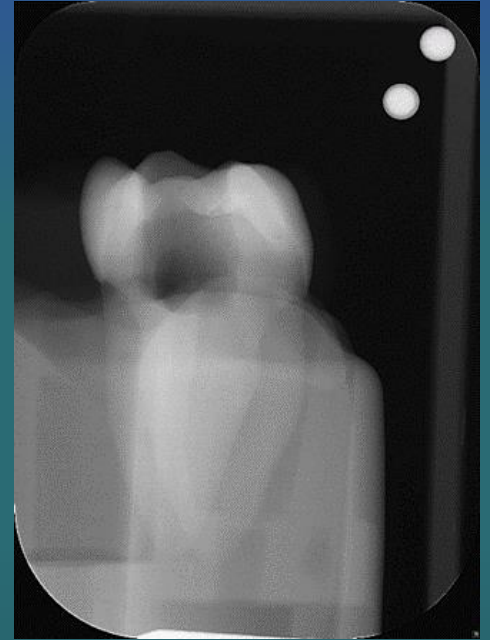
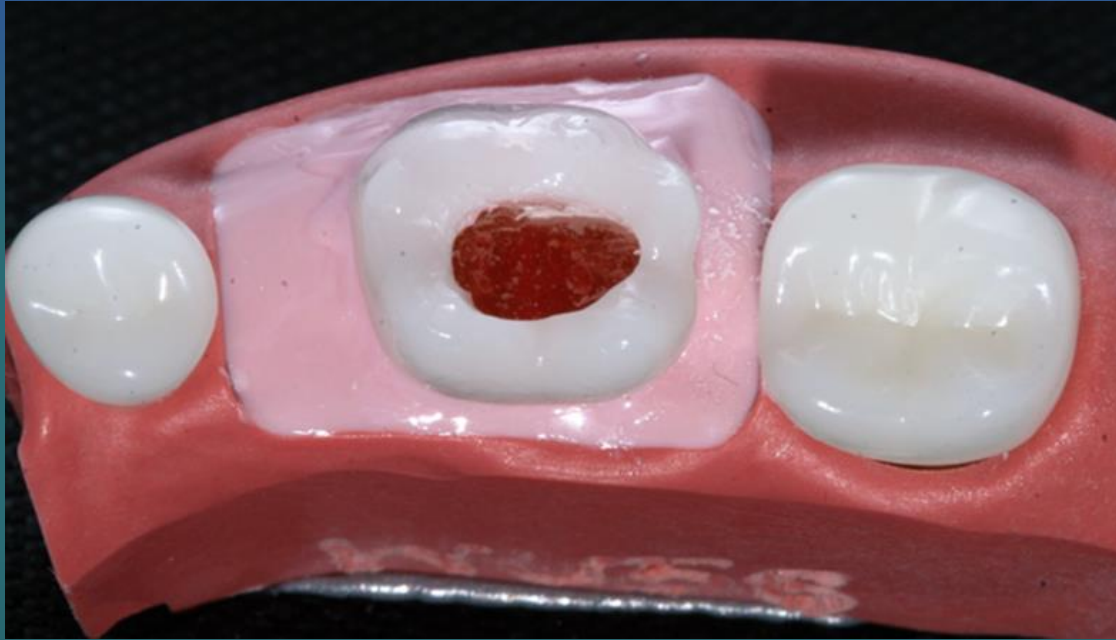
Postoperative radiograph

- If digital site with Candidate folder
- If digital site with
- If conventional site

This worksheet
2018 - Revised

Endodontics





Operative Simulation 2021

Op-Sim uses new teeth for the preparations (Class II [amalgam or composite] and Class III composite).

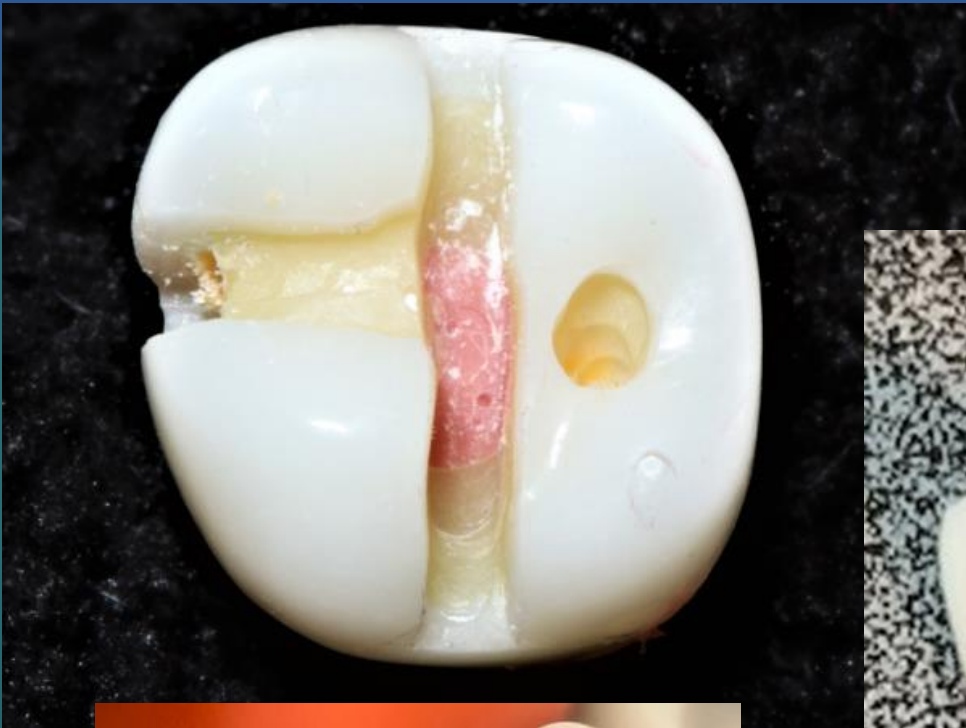
- Harder enamel and dentin layers; identifiable DEJ
- Caries – color and tactile sensation is improved
- Caries requires modification beyond minimal WREB criteria
- Pulp chamber → exposure risk
- Involves radiographic reference and interpretation
- Both preparation and restoration are accomplished in full simulation with rubber dam isolation

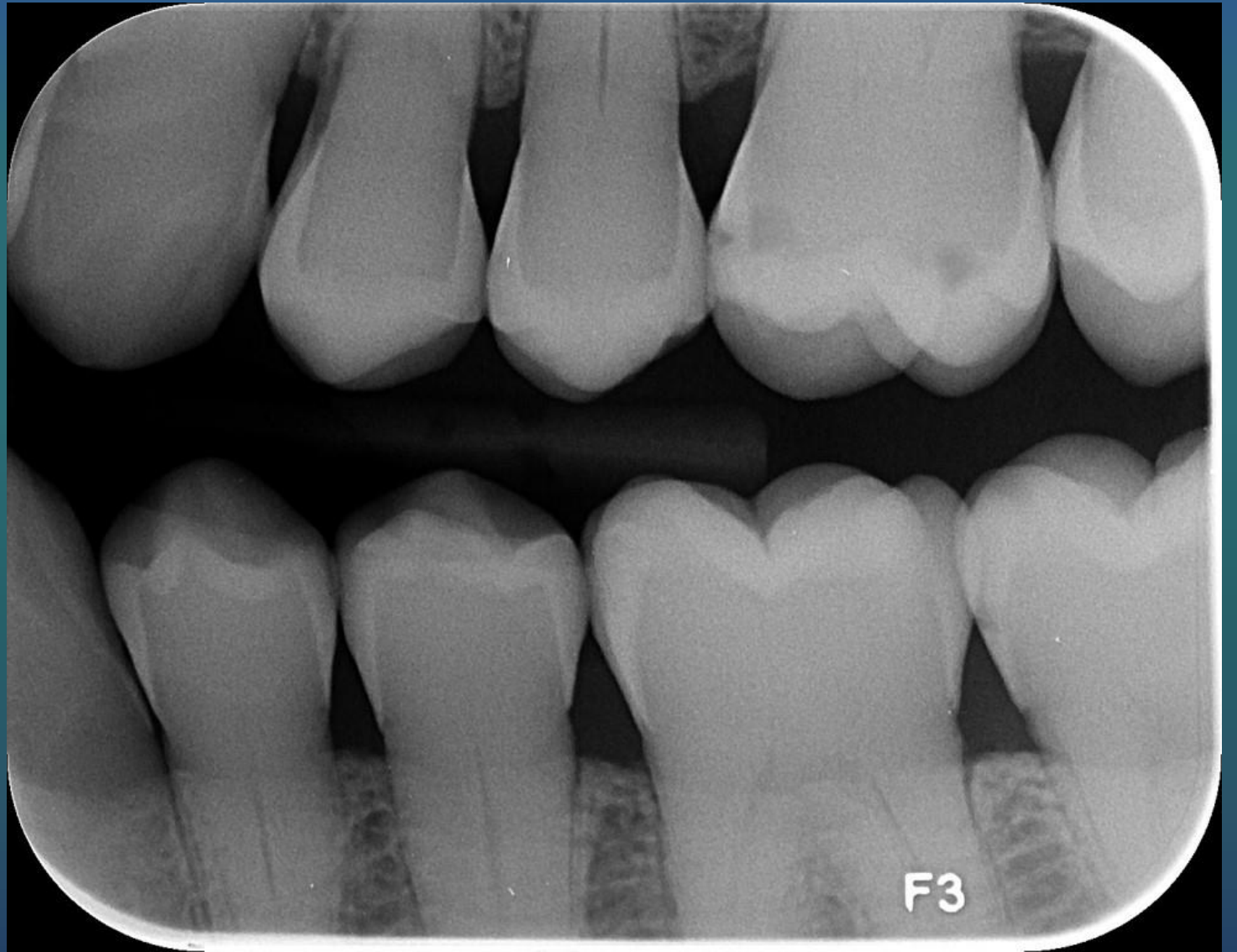


















Operative Simulation 2021

Dental Operative simulation will continue to improve as more states accept it—dental simulation now is an ongoing technical evolution.

- 2021 is an improvement over the past simulations.
- This is all that the engineers were able to accomplish for 2021.
- Continuing development is ongoing in the background.
- Like WREB's Endo section, candidates will be able to obtain RTX teeth from Acadental for practice, but not the WREB-designed teeth that will be used in the exam.

Operative Simulation 2021

Administration

- Enables onsite or offsite grading.
- Enhances social distancing and minimizes the use and movement of auxiliary personnel.
- Adapts to a broad variety of program (school) facilities.
- Requires Universal Precautions.
- Involves monitoring simulation protocol, PPE, rubber dam isolation, etc.
- Takes advantage of simulation's potential to increase standardization.
- Potentially lowers candidate cost.

Periodontics Simulation 2021

WREB continues to assert that a hands-on scaling exercise for dentists is no longer supported by the Practice Analysis that underpins the Dental Exam.

- The Periodontics section remains elective. (Not all states require it.)
- For states that still require it, physical task assessment now is provided.
- The task (for dentists) mirrors the patient-based Periodontics section.
 - Appropriate removal of subgingival calculus from all teeth in an assigned quadrant mounted in a manikin to simulate performing the procedure on a patient.
 - The same restrictions, critical error, and grading criteria apply as for WREB's patient-based Periodontal Treatment section.

Periodontics Simulation 2021

- There is no need to qualify the patient (though WREB DH assessment and detection component may be added).
- The simulation is timed: 2 hours to complete treatment.
- Accommodates onsite or offsite grading.
- Accommodates social distancing and minimizes the use and movement of auxiliary personnel.
- Appropriate PPE and simulation protocol are monitored.
- Adaptable to a broad variety of program (school) facilities.
- Takes advantage of simulation's potential to increase standardization.
- Potentially lowers candidate cost.



Calculus

Removable Calculus Characteristics

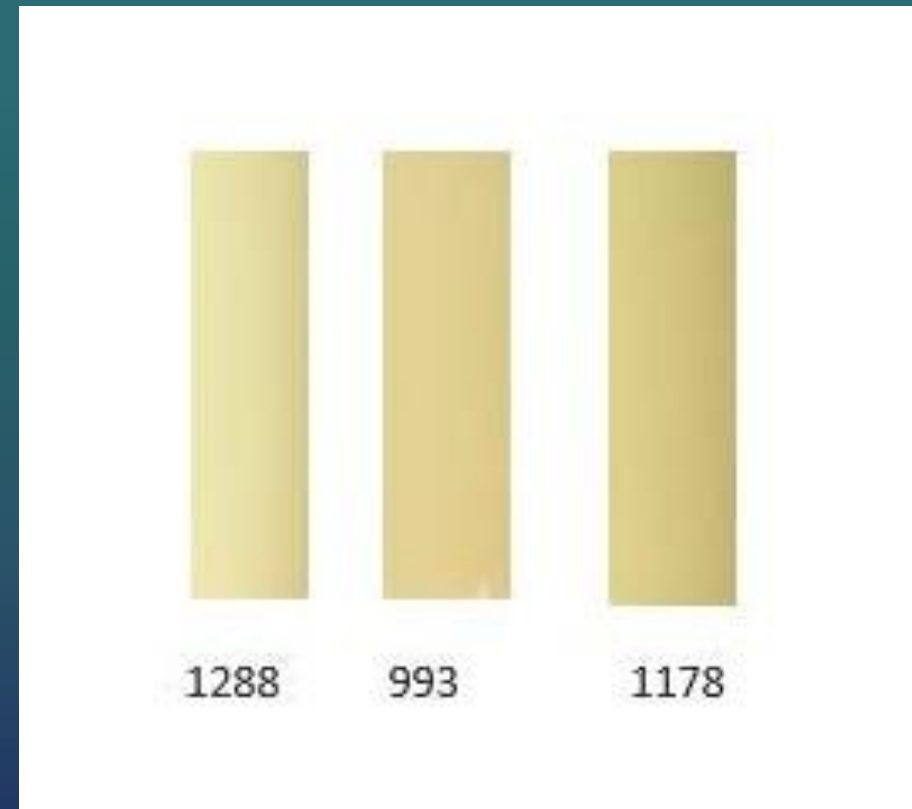
Deposit Size

- Small
- Medium
- Large

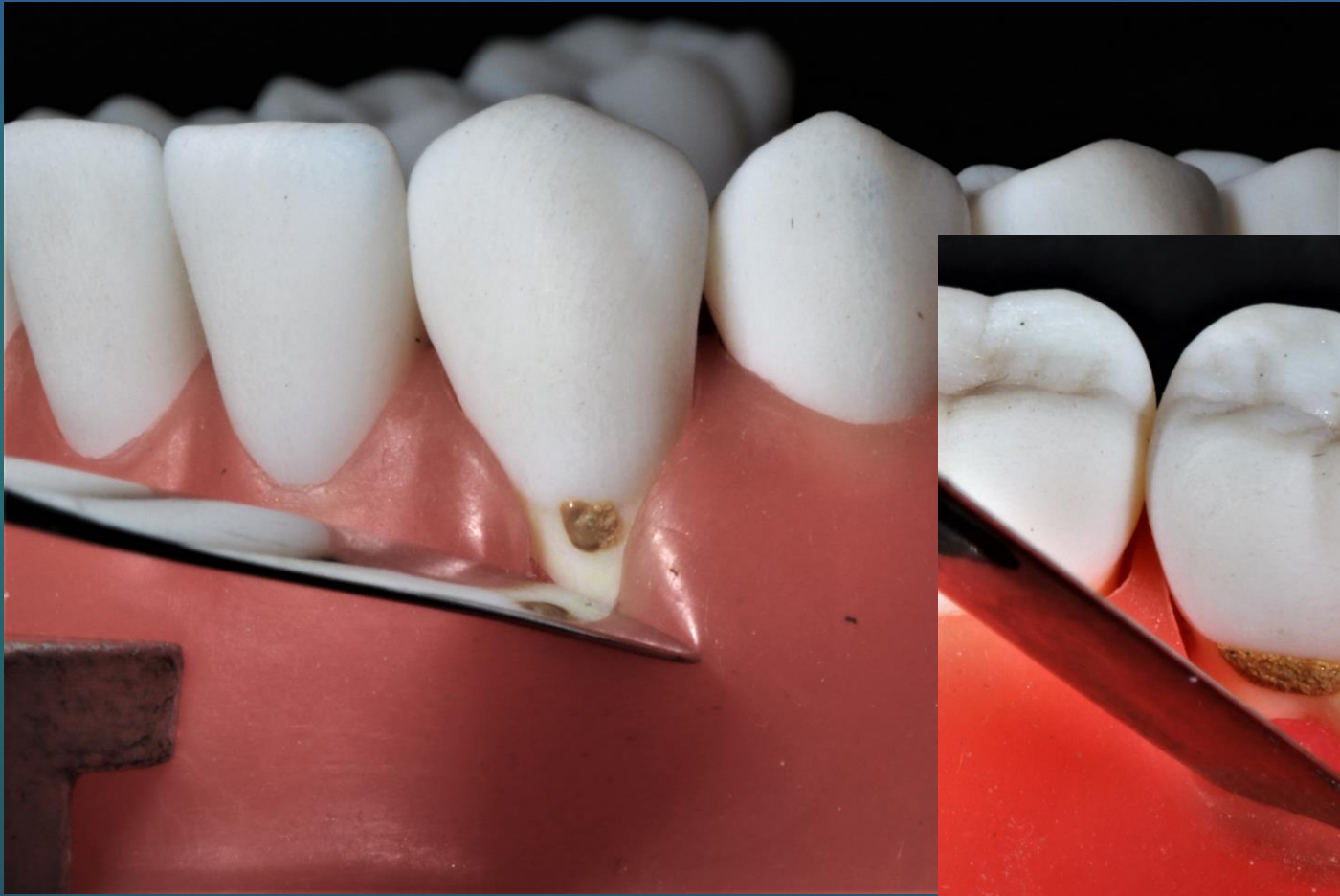
Deposit Character

- Spicule
- Ledge
- Burnished

Deposit Color







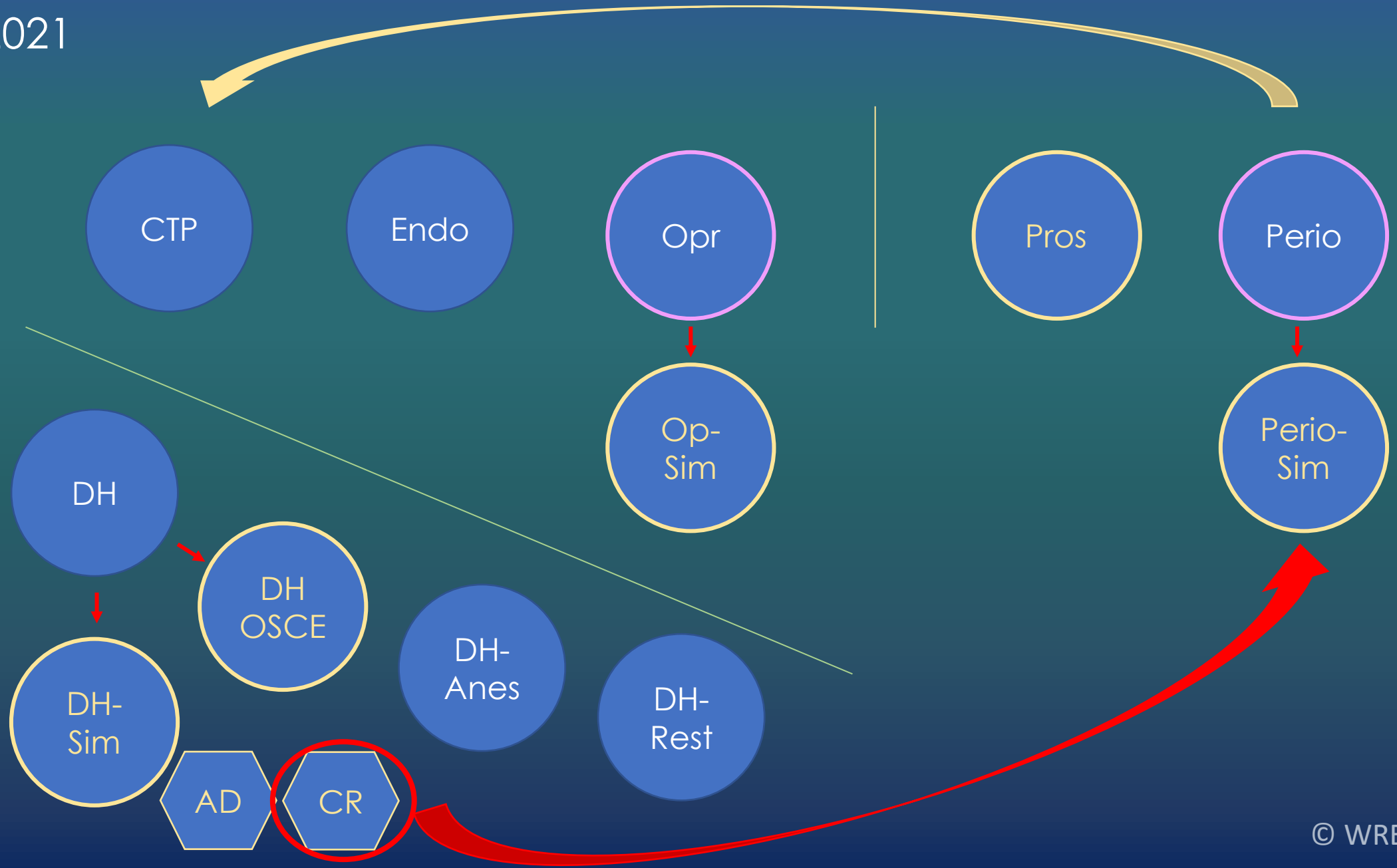




2021

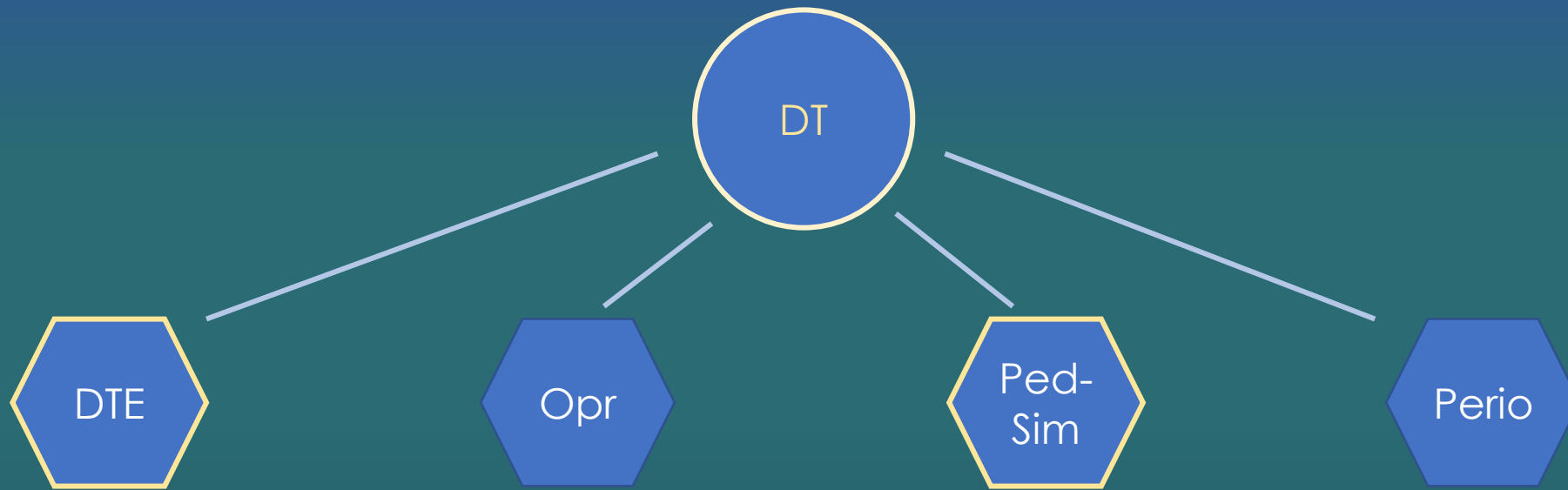


2021



2021





DTE Written Section (Computer-based, an adaptation of WREB's Dental CTP Section)

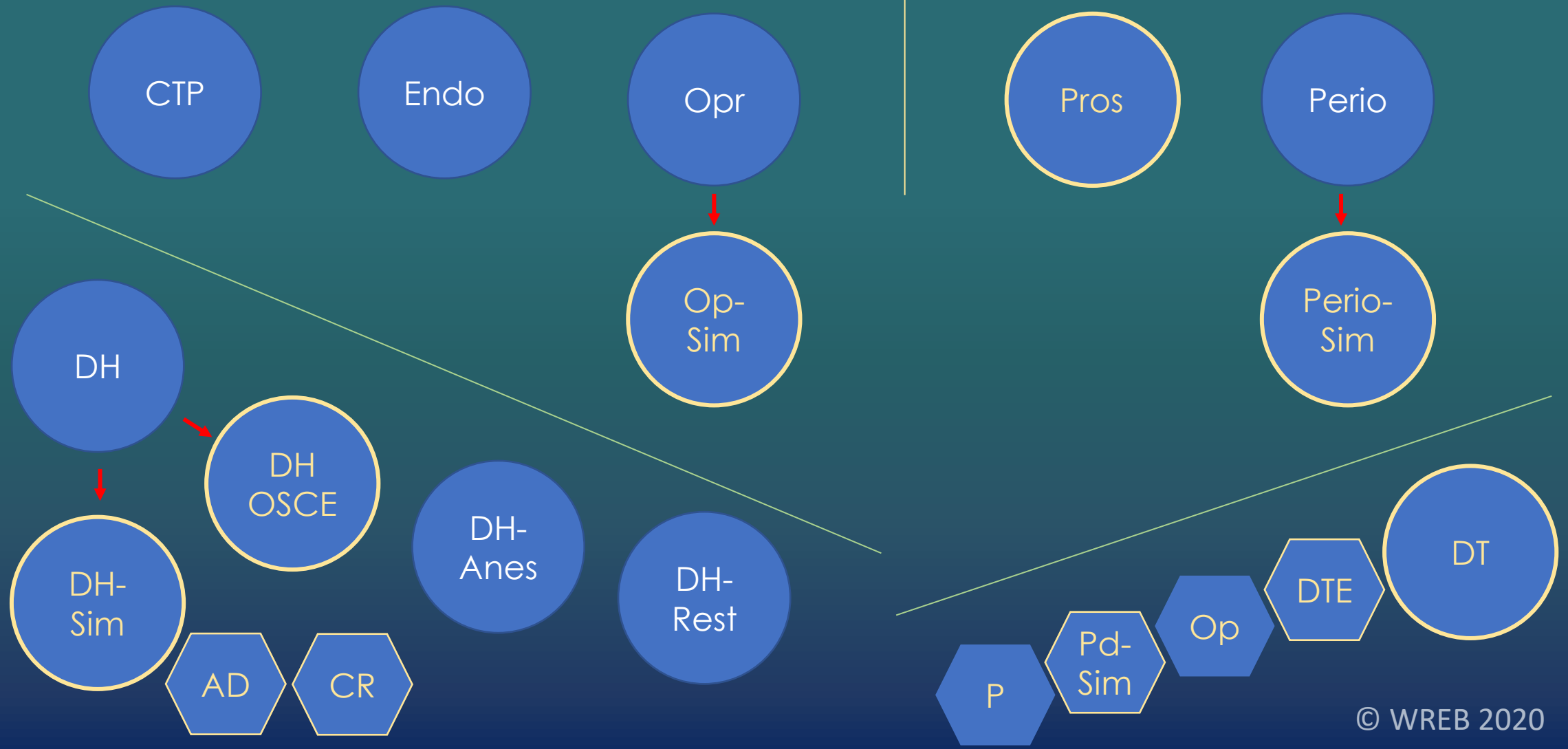
Adult Restorative Section (WREB's contemporaneous Dental Operative Section)

Pediatric Dentistry Simulation Section (to be administered jointly with Endo or Pros)

- Pulpotomy – Tooth A
- Amalgam Restoration – Tooth T
- SSC Preparation – Tooth L
- SSC Cementation (includes preparation) – Tooth J


Periodontal Section (WREB's contemporaneous Dental Periodontal Treatment Section—an elective section available for persons in who are not already licensed dental hygienists)

2021




Individual Performance Report

- All attempts recorded and reported
- Specific detail includes:
 - Simulation or Patient
 - Criteria area scores
 - Summary by procedure
 - Class II and Class III
 - Summary by skill set
 - Preparation and Restoration
- History of attempts for every section
- Candidates needing an additional section can challenge and append it to their score report.



WREB
A National Dental and Dental Hygiene Testing Agency

Dental Individual Performance Report



Doe, John (A101)
555 N. Street Rd.
City, State 90000
United States

OPERATIVE
New York University * - Mar 21 - Mar 24 2019

Prep Procedure #1			
Posterior Composite	Median Score	Weight Factor	Score
Outline and Extension	4.00	46.0%	1.840
Internal Form	3.00	39.0%	1.170
Operative Environment	3.00	15.0%	0.450
Posterior Composite Prep Score:			3.460

Finish Procedure #1			
Posterior Composite	Median Score	Weight Factor	Score
Anatomical Form	3.00	36.5%	1.095
Margins	3.00	36.5%	1.095
Finish	3.00	27.0%	0.810
Posterior Composite Finish Score:			3.000

Procedure #1 Score: **3.23**

Prep Procedure #2			
Anterior Composite	Median Score	Weight Factor	Score
Outline and Extension	3.00	46.0%	1.380
Internal Form	3.00	39.0%	1.170
Operative Environment	3.00	15.0%	0.450
Anterior Composite Prep Score:			3.000

Finish Procedure #2			
Anterior Composite	Median Score	Weight Factor	Score
Anatomical Form	4.00	36.5%	1.460
Margins	4.00	36.5%	1.460
Finish	3.00	27.0%	0.810
Anterior Composite Finish Score:			3.730

Procedure #2 Score: **3.37**

Operative Section Score: **3.30** Pass

ENDODONTIC
New York University * - Mar 21 - Mar 24 2019

Anterior			
Access	Median Score	Weight Factor	Score
Access	4.00	27.0%	1.080
Condensation	4.00	46.0%	1.840

Posterior			
Access	Median Score	Weight Factor	Score
Access	3.00	27.0%	0.810

Endodontic Section Score: **3.73** Pass

COMPREHENSIVE TREATMENT PLANNING (CTP)

CTP Section Score: **3.40** Pass

PERIODONTICS
New York University * - Mar 21 - Mar 24 2019

Treatment:	Score
	100.00%

Periodontics Section Score: **100.00%** Pass

A score of 3.00 (or 75% or higher on Periodontics) reflects the standard for demonstrating competence. Completion of the core exam requires passing the three sections, Operative, Endodontics and CTP, within twelve (12) months. If any of the three core sections is failed, the WREB Exam is failed until the failed section(s) is/are passed within the required twelve (12) month period. If the failed section(s) is/are not passed within twelve (12) months, all three core sections must be taken again. Many individual state licensing bodies also require passing performance on the Periodontal or Prosthodontics sections. In addition to the WREB Core Sections (Operative, Endodontics and Comprehensive Treatment Planning), you should review the Dental Candidate Guide for detailed scoring information and requirements. Additional details regarding performance are provided for your information. Please note that performance within each section is likely to vary more than overall clinical or written score across subsequent examination performances. Candidates retaking sections are encouraged to consider all content categories in preparation.

Important Document - Maintain for your records

Page 1 of 2

Psychometric Analysis and Technical Reports

- Candidate and examiner performance across years by attempt and by individual
- Comparison of candidate and examiner performance on patient and simulation forms
- Internal reliability measures
- Documentation supporting the validity argument and defensibility of using WREB exam results to inform licensing decisions
- Technical reports for WREB Examinations

For questions or to obtain additional information:

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WREB

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WREB Dental Examination

Overview of Decision-Making Approach and Scoring Determination

WREB ensures that all examinations are scored accurately, fairly, and in accordance with the *Standards for Educational and Psychological Testing*.¹ Practices relevant to examination scoring include the decision-making approach and methods of score determination. An overview of each for the WREB Dental Examination is provided in this document. Additional details regarding the Dental Examination or for related information regarding WREB's Dental Hygiene Examinations are available upon request.

Examination Decision-Making Approach

The terms *compensatory* and *conjunctive* refer to decision-making approaches that may be employed when results from multiple assessments are combined. A compensatory approach averages scores across multiple assessment scores to obtain one final overall score, which allows higher performance on one assessment to compensate for lower performance on another assessment. In contrast, a conjunctive approach requires that performance on each assessment meet or exceed a standard set for that assessment. WREB employs a conjunctive approach to determine the pass or fail decision based on multiple sections of the overall examination. For WREB's Dental Examination, all sections are independent and must be passed at the competency standard for a candidate to pass the Dental Examination.

Methods of Score Determination

The pass or fail decision regarding candidate performance on each examination section is based on the final score, which is derived from a raw score. The raw score is equal to the final score if no deductions or penalties are applied. A candidate's final score on each examination section must meet or exceed the passing score to pass the Dental Examination, in accordance with the conjunctive model of combining results from different tests. Additional details for each examination section regarding scoring are provided, below.

Periodontics Section. The raw score for the Dental Periodontics section is based on the percentage of examiner-validated error-free tooth surfaces. The Dental Periodontics section utilizes error/no-

error grading, where the median grade of the three independent examiners will always reflect exact agreement by at least two of the examiners. For each error that is validated by at least two examiners, the candidate's score is reduced by a proportion of the maximum points available. Penalties (e.g., unacceptable patient submissions) result in deductions from the Periodontics section score, if applicable and validated. A validated critical error (e.g., major tissue trauma) or a finding of egregious performance results in examination failure.

Comprehensive Treatment Planning (CTP), Operative Dentistry, Endodontics, and Prosthodontics sections. Raw scores for the Comprehensive Treatment Planning (CTP), Operative, Endodontics, and Prosthodontics sections are calculated by summing and/or averaging the median of ratings (i.e., grades) assigned by the Grading Examiners for each scoring criterion, according to defined ordinal levels of performance. As described in the previous section regarding the pass/fail decision-making approach, a conjunctive approach is employed for combining results across the different Dental Examination sections; however, a compensatory scoring approach (i.e., summing and/or averaging) is recommended for scoring related tasks and abilities assessed *within* a single test. Median grades are summed and averaged across multiple criteria and procedures, rather than requiring candidates to “pass” every criterion or procedure as if each were a separate test. Unless the candidate's performance has prompted a validated critical error, which results automatically in section failure, it is possible that a small variation from the cut score can be offset by performance in other areas that exceed the minimal competency definition, to arrive at a final score that meets or exceeds the minimal competency standard. The converse is also possible; adequate performance in one area may be offset by inadequate performance in other areas, resulting in section failure.

Compensatory scoring *within* each examination section is consistent with research on standard-setting methods for performance-based tasks. For example, Hambleton and Slater² demonstrated that decision consistency and decision accuracy decrease with the number of separate tasks assessed under a conjunctive scoring approach. Haladyna and Hess³ also found reliability and rater consistency to be lower with conjunctive scoring of performance-based tasks. They recommend that the choice of scoring strategy be supported by suitable definitions from subject matter experts corroborated by empirical evidence that demonstrates the degree of

relatedness among the scored elements. WREB examination committees review grading criteria, scoring procedures, and criterion weighting regularly. Analyses of content dimensionality and correlations among graded criteria and procedures are also conducted regularly to determine and support scoring methods. Dental grading criteria and procedures within each examination section are highly related, indicating summing and averaging as the preferred approach to scoring. For example, performance on the two Operative restorations is highly related; approximately 90% of attempts, historically, have the same outcome per procedure (*i.e.*, both below the standard for competence or both at or above the standard for competence).

The Comprehensive Treatment Planning (CTP), Operative, Endodontics and Prosthodontics sections are graded according to published scoring rubrics, that define performance at multiple levels for various criteria. Each grading criterion is defined at five (5) levels of performance for each procedure, with a grade of "3" representing minimal competence. A grade of "5" is defined generally to represent optimal performance, with grades of 4, 3, 2, and 1 corresponding to appropriate, acceptable, inadequate, and unacceptable performance, respectively. All scoring criteria are available in the Dental Exam Candidate Guide and CTP Exam Candidate Guide for the current season at:

https://wreb.org/Candidates/Dental/2020_Dental_PDFs/2020_Dental_Candidate_Guide.pdf and
https://wreb.org/candidates/dental/dentalpdfs/2021_CTP_Candidate_Guide.pdf .

An example of scoring criteria for grading the Preparation stage of the Posterior Class II composite is displayed in Figure 1, on the following page.

For each criterion, the median of the three examiner grades is weighted to reflect the level of criticality relevant to minimally competent treatment. For example, for the Operative Dentistry section, Outline and Extension accounts for 46% of the Preparation score and Operative Environment accounts for only 15%. Weighted criterion medians are summed to attain procedure scores or CTP case-level scores. The average of the procedure or case-level scores is the raw score for the Operative Dentistry, Prosthodontics, and CTP sections. The sum of weighted criteria is the

raw score for the Endodontics section. Final scores also reflect score deductions if any penalties have been assessed.

DIRECT POSTERIOR CLASS II – COMPOSITE PREPARATION SCORING CRITERIA RATING SCALE					
	5–Optimal	4–Appropriate	3–Acceptable	2–Inadequate	1–Unacceptable
OUTLINE & EXTENSION	Outline is generally smooth and flowing, and does not weaken tooth in any manner.	Outline is slightly irregular, but does not weaken tooth. Isthmus is slightly wider than required for lesion.	Outline moderately weakens marginal ridge or a cusp. Isthmus is too wide or too narrow for lesion.	Outline severely weakens marginal ridge or a cusp. Outline is misshapen and/or forces improper angle of exit. Unsound demineralized enamel that is tactilely different from the adjacent unaffected enamel is present.	Outline is grossly improper and/or lacks any definite form. Tactilely unsound demineralized enamel penetrates the DEJ. Caries remains in the enamel or is not completely accessed. Unapproved surface prepared.
	Proximal and gingival extensions are visually open and break contact up to 1.0 mm.	Proximal and/or gingival extensions are slightly overextended.	Proximal and/or gingival extensions are moderately overextended.	Proximal and/or gingival extensions are in contact or obviously overextended.	Proximal and/or gingival extensions are grossly overextended.
	Optimal treatment of fissures.	Near optimal treatment of fissures.	Adequate treatment of fissures. Neither the tooth nor restoration is compromised.	Inadequate treatment of fissures will compromise the tooth or restoration.	Lack of treatment of fissures will seriously compromise the tooth and restoration.
	Proximal cavosurface angles are equal to or slightly greater than 90°. The integrity of both tooth and restoration is maintained.	Cavosurface angles are not optimal, but do not compromise the integrity of the tooth or restoration. Cavosurface has small areas of minor roughness.	Cavosurface angles possibly compromise the integrity of the tooth or restoration. Cavosurface is moderately rough, but will not adversely affect the final restoration.	Improper cavosurface angles or rough cavosurface will cause the final restoration to fail.	Cavosurface angles are grossly improper. Cavosurface has multiple major areas of roughness and/or enamel weakness that will cause the restoration to fail.
INTERNAL FORM	Pulpal floor depth as determined by the lesion or defect does not exceed 2.0 mm from the cavosurface. Enamel may remain on the pulpal floor. Axial wall depth at the gingival floor is 1.0 mm-1.5 mm.	Pulpal floor and/or axial wall is slightly shallow or deep.	Pulpal floor and/or axial wall is moderately shallow or deep.	Pulpal floor and/or axial wall is critically shallow or critically deep. Affected dentin remains. Indirect pulp cap declared when no caries or affected dentin remains.	Walls and/or floors are grossly deep with total lack of concern for the pulp. Caries remains in the dentin or is not completely accessed. Unapproved surface prepared.
	Conventional design: Internal form is smooth and flowing and has no sharp angles that could weaken or cause voids in the final restoration. Slot design: Proximal box is present. Proximal line angles are ideal.	Conventional design: Internal form is mostly smooth and flowing, but some minor roughness and/or sharp angles are present. Slot design: Proximal box is present. Proximal line angles are slightly more or less rounded than ideal.	Conventional design: Internal form is generally smooth and flowing, but some moderate roughness and/or sharp angles are present. Slot design: Proximal box form has moderate variation from ideal.	Conventional design: Internal form is rough and unfinished with major areas of roughness or sharp angles that will lead to restoration failure. Slot design: There is excessive rounding of all line angles. Excessive deviation from ideal proximal box form.	Conventional design: Internal form is grossly rough and/or has gross sharp angles that will lead to restoration failure. Slot design: There is gross lack of internal form.
	Rubber dam isolation is stable and optimal; the dam is inverted and has no rips, tears, bunching or exposed tissue. The preparation is clean and dry. No damage to the adjacent tooth.	Rubber dam isolation is not optimal, but the preparation is clean and dry. Minor damage to the adjacent tooth can be removed by polishing without changing the shape of the contact.	Rubber dam isolation is adequate, but the wrong teeth are isolated. The preparation can be cleaned and dried. Damage to the adjacent tooth can be removed by polishing, but the shape of the contact will be changed.	Rubber dam isolation is inadequate. The preparation is difficult to access or visualize due to blood or saliva on the preparation or partial coverage by the dam. Damage to the adjacent tooth will be difficult to polish out and still maintain appropriate proximal contour. The adjacent tooth will likely require restoration.	The rubber dam is grossly sloppy and torn, or portions of the preparation are not visible due to blood, saliva, or improper isolation. Damage to the adjacent tooth will definitely require restoration.

Figure 1. Scoring criteria definitions for the Preparation stage of the Direct Posterior Class II Composite procedure, 2020.

Examiners are trained to assign a particular grade only when *all* aspects of performance described for that level have been demonstrated. For example, if performance on the criterion under review meets most of the definition for a grade of “3” but does not quite meet the standard for even one aspect of the definition for a “3,” the grade assigned will be a “2,” at most. This holds for all graded criteria.

Where applicable, raw scores are scaled and/or equated to facilitate interpretability and to ensure comparability of scores on different test forms and across years. For example, the patient

cases that comprise the Comprehensive Treatment Planning examination are equated to ensure comparability of test forms. Equating of test forms must be conducted because the raw passing score on a difficult form of a test may be lower than the raw passing score on a less challenging form of the test. Scaling and equating procedures allow for unambiguous interpretation of comparable performance on each form. Scaling is a linear or proportional conversion to another, more interpretable, numeric score scale, analogous to converting from degrees Celsius to degrees Fahrenheit. Pass or fail decisions based on final scores, after applicable weighting, equating, and scaling, reflect accurately the passing standards set by examination committees and ensure that candidates of comparable proficiency will be equally likely to pass the examination, regardless of test form or date of administration.

Conclusion

The scores on the two restorations for the WREB Operative Dentistry section have been averaged for many years, and at least one other dental testing agency, CRDTS, also averages the scores attained on different procedures within an examination section, including their dental restorative section.⁴ Misinformation has been provided to some State Boards that characterizes this aspect of scoring as somehow improper or not rigorous, which is not accurate. As noted above, averaging the scores on the two Operative restorations is the recommended approach for scoring multiple tasks or test items that are related *within* one assessment. Averaging the scores for the two procedures requires the candidate who underperforms on the first procedure to demonstrate performance that *exceeds* the cut-point by at least as much on the second procedure in order to achieve a passing score and instill confidence in an inference of competence. Candidates who incur a critical error on the first procedure, or are dismissed for egregious performance or ethical violations, fail the Operative Dentistry section at once and are not allowed to perform a second procedure. Every criterion grade assigned (out of six criteria per restoration) reflects the *least* competent aspect of the performance demonstrated, regardless of higher competence demonstrated within the same criterion under evaluation. The decision-making approach used to determine the overall outcome of the multi-section WREB dental examination is completely conjunctive, *i.e.*, candidates must demonstrate competence at the passing standard on *every* section to be successful, overall.


WREB continues to accumulate evidence that supports the validity and integrity of its scoring system but recognizes that some states may be more familiar with an alternative scoring model. Reinterpreting the structure of a test to alter the pass or fail outcome requires a comprehensive standard setting process and justification to maintain defensibility^{5, 6} and is not recommended by WREB. However, if a state chooses to require independent passage of each restoration in the Operative Dentistry section (i.e., a conjunctive decision *within* the test), the score attained on each procedure can be easily verified on the WREB dental score report. The score report allows State Boards of Dentistry to see details of the candidate's performance, such as the scores for each restoration and the raw median grades for each Operative Dentistry section criterion. The report provides clarity regarding WREB's scoring system, revealing each median score, criterion weight, and details for any penalties assessed. An example score report is displayed in the Appendix (p. 7 – 8).

References

1. American Educational Research Association, American Psychological Association, & National Council on Measurement in Education. *Standards for Educational and Psychological Testing*. Washington, DC: American Educational Research Association; 2014.
2. Hambleton RK, Slater SC. Reliability of credentialing examinations and the impact of scoring models and standard-setting policies. *Applied Measurement in Education* 1997; 10(1), 19-38.
3. Haladyna TM, Hess RK. An evaluation of conjunctive and compensatory standard-setting strategies for test decisions. *Educational Assessment* 1999; 6(2), 129-153.
4. Central Regional Dental Testing Service, Inc. *Dental Examination Candidate Manual, Class of 2020*. Topeka, KS: CRDTS. At: <https://www.crdts.org/uploads/2020%20DENTAL%20CANDIDATE%20MANUAL.pdf> . Accessed 20 Jan. 2020.
5. Cizek GJ, Bunch MB. *Standard Setting: A Guide to Establishing and Evaluating Performance Standards on Tests*. Thousand Oaks, CA: Sage, 2007.
6. Mattar J, Hambleton RK, Copella JM, Finger, MS. Reviewing or revalidating performance standards on credentialing examinations. In G. J. Cizek (Ed.), *Setting Performance Standards: Concepts, Methods, and Innovations* (pp. 399-412). New York: Routledge, 2012.


Appendix

Example WREB Dental Examination Individual Performance Report



WREB
A National Dental and Dental Hygiene Testing Agency

Dental Individual Performance Report



Doe, John (A101)
555 N. Street Rd.
City, State 90000
United States

OPERATIVE
New York University* - Mar 21 - Mar 24 2019

Prep Procedure #1			
Posterior Composite	Median Score	Weight Factor	Score
Outline and Extension	4.00	46.0%	1.840
Internal Form	3.00	39.0%	1.170
Operative Environment	3.00	15.0%	0.450
Posterior Composite Prep Score:			3.460

Finish Procedure #1			
Posterior Composite	Median Score	Weight Factor	Score
Anatomical Form	3.00	36.5%	1.095
Margins	3.00	36.5%	1.095
Finish	3.00	27.0%	0.810
Posterior Composite Finish Score:			3.000

Procedure #1 Score:	3.23
---------------------	------

Prep Procedure #2			
Anterior Composite	Median Score	Weight Factor	Score
Outline and Extension	3.00	46.0%	1.380
Internal Form	3.00	39.0%	1.170
Operative Environment	3.00	15.0%	0.450
Anterior Composite Prep Score:			3.000

Finish Procedure #2			
Anterior Composite	Median Score	Weight Factor	Score
Anatomical Form	4.00	36.5%	1.460
Margins	4.00	36.5%	1.460
Finish	3.00	27.0%	0.810
Anterior Composite Finish Score:			3.730

Procedure #2 Score:	3.37
---------------------	------

Operative Section Score:	3.30	Pass
--------------------------	------	------

ENDODONTIC
New York University* - Mar 21 - Mar 24 2019

Anterior			
	Median Score	Weight Factor	Score
Access	4.00	27.0%	1.080
Condensation	4.00	46.0%	1.840

Posterior			
	Median Score	Weight Factor	Score
Access	3.00	27.0%	0.810

Endodontic Section Score:	3.73	Pass
---------------------------	------	------

COMPREHENSIVE TREATMENT PLANNING (CTP)

CTP Section Score:	3.40	Pass
--------------------	------	------

PERIODONTICS
New York University* - Mar 21 - Mar 24 2019

	Score
Treatment:	100.00%
Periodontics Section Score:	100.00%
	Pass

A score of 3.00 (or 75% or higher on Periodontics) reflects the standard for demonstrating competence. Completion of the core exam requires passing the three sections, Operative, Endodontics and CTP, within twelve (12) months. If any of the three core sections is failed, the WREB Exam is failed until the failed section(s) is/are passed within the required twelve (12) month period. If the failed section(s) is/are not passed within twelve (12) months, all three core sections must be taken again. Many individual state licensing bodies also require passing performance on the Periodontal or Prosthodontics sections, in addition to the WREB Core Sections (Operative, Endodontics and Comprehensive Treatment Planning). You should review the Dental Candidate Guide for detailed scoring information and requirements.

Additional details regarding performance are provided for your information. Please note that performance within each section is likely to vary more than overall clinical or written score across subsequent examination performances. Candidates retaking sections are encouraged to consider all content categories in preparation.

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PROSTHODONTIC
New York University * - Mar 21 - Mar 24 2019

Anterior Crown	Median Score	Weight Factor	Score
Occlusal Reduction	3.00	30.0%	0.900
Axial Reduction	4.00	25.0%	1.000
Margins & Finish Line	4.00	35.0%	1.400
Operative Environment	4.00	10.0%	0.400
Anterior Crown Prep Score:			3.700

Anterior Bridge Abutment	Median Score	Weight Factor	Score
Occlusal Reduction	4.00	30.0%	1.200
Axial Reduction	4.00	25.0%	1.000
Margins & Finish Line	3.00	35.0%	1.050
Operative Environment	4.00	10.0%	0.400
Anterior Bridge Abutment Prep Score:			3.650

Posterior Bridge Abutment	Median Score	Weight Factor	Score
Occlusal Reduction	4.00	30.0%	1.200
Axial Reduction	4.00	25.0%	1.000
Margins & Finish Line	3.00	35.0%	1.050
Operative Environment	4.00	10.0%	0.400
Posterior Bridge Abutment Prep Score:			3.650

Prosthodontic Section Score:	3.67	Pass
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A score of 3.00 (or 75% or higher on Periodontics) reflects the standard for demonstrating competence. Completion of the core exam requires passing the three sections, Operative, Endodontics and CTP, within twelve (12) months. If any of the three core sections is failed, the WREB Exam is failed until the failed section(s) is/are passed within the required twelve (12) month period. If the failed section(s) is/are not passed within twelve (12) months, all three core sections must be taken again. Many individual state licensing bodies also require passing performance on the Periodontal or Prosthodontics sections, in addition to the WREB Core Sections (Operative, Endodontics and Comprehensive Treatment Planning). You should review the Dental Candidate Guide for detailed scoring information and requirements. Additional details regarding performance are provided for your information. Please note that performance within each section is likely to vary more than overall clinical or written score across subsequent examination performances. Candidates retaking sections are encouraged to consider all content categories in preparation.

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WREB Dental Examination Sections 2021

Comprehensive Treatment Planning (CTP) Section. CTP is a performance-based, examiner-graded section that requires candidates to review three patient cases and create treatment plans, construct responses to questions, and perform tasks (e.g., write prescriptions). CTP requires a broad understanding of diagnosis, prevention, restoration, endodontics, periodontics, prosthodontics, oral surgery, radiology, pediatric dentistry, and patient-management procedures. Failure can result if a candidate commits a critical error, i.e., constructs a response that could result in life-threatening harm, e.g., administering more than the upper limit of a safe dose of local anesthetic to a pediatric patient.

Endodontics Simulation Section. The Endodontics Section is a performance-based, examiner-graded clinical simulation examination. Candidates must perform two endodontic procedures on simulated teeth mounted in a segmented arch which is mounted in a manikin that is positioned to simulate working on a patient. The anterior tooth procedure requires treatment of a maxillary central incisor simulated tooth, including access, instrumentation and obturation. The posterior tooth procedure requires access of a mandibular first molar simulated tooth. Access of the posterior tooth must enable grading examiners to identify all canal orifices.

Prosthodontic Simulation Section. The Prosthodontics Section is a performance-based, examiner-graded clinical simulation examination. Candidates complete two prosthodontic procedures (three preparations) on simulated teeth in a mounted articulator and manikin that is positioned to simulate working on a patient. Candidates are required to prepare an anterior tooth for a full-coverage crown and prepare two abutments to support a posterior three-unit fixed partial denture prosthesis (i.e., bridge). The three-unit bridge must have a path of insertion that allows full seating of the restoration.

Periodontics Section. The Periodontics section will be available in either a patient-based form or simulation form. The patient-based form is unchanged. The simulation form will not involve qualifying a patient but will involve the removal of subgingival calculus on teeth in an assigned quadrant mounted in a manikin to simulate performing the procedure on a patient. WREB has worked to develop a realistic colored calculus for the simulation. Grading criteria and scoring for the removal of calculus are as published for performance of the same task on a patient.

Operative Dentistry Section. The Operative section will be available in either a patient-based form or simulation form. The patient-based form is unchanged. The simulation form involves performing a Class II (composite or amalgam) and a Class III composite restoration on a posterior tooth and anterior tooth, respectively. The teeth for preparation have a simulated caries, a DEJ, dentin, enamel, and a pulp chamber. The exam will involve limited radiographic interpretation and the depth of the simulated caries will require candidates to modify their preparations. As in the patient-based form, modifications will be initially reviewed by a Floor Examiner. Both preparation and restoration will be accomplished with full clinical simulation and with rubber-dam isolation.

WREB Dental Hygiene Examination 2021

Dental Hygiene Clinical Examination. The Dental Hygiene Clinical Examination will be available in either a patient-based form or manikin-based form. The patient-based form is unchanged. The manikin exam is comprised of two exercises: 1) Assessment and Detection, and 2) Removable Calculus. Each exercise is completed on a simulated quadrant mounted in a typodont/manikin, positioned to simulate the treatment of a patient. Features of the Assessment and Detection model and the color and design of calculus on the Removable Calculus model are new or improved for 2021.

- The Assessment and Detection exercise requires the candidate to assess periodontal conditions, accurately record periodontal measurements, and note the presence of subgingival calculus on a maxillary quadrant.
- The Removable Calculus exercise requires candidates to thoroughly remove subgingival calculus from all teeth in the assigned quadrant using ultrasonic and/or hand instrumentation.

Dental Hygiene Objective Structured Clinical Examination (DH OSCE). The DH OSCE will continue to be offered as a stand-alone examination for those states that do not require a demonstration of hand skills or as a psychometrically sound alternative in the event that the pandemic impacts the delivery of alternative forms of the exam.

The DH OSCE examination is a standardized, multiple-choice examination that employs images and radiographs to replicate authentic oral conditions and clinical situations. DH OSCE content focuses on the clinical aspects and knowledge-based skills necessary to safely treat a patient in a clinical setting. The content categories assessed are medical history, risk assessment, extraoral/intraoral examination, periodontal assessment, dental hygiene care/treatment plan, and instrumentation. The DH OSCE is tailored to specific clinical aspects of dental hygiene care in order to evaluate critical thinking skills that cannot be assessed comprehensively on the clinic-based examination. The examination is administered at dental hygiene schools by WREB personnel with social distancing and adherence to current COVID-19 guidelines. Site-based administration eliminates the need for students to wait for availability at a testing center.