WREB
2018 Dental Examination Update

Utah Dentist and Dental Hygienist Board

September 7, 2018

Mark L Christensen, DDS MBA
Sharon E Osborn Popp, PhD

WREB
A National Dental and Dental Hygiene Testing Agency

Outline

1. History and Background
2. Dental Exam: sections
3. Administration and Performance
4. Quality: reliability and validity
5. Reporting and Remediation
6. Considerations for 2018
7. Clinical Dental Hygiene Exams
8. Questions?

History and Background

History

Western Regional Examining Board

Inc. 1976, Oregon and Utah

Collaboration and control → improved quality

Now **WREB – A National Testing Agency**

Retains centralized control of

exam development, administration,

and quality with guidance from all member state dental boards.

WREB
A National Dental and Dental Hygiene Testing Agency

Mission Statement

The Mission of WREB is to develop and administer competency assessments for state agencies that license dental professionals

WREB Vision

…to focus on providing the highest quality assessments possible—tests that conform to the *Standards for Educational and Psychological Testing*

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Why?

To better serve the states that recognize WREB Examinations

and support them

in their work to

Protect the Public

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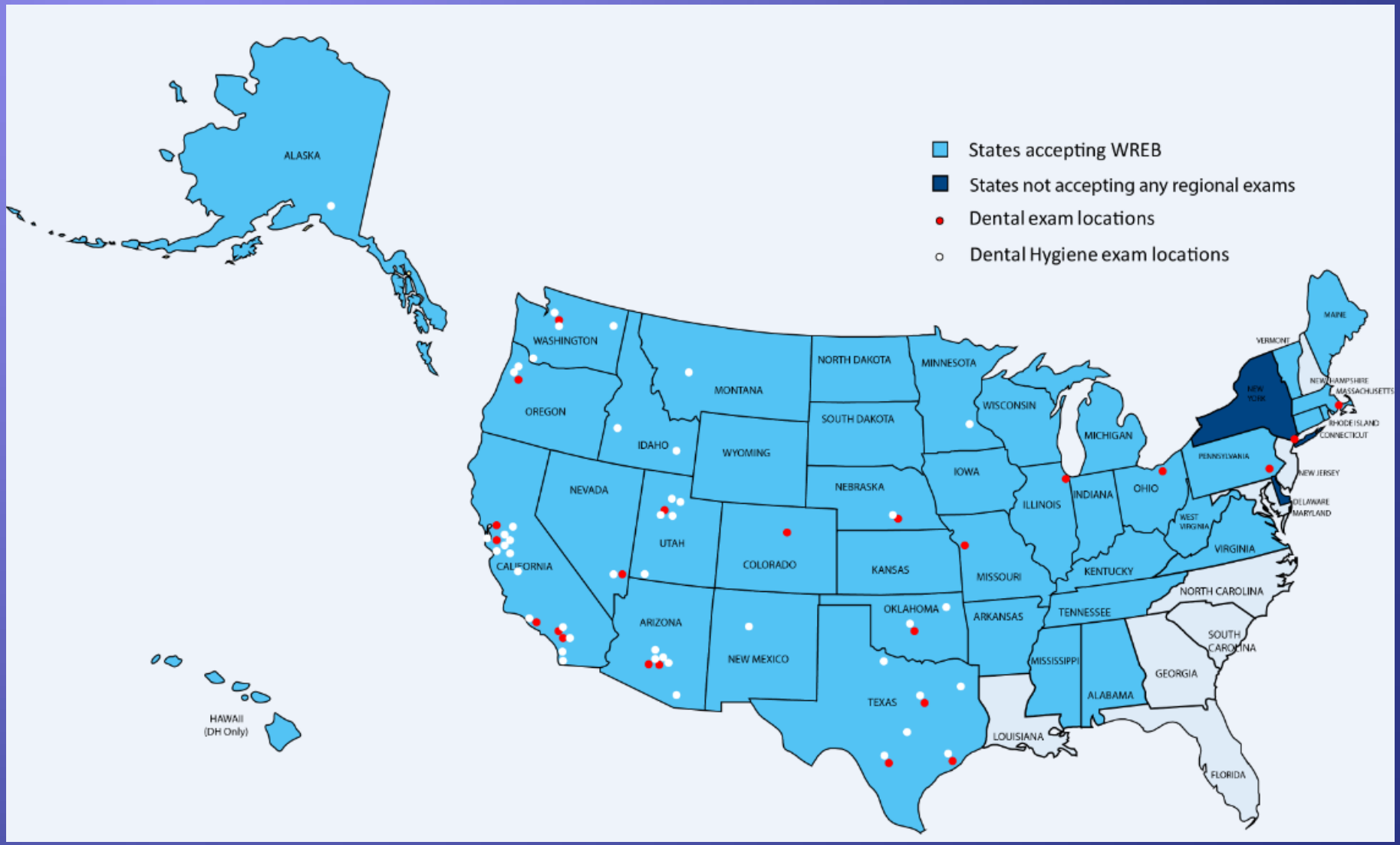

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Content: exam sections

WREB Dental Examination

Sections

Comprehensive Treatment Planning (CTP)

Prosthodontics (new for 2018)

Endodontics

Periodontics

Operative Dentistry

Sections are conjunctive and independent.

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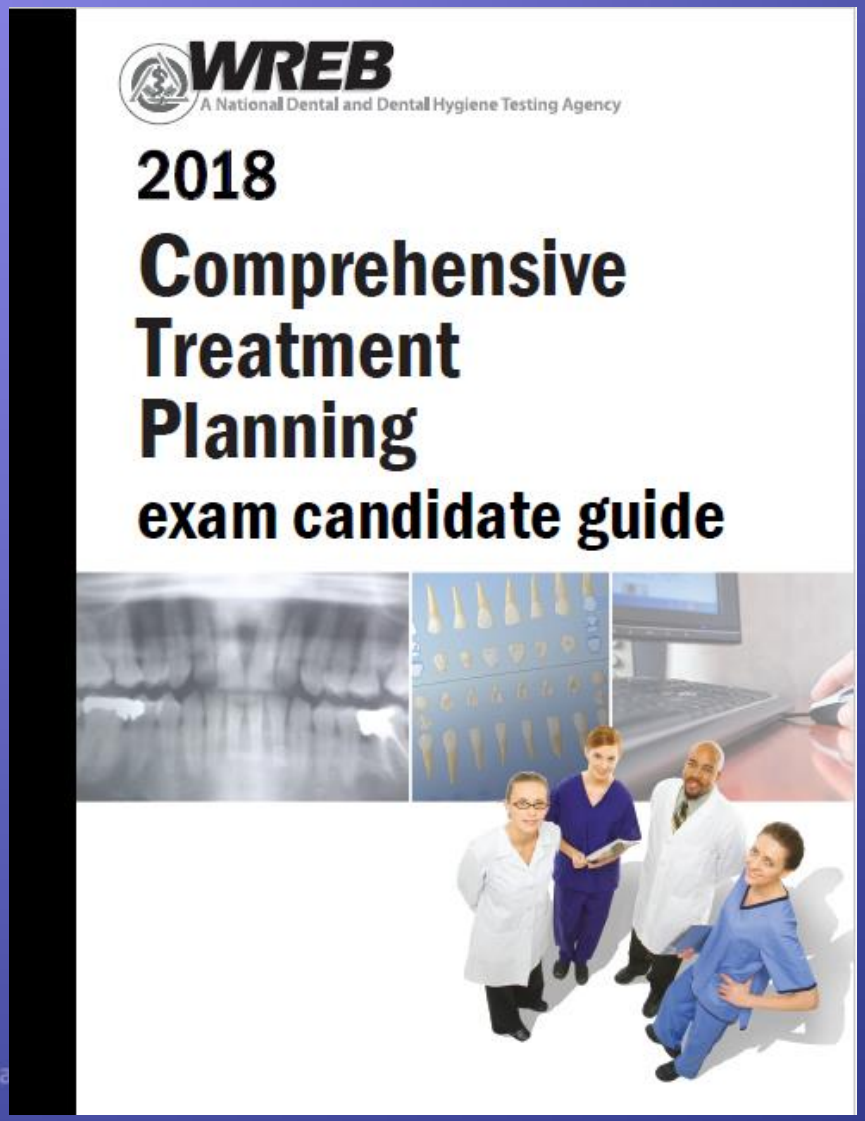
Comprehensive Treatment Planning CTP



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Comprehensive Treatment Planning (CTP)

- Computer-based but **NOT multiple-choice** – completely open-ended and examiner-graded
- Involves three (3) patient cases of varying complexity, including a pediatric case
- Candidates generate treatment plans from scratch
- Candidates answer open-ended questions that reveal their thinking
- Candidates perform tasks (e.g., write prescriptions, etc.)
- About 2% of candidates incur a validated critical error (e.g., local anesthesia overdose of pediatric patient) – automatic section failure

Patient Medical History

Patient Name: _____

Height: 5'4" Weight: 145 lbs

Blood Pressure: 128 / 78 Repeat BP: 127 / 72 Pulse: 63

Physician's name: Dr. Frieda Watkins Phone #: 602-333-4272

Do you have or have you ever experienced any of the following conditions?

Rheumatic Fever	Yes	(No)	Diabetes	Yes	(No)
Heart Condition	Yes	(No)	Kidney/Renal Disease	Yes	(No)
Heart Murmur	(Yes)	No	Hepatitis/Jaundice	Yes	(No)
Heart Surgery	(Yes)	No	HIV Positive	Yes	(No)
Valve Replacement	Yes	(No)	Epilepsy/Seizures	Yes	(No)
Pacemaker	Yes	(No)	Joint Replacement	Yes	(No)
Stroke	Yes	(No)	Cancer	Yes	(No)
High Blood Pressure	Yes	(No)	Ulcers/Colitis	Yes	(No)
Bleeding Disorder	Yes	(No)	Sexually Transmitted Disease	Yes	(No)
Tuberculosis	Yes	(No)	Psychiatric Care	Yes	(No)
Asthma/Lung/Respiratory Conditions	Yes	(No)			

Are you taking any medication, pills or drugs, prescribed or not? (Yes) No
If yes, please list and reason for use:
Ibuprofen 2-3 x/week

Are you allergic to any medicines, drugs, latex or other things? Yes (No)
If yes, please list:

Have you ever received intravenous bisphosphonates for bone cancer or severe osteoporosis? Yes (No)

Are you under the care of a physician at the present time or have you been treated by a physician in the past six months? (Yes) No
If yes, for what condition: Heart valve replacement 7 months ago.

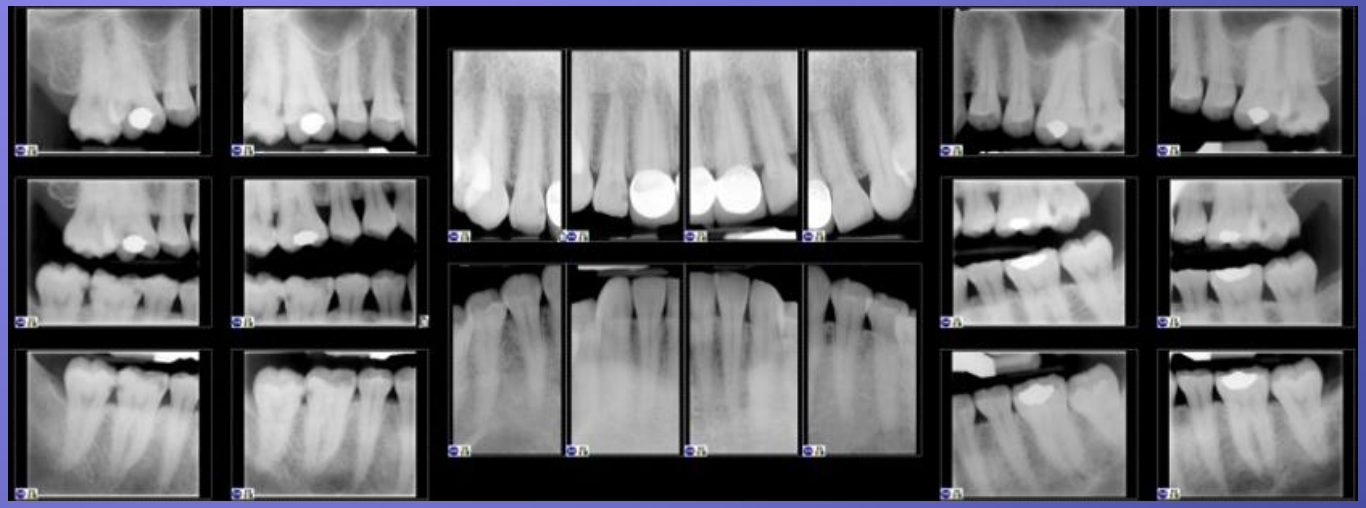
Do you have any disease, condition or problem not listed above that we should know about? If yes, please list: Yes (No)

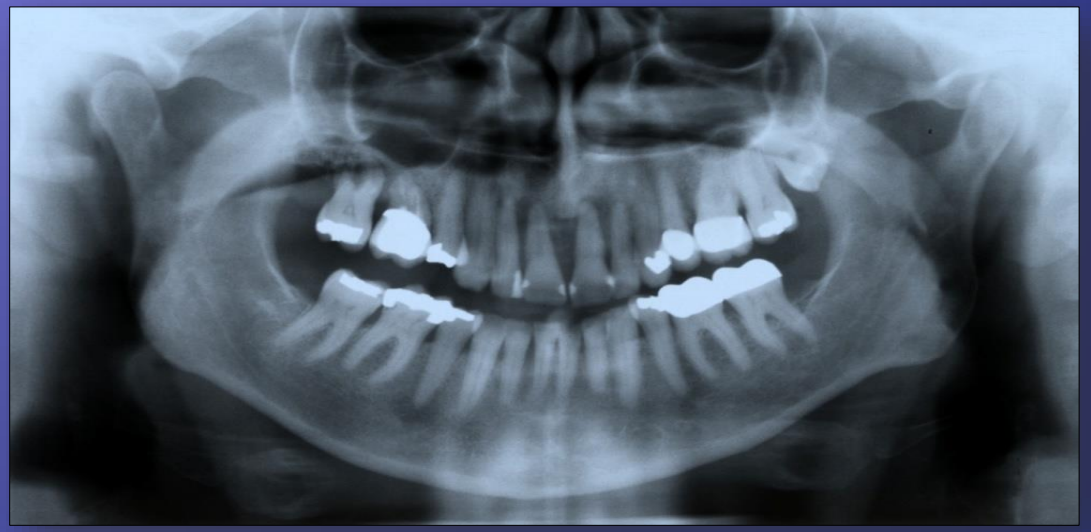
Women only, are you pregnant? Yes (No)
If yes, expected due date:

Clinical Findings:

None

Full Mouth Series and Panoramic Radiographs are provided for each case.





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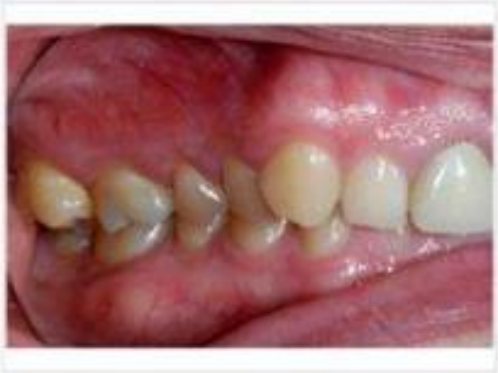

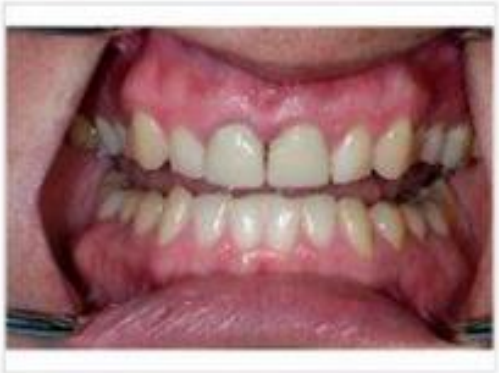

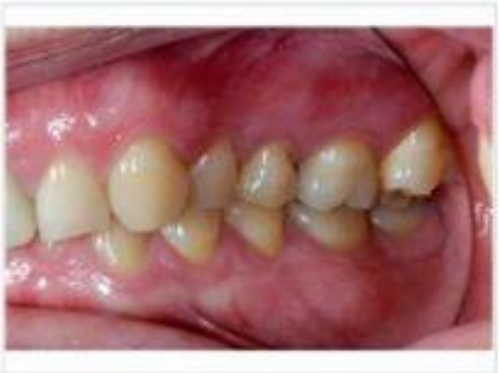

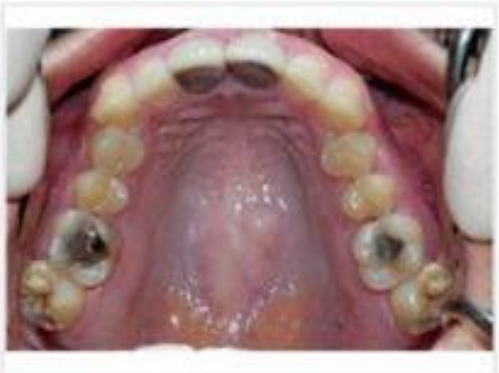

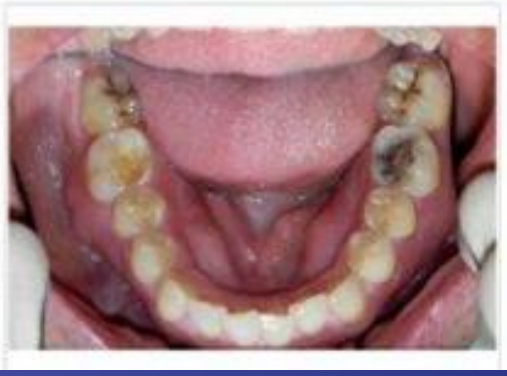

CTP Treatment Plan Scoring Criteria

CTP Global Scoring Criteria					
	5	**4**	**3**	**2**	**1**
Treatment Modification	All needed modifications are appropriately noted (medication, referral, etc.). Specific medication and dosage is required.	The modifications are not optimal, but appropriate.	Not all modifications are noted, but the patient's health is not compromised. Modifications are noted at the minimally acceptable level.	Not all modifications are noted, and or the modifications are incorrect or incomplete. The patient's health may be compromised.	Modifications are ignored or incorrect and the patient's health is compromised
Is the Treatment plan Inclusive?	All items that must be addressed are addressed. Chief complaint correctly addressed.	Most items that need to be addressed are addressed. Those that may be missing have little or no impact on the well – being of the patient . Chief complaint correctly addressed.	Missing items (one or more) do not pose a short term threat. Missing items (one or more) might affect patient well being if the next regular periodic exam is missing. Chief complaint not fully addressed.	Important items (one or more) are missing. If not corrected, patient well being is at risk in the near term. Chief complaint wrongly addressed.	Critical items (one or more) are missing. Patient well-being is currently at risk. Chief complaint not addressed.
Does the Treatment plan exhibit overtreatment?	Only those item(s) that must be addressed are addressed.	There are some (one or more) items that do not need to be addressed, but do not pose a risk to the patient.	There are some (one or more) items for which justification is questionable, but that pose little risk to the patient.	There are some (one or more) items that are not justified; if performed, they would result in limited physical damage to the patient.	There are multiple items that are not justified; if performed they would damage the patient.
Is the Treatment sequence appropriate?	The sequence is optimal.	The sequence is not optimal but will accomplish treatment goals.	The sequence is not correct, but can be corrected as treatment progresses. Rationale for the proposed sequence is unclear.	The sequence has definite flaws that are likely to result in backtracking and additional treatment.	The sequence has serious flaws and will not accomplish treatment goals.
Is the Treatment plan concise, well organized and easily interpreted?	The treatment plan is concise, well organized and easily interpreted.		The treatment plan, as presented, may be confusing, but can be interpreted.		The interpretation of the plan cannot be determined.

Case Questions Require a Constructed Response

And, for example, often deal with things like:

Pediatric dosage / mode of administration

Antibiotic premedication / Chief Complaint

Treatment modifications / HH considerations

Implant considerations / Endodontic diagnosis

Periodontal re-evaluation decisions

Acute treatment scenarios / ethical issues

Prescription Writing

Pharmacy Rx:

Rx Disp. Sig. Refill

Dental Laboratory Rx:

RPD – major connector, minor connectors, rests, guide planes, survey crowns, etc.

FPD – abutment, pontic design, material, shade, etc. (single units, survey crowns, implants)

Comprehensive Treatment Planning (CTP)

Test design ensures that aspects of the following are included:

- Pediatric Dentistry
- Geriatric Dentistry
- Operative Dentistry
- Endodontics
- Prosthodontics
  - Fixed (incl. implants)
  - Removable
- Periodontal Diagnosis and Treatment
- Patient Management
- Ethical Issues
- Preventive Dental Care
- Pharmacology
- Local Anesthesia
- Oral Surgery
- Oral Pathology and Radiology
- Medical Emergencies
- Prescription Writing
  - Pharmaceutical scripts
  - Laboratory orders
- Legal Issues

Comprehensive Treatment Planning - CTP

- **Clinically relevant** and **comprehensive**
- **NOT** multiple choice; **performance-based**
- Requires Candidates to **demonstrate,** without cues, **what they know** and **how they think** about clinical issues
- Graded by **calibrated examiners** (content experts)
- **High fidelity** and relevance for safe practice
  - Involves candidates **doing tasks they will be doing in practice**
  - **Catches errors** that could result in patient morbidity or mortality
- **Objectively scored** (criteria referenced) and **high reliability**
- Complements other sections of the WREB Examination
- **Unique**; neither ADEX nor CDCA (or any other agency) has anything like WREB's CTP Exam
- Does NOT duplicate the National Board Dental Examination

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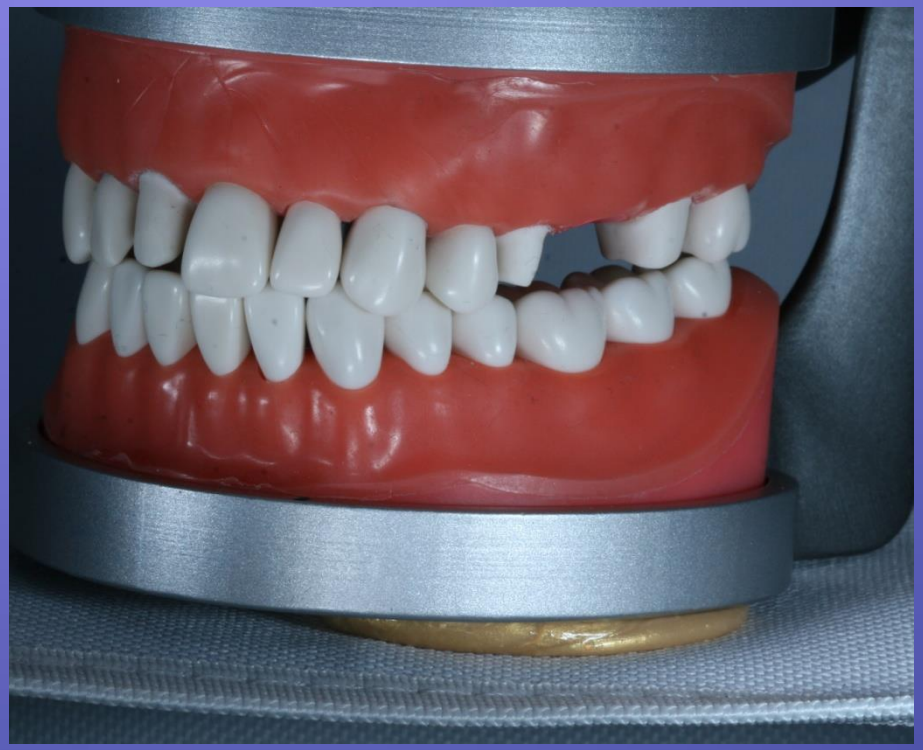
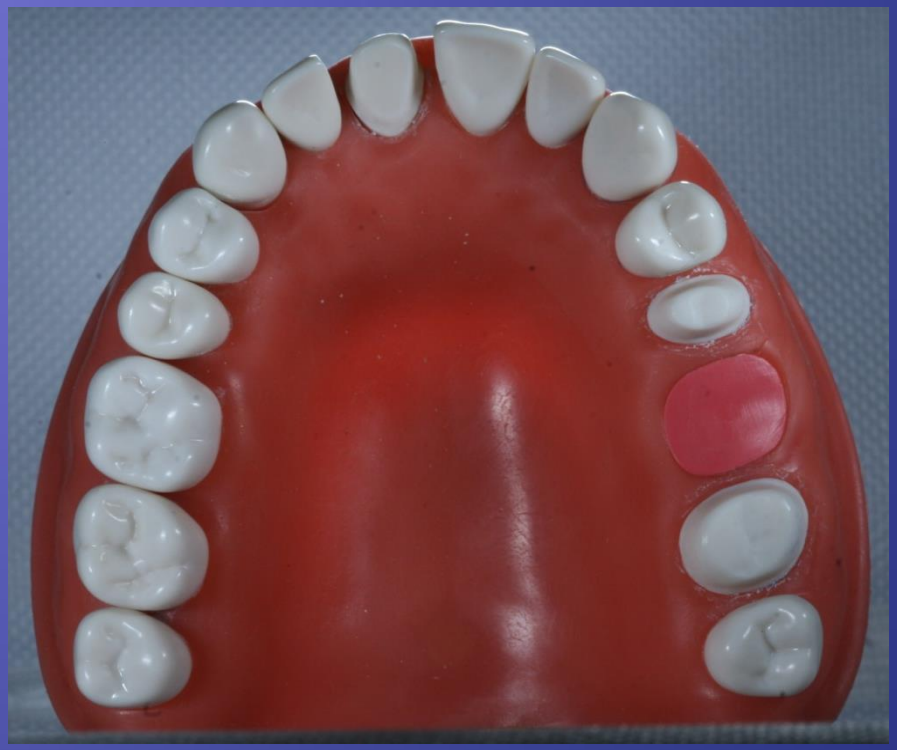
CTP

Open-ended Responses, Graded by Examiners

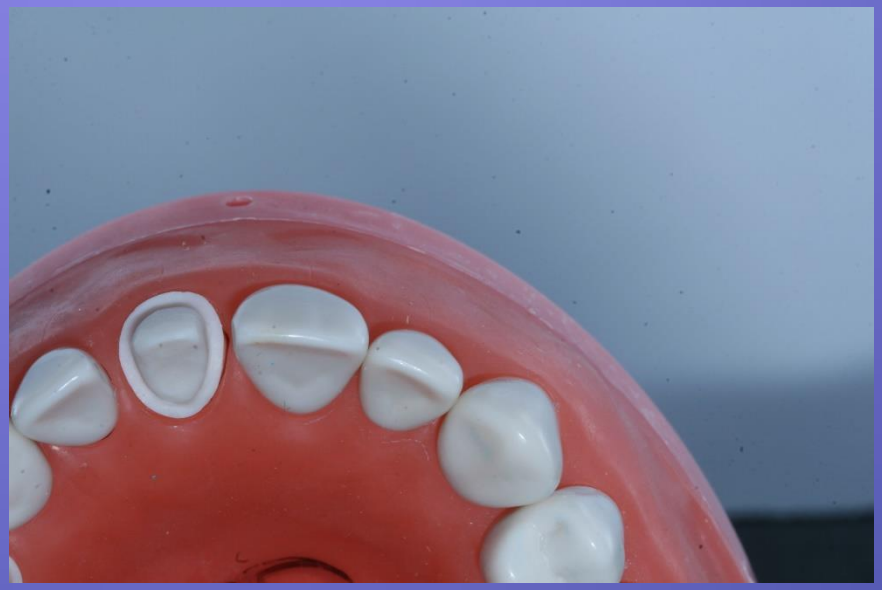
Prosthodontics
(new for 2018)





Candidates are required to prepare abutments for a posterior three-unit fixed partial denture (bridge) and a tooth for a single unit anterior crown.

Anterior Crown Preparation



Soft “ gummy’’ tissue, and assessment of tissue management

Posterior 3 Unit Bridge

PVS sectional matrices fabricated by candidates to evaluate reduction

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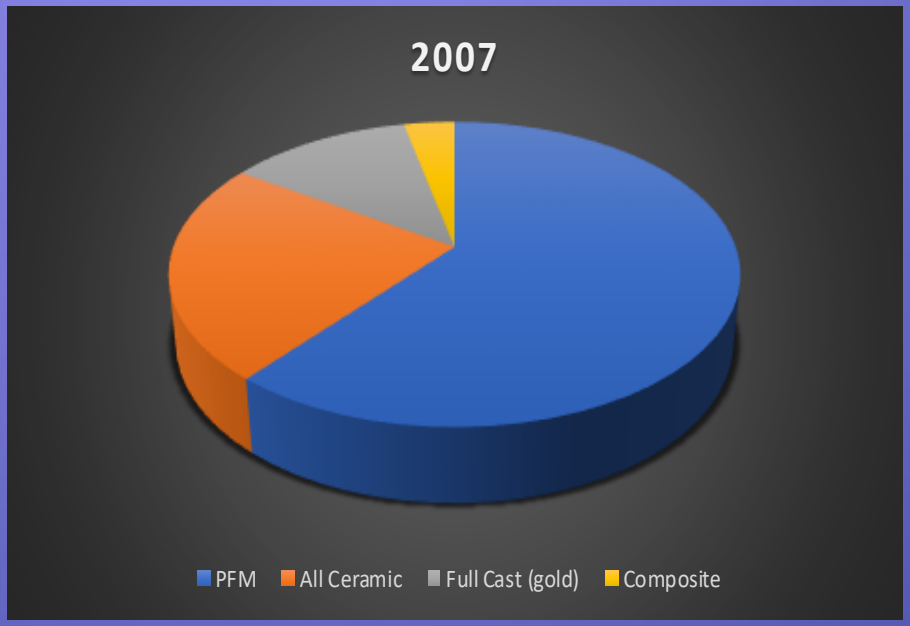
Why doesn't the WREB Prosthodontics section require both CG (FCC) & PFM on the three-unit bridge?

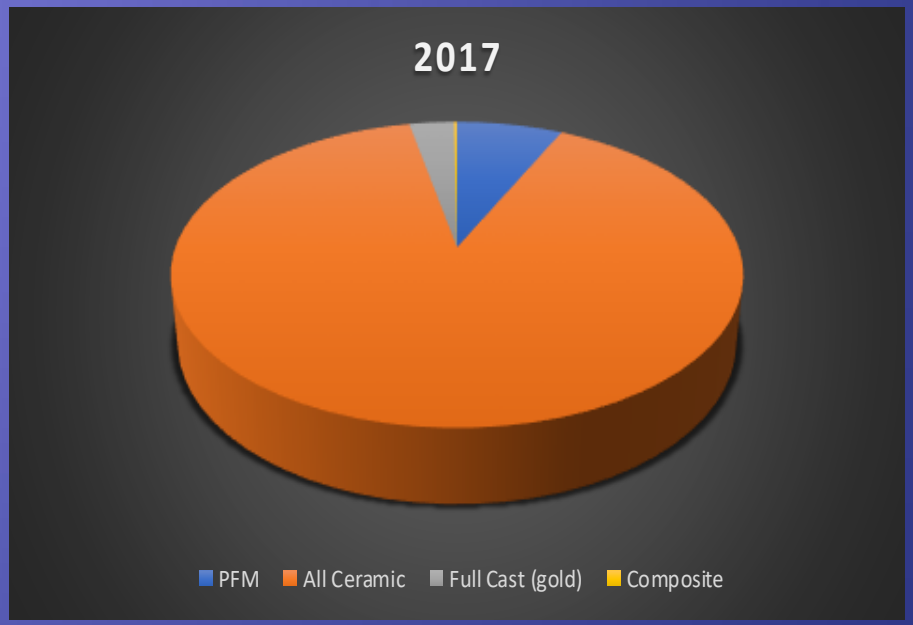
- The WREB Prosthodontic section expects the candidate to choose an appropriate material and then to demonstrate proper preparation design for the material chosen.

- Materials and techniques change over time; candidates are expected to exercise and demonstrate their professional judgment regarding material choices and preparation design.

- WREB wants candidates to demonstrate what they, in fact, will be doing in practice.

Posterior Fixed Prescriptions – courtesy Glidewell Laboratories





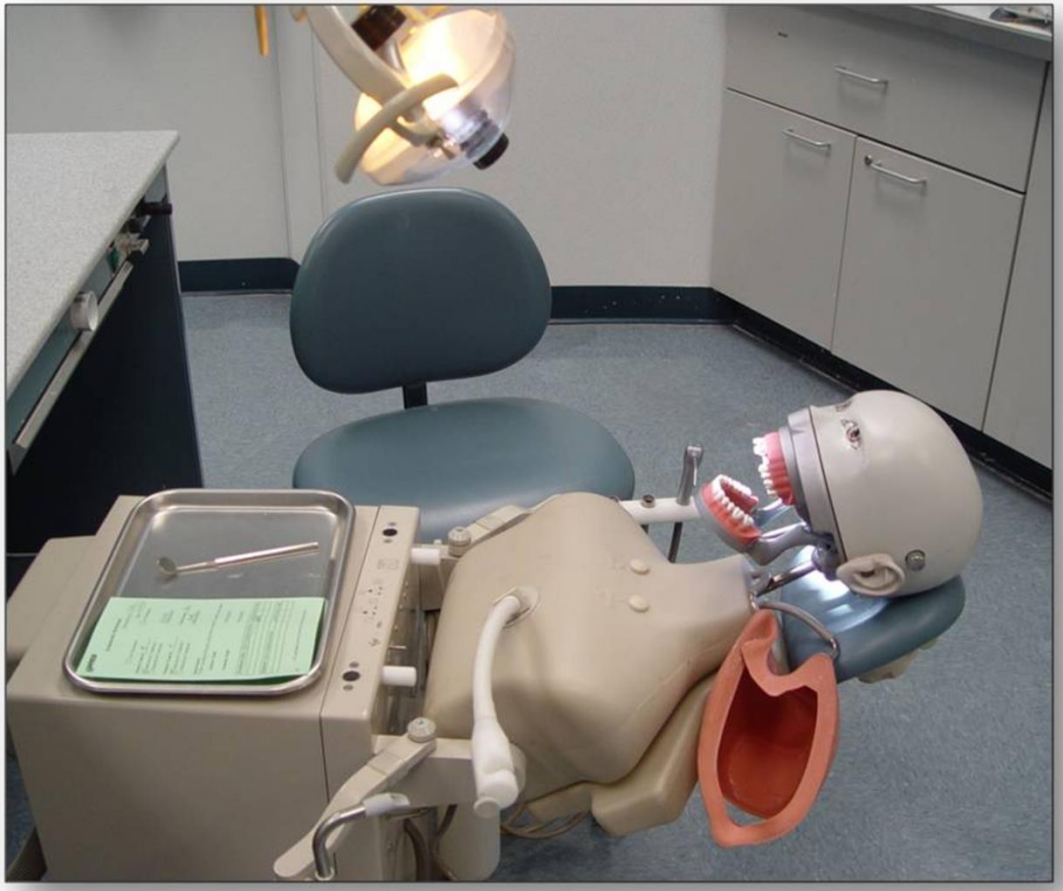
2007: PFM 60.9% All Ceramic 23.3% Full Cast (gold) 12.3% Composite 3.4%
2017: PFM 7.1% All Ceramic 89.6% Full Cast (gold) ~ 3% Composite 0.2%

Prosthodontics

Elective Section

State Dental Boards may mandate this section.

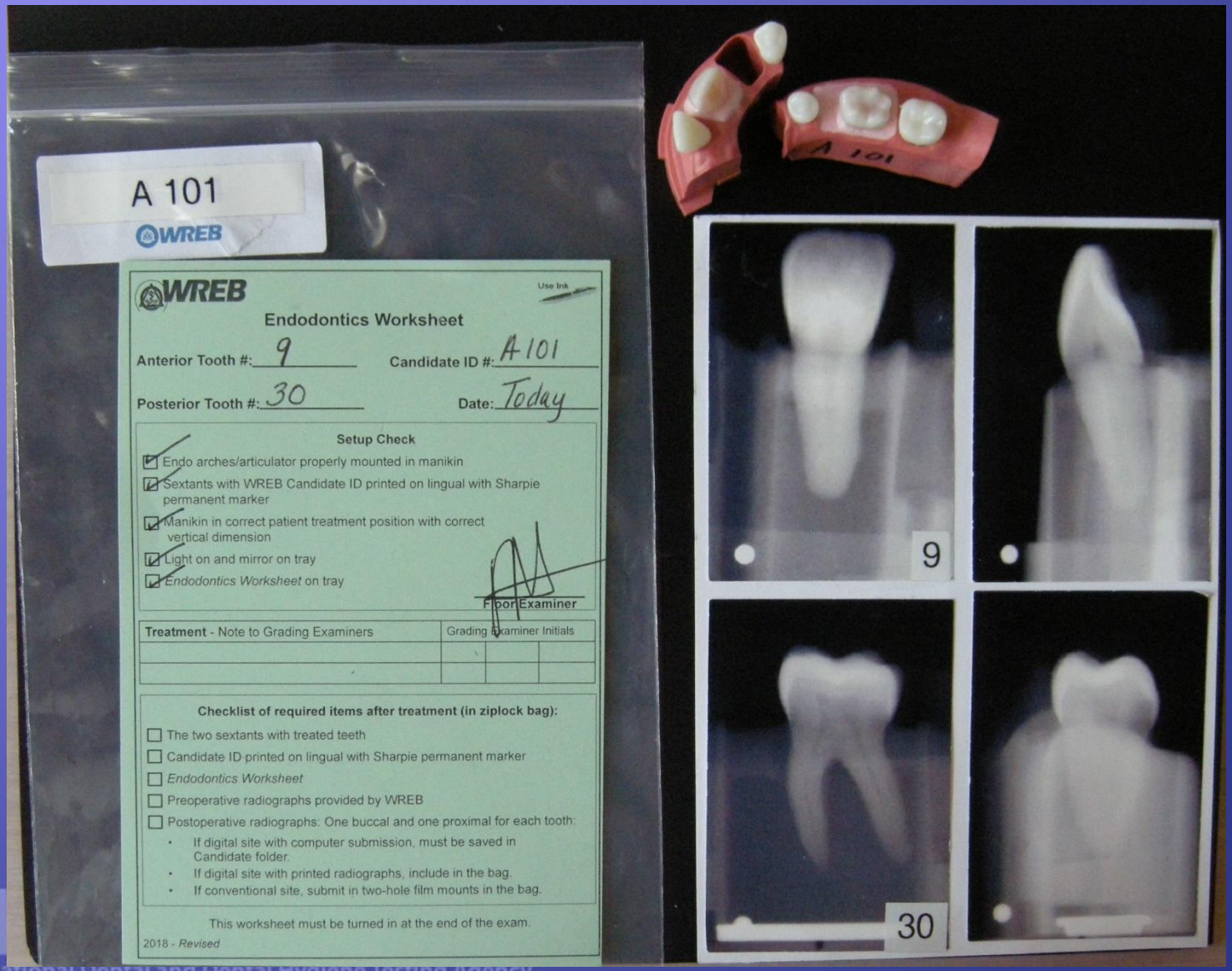
Endodontics



Endodontics

- Simulation – including universal precautions
- 3D printed (replicas) actual human teeth (maxillary central incisor and mandibular 1st molar) This is NOT the typical plastic tooth.
- Candidates receive:
  - Teeth mounted in sextant (2mm sphere)
  - Preoperative radiographs (B-L and M-D views)
  - Worksheet

Simulated Endodontic Patient

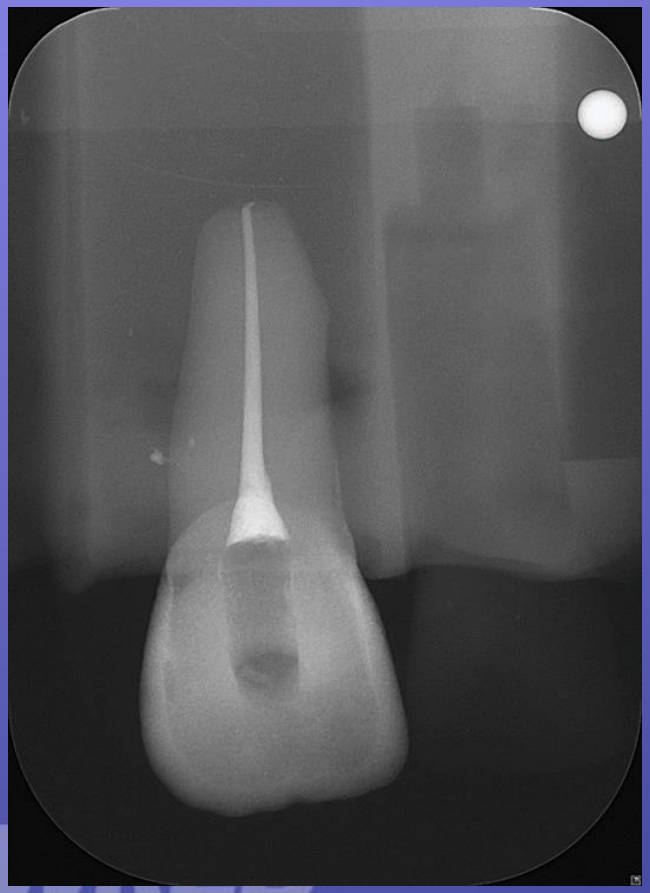


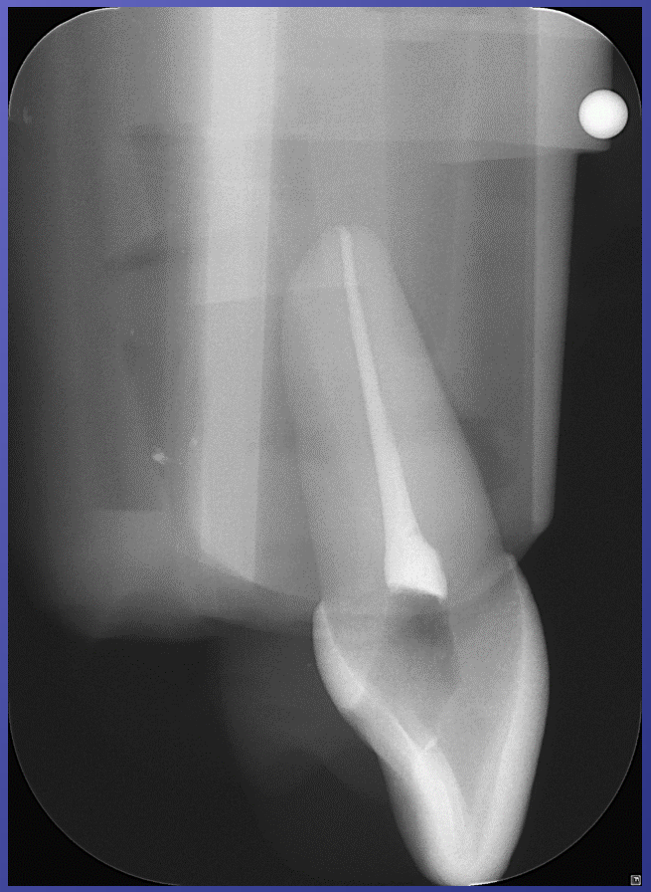
Endodontic Treatment

- Maxillary anterior tooth:
  - Access
  - Instrumentation
  - Obturation
  - Diagnostic post-tx radiographs (M-D and B-L)
- Posterior mandibular molar:
  - Access
  - Identification of all canal orifices
  - Diagnostic post-access radiographs (M-D & B-L)

Scored to Criteria

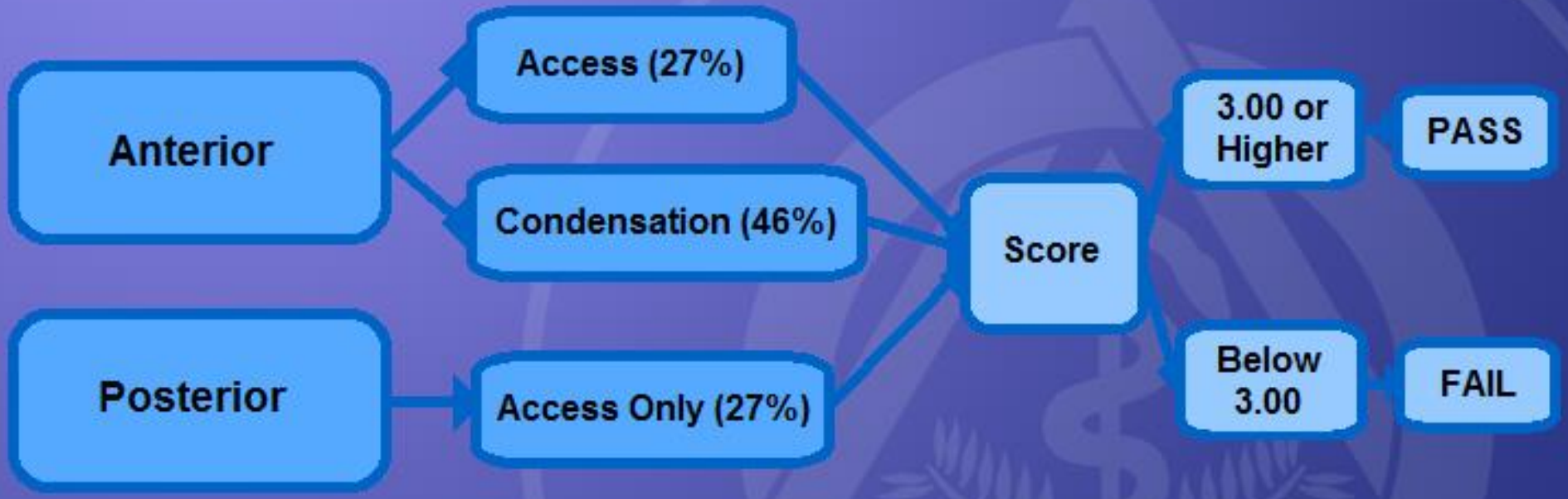
(Includes Radiographic Analysis)





Endodontics

Simulated teeth – scanned replica's fabricated with high density enamel and dentin polyomers.



Comparable teeth available for practice are not identical to the teeth used in the examination!

Periodontics

- Evaluating patient medical history and qualification
  - Sufficient **teeth**, 1 molar, posterior contact
  - Sufficient **explorer detectable subgingival calculus**
  - Sufficient **periodontal pockets** of 5.0 mm or more

- Candidates are evaluated on the thoroughness of calculus removal and root planning of all teeth in the quadrant(s) selected.

- Treatment must be completed the same day the patient is approved.

Periodontal Treatment Worksheet

WREB

Patient's First Name: Janie

Candidate ID #: A 105

☐ **Radiographs submitted on computer,** record locator #_____

Patient Medical History submitted with:
☐ Anterior Composite ☐ Cast Gold
☐ Posterior Composite ☑ Amalgam

☐ 2nd Submission

☐ 3rd Submission

Circle Quadrant(s) Selected

(Upper Right) Upper Left

Lower Right Lower Left

TEETH #'S

	#	#2	#3	#4	#5	#6	#7	#8	#	#	#	#	#	#	#	#
CALCULUS (Mark "X" if present)																
D	X	X	X	X		X	X	X								
F					X		X	X								
M		X	X	X												
L		X				X										
PROBING DEPTH (Record 3mm or greater)																
DF		6	5	4	3	3	4	3								
F		4	4	3	4	2	4	4								
MF		5	5	4	3	3	3	3								
ML		4	4	3	4	3	3	3								
L		5	3	2	3	4	3	3								
DL		6	3	3	3	4	3	3								

☑ **ACCEPTANCE**

Accepted by: _____

Note to Examiners (if necessary)

Grading Examiner Initials

☐ **TREATMENT GRADE**

Treatment Graded: _____

Note to Examiners (if necessary)

Grading Examiner Initials

Patient may be released from the examination: _____
Floor Examiner

2014 - *Revised*

Periodontics

No change

Operative Dentistry

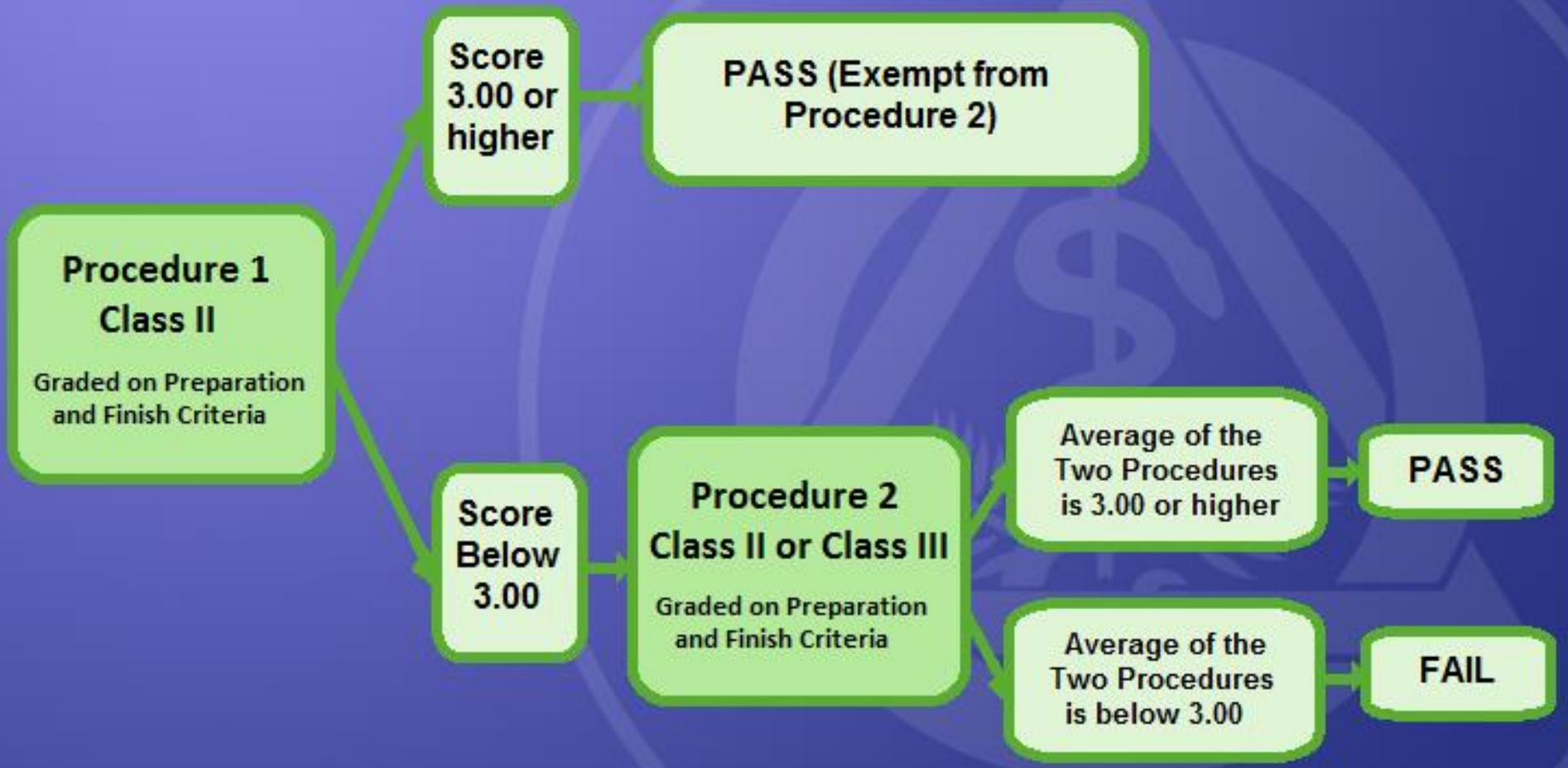
Aspects of the Patient-based Operative Clinical Exam

- Take, review, understand, and submit a HH
- Diagnose and submit an acceptable TP.
- Local anesthesia and pain management
- Moisture control and soft tissue management
- Communication and patient management
- Disease management and removal
- Instrumentation and material handling skill
- Anatomic and functional understanding

Operative Dentistry Section for 2018

- Operative section consists of two (2) approved, patient-based, direct restorative procedures – this is unchanged
- Must include a Class II procedure – this is unchanged
- Acceptance criteria are unchanged
- Grading criteria are unchanged
- Examiner orientation and calibration are unchanged
- Scoring is unchanged EXCEPT that if the section score after the first procedure is passing (3.0 or higher) the candidate is EXEMPT from needing to perform the 2nd procedure; that's all
- The scoring update is justified by many years of reliable candidate performance data
- Outcome is as predicted; results for Operative remain valid and reliable
- States can choose to continue to require two procedures regardless → in which case nothing is changed!!!

Operative Dentistry



Administration and Performance

Dental Exam Onsite Retakes

- Limited onsite retakes may be available for **Endo**, **Perio,** and **Pros** sections. There is NO onsite retake for **Operative**.
- Availability depends on a Candidate's scheduled sections and individual time constraints.
- Eligibility depends on absence of exceptional situations (e.g., critical error.)
- **Results for all attempts are reported.**
- Onsite retake is **NOT** obligatory; **remediation always is an option**. The decision to retake or remediate initially lies with the candidate, as it always has.

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Performance-based Exam Format

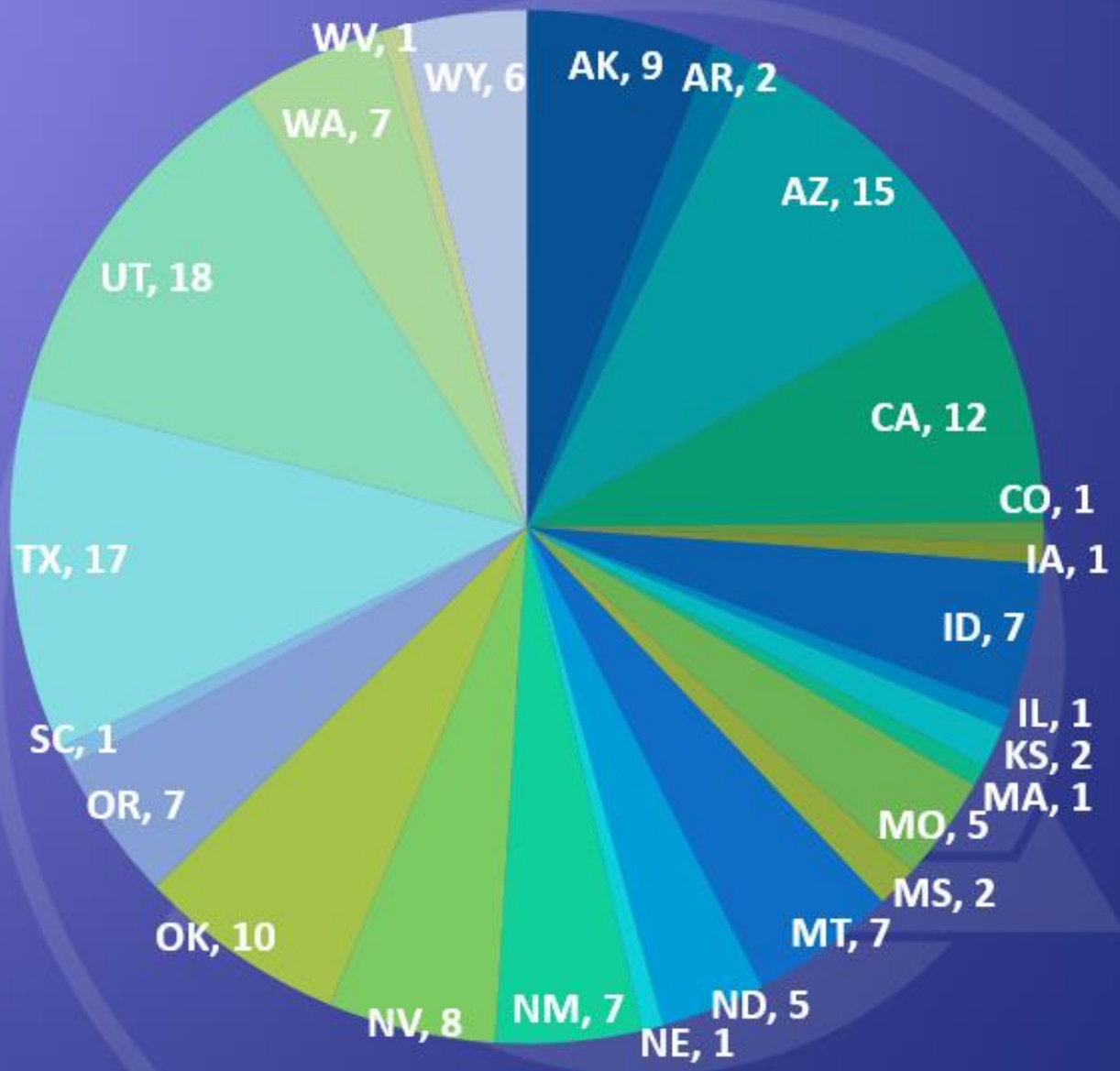
Where candidate performance is evaluated by examiners,

reliability depends on the quality of examiner judgments.

Origin of Dental Examiners

2018 Examiners

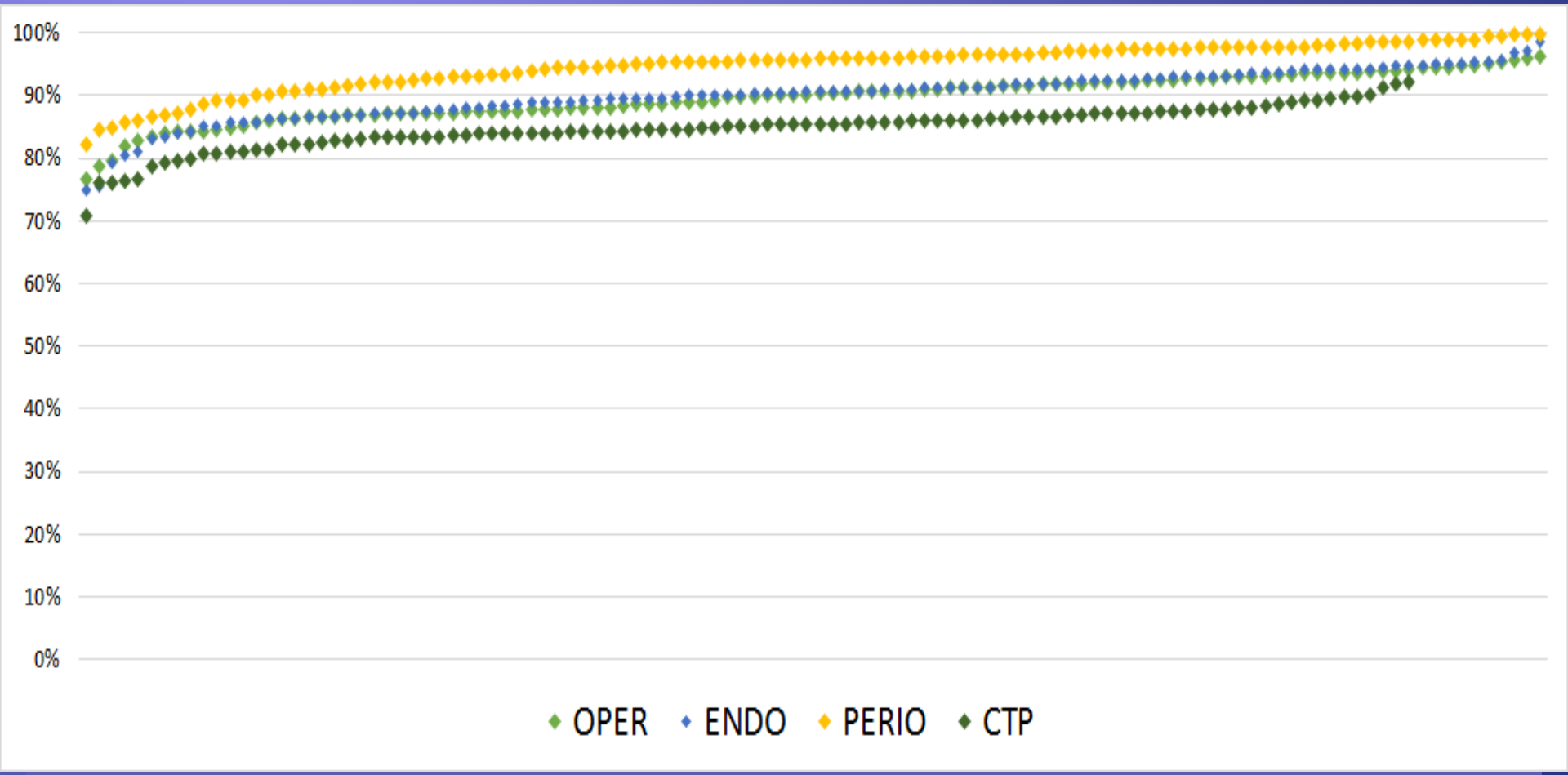
- 154 total from 25 states
- Approximately 120 Grading Examiners (the rest are Floor Examiners)
- 24 Full-time Educators



WREB Procedure Scoring

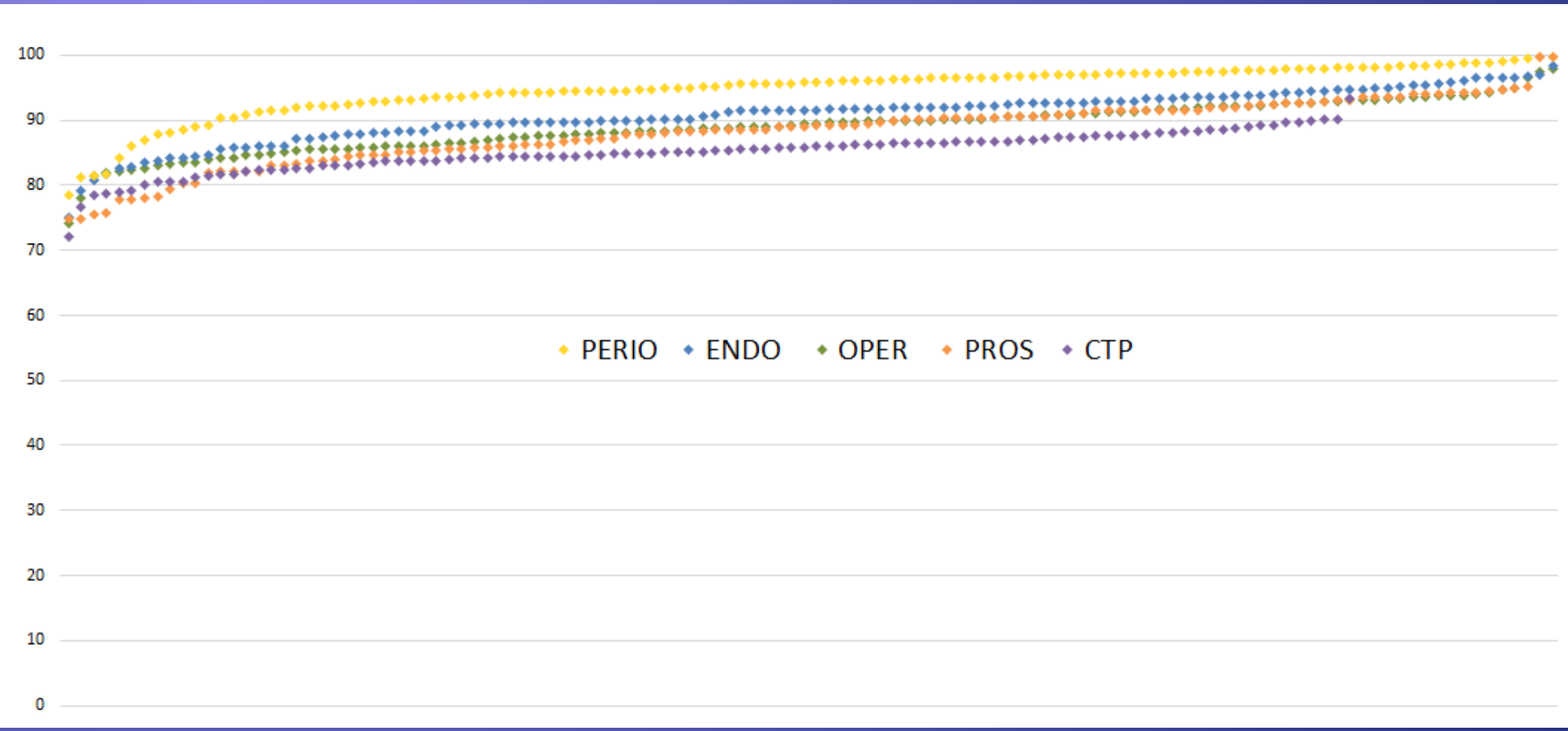
- Three calibrated Examiners
- Independent
- Anonymous
- Criteria-referenced Scoring Scale
- Median Examiner Score (in each area)
- Average Rating of “3” is passing
- Periodontal Treatment: 75% is passing

Examiner Agreement 2017
121 Grading Examiners (112 O/E/P; 102 CTP)



Weighted Averages:
OP 89.9% ; ENDO 90.6%; PERIO 94.9%; CTP 85.4%

Examiner Agreement 2018-YTD
118 Grading Examiners (111 O/E/P; 102 CTP)



Weighted Averages:

OP 89.4% ; ENDO 91.0%; PERIO 95.2%; PROS 88.5%; CTP 85.3%

Keep in mind…

- Even when examiners do not “agree,” the median grade reflects exact or adjacent agreement over 99.95% of the time (100% in Perio)
- Exceptional grading patterns e.g., 1-3-5 (MED=3):
  - Extremely rare
  - < 0.05% of grading patterns (about once per grading season)

% Examiner Harshness, Lenience, Agreement

Weighted by Number of Judgments Made

OPERATIVE

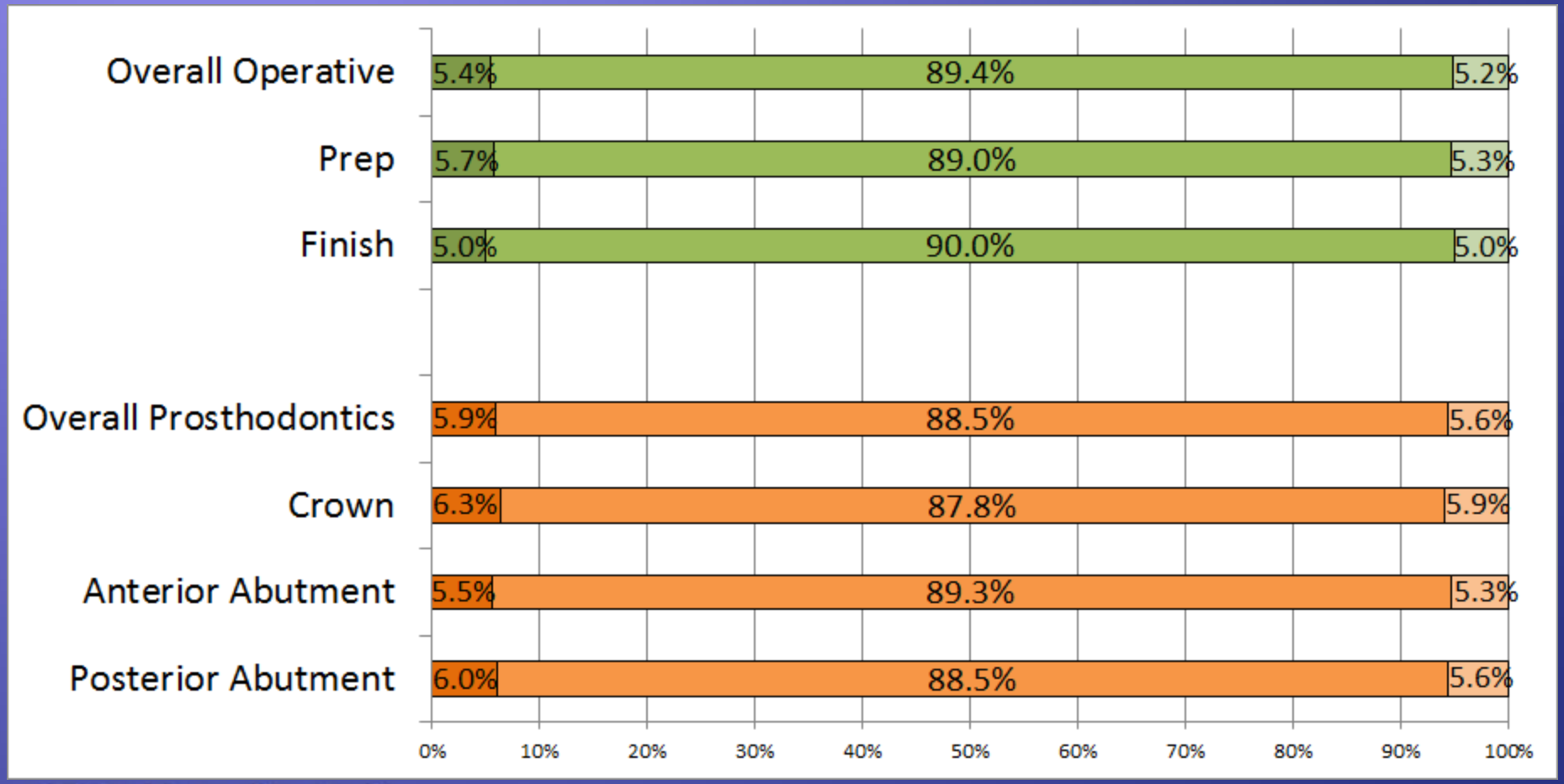
	Harshness	Lenience	Agreement
2018 (July)	5.4	5.2	89.4
2017	5.1	4.9	89.9
2016	5.3	5.0	89.7
2015	5.2	5.1	89.6
2014	5.8	5.5	88.8
2013	5.9	5.7	88.4
2012	5.7	5.6	88.8

% Examiner Harshness, Lenience, Agreement
Weighted by Number of Judgments Made

PROSTHODONTICS

	Harshness	Lenience	Agreement
2018 (July)	5.9	5.6	88.5

Operative & Prosthodontics 2018 (July)
Examiner Harsh, Agreement, Lenient %



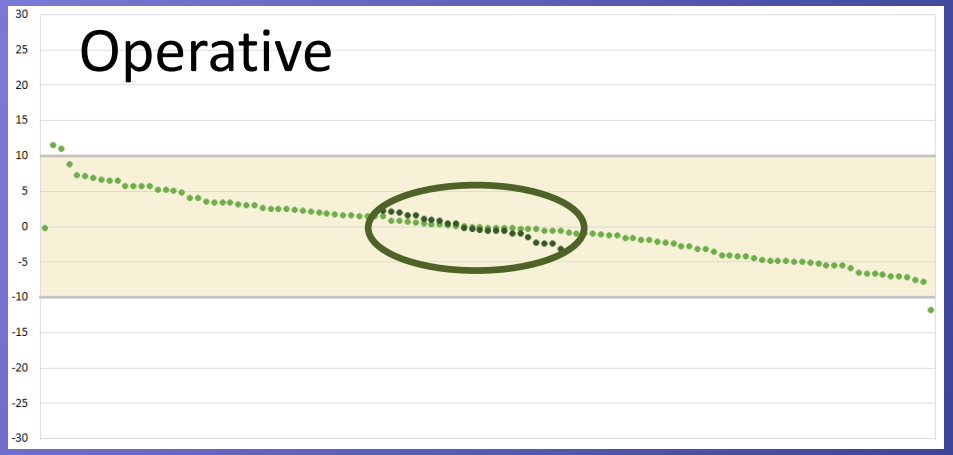
Could some exam sites be “harsh,” and others “lenient”?

Best practices ensure comparability of exam sites:

- Rigorous examiner training re: criteria
- Well-planned examiner teams
- Team linkage across sites: No isolated teams
- Standardized administration procedures
- Extensive post-exam review and analyses

Operative & Prosthodotics Exam Comparability

2018 (May)



Candidate Performance

WREB Dental Examination

Individual Candidates			
2015 33 exams	2016 31 exams	2017 32 exams	2018 YTD 30 exams
2,217	2,215	2,224	2,152

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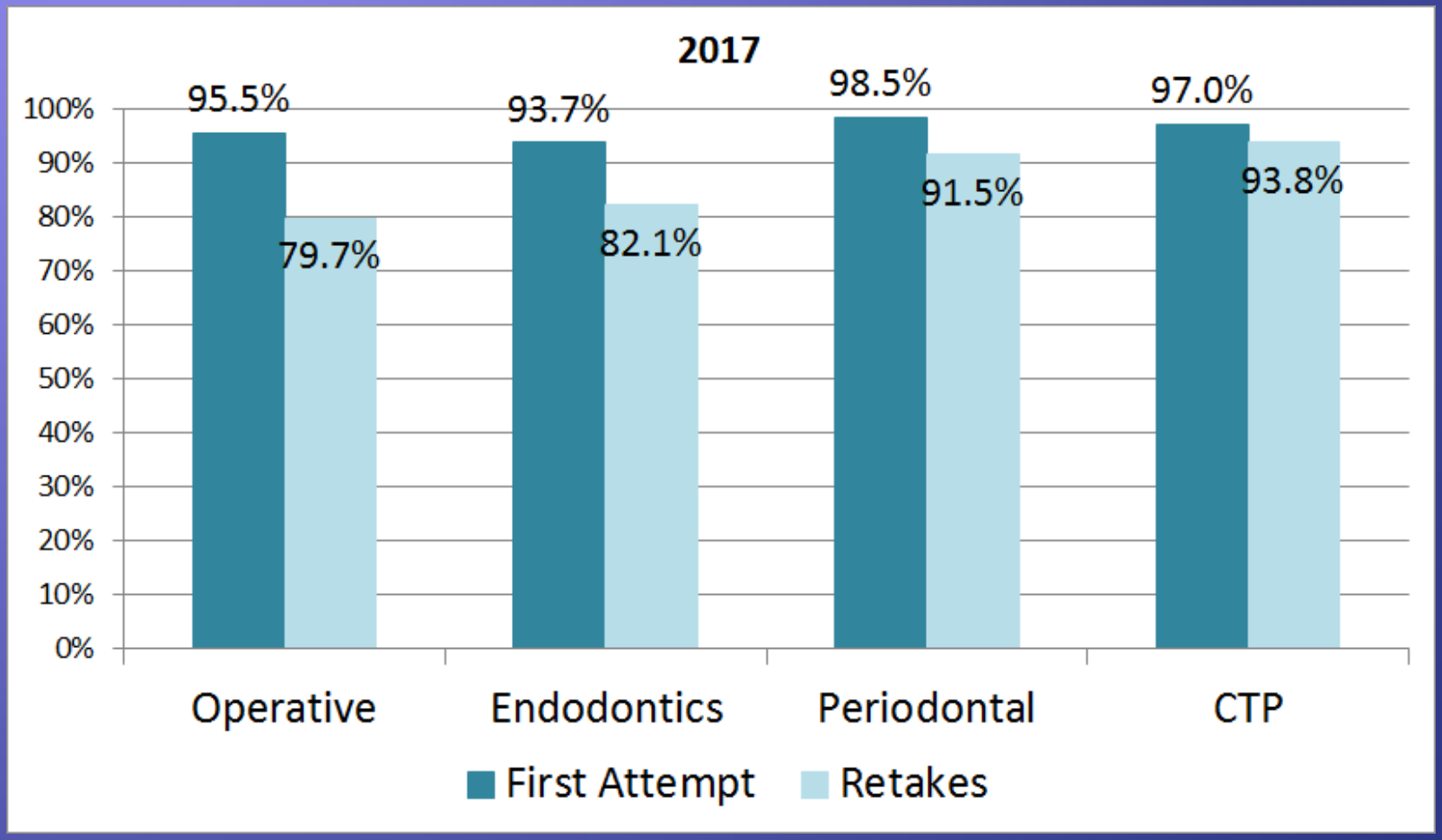
What is WREB's Pass Rate?

Many different ways to calculate:

- By All Attempts
- By First Attempts
- By Individuals, end of season
- By Individuals, over time

By First Attempt

reflects initial preparedness of the candidate population



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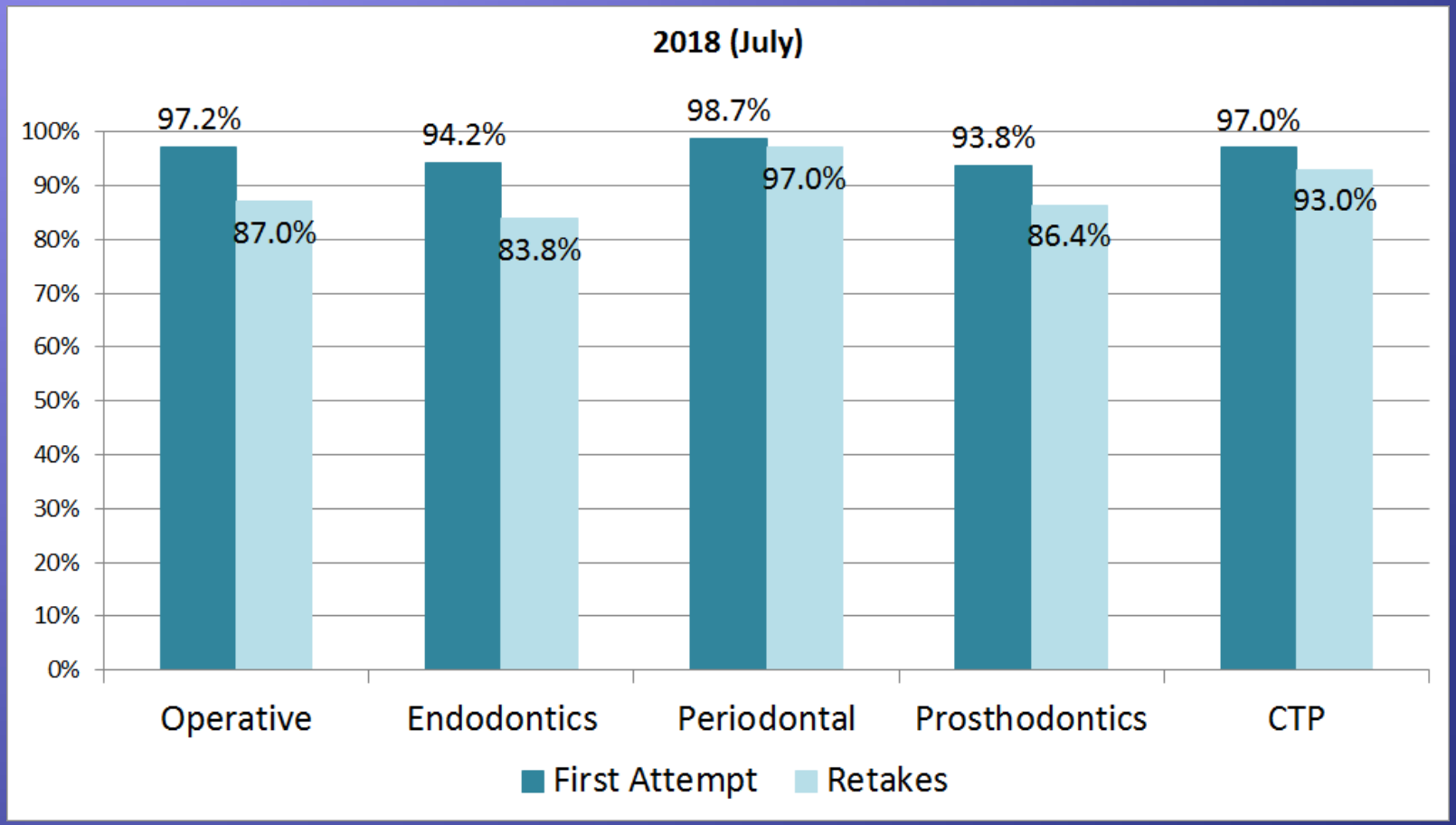
By First Attempt

2018 After 30 Exams



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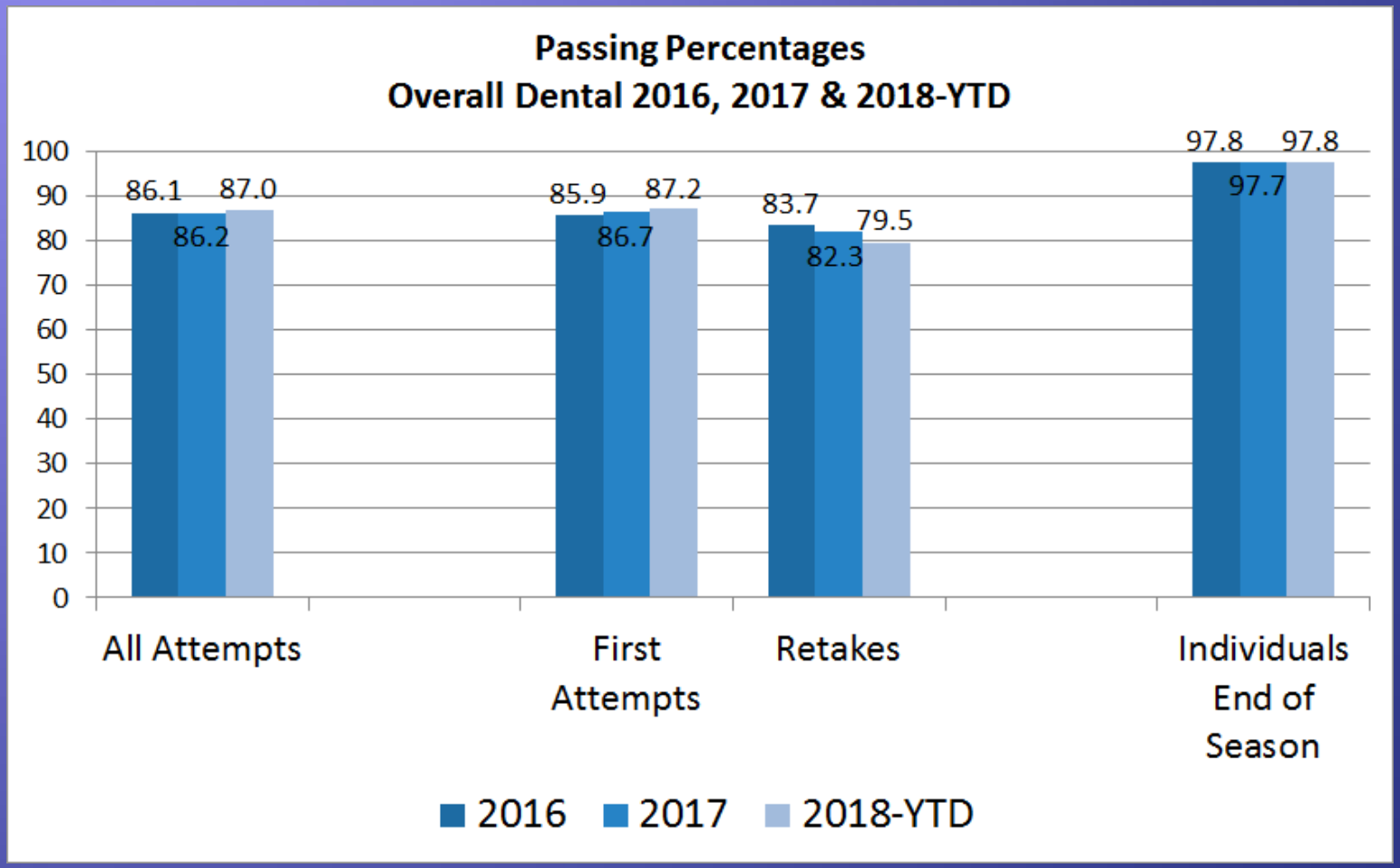
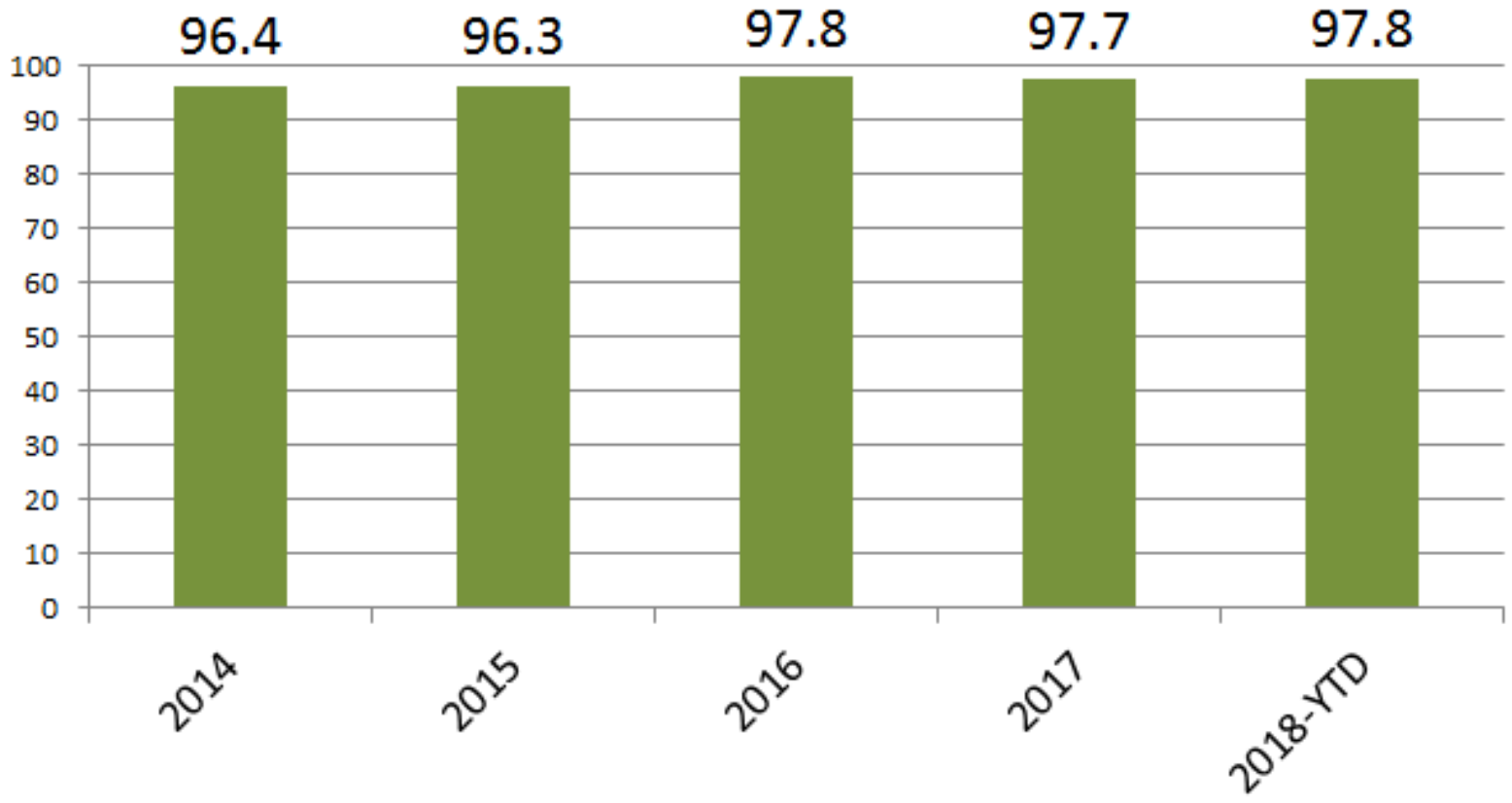
Overall Dental: After 30 exams
(about 95% of projected total for season)



Dental Pass Rates By Individual Candidates
Past Five Years



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Quality: reliability and validity

WREB examinations are developed and administered in accord with industry standards:

*Standards for Educational and Psychological Testing (AERA, APA, NCME)

*Guidance for Clinical Licensure Examinations In Dentistry (AADB)

Testing Specialist / Psychometrician
Sharon Osborn Popp, PhD

- Enforces professional standards of testing
- Provides support on all aspects of exam quality
- Monitors validity, reliability, fairness, and sensitivity
- Makes WREB exams defendable for state boards

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Sharon is not alone.

Thomas M. Haladyna, PhD - Professor Emeritus, ASU

2017, 2010, 2005…about every 5-8 years.

Categories of validity evidence evaluation include:

(1) **content**, (2) **reliability**, (3) **item quality**, (4) **examiner training**, (5) **examination administration**, (6) **scaling and comparability**, (7) **standard setting**, (8) **reporting**, (9) **candidate and patient rights**, (10) **security**, and (11) **documentation**.

California Department of Consumer Affairs

Office of Professional Examination Services (OPES)

2012, 2005…approx. every 5-7 years

"The Office of Professional Examination Services determined that the procedures used to establish and support the validity and defensibility of the WREB examination program components were found to meet professional guidelines and technical standards outlined in the Standards for Educational and Psychological Testing and Business and Professions Code, Section 139."

–Karen M. Fisher, MPA, Exec. Dir.

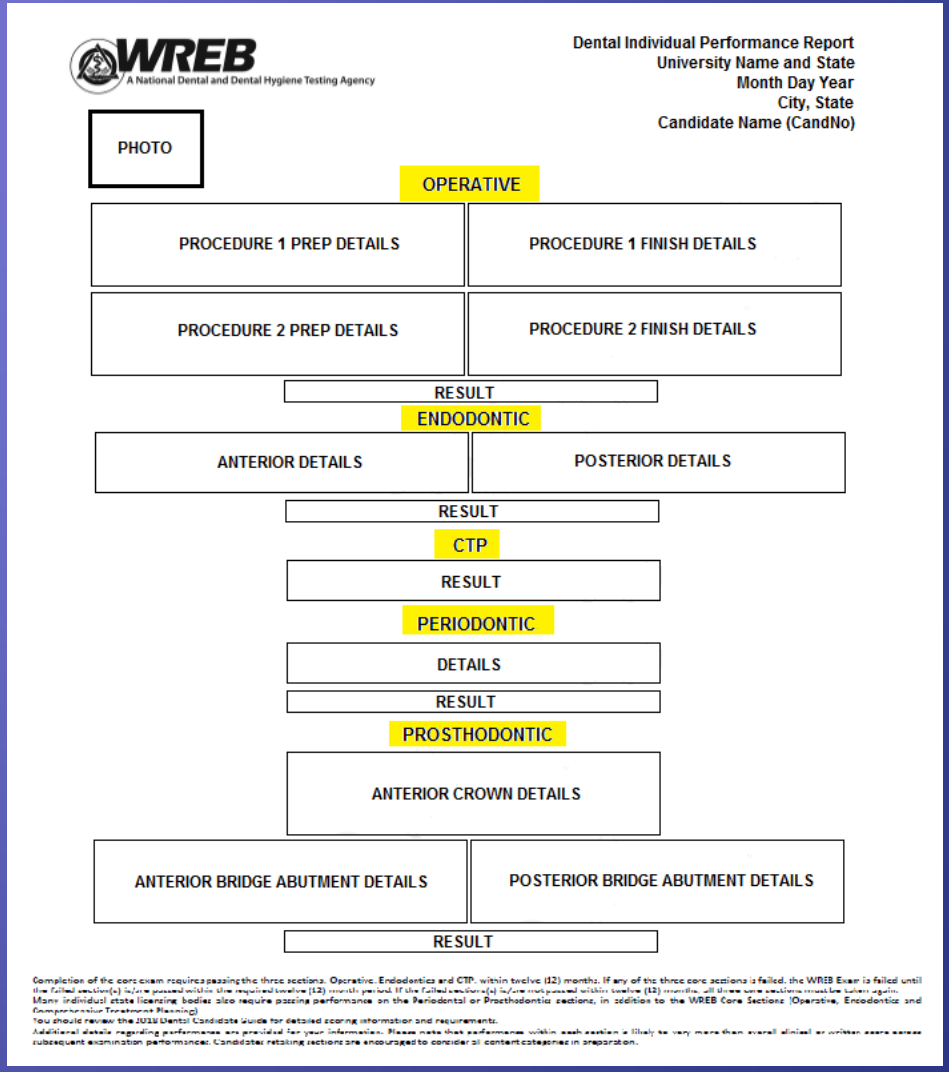
Reporting

Results Reporting

Results of **all attempts** per candidate continue to be available.

Secure login is provided for designated board staff

Detail for all sections (procedure type) is shown



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Dental Individual Performance Report
University Name and State
Month Day Year
City, State
Candidate Name (CandNo)

PHOTO

OPERATIVE

PROCEDURE 1 PREP DETAILS	PROCEDURE 1 FINISH DETAILS
PROCEDURE 2 PREP DETAILS	PROCEDURE 2 FINISH DETAILS

RESULT

ENDODONTIC

ANTERIOR DETAILS	POSTERIOR DETAILS

RESULT

CTP

RESULT

PERIODONTIC

DETAILS

RESULT

PROSTHODONTIC

ANTERIOR CROWN DETAILS

ANTERIOR BRIDGE ABUTMENT DETAILS	POSTERIOR BRIDGE ABUTMENT DETAILS

RESULT

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 Prosthodontic sections, in addition to the WREB Core Sections (Operative, Endodontics and Comprehensive Treatment Planning).
You should review the 2018 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 exam scores across subsequent examination performances. Candidates retaking sections are encouraged to consider all content categories in preparation.

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Remediation

- Remediation is in the domain and prerogative of State Dental Boards.
- WREB (DERB/HERB) **requires remediation** after **THREE (3)** unsuccessful attempts.
- Candidates are accountable for the outcome of their performances.
- There is no retake “window” time limitation or WREB-imposed urgency.
- Only the JCNDE has a “waiting” period.
- **Results of all attempts are reported.**

Considerations

A look at what's happened with the changes in 2018

Is the WREB Exam Easier to Pass with the 2018 Changes?

No, it's definitely not easier!

- WREB screens out a small but consistent proportion of candidates each year (and over time) ~2-3%
  - Changes were implemented to increase **efficiency** while maintaining comparability and validity to the pre-2018 WREB exam
- Changes to the exam format were thoroughly researched and field-tested; no significant change was expected and none has occurred.

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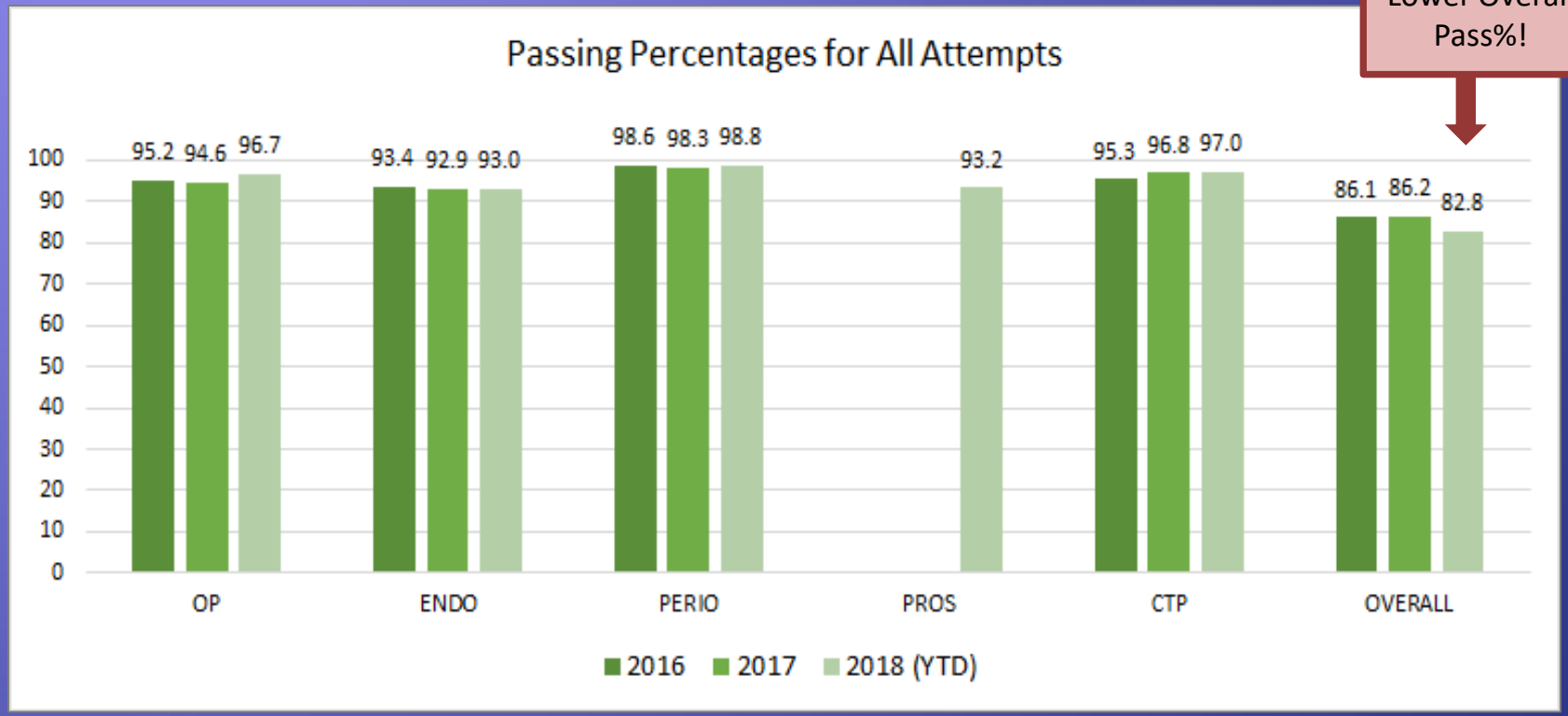
- Addition of the elective Prosthodontics section, if taken, potentially makes the overall Dental exam more difficult.
  - Field Testing indicated passing % would be comparable to Endodontics

_____

What are the results for 2018?

By Attempt: Including Retakes

(Results are highly comparable or expected)



After First Twelve Exams of 2018

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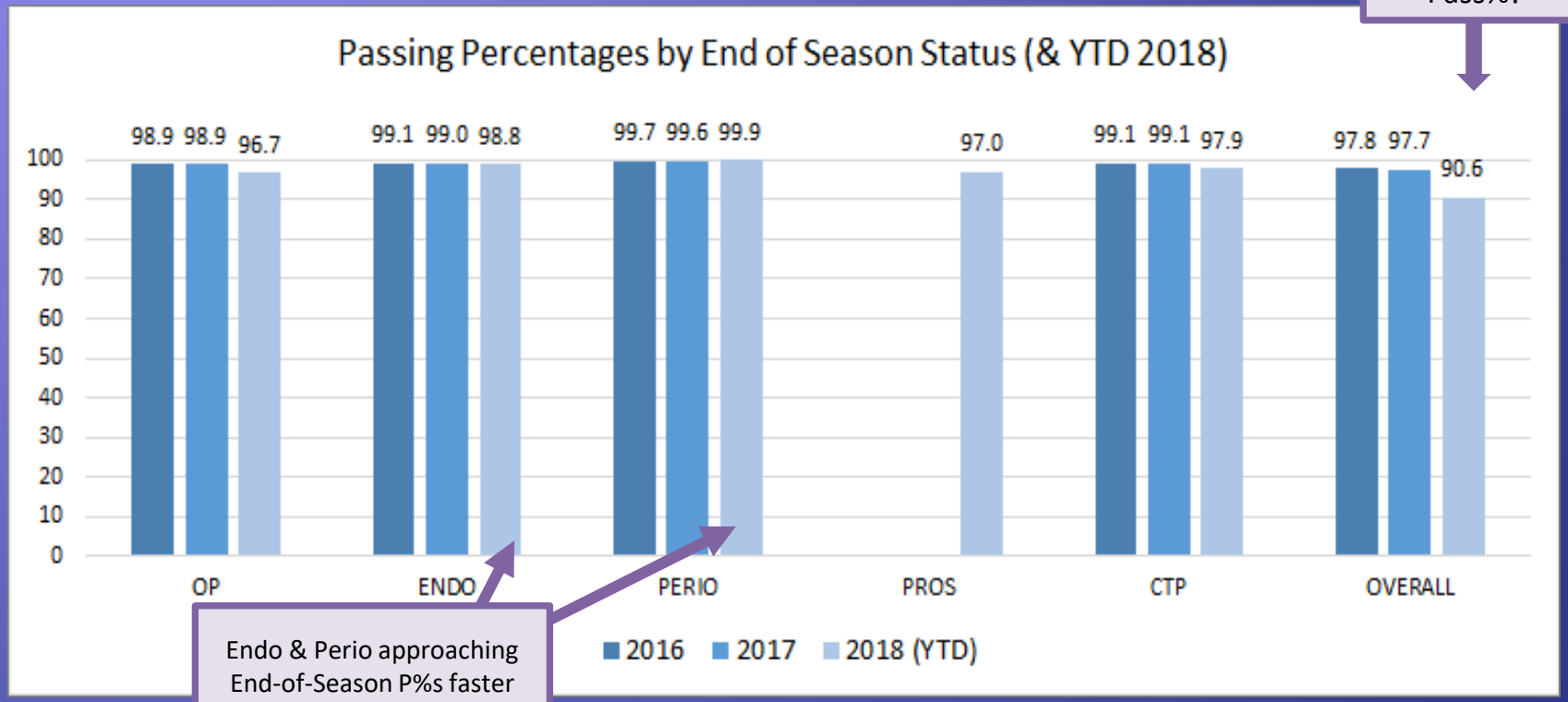
By Individual Candidates, End-of-Season Status

(many retakes to go, but on track)

Lower Overall Pass%!



Endo & Perio approaching End-of-Season P%s faster w/ onsite retakes

After First Twelve Exams

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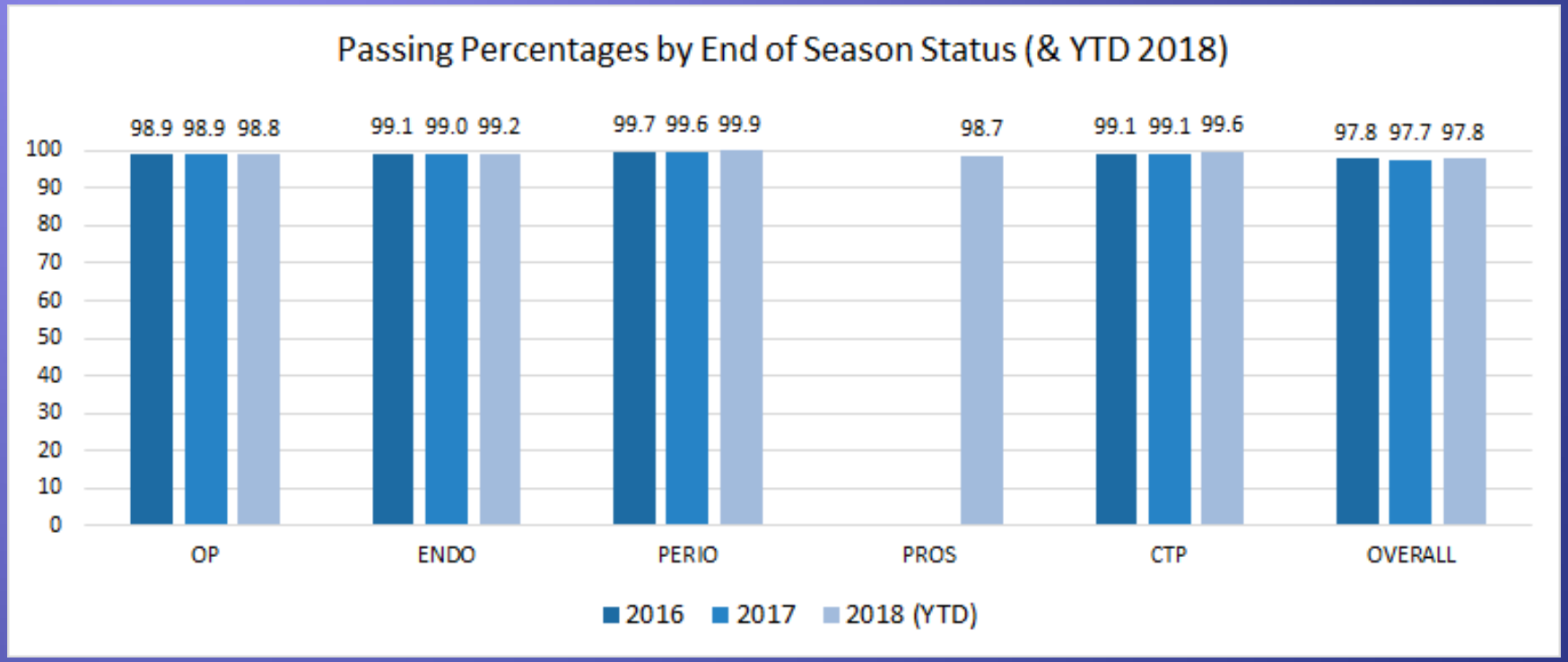
Passing Percentages for Individuals



After 30 Exams in 2018

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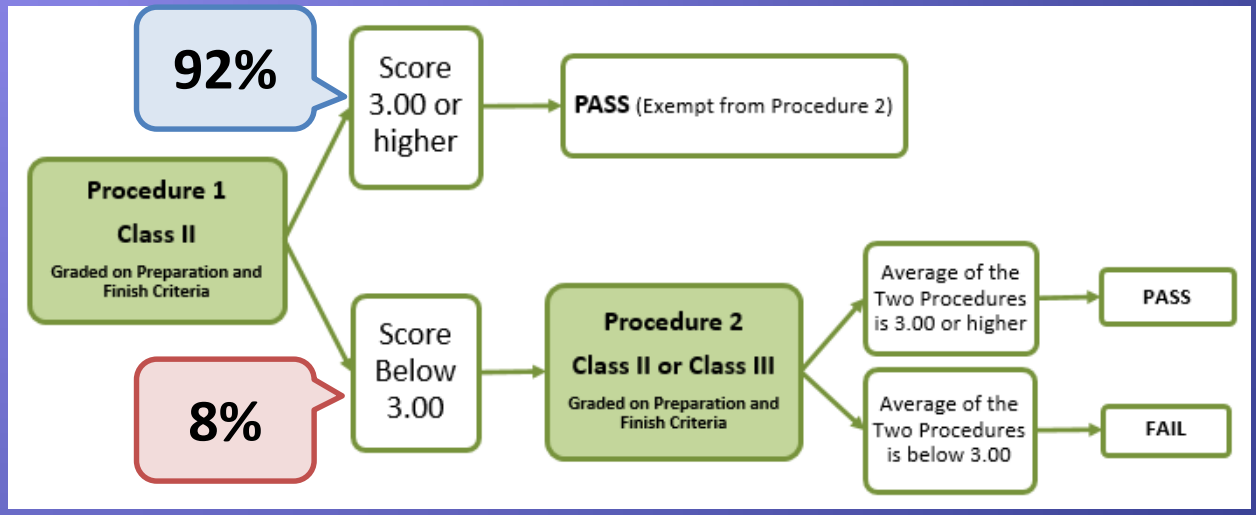
Why one Operative procedure?

- Performing a restorative procedure on a patient is a **complex performance task** and manifests characteristics associated with complex task performance.
- When accidents happen the quality of performance declines; accidents don't continue to happen that result in performance that would reflect better than the operator's actual skill.
- If the operator can achieve successful performance once, he or she can do it again.
- False positive results are extremely rare.

Operative Section: First Procedure Performance

After First Twelve (12) Exams

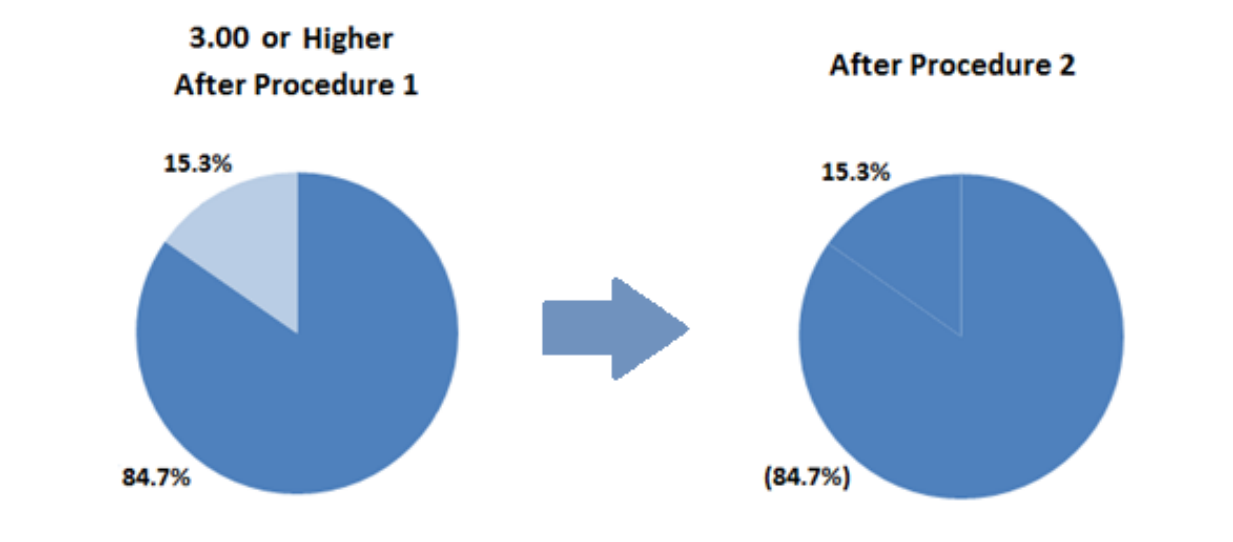


- Candidates whose section score is 3.00 or higher after their 1st procedure may choose to challenge another procedure (and risk the VERY small possibility of failure after the second procedure)
- Candidates that score below 3.00 (and have not made a critical error) may proceed to the second procedure as in past years

Operative Section Score
3.00 or higher after first procedure

92%
Of First Procedures

After First Twelve (12) Exams



- 15.3% of those who score 3.00 or higher elect to perform a 2nd procedure
- **All pass** the section after both procedures: **we learn VERY little more about these candidates by having them perform a second procedure**

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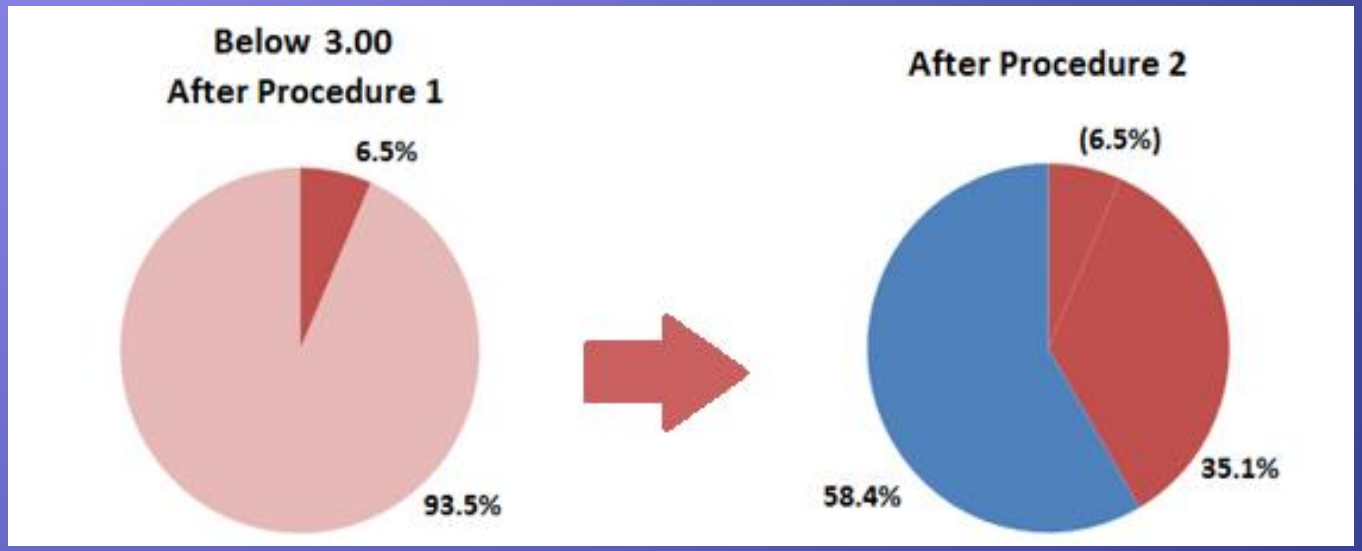
Operative Section Score below 3.00 after first procedure

8%
Of First Procedures

After First Twelve (12) Exams



- 93.5% of those scoring < 3.00 proceed with a 2nd procedure
- 6.5% of those scoring < 3.00 fail and are finished (Critical Error)
- Of those able to perform a second procedure, < 60% pass
- Those that pass typically score close to 3.00 on their first procedure

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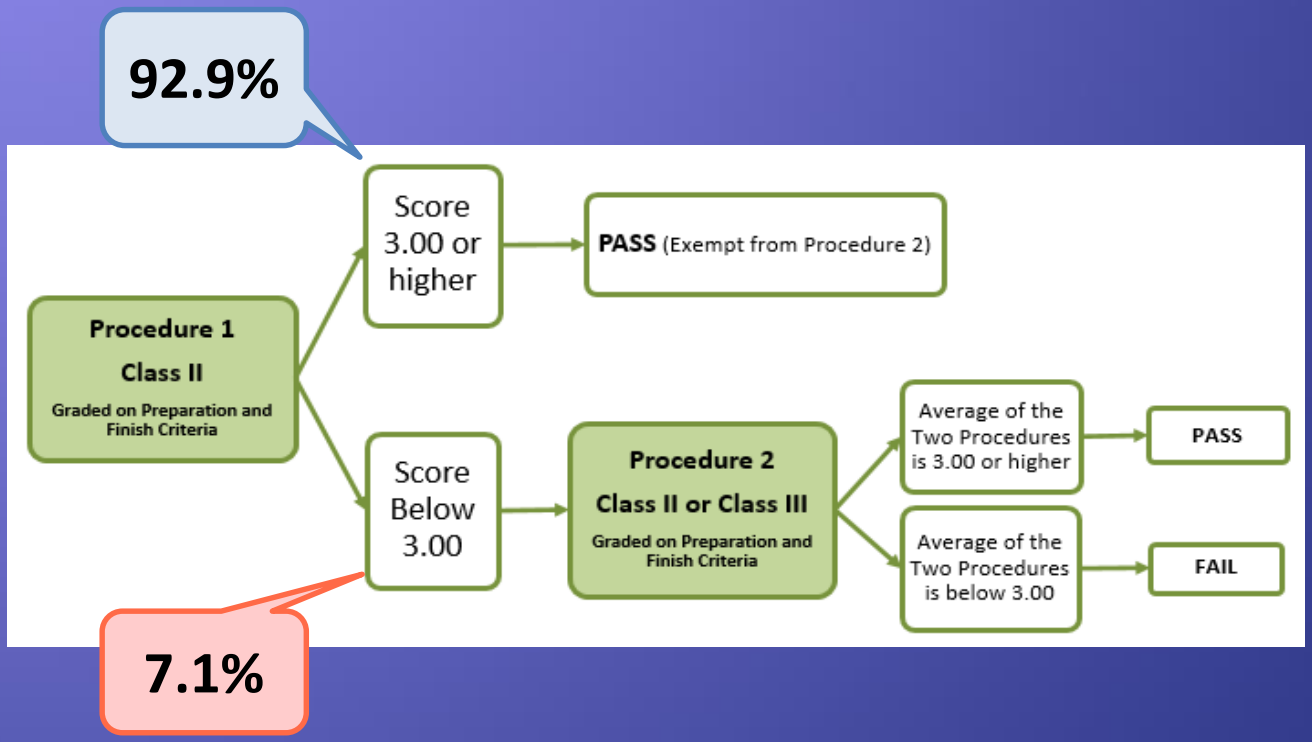
Operative Section: First Procedure Performance

After thirty (30) exams



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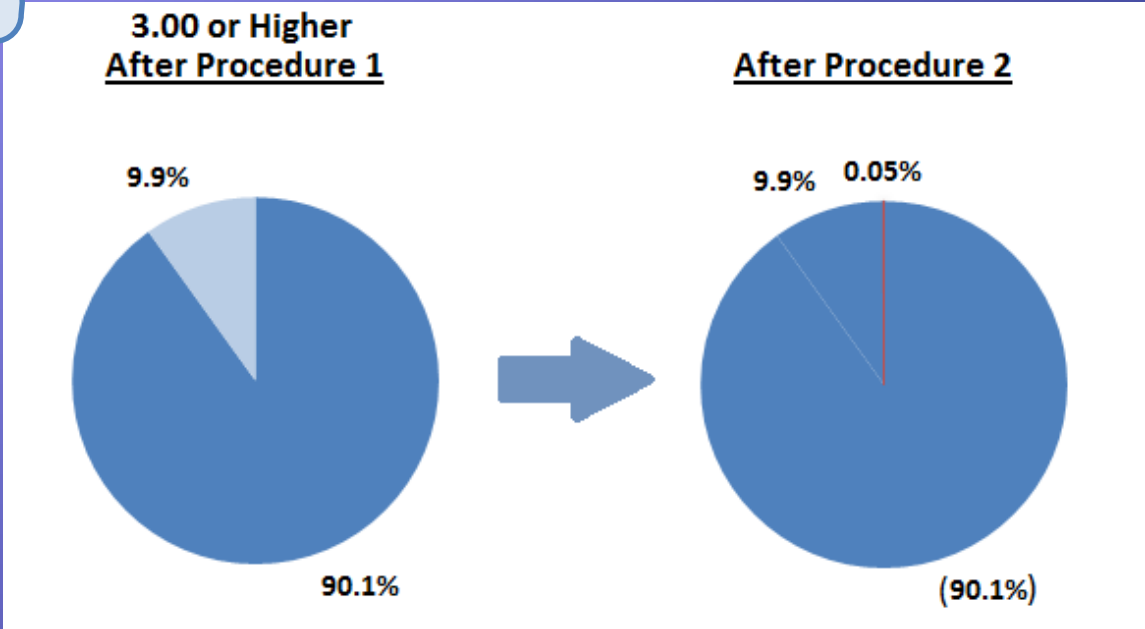
Operative Section Score
3.00 or higher after first procedure

N = 2,169 2,015 Exempt - Pass After 30 Exams

92.9%
Of First Procedures



- 9.9% elect to challenge a second procedure
- All but one (214 of 215) pass after both procedures (99.5%→100%)
- **2015** fewer patient procedures are needed to assess these candidates

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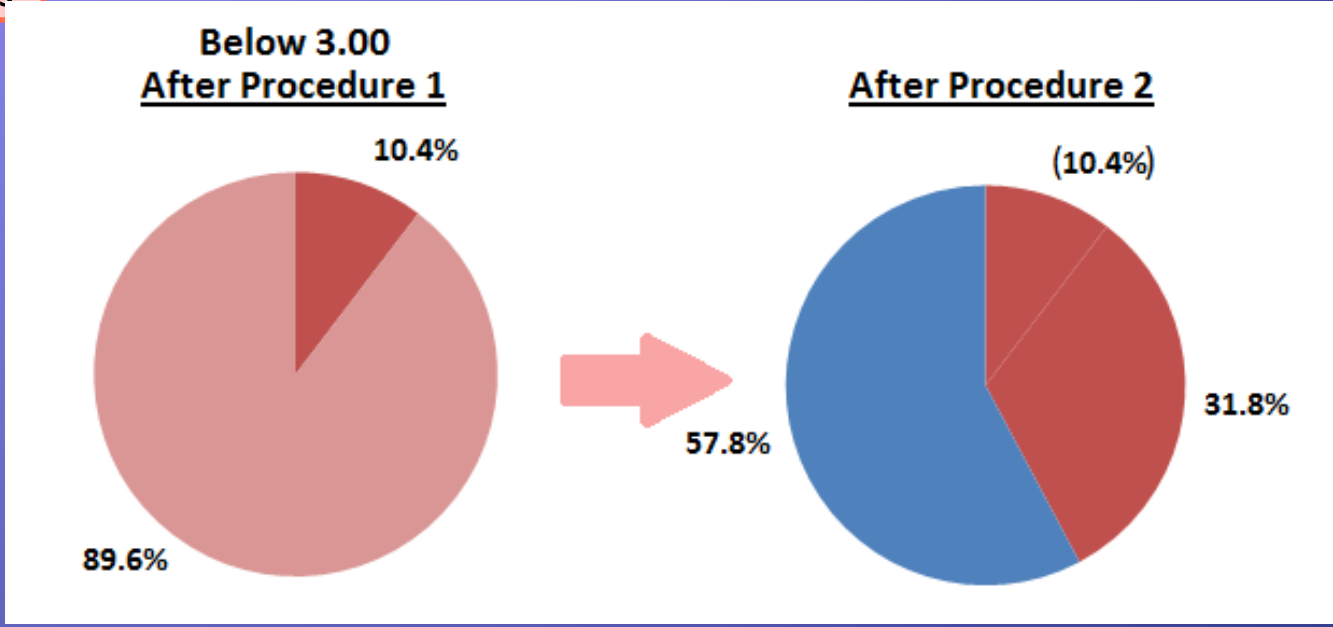
Operative Section Score below 3.00 after first procedure

N = 154 16 finished and fail (critical error)

After 30 Exams

7.1%
Of First Procedures



- 89.6% proceed to challenge a second procedure (10.4% finished and fail)
- Of those who score < 3.00 on their first procedure, again < 60% Pass
- The test is efficiently narrowing to the result it seeks to demonstrate

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Rarely does a candidate score very low on one procedure and high enough on the other to pass. The score on the second procedure must exceed the passing cut score by enough to more than compensate for any deficiency of the first score and thereby eliminate any doubt regarding the candidate's competence. It is highly unlikely that a truly incompetent candidate could perform at such a high level due to luck or chance.

With WREB it is not enough to pass a procedure; candidates must pass the Operative section!

…to summarize:

- Performing a dental restoration on a patient is a complex performance task.
- It is highly unlikely that performance will accidently turn out better than would reflect the candidate's actual skills.
- Complex task assessment is much more likely to yield false negative than false positive results
- 2nd procedure → reduces misclassification due to candidate-based measurement error

Findings for Operative after first 30 Exams of 2018

- Performance continues to be highly related on both Operative procedures
- Nearly all Candidates that would have passed with their first procedure pass after their second (all but one charged with two unapproved Modification Requests)
- Candidates who score below 3.00 after their first procedure and pass after two procedures, are far more likely to have scored close to 3.00 on first
- Reliability remains high (0.83)
- 42% (**1,815**) fewer patient procedures were performed

Preserving Patient-based Assessment

- Patient-based exams have high fidelity; they directly and indirectly evaluate things that currently cannot be as effectively evaluated in any other way.

- Patient-based exams entail certain problems that introduce construct-irrelevant variance, risk, expense, trouble, and ethical issues. These have generated broad criticism and schemes to replace patient-based exams with non-patient-based alternatives.

- It is incumbent upon testing agencies and states that value and rely on patient-based exams to do what they can to reduce or mitigate the associated problems without compromising the reliability of exam results or protection of the public.

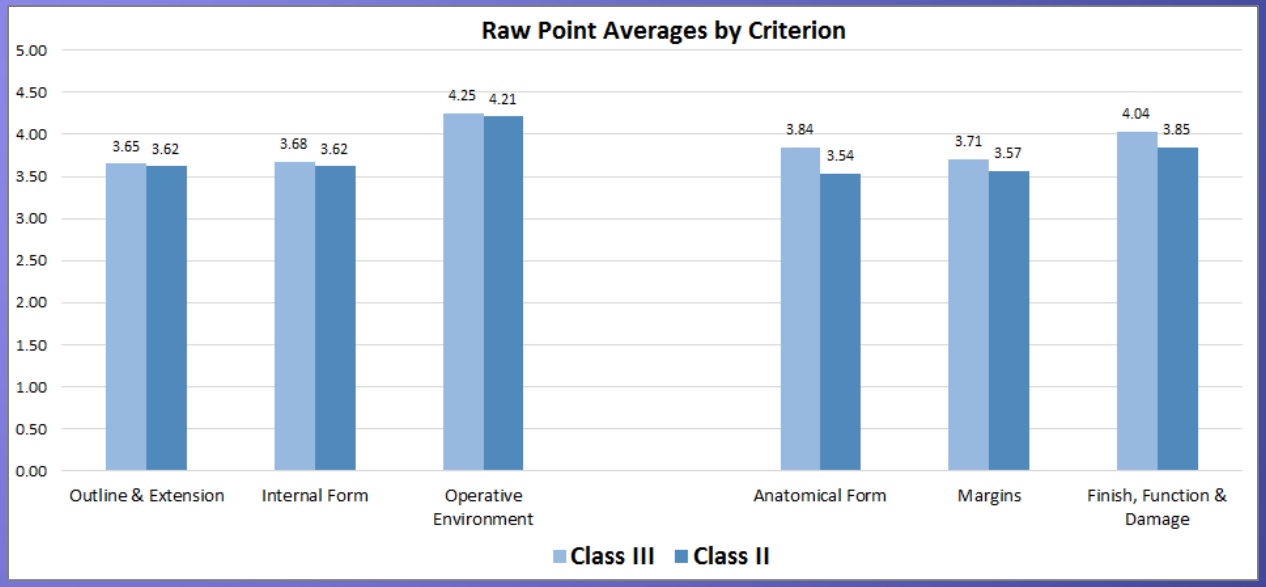
- WREB's success demonstrating that the number of patient-based procedures can be reduced for many candidates without sacrificing reliability benefits everyone including states that rely on patient-based exams and the public consumers they protect.

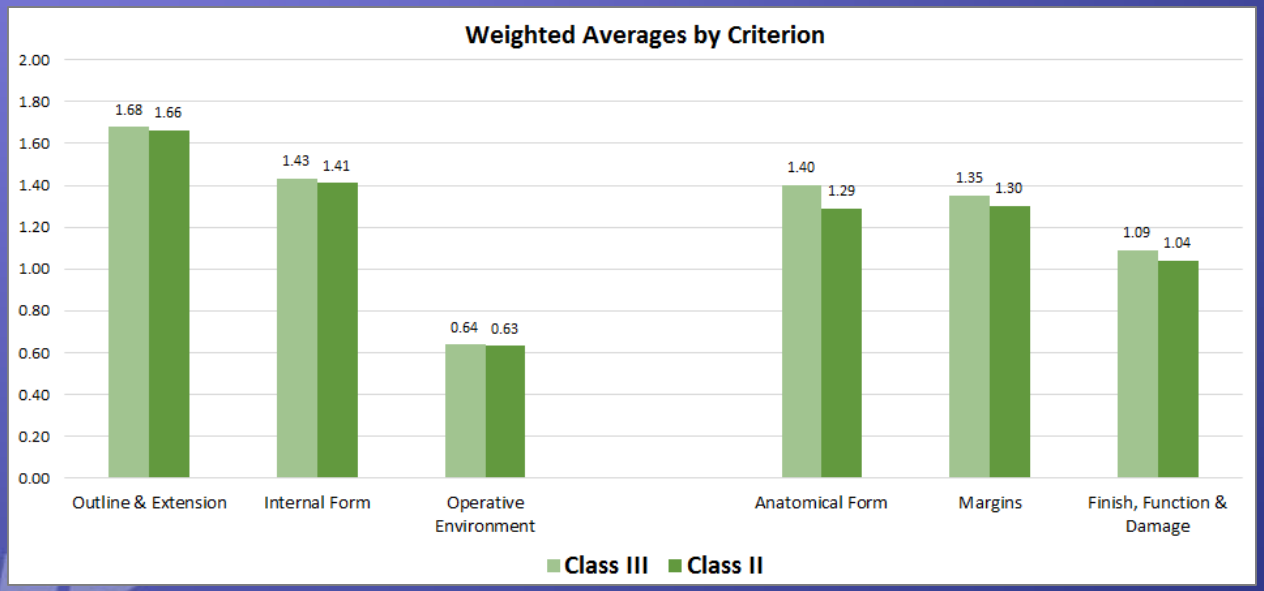
Why is a Class III Restoration Not Required?

Class III

- Historic rationale for requiring a Class III – material difference: composite vs. amalgam (not difficulty)
- Candidates who perform well on Class II are highly likely to perform well on a Class III
- Many years of data show that the Class III is a less challenging procedure (dentists intuitively know this)
  - Consider: access, visibility, occlusion, anatomy, ease of isolation, patient management and interference, contact characteristics, anesthesia requirements…etc.
- If another testing agency finds the Class III consistently scoring lower than the Class II, then something about their scoring of the Class III (criteria? examiner calibration? penalties?) is different than for the Class II

For all procedures in 2017





Class III

- ADEX and CDCA assert that the Class III tests a different skill set and must be independently passed (Really?) → implies →
  - Class III is its own test section
  - Class IV and V, maybe even Class I and VI should be required since they too would be similarly different

- Fewer available Class III patients
  - Candidates seek Class III but < 18% of all exam submissions in 2017 included a Class III (when two procedures were required of everyone)

- States that still feel Class III is important can require two procedures and mandate that one be a Class III
  - Clearly not necessary to accurately assess candidate competence

Consistency Across Sites, Reportability and Control

WREB technical reports, data and statistics are for EVERY examiner and EVERY administration of the WREB Examination EVERYWHERE

All WREB examinations are administered by WREB. No other agency or agencies administer any WREB examination

Because WREB examinations are **consistently administered everywhere** the **results can be relied on to always mean the same thing**.

Consistency Across Sites, Reportability and Control

The high quality psychometric decisions and statistical analysis reflected in WREB technical reports and presentations like this are possible only because WREB has complete control of its exam administrations, comprehensive examiner and candidate performance data, and sophisticated testing expertise

These advantages and resources also make recognition of WREB examination results highly defendable for states that recognize WREB examinations

Clinical Dental Hygiene Examinations

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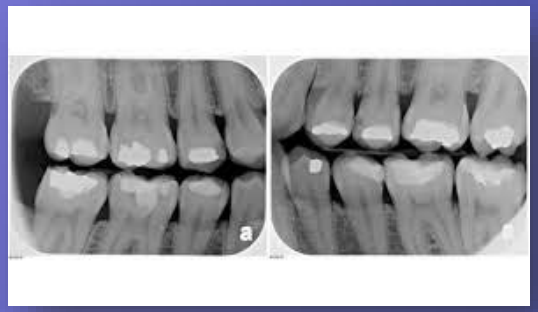
Clinical Dental Hygiene Examination

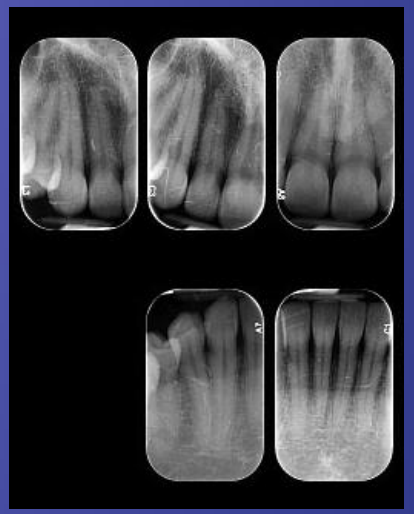
Clinical aspects

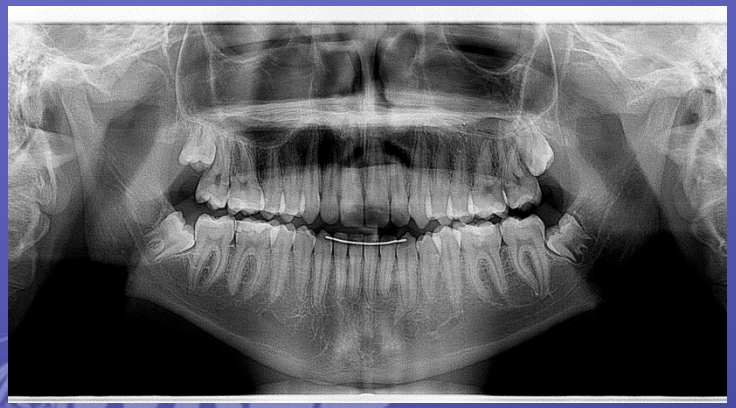
- Patient Qualification
- Extraoral/Intraoral Examination
- Calculus detection and removal (12 deposits)
- Probing and Recession
- Tissue Management
- Periodontal Assessment (4 questions)
- Professional judgment

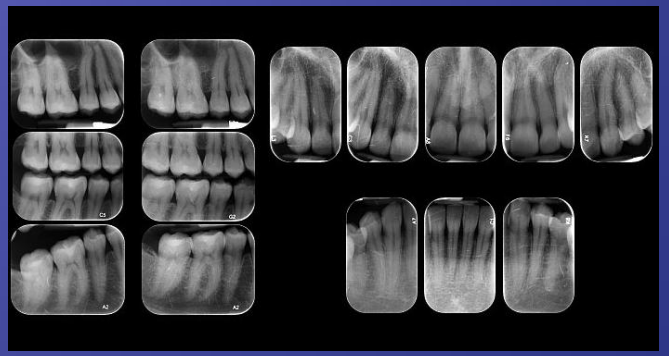
Diagnostic Radiographs

- Must submit radiographs









Extraoral/Intraoral Examination

Candidates choose ***"NSF"***

OR

Follow up or monitor

- Follow up could be short term, in-office or referral for a medical or dental evaluation
- Monitoring would be indicated for ongoing evaluation at future recare

Local Anesthesia Examination

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Required Injections

Administer

- One inferior alveolar nerve block
- One posterior superior alveolar nerve block
- Performed on same patient
- Evaluated on performance criteria
- Each critical category must be passed

Critical and Less Critical Components

1. *Medical History, Anesthetic & Syringe Selection
2. Syringe Preparation & Handling
3. *Penetration Site
4. *Angle & Depth
5. *Aspiration
6. *Amount & Rate
7. *Tissue Management
8. *Recapping
9. *Sharps Disposal

*** Critical Categories**

Restorative Examination

Prep Assignments

- Candidates are notified at Question and Answer Session of prep combinations
- Each session has different prep combinations
- Each Candidate restores one maxillary and one mandibular Class II preparation

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Grading Criteria

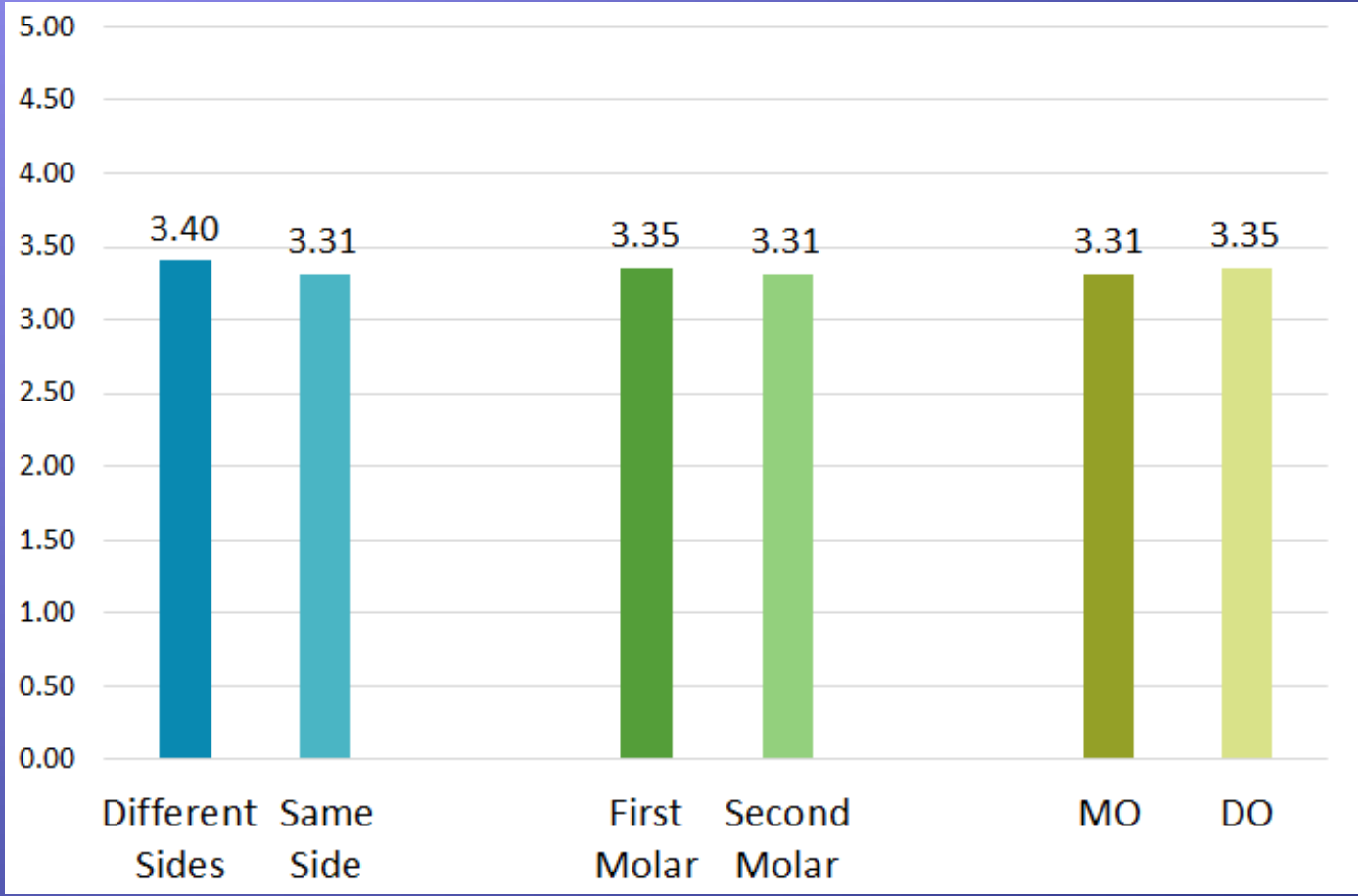
- Major developmental grooves; basic anatomy present
- Marginal ridge that is proper height and contour
- Small areas of flashing (+) or deficiencies (-) are acceptable
- Deficiencies can be corrected with minimal polishing
- Ridges are present

Comparability of Assigned Prep Combinations 2018

No significant difference between:

- Same-side-of-mouth and different-side quad combinations
- Maxillary molar types (First & Second)
- Surfaces treated (MO & DO)

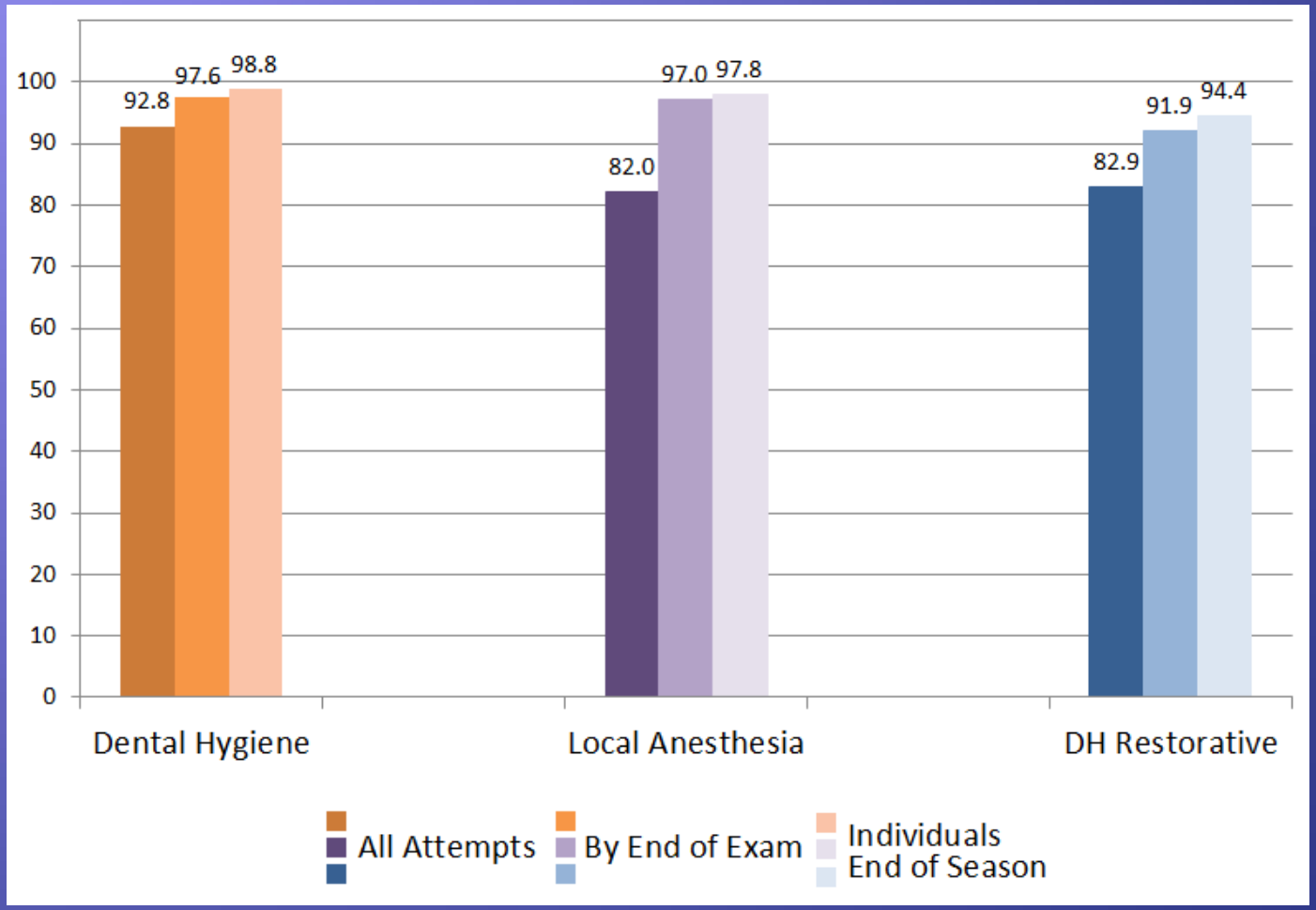
Average Raw Scores by Quad Combos, Max. Molar Types, MO/DO



Onsite Retakes

- Dental Hygiene (same criteria as initial exam)
- Local Anesthesia (perform failed injection)
- Restorative (assign same failed prep)
- Immediate Results

Hygiene, Local Anesthesia, DH Restorative Exams Passing Percentages: 2018 Year-to-Date



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Questions?

Thank you.

Supplemental Information

Why is scoring within a section compensatory? (Compensatory vs Conjunctive)

Compensatory or Conjunctive

- Decision-making approaches for combining results of ***different*** assessment
- ***Within*** an assessment, "compensatory" scoring (i.e., summing or averaging) is recommended since the elements assessed are related (the same skill set)
- For example, this is why we sum golf strokes over a course.

Compensatory or Conjunctive

- Conjunctive scoring within a section increases the likelihood of not meeting an overall standard due to measurement error (i.e., multiple hurdles)
- The conjunctive model is appropriate when a minimum standard on each ***measure (different exam section or sampled skill set)*** is required to ensure competence for public safety.
- WREB Dental Examination sections are **independent and conjunctive**; WREB requires each ***section*** be Passed. This ensures candidate competence in each area.

Research on conjunctive scoring of multiple performance exercises

- Hambleton & Slater (1997) *Applied Measurement in Education*, V10, n1, pp.19-38.
  - Lower decision consistency and accuracy, higher false negatives under conjunctive scoring. Adding enough exercises would fail every candidate, regardless of inter-exercise correlations.

- Haladyna & Hess (1999) *Educational Assessment*, V6, n2, pp.129-153.
  - Decision consistency and accuracy decrease with each added exercise under conjunctive scoring; impact may depend on reliability of exercises.

Haladyna & Hess p. 136

To certification and licensing boards, the nonsequential conjunctive strategy is also appealing because it provides a public demonstration that these boards value higher standards. However, the added stringency of the conjunctive strategy might cause a higher fail rate than is tolerated within the profession.

On the negative side, do the data support the use of the nonsequential conjunctive standard-setting strategy? Also, the reliability of test scores for nonsequential conjunctive decision making has to be lower than in a comparable situation where the compensatory strategy might be used. For instance, in a writing assessment with the six-trait scoring model, each student's performance would be evaluated as to each of the six writing traits, based on the judgment of two or three raters. The reliability of each trait score would likely be lower than the reliability of total scores based on the sum of these traits. **An important issue in decision making is whether the nonsequential conjunctive reliability is high enough for making a pass or fail decision with adequate confidence.**

- Requiring each restorative procedure in the same section to be passed would increase false negatives, failing candidates that are highly likely to pass upon retake.

- If the outcome is no different or more reliable and the public no better protected, then to repeatedly charge candidates (who can least afford it) to take an exam, exam section or procedure over again simply because the exam is inefficiently designed is unnecessary and merely lines the coffers of the testing agency.

- WREB's compensatory scoring **within a section that evaluates the same underlying skill set** arrives **more efficiently** at the outcome needed to protect the public.

Competition

Recently another agency has been saying some very strange things about competition—denigrating competition. This is oddly hypocritical since this agency is heavily engaged in competition itself and, in fact, has been making presentations to discredit competitors and spending hundreds of thousands of dollars of candidate money on raw competitive strategies like paying lobbyists to influence decisionmakers or making outright contributions to influence a state in an attempt to expand its market share.

Competition is a good thing!

Competition in America is about price, selection, and service. It benefits consumers by keeping prices low and the quality and choice of goods and services high. Competition makes our economy work. -Federal Trade Commission

Competition is the critical driver of performance and innovation. It benefits everyone by enabling us to choose from an array of excellent products at affordable prices. Competition also encourages the adoption of innovation as companies evolve and new ideas flourish in the marketplace. -Federal Trade Commission

Competition can promote innovation by reducing the value of failing to invest in research and development.
-Competition and Innovation, UC Berkeley Recent Work, Gilbert, Richard J, 2007-01-27

Competition is a good thing!

Competition affords freedom of choice, even for regulatory boards.

The advent of competition curtails the potential abuse and stagnation inherent in situations where uncontrolled monopoly exists.

The public interest has determined that action by any business and even any state regulatory agency that is deemed anti-competitive, that unduly limits access or portability or that unreasonably restrains healthy competition should be subject to critical scrutiny and potential sanction.

Participation

Decisions regarding the WREB Dental Examination are controlled by WREB member states who ultimately determine everything having to do with test design, construction, administration, reporting and documentation.

Participation

WREB Member states are engaged in all aspects of the process. Among other things, they:

- Provide a representative for WREB's Dental Examination Review Board (DERB) / (HERB)
- Supply WREB examiners
- Supply expertise and participate on WREB test construction committees
- Elect WREB's corporate Board of Directors
- Are in direct communication with WREB
- Receive WREB's state administrators' update
- Acquire direct digital access to WREB results

Participation

The fiscal cost for a state be a member of WREB is ZERO!

- WREB pays travel expenses and a conservative per diem and honorarium to persons who serve as members of DERB, who participate on test construction committees or who serve as WREB examiners.

Participation

WREB membership is not exclusive; states can be a member of WREB and of other testing agencies.

Membership is encouraged for states that recognize WREB examinations. Any state that is not currently a member is invited to become a member.

To learn more or initiate membership in WREB simply contact WREB at:

(623) 209-5400
23460 N. 19th Ave, Ste 210
Phoenix, AZ 85027

www.wreb.org

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