

# DENTAL BOARD OF CALIFORNIA

## REVIEW OF THE REGISTERED DENTAL ASSISTANT PRACTICAL EXAMINATION



OFFICE OF PROFESSIONAL EXAMINATION SERVICES



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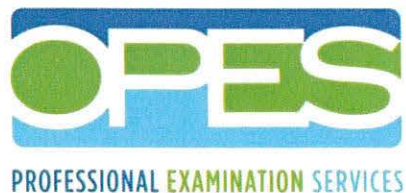
## REVIEW OF THE REGISTERED DENTAL ASSISTANT PRACTICAL EXAMINATION

This report was prepared and written by the  
Office of Professional Examination Services  
California Department of Consumer Affairs

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## EXECUTIVE SUMMARY

The Dental Board of California (Board) requested that the Department of Consumer Affairs' Office of Professional Examination Services (OPES) complete a comprehensive review of the Registered Dental Assistant (RDA) Practical Examination. The review was conducted with the following goals: 1) to evaluate the psychometric properties of the examination (e.g., reliability, test security, standardization) in response to ongoing concerns from the Board and industry stakeholders; 2) to determine the necessity and accuracy of the examination in response to Assembly Bill (AB) 179 (2015); and 3) to evaluate the content validity of the RDA Practical Examination in relation to the 2016 RDA Occupational Analysis (OA) results.

OPES evaluated the practical examination with regard to reliability of measurement, examiner training and scoring, test administration, test security, and fairness. [REDACTED]

[REDACTED] Specifically, the inconsistencies in different test site conditions, deficiencies in scoring criteria, poor calibration of examiners, and the lack of a clear definition of minimum acceptable competence indicate that the examination does not meet critical psychometric standards.

OPES recommends that the Board immediately suspend the administration of the practical examination. OPES believes there is a relatively low risk of harm to the public from the suspension of the examination because of the other measures in place, i.e., passing a written examination and the fact that RDAs are required to be under general or direct supervision by a licensed dentist (Business and Professions Code section 1752.4.(c)). [REDACTED]

Based on OPES' experience, correcting the problems to bring the examination into compliance with technical and professional standards will require a great deal of time, staffing and fiscal resources from the Board and the industry. Therefore, OPES recommends that the Board initiate a process to thoroughly evaluate options other than a practical examination for ensuring the competency of RDAs to perform the clinical procedures identified as a necessary component of RDA licensure.

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## CHAPTER 1. INTRODUCTION

### FACTORS LEADING TO THE PRACTICAL EXAMINATION REVIEW

Licensing boards and bureaus within the California Department of Consumer Affairs (DCA) are required to ensure that examination programs used in the California licensure process comply with psychometric and legal standards. The public must be reasonably confident that an individual passing a licensing examination has the requisite knowledge and skills to competently and safely practice in the respective profession.

In March 2015, the Office of Professional Examination Services (OPES) initiated an occupational analysis (OA) of the Registered Dental Assistant (RDA) profession at the request of the Dental Board of California (Board). Business and Professions (B&P) Code section 139 requires that the boards and bureaus of DCA conduct an OA for each license classification every five to seven years.

One purpose of the OA is to develop a description of current practice in terms of the actual job tasks that entry-level licensees must be able to perform safely and competently. The results of OA research projects are also used to ensure that the content of written, practical, and law and ethics licensing examinations reflect knowledge, skills, and abilities that are critical for public protection. To become more familiar with the RDA skills and abilities, OPES staff attended the examiner training and three sessions of the August 2015 RDA Practical Examination.

During the course of the RDA OA, Assembly Bill (AB) 179 (2015) chaptered (Chapter 510, statutes of 2015), requiring that OPES “conduct a review to determine whether a practical examination is necessary to demonstrate competency of registered dental assistants, and if so, how this examination should be developed and administered.”

AB 179 also included language allowing the Board to vote to suspend the practical examination if OPES’ review “concludes that the practical examination is unnecessary or does not accurately measure the competency of registered dental assistants.”

Pursuant to AB 179, OPES initiated the review in conjunction with the OA, and in May 2016, OPES issued a Memorandum to the Board with their preliminary findings. The results of the review determined that the evaluation of candidate competency to perform specific clinical skills is a necessary component of RDA licensure; however, the review concluded that there are multiple methods the Board could employ to ensure that these skills are assessed as part of the licensure process. In the May 2016 Memorandum, OPES provided the Board with two options:

Option 1: Continue use of a Board administered practical examination. This option requires the Board’s practical examination to be updated to include the 2016 RDA OA results.

Option 2: Candidates meet initial educational and training requirements through

schools and/or on the job training, as currently allowed in statute. Once education and training requirements have been met, the candidate gains practical clinical experience under a supervising dentist. Following satisfactory acquisition of clinical skills as determined by the supervising dentist, candidates will submit an application for licensure with certification from their supervising dentist indicating the candidate can demonstrate the required RDA clinical skills.

## **PURPOSE OF THE REVIEW**

At the time of the May 2016 Board meeting, OPES had not had an opportunity to evaluate whether the practical examination accurately measured the competency of RDAs. During the Board meeting, there was a request from industry to release the grading criteria for the practical examination, which was approved by the Board and found acceptable to OPES. The Board voted not to suspend the practical examination and directed staff to work with OPES to review and update the practical examination. Subsequently, the Board entered into an intra-agency agreement with OPES to conduct a comprehensive review of the RDA practical examination.

In summary, one purpose of this review was to determine whether the Board's RDA Practical Examination meets professional guidelines and technical standards. The review was also necessary to satisfy the requirements of AB 179, and, if requested, to update the RDA Practical Examination based on the results of the 2016 OA.

## **CALIFORNIA LAW AND POLICY**

Section 139 (a) of the California B&P Code states:

The Legislature finds and declares that occupational analyses and examination validation studies are fundamental components of licensure programs. It further requires that DCA develop a policy to address the minimum requirements for psychometrically sound examination validation, examination development, and occupational analyses, including standards for the review of state and national examinations.

DCA policy, OPES 12-01, specifies the *Standards for Educational and Psychological Testing* (2014), hereinafter referred to as *Standards*<sup>1</sup>, as the most relevant technical and professional standards that should be followed to ensure that examinations used for licensure testing in California are psychometrically sound, job-related, and legally defensible.

<sup>1</sup> *Standards* references information taken from: American Educational Research Association, American Psychological Association, and National Council on Measurement in Education. (2014). *Standards for Educational and Psychological Testing*. Washington, DC: American Educational Research Association.

## FORMAT OF THE REPORT

The following chapters of this report provide the relevant standards with regard to various aspects of the RDA Practical Examination and describe the issues and findings that OPES identified during their review. [REDACTED]

## CHAPTER 2. RELIABILITY OF MEASUREMENT

### OBSERVATION OF PRACTICAL EXAMINATION

On November 5, 2016, OPES staff observed the examiner training and three sessions of the RDA Practical Examination held at the University of California, San Francisco (UCSF) School of Dentistry in San Francisco. The observation included discussions with Board staff, testing staff, and dentists who were involved with the practical examination. The purpose of the observation was to evaluate the process of the practical examination with regard to reliability of measurement, examiner training and test scoring, administration, and test security and fairness to determine if the examination meets professional guidelines and technical standards.

The standards most relevant to reliability/precision of measurement, as applied by the *Standards* to credentialing or licensing examinations, are:

### STANDARDS

#### **Standard 2.1**

The range of replications over which reliability/precision is being evaluated should be clearly stated, along with a rationale for the choice of this definition, given the testing situation. (p. 42)

Comment: For any testing program, some aspects of the testing procedure (e.g., time limits and availability of resources such as books, calculators, and computers) are likely to be fixed, and some aspects will be allowed to vary from one administration to another (e.g., specific tasks or stimuli, testing contexts, raters, and, possibly, occasions). Any test administration that maintains fixed conditions and involves acceptable samples of the conditions that are allowed to vary would be considered a legitimate replication of the testing procedure. As a first step in evaluating the reliability/precision of the scores obtained with a testing procedure, it is important to identify the range of conditions of various kinds that are allowed to vary, and over which scores are to be generalized.

#### **Standard 11.14**

Estimates of the consistency of test-based credentialing decisions should be provided in addition to other sources of reliability evidence. (p. 182)

### FINDINGS

The Board typically administers the RDA Practical Examination eight times per year in two or three different locations (i.e., UCSF School of Dentistry in San Francisco, Carrington College in Pomona, or San Joaquin Valley College, Inc. in Fresno). Each administration usually consists of two testing days, with three testing sessions per day.

At the November 5, 2016 UCSF test administration, OPES staff found that all three testing sessions were equal with regard to standardized check-in/registration



procedures, candidate instructions, administration, test security protocols, and scoring. Aspects of the test administrations did not appear to vary from one administration session to another.

**Finding 1:** The standardization of administrations with regard to replicating the administration of the test between multiple test sessions at the UCSF test administration appears to meet professional guidelines and technical standards.

## ISSUES

During the observation of the San Francisco test administration, OPES staff met with Board staff and test examiners. OPES staff was informed that all test administration procedures, policies, and protocols are standardized at each test site for each testing session and that the testing staff, proctors, and examiners are predominantly the same individuals.

However, the testing sites themselves are different from each other with regard to testing environment. The Pomona test site has a classroom/lecture-type setting, with less space between candidates compared to the San Francisco test site, which is in a dental operatory lab-type setting. Pomona candidates are reportedly heavily crowded at a table to perform their examination compared to the more open space afforded the San Francisco candidates.

**Issue 1:** The testing environments do not appear to be standardized across different test sites, thus introducing potential measurement error into the assessment process.

## RECOMMENDATIONS

**Recommendation 1:** Find alternative testing sites in Southern California that resemble the testing environment at UCSF School of Dentistry in San Francisco.


**Recommendation 2:** Continue to provide testing at Carrington College in Pomona, but afford more space between candidates. This might result in adding an extra testing room, testing day, and/or testing sessions.

## CONCLUSIONS

Although test administration appears to meet professional guidelines and technical standards with regard to replicating the test for multiple sessions at a given test site, the testing environments between test sites do not appear to be comparable to each other.

No issues were observed regarding whether individual candidates had sufficient space to work in at the UCSF test site. Regarding the Pomona test site, OPES received multiple reports of this being a material issue at this test site, (i.e., candidates experienced test conditions that offered less individual privacy and were more crowded).





Finding comparable test sites for northern and southern California test administrations appears to be one key variable in diminishing construct irrelevant variance in the RDA Practical Examination. One approach could involve keeping the UCSF test site and locating a comparable test site in Southern California.

Rearranging the seating at the Pomona test site is not an option because of the layout and fixed nature of the tables. Reducing the number of candidates being tested at the same time will reduce overcrowding but will also add more testing days and testing sessions to the Pomona site, thus substantially increasing the costs to the Board.

## CHAPTER 3. EXAMINER TRAINING AND TEST SCORING

### STANDARDS

The standards most relevant to examiner training and test scoring, as applied by the *Standards* to credentialing or licensing examinations, are:

#### **Standard 4.20**

The process for selecting, training, qualifying, and monitoring scorers should be specified by the test developer. The training materials, such as the scoring rubrics and examples of test takers' responses that illustrate the levels on the rubric score scale, and the procedures for training scorers should result in a degree of accuracy and agreement among scorers that allows the scores to be interpreted as originally intended by the test developer. Specifications should also describe processes for assessing scorer consistency and potential drift over time in raters' scoring. (p. 92)

#### **Standard 4.21**

When test users are responsible for scoring and scoring requires scorer judgement, the test user is responsible for providing adequate training and instruction to the scorers and for examining scorer agreement and accuracy. The test developer should document the expected level of scorer agreement and accuracy and should provide as much technical guidance as possible to aid test users in satisfying this standard. (p. 92)

#### **Standard 6.8**

Those responsible for test scoring should establish scoring protocols. Test scoring that involves human judgment should include rubrics, procedures, and criteria for scoring. When scoring of complex responses is done by computer, the accuracy of the algorithm and processes should be documented. (p. 118)

### ISSUES

The Board's RDA examiner manual provides information to examiners regarding preparation for grading, evaluation and grading, and grading procedures. Instructions are provided to examiners for how to perform candidate scoring and how to handle scoring anomalies.

The examiner orientation/training session at the UCSF test site included descriptions of minimum competency. [REDACTED]

Before the scoring process had begun, examiners were instructed to follow the scoring protocols and to direct questions to designated staff or to the lead examiner, as needed.

[REDACTED]

Examiners were also instructed that scoring should be performed based on the specific scoring criteria/scoring rubric and should not be based on what is "perfect" or on a given examiner's opinion.

[REDACTED]

**Issue 2:** Although the Board provides some training information, materials, and instructions to examiners for scoring the RDA Practical Examination, including a certain amount of scoring protocols, procedures, and criteria, there is a degree of inaccuracy and non-agreement among examiners. Thus, the training and scoring protocols and criteria do not appear to meet professional and technical standards and guidelines.

According to the *Standards*, calibration refers to "...procedures used during training and scoring to achieve a desired level of scorer agreement" (p. 216).

[REDACTED]

There are no standardized exercises for training examiners on scoring procedures to measure their level of anchoring/calibration.

[REDACTED]

[REDACTED]

**Issue 3:** There is no evaluation of whether examiners understand the definition and criteria associated with minimum competency and each scale point. There is also no evaluation of the degree or level of examiner calibration, (i.e., the ability of the individual examiner to consistently and accurately apply the scoring standards).

[REDACTED]

**Issue 4:** There is no measure of inter-rater reliability between examiners since examiner ratings are not tracked. [REDACTED]

Equitability in the application of the scoring criteria by an individual examiner and within the team of two examiners is a critical part of ensuring the validity and reliability of the examination results. [REDACTED]

### RECOMMENDATIONS

**Recommendation 3:** Conduct the necessary workshops and studies to reestablish what constitutes as minimum acceptable competency for each of the procedures being evaluated in the practical examination.

**Recommendation 4:** Conduct the necessary workshops and studies to develop anchoring/calibration procedures and materials for examiner orientation/training sessions.

[REDACTED]

[REDACTED]

[REDACTED]

**Recommendation 5:** Develop procedures for tracking every examiner's ratings to assess their pass/fail scores over time and their inter-rater reliability.

## CONCLUSIONS

The procedures used to calibrate the examiners and evaluate the ability of examiners, individually and as a team of two examiners, to consistently and accurately apply the scoring standards appear to be either inconsistent [REDACTED]

Standardizing the scoring rubrics will require reestablishing the level of minimum acceptable competence for each procedure being evaluated. Once these studies and workshops have been successfully completed, the application of these findings to updating the rating scale and scale anchors must be accomplished.

Standardized training procedures and exercises will need to be developed for implementation during examiner orientation/training sessions to improve examiner calibration prior to scoring candidates and to increase inter-rater reliability.

In addition, examiner scoring and pass/fail decisions should be tracked over time to ensure that scoring is occurring consistently using the required rubrics and within the required minimum levels of examiner agreement.

## CHAPTER 4. TEST ADMINISTRATION

### STANDARDS

The most relevant standards relating to standardizing the test administration, as applied by the *Standards* to credentialing or licensing examinations, are:

#### **Standard 3.4**

Test takers should receive comparable treatment during the test administration and scoring process. (p. 65)

#### **Standard 4.15**

The directions for test administration should be presented with sufficient clarity so that it is possible for others to replicate the administration conditions under which the data on reliability, validity, and (where appropriate) norms were obtained. Allowable variations in administration procedures should be clearly described. The process for reviewing requests for additional testing variations should also be documented. (p. 90)

#### **Standard 4.16**

The instructions presented to test takers should contain sufficient detail so that test takers can respond to a task in the manner that the test developer intended. When appropriate, sample materials, practice or sample questions, criteria for scoring, and a representative item identified with each item format or major area in the test's classification or domain should be provided to the test takers prior to the administration of the test, or should be included in the testing material as part of the standard administration instructions. (p. 90)

#### **Standard 6.1**

Test administrators should follow carefully the standardized procedures for administration and scoring specified by the test developer and any instructions from the test user. (p. 114)

#### **Standard 6.3**

Changes or disruptions to standardized test administration procedures or scoring should be documented and reported to the test user. (p. 115)

#### **Standard 6.4**

The testing environment should furnish reasonable comfort with minimal distractions to avoid construct-irrelevant variance. (p. 116)

#### **Standard 6.5**

Test takers should be provided appropriate instructions, practice, and other support necessary to reduce construct-irrelevant variance. (p. 116)

## FINDINGS

### Test Administration – Directions and Instructions to Candidates

A link to the RDA Practical Examination candidate guide is provided on the Board's website. This guide provides candidates with information regarding RDA application and examination requirements, examination administration procedures, required materials, and grading/scoring criteria.

Throughout the administration process, candidates are presented with standardized instructions from testing staff. Testing staff and proctors are strategically placed in specific areas on the floor to assist candidates and to provide instructional information during candidate check-in/registration. Once all candidates are escorted into the testing area and are seated, the Chief Orientation Examiner (COE) provides a scripted orientation speech to candidates over the PA system. The COE also notifies candidates over the PA system when they have 30 minutes and 10 minutes remaining to complete the examination and when they must stop. These instructions are provided in a clear and uniform manner consistently in all testing sessions.

**Finding 2:** The directions and instructions provided to candidates appear straightforward. The information available to candidates is detailed and thorough, clearly stating the Board's policies where necessary.

### Test Administration – Standardized Procedures

Testing staff and proctors follow standardized scripts, instructions, and check lists throughout the test administration process. Check lists are utilized to evaluate site preparedness, document candidate compliance with infection control procedures (i.e., personal protection equipment [PPE]), and document candidate apparel/equipment (e.g., equipment replacement or incidences). Operating procedures are also in place, if needed, for emergency preparedness, sexual harassment/sexual misconduct, and other unprofessional conduct – including candidate and examiner/staff dismissal.



The following forms are completed by testing staff as necessary:

- Orientation Waiver Form
- RDA Incident Log Sheet
- Incident Report
- Candidate Examination Interruption Form
- RDA Examination Tracking Log

The test facility also has signage clearly directing candidates where to go, and the directions to the check-in area are clearly marked and monitored. Testing staff uphold a professional appearance and demeanor. Their roles and responsibilities are well-evidenced, as the check-in process is well-organized and includes reminders regarding prohibited items. The timing schedule for test administration is objective and standard, and candidates are able to monitor time remaining. Responses to candidate questions are standardized, where applicable.

**Finding 3:** The policies and procedures established for the test administration process appear to meet professional and technical standards and guidelines.

#### Test Administration – Testing Environment

The testing environment at UCSF is well-lit and is set at a comfortable temperature. All electronic devices are out-of-sight in the testing area. Candidate testing stations are identical for each candidate and are evenly spaced to permit confidential performance between candidates. The testing stations allow for the proper placement and anchoring of typodonts, and there is sufficient room for performing the procedures and for the placement of armamentaria. Communication between candidates can easily be monitored by testing staff, and proctors are able to walk through the testing area to make unobtrusive observations.

**Finding 4:** The testing environment at UCSF appears to meet professional guidelines and technical standards.

### **CONCLUSIONS**

Given the findings, the test administration protocols observed in the UCSF test site meet professional guidelines and technical standards. However, it was reported to OPES that in Southern California, bench mounts are pre-mounted in some rooms, but not in others. If this is the case, it could introduce unnecessary measurement error into the assessment process.

## CHAPTER 5. TEST SECURITY

### STANDARDS

The most relevant standards relating to the test security of credentialing or licensing examinations, as applied by the *Standards*, are:

**Standard 6.6**

Reasonable efforts should be made to ensure the integrity of test scores by eliminating opportunities for test takers to attain scores by fraudulent or deceptive means. (p. 116)

**Standard 6.7**

Test users have the responsibility of protecting the security of test materials at all times. (p. 117)

**Standard 8.9**

Test takers should be made aware that having someone else take the test for them, disclosing confidential test material, or engaging in any other form of cheating is unacceptable and that such behavior may result in sanctions. (p. 136)

**Standard 9.21**

Test users have the responsibility to protect the security of tests, including that of previous editions. (p. 147)

### FINDINGS

During test administration, the following security policies, procedures, and protocols are adhered to and implemented:

- Candidates must provide a current and valid government-issued photo identification for entry into test site.
- Candidates are prohibited from bringing any personal belongings into the testing rooms other than the required materials.
- Candidate identification numbers are used to designate candidates on all examination/scoring materials and testing stations.
- Areas of test facility are clearly marked, blocked, and/or monitored by staff (i.e., only candidates and designated staff are allowed in the testing area).
- Testing staff and proctors are clearly identified (i.e., badges, attire).
- Examiners remain in a separate room away from candidates during testing and do not intermingle with candidates outside the testing area.
- Area for kit renters is clearly marked on a separate floor, and they are not permitted anywhere in the testing area.
- Testing area layout permits the monitoring/observation of candidates.

- All scoring materials remain in a secure, designated area.
- Candidate score sheets are maintained in a confidential/secure manner.
- Only designated staff have access to testing and scoring materials.
- Procedures for candidate dismissal upon completion prevent sharing of information between candidates.
- Candidates are escorted to the waiting area during scoring, are monitored at all times, and then escorted back to the testing area for dismissal.
- Following administration, all test and scoring materials are accounted for, secured, and prepared for conveyance.

In addition to these security measures, the Board's *Candidate Guide for the Registered Dental Assistant Practical Examination* also provides information to candidates regarding what constitutes improper performance and unethical conduct on the part of candidates and the consequences of such actions.

**Finding 5:** The Board, through its internal test administration and security protocols, provides a robust framework of test site and examination security policies and procedures.

## CONCLUSIONS

Given the findings, the test security policies, procedures, and protocols meet professional guidelines and technical standards.

## CHAPTER 6. TEST FAIRNESS

### TEST FAIRNESS

The concept of fairness as it relates to testing is applied by the *Standards* in four primary areas: fair and equitable treatment of all test takers during the testing process, issues of fairness in measurement quality, fairness as the absence of measurement bias, and fairness as access to the construct being measured (p. 51). One way of characterizing all of these areas is to consider that fairness in testing requires that individuals not be advantaged or disadvantaged in any facet of the testing process because of characteristics that are irrelevant to the construct being tested. Standards 3.1 and 3.4, below, should be understood within the context of individuals from the intended test population from diverse racial, ethnic, gender, age, socioeconomic, and educational backgrounds who have met the eligibility requirements to take the RDA Practical Examination.

### STANDARDS

The standards most relevant to test fairness, as applied by the *Standards* to credentialing or licensing examinations, are:

#### **Standard 3.1**

Those responsible for test development, revision, and administration should design all steps of the testing process to promote valid scores for the widest possible range of individuals and relevant groups in the intended population. (p. 63)

#### **Standard 3.4**

Test takers should receive comparable treatment during the test administration and scoring process. (p. 65)

#### **Standard 9.14**

Test users should inform individuals who may need accommodations in test administration (e.g., older adults, test takers with disabilities, or English language learners) about the availability of accommodations and, when required, should see that these accommodations are appropriately made available. (p. 145)

### FINDINGS

Candidates are informed in the Board's "Registered Dental Assistant Examination Instructions" that they may call the Board to request a special accommodations packet, which must be submitted with their application. In addition, they are informed that if their religious beliefs preclude them from being examined on Saturday or Sunday, they must include a note indicating the day on which they cannot take the examination and

the reason why. The Board approves any necessary accommodations under the Americans with Disabilities Act.

In addition, as noted previously in Chapter 4, the Board has policies and procedures for standardizing the test administration. These procedures contribute to fairness in that all candidates receive the same instructions in the same way. There are opportunities for candidates to ask questions in a group setting so that all candidates present hear the question and the response together. These candidate "orientations" serve to ensure that all candidates have the opportunity to hear the instructions and to hear the test administration's facilitators clarify areas where there may be confusion.

**Finding 6:** The Board takes measures to ensure that the examination is fair for all candidates with regard to special accommodations and equitable treatment.

## **CONCLUSIONS**

Given the findings, the Board's process appears to meet professional guidelines and technical standards with regard to test fairness.

## CHAPTER 7. STAKEHOLDER MEETINGS

OPES convened two stakeholder panel meetings to provide focused discussions on topics directly related to the practical examination. The purpose of the meetings was to allow stakeholders the opportunity to provide background information to OPES and to provide a forum in which to discuss controversial issues and current trends.

The first meeting was convened by OPES on January 26, 2017, to discuss key questions generated as a result of OPES' observation of the November 5, 2016, examiner training and practical examination administration held at the UCSF School of Dentistry in San Francisco. The Board, with direction from OPES, recruited nine stakeholders, consisting of kit renters and educators representing both northern and southern California to participate in the meeting. Kit renters supply "kits" with the typodont and other materials that candidates need to take the examination. The stakeholders completed security agreements and personal data forms, which are on file with OPES for documentation of stakeholder information.

An orientation provided by OPES stated the purpose of the meeting, the role of the stakeholders, and the project background leading to the meeting. Once the stakeholders understood the purpose of the meeting, they were provided with questions to stimulate thought and discussion in areas where stakeholder input might contribute to the review and update of the practical examination. Areas of discussion included test site conditions, the use of tooth #8 for fabrication of a temporary crown, the problem with some kit renter items, the use of different types of typodonts, and the use of different types of materials.

The second meeting was convened by OPES the following day on January 27, 2017. The Board recruited a different group of eight stakeholders, also comprised of kit renters and educators representing both northern and southern California. The purpose of this second meeting was to allow for additional stakeholder representation. The majority of the participants of both panel meetings indicated that they were simultaneously kit renters and educators. The stakeholders were provided with the same security agreements, personal data forms, orientation, and key questions for discussion as the previous meeting.

Information gathered from the two stakeholder meetings were transcribed and are summarized below:

### Stakeholder Comments regarding Scoring Criteria, Grading Considerations, and Examiner Calibration

- A more thorough clarification of the scoring criteria needs to be implemented to provide for more quantifiable measures. The scoring rubric should include pictures and better descriptions of what constitutes each score rating.

- Examiner qualifications need to be evaluated. Examiners should be current and experienced (at least five years) and performing the duties on a daily or weekly basis.
- Calibration needs to be improved so that examiners are consistent with their expectations of what constitutes entry-level performance. An RDA (not dentist) should be doing the training of examiners.
- Candidates should be reminded that using loops or lights are allowed during the examination. Some candidates use them and some do not.
- Climate can affect the setting time of material. This information should be taken into consideration during grading.
- Material for cementation in a real mouth sets faster because it is warm. On a typodont, however, it sets slower. This information should be taken into consideration during grading.
- Examiners should not tug on tooth #8 to ensure that it is cemented properly since it can affect what the next examiner sees.

#### Stakeholder Comments regarding Test Administration Sites

- The seating of candidates needs to be consistent across locations. Candidates are placed within close proximity of each other in Pomona and Fresno but are afforded more space at UCSF.
- The setting up of bench mounts needs to be consistent across locations. The bench mounts are pre-mounted in Northern California, but in Southern California the candidates set up the bench mounts themselves prior to the examination.
- There needs to be consistency between testing rooms within the same test site. In Southern California, bench mounts are pre-mounted in some rooms, but not in others.
- Personal Protection Equipment (PPE) needs to be consistent with regard to what is allowable. For candidates who wear prescription glasses, there is inconsistency between whether face shields or side shields are required.

#### Stakeholder Comments regarding Typodonts

- Typodonts need to be standardized (i.e., Kilgore or only one type of Columbia).
- The Board should supply the typodonts to the candidates. If not, there needs to be criteria specifying the typodont's requirements. The typodonts should come ready to go.
- The Board should remove the task of calibrating/articulating the typodonts (i.e., making the typodonts close to check the bite with the paper) since this can affect tooth #8.
- Candidates should be allowed to screw in prep tooth #8 from the Board before the examination begins. During the examination, some candidates are

unable to strip the screw to take out the normal white tooth #8. This results in the candidate being escorted by a proctor to the kit renters to replace the upper arch from another typodont. This can affect the occlusion and fit, and consequently, the typodont's occlusion may not have the reasonable stability required.

#### Stakeholder Comments regarding General Examination Process Improvements

- Candidates need to be provided with a more specific response for why they failed. The language for failing is not congruent with the grading criteria. It was suggested that perhaps the Board keep a digital record of each candidate's work so that if a candidate fails, the candidate would know the reason for their failure based on the picture. There needs to be better overall communication between the Dental Board, the educators, kit renters, and candidates about why candidates failed.
- The Board needs to communicate whenever they are making a change. When an examination is cancelled, the Board needs to communicate the reasoning to the candidates. The Board also needs to notify the candidates about their application status when a test is cancelled and pushed to another date.
- The Board should provide first time versus repeat candidate statistics by school.
- The Board should keep records of each examiner's pass/fail rate for tracking purposes.
- The Board should look at the statistics to correlate when candidates graduated and when they take the examination. Do those who wait six months to one year after graduation typically pass the practical examination versus those who take the examination right after graduation?



## CHAPTER 8. SME REVIEW WORKSHOP

On February 17–18, 2017, OPES convened a two-day review workshop to provide recommendations for improving the practical examination and to link the practical examination to the 2016 occupational analysis (OA). The Board, with direction from OPES, recruited 10 SMEs, who consisted of RDAs and practical examiners. The attending SMEs represented both northern and southern California. The SMEs completed security agreements and personal data forms, which are on file with OPES for documentation of participant information.

An orientation provided by OPES stated the purpose of the meeting, the role of the SMEs, and the project background leading to the meeting. Once the SMEs understood the purpose of the meeting, they were asked for input regarding the practical examination and whether there was anything they would like to see changed and/or improved. The content of their discussions were very similar to the discussions held during the stakeholder meetings. Although the source of the problems and the responsible parties involved varied between the groups, they all agreed that improvement is needed in key areas. The areas of improvement are summarized as follows:

### SME Comments regarding Scoring Criteria, Grading Considerations, and Examiner Calibration

- The scoring criteria/scoring rubric is good, but it would be very beneficial for the Board to provide information about millimeters on the margins for improved clarification.
- The scoring sheet needs more applicable scenarios. “Incorrect procedure” does not provide candidates with enough information for why they failed the examination. More specific information is needed (i.e., prep is there, but the crown is not in place.) This will assist candidates to better prepare for the examination.
- The ability to grade the examination is very problematic if cementation is wrong. Performing one procedure right on top of another is not good. If the candidate fails the first procedure (fabricating a temporary crown), then they fail the second one as well (cementation). SMEs suggested that either cementation be removed as a tested procedure or a different tooth be chosen for cementation. For example, fabricate on temporary tooth #8, but cement on a posterior tooth.

- The setting time for cementation is a problem, which can affect scoring. If the cement is not set when the first examiner tugs at the tooth to ensure it is cemented properly, it can affect how the second examiner receives that tooth to grade. The examiners should no longer tug on the tooth, or the Board should allot more time for the material to set prior to examiner grading. (The examiners informed OPES that in the past, they were not allowed to touch the typodonts during scoring. They were required to score based on what they saw visually. Consequently, they may have been passing candidates for cementation because the tooth appeared cemented in place and stable, but when in fact, it may not have been. This could explain the more recent failure rates since examiners are now allowed to touch the typodonts to ensure proper cementation.)
- Calibration needs to be improved so that examiners are consistent with their expectations of what constitutes entry-level performance. The SMEs believe that the dentists who are involved with the practical examination have set the bar for minimum competency above what they would consider minimum competency. Therefore, the examiners need new training on minimum competency and calibration. The SMEs support OPES' recommendation of conducting SME workshops to develop anchoring/calibration materials (slides and typodonts) for new and improved examiner orientation/training sessions. In addition, the SMEs think that the dentists should be present at the practical examination as consultants only, rather than providing the calibration training or performing as a scoring examiner.
- There is confusion over what the word "stable" indicates with regard to cementation. This term needs to be operationally defined and discussed in depth during calibration training.

#### SME Comments regarding Test Administration Sites

- The seating of candidates needs to be consistent across locations.
- The setting up of bench mounts needs to be consistent across locations.
- The use of overhead lighting needs to be consistent across locations. UCSF allows the use of overhead lighting, but there are none available in the southern California sites.

The SMEs indicated that northern California candidates have always performed better on the practical examination than southern California candidates even when the examination was held at University of California, Los Angeles (UCLA) and University of Southern California (USC), which were similar to the test site at UCSF. Therefore, the SMEs believe that it is a matter of education the candidates are receiving in southern California that explains the higher failure rate compared to northern California rather than due to any other factor.

### SME Comments regarding Typodonts and Explorers

- Typodonts need to be standardized (i.e., Kilgore).
- Explorers need to be standardized because there are differences in explorers. The examiners use the pig tail, which is thinner, but some of the kits come with explorers that are thicker.

There were four topics of discussion in which the stakeholders (kit renters and educators), RDA SMEs, and the dentists differed:

1. The stakeholders indicated that there is inconsistency with regard to allowable PPE, but the SMEs indicated that this is not a problem.
2. The stakeholders indicated that the Board should remove the task of calibrating/articulating the typodonts since this can affect tooth #8. However, the SMEs indicated that this should continue to be done in order to make sure there is occlusion.
3. The stakeholders indicated that expired materials or missing kit items is not a problem. However, the SMEs indicated that it is a problem.
4. The dentists who were involved with the practical examination indicated that tooth #8 is problematic since the way that the tooth is trimmed makes it not shaped correctly. Therefore, the dentists believe that prep tooth #8 should be replaced or fixed. However, the SMEs indicated that the candidates are told the margin is supragingival in the candidate guide. The educators should be aware and be teaching candidates to expect this situation. Therefore, according to the SMEs, tooth #8 is not a problem since the candidates are provided this information.

## CHAPTER 9. LINKAGE OF PRACTICAL EXAMINATION CONTENT WITH 2016 OCCUPATIONAL ANALYSIS RESULTS

In order to verify the content validity of the skills and abilities tested on the present practical examination, the SMEs in the February 17-18, 2017 workshop were provided with a list of the 12 ability statements that had been developed during the 2016 RDA Occupational Analysis (OA). The 12 ability statements reflected the central dental assisting skills that define the RDA scope of practice. In conducting their review, the SMEs decided to add an additional ability statement for a total of 13 ability statements for an RDA (see Appendix B).

Overall, the SMEs concluded that the 13 ability statements were accurate and complete in describing the principle dental assisting tasks that define the RDA scope of practice. For the purpose of this report, these 13 ability statements will be referred to as the “RDA Abilities.”

The SMEs were also asked to review the relationship between the RDA Abilities and the tasks and knowledge from the 2016 RDA OA. To accomplish this task, the SMEs reviewed the linkage identified in the OA workshops. The SMEs concurred with the OA findings. The linkage between the task and knowledge statements of the 2016 RDA OA can be found in Appendix D.

The SMEs were then asked to rate each of the 13 ability statements using the following “acquired” rating scale:

- 0 - **Does not apply to my job; Not required** – This job knowledge does not apply to my job; it is not required for job performance.
- 1 - **Acquired before licensure** – I acquired the ability to apply this knowledge before licensure.
- 2 - **Acquired mostly before licensure** – I acquired most of the ability to apply this knowledge before licensure.
- 3 - **Acquired mostly after licensure** – I acquired most of the ability to apply this knowledge after licensure.
- 4 - **Acquired after licensure** – I acquired the ability to apply this knowledge after licensure.

The purpose was to assess whether the RDA Abilities are learned before or after licensure. Appendix C depicts the ratings provided by each SME and the average ratings for each ability statement. The results indicate that RDAs acquire most of the ability to apply the *related knowledge* before, or mostly before, licensure.

During the February 2017 discussion of the results, the SMEs went on to describe that the RDA candidate typically learns the *techniques and procedures* for applying the RDA Abilities while in school and during on the job training. This is congruent with the SME

discussions during the 2016 OA workshops, and similar results were reported by the RDA sample responding to the OA questionnaire. In the OA questionnaire, when respondents were asked to indicate the top three sources of experience to become an RDA, 59% indicated on the job from the supervising dentist, 31% from a private career school, and 29% on the job from an experienced RDA or RDA Extended Functions (RDAEF).

The SMEs further noted that the actual proficiency in applying the RDA Abilities occurs after licensure. The SMEs indicated that a certain degree of ability is gained by the completion of school, but proficiency takes time and practice to be achieved, especially in relation to taking accurate impressions, fabricating dental provisionals, placing temporary filling material, and the cementation of provisionals. These areas are associated with the following RDA Abilities:

A4.	Ability to fabricate acrylic temporary restoration with proper margins, tooth contours, and acrylic finish lines.
A5.	Ability to adjust acrylic temporary restoration with proper tooth contours, appropriate occlusal and proximal surfaces, and appropriate embrasures and contacts.
A7.	Ability to cement temporary restoration, leaving restoration stable and in place without excess cement.
A11.	Ability to place temporary restoration with proper occlusion, no excess O/B/L, and correct proximal box form (anatomically and margins).

Finally, the SMEs were asked to review the three procedures evaluated by the current practical examination and to identify the tasks and knowledge from the 2016 OA measured by each of the three procedures. In addition, the SMEs were asked to identify which of the thirteen RDA Abilities were measured by each of the three procedures evaluated by the practical examination. The results of this review can be found in Appendix A.

## FINDINGS

The three procedures evaluated by the current practical examination are procedures that reflect principle dental assisting tasks that define the RDA scope of practice.

The results of the SME review conducted for this study reflect the findings of the 2016 RDA OA in the following areas:

- Much of the techniques and procedures related to the RDA Abilities are learned by the candidates in school and on the job prior to licensure.
- Applying the knowledge related to the RDA Abilities is also learned by the candidates in school and on the job prior to licensure.
- Proficiency in performing the RDA Abilities occurs after licensure and is related to the RDAs gaining further practice and experience in applying the RDA Abilities.
- The supervising dentist is the ultimate judge and arbiter of the extent to which the

RDA demonstrates sufficient proficiency to perform the RDA duties in the dentist's office (See B&P Code section 1752.4.(c)).

## CHAPTER 10. CONCLUSIONS AND RECOMMENDATIONS

Information was gathered about the RDA Practical Examination from Board staff, RDA educators, RDA examination kit renters, RDA examiners, dentists, and RDAs working in the industry. Their feedback, coupled with OPES' observation of a test administration, elicited serious concerns about the present practical examination.

OPES recommends that the Board immediately suspend the administration of the practical examination. [REDACTED]

The most critical issue identified is the need to clearly define minimum competence for the RDA procedures measured in the examination. OPES' analysis determined that the procedures that are being assessed are necessary for entry-level licensure and appropriate for a practical examination. However, the level of minimum acceptable competence for each procedure needs to be identified through a series of workshops involving dentists, RDAs, and testing professionals. The Board has a history of struggling with this issue, as the practical examination examiner training has in the past been conducted by an RDA and then more recently conducted by a dentist. Because dentists are ultimately responsible for the work of RDAs, both dentists and RDAs must be involved in determining the level of performance acceptable for entry-level RDA practice.

One factor adding to the complexity of defining minimum competence is the multiple pathways to RDA prelicensure training and the variety of materials that are used in different dental offices. The 2016 OA results indicated that RDAs typically learn the basic skills and techniques prelicensure and then receive additional training and techniques with specific materials under direct supervision of RDAs, RDAEFs, or dentists. This issue makes defining the correct level of minimum competence for some procedures more difficult. However, it is important to note that RDAs are closely supervised by dentists until they are determined to have the necessary skills and abilities to work under indirect supervision, therefore suspending the practical examination does not appear to increase the risk of public harm.

The second most critical issue identified is the need to improve the scoring criteria and calibration procedures. The current process does not meet professional guidelines and technical standards, and is causing unnecessary confusion for examiners, candidates, and instructors, as shown in the multitude of comments by stakeholders and SMEs. To correct this process, a series of SME workshops needs to be conducted to develop anchoring/calibration procedures and materials (slides and typodonts) for examiner orientation/training sessions. Ongoing examiner orientation/training sessions will need to be provided to ensure minimum competency and to maintain calibration standards. Each examiner's ratings will need to be tracked to assess their pass/fail scores over time (i.e., across administrations) and to monitor inter-rater reliability.

The third most critical issue is the lack of standardization. All test sites and all testing rooms must ensure consistency as much as possible (e.g., with candidate seating, bench mount setup, overhead lighting, and allowable personal protection equipment). Controversial issues with regard to the tooth used, the cementation process, the type of typodont and explorer need to be resolved. Ensuring that all equipment used by candidates is consistent, in working order, and that materials are not expired is important for reducing unnecessary stress to candidates and improving test reliability.

Finally, the potential conflict of interest of instructors providing kits and then participating in the discussion of updating the practical examination needs to be acknowledged and explored.

Addressing each issue and implementing the suggested changes to improve the RDA Practical Examination will require a great deal of time, ongoing commitment, and resources from the Board and industry. Implementing the recommendations to ensure the examination is in compliance with professional guidelines and technical standards could take one to two years. Given the amount of time, fiscal and staffing resources needed to enact change to the RDA Practical Examination, and the relatively low risk of public harm from its suspension, OPES recommends that the Board evaluate means other than a practical examination for assessing RDA competency to perform clinical procedures necessary for licensure.



## APPENDIX A: RDA PRACTICAL EXAMINATION OUTLINE

### I. Fabrication of a Temporary Crown

#### **TASK STATEMENTS**

- T21.** Take impressions for direct and indirect provisional restorations.  
**T18.** Fabricate and adjust direct and indirect provisional restorations.

#### **KNOWLEDGE STATEMENTS**

- K34.** Knowledge of irregularities in margins that affect direct and indirect provisional restorations.  
**K35.** Knowledge of techniques used to eliminate open margins when placing restorative materials.  
**K36.** Knowledge of methods for identifying improper occlusal contacts, proximal contacts, or embrasure contours of provisional restorations.  
**K37.** Knowledge of techniques and procedures for mitigating the effects of improper occlusal contacts, proximal contacts, or embrasure contours of provisional restorations.  
**K41.** Knowledge of types of impression materials and techniques and procedures for their application and placement.  
**K42.** Knowledge of techniques and procedures used to mix and place provisional materials.  
**K43.** Knowledge of techniques and procedures for bonding provisional veneers.  
**K69.** Knowledge of laws and regulations pertaining to infection control procedures related to "Dental Healthcare Personnel" (DHCP) environments.  
**K74.** Knowledge of protocols and procedures for purging dental unit waterlines and hand pieces (DUWL).  
**K84.** Knowledge of procedures and protocols for the disposal of biological hazardous waste and Other Potentially Infectious Materials (OPIM).

**I. Fabrication of a Temporary Crown (continued)**

**ABILITY STATEMENTS**

- A1.** Ability to take an accurate impression.
- A2.** Ability to prepare non-monomer acrylic resin material to fabricate an indirect restoration.
- A3.** Ability to fabricate acrylic temporary restoration without fractures, cracks, or voids.
- A4.** Ability to fabricate acrylic temporary restoration with proper margins, tooth contours, and acrylic finish lines.
- A5.** Ability to adjust acrylic temporary restoration with proper tooth contours, appropriate occlusal and proximal surfaces, and appropriate embrasures and contacts.
- A6.** Ability to prepare bonding agent and apply it to temporary restoration for cementation.
- A7.** Ability to cement temporary restoration, leaving restoration stable and in place without excess cement.
- A8.** Ability to mix, place, and contour sedative filling material.
- A9.** Ability to prepare tooth surface for placement of temporary restoration.
- A10.** Ability to place temporary restoration with a smooth surface without voids.
- A11.** Ability to place temporary restoration with proper occlusion, no excess O/B/L, and correct proximal box form (anatomically and margins).
- A12.** Ability to apply infection control procedures.
- A13.** Ability to place Tofflemire matrix and wedge.

## II. Cementation of a Temporary Crown

<b>TASK STATEMENTS</b>
<b>T19.</b> Perform cementation procedure for direct and indirect provisional restorations.
<b>KNOWLEDGE STATEMENTS</b>
<b>K48.</b> Knowledge of types of cements and the techniques and procedures for their application, placement, and removal.
<b>ABILITY STATEMENTS</b>
<b>A6.</b> Ability to prepare bonding agent and apply it to temporary restoration for cementation.
<b>A7.</b> Ability to cement temporary restoration, leaving restoration stable and in place without excess cement.
<b>A9.</b> Ability to prepare tooth surface for placement of temporary restoration.
<b>A12.</b> Ability to apply infection control procedures.

### III. Placement of a Temporary Restoration

<b>TASK STATEMENTS</b>
<p><b>T14.</b> Place matrices and wedges.</p> <p><b>T15.</b> Place temporary filling material.</p> <p><b>T18.</b> Fabricate and adjust direct and indirect provisional restorations.</p>
<b>KNOWLEDGE STATEMENTS</b>
<p><b>K29.</b> Knowledge of types of wedges and the techniques and procedures for their use.</p> <p><b>K30.</b> Knowledge of techniques and procedures for using matrix bands with or without band retainers.</p> <p><b>K31.</b> Knowledge of types of temporary filling materials and the techniques and procedures to mix, place, and contour them.</p> <p><b>K34.</b> Knowledge of irregularities in margins that affect direct and indirect provisional restorations.</p> <p><b>K35.</b> Knowledge of techniques used to eliminate open margins when placing restorative materials.</p> <p><b>K36.</b> Knowledge of methods for identifying improper occlusal contacts, proximal contacts, or embrasure contours of provisional restorations.</p> <p><b>K37.</b> Knowledge of techniques and procedures for mitigating the effects of improper occlusal contacts, proximal contacts, or embrasure contours of provisional restorations.</p> <p><b>K42.</b> Knowledge of techniques and procedures used to mix and place provisional materials.</p> <p><b>K43.</b> Knowledge of techniques and procedures for bonding provisional veneers.</p>
<b>ABILITY STATEMENTS</b>
<p><b>A1.</b> Ability to take an accurate impression.</p> <p><b>A2.</b> Ability to prepare non-monomer acrylic resin material to fabricate an indirect restoration.</p> <p><b>A3.</b> Ability to fabricate acrylic temporary restoration without fractures, cracks, or voids.</p> <p><b>A4.</b> Ability to fabricate acrylic temporary restoration with proper margins, tooth contours, and acrylic finish lines.</p> <p><b>A5.</b> Ability to adjust acrylic temporary restoration with proper tooth contours, appropriate occlusal and proximal surfaces, and appropriate embrasures and contacts.</p>

### III. Placement of a Temporary Restoration (continued)

ABILITY STATEMENTS (continued)	
<b>A6.</b>	Ability to prepare bonding agent and apply it to temporary restoration for cementation.
<b>A7.</b>	Ability to cement temporary restoration, leaving restoration stable and in place without excess cement.
<b>A8.</b>	Ability to mix, place, and contour sedative filling material.
<b>A9.</b>	Ability to prepare tooth surface for placement of temporary restoration.
<b>A10.</b>	Ability to place temporary restoration with a smooth surface without voids.
<b>A11.</b>	Ability to place temporary restoration with proper occlusion, no excess O/B/L, and correct proximal box form (anatomically and margins).
<b>A12.</b>	Ability to apply infection control procedures.
<b>A13.</b>	Ability to place Tofflemire matrix and wedge.

## APPENDIX B: RDA ABILITY STATEMENTS

<b>A1.</b> Ability to take an accurate impression.
<b>A2.</b> Ability to prepare non-monomer acrylic resin material to fabricate an indirect restoration.
<b>A3.</b> Ability to fabricate acrylic temporary restoration without fractures, cracks, or voids.
<b>A4.</b> Ability to fabricate acrylic temporary restoration with proper margins, tooth contours, and acrylic finish lines.
<b>A5.</b> Ability to adjust acrylic temporary restoration with proper tooth contours, appropriate occlusal and proximal surfaces, and appropriate embrasures and contacts.
<b>A6.</b> Ability to prepare bonding agent and apply it to temporary restoration for cementation.
<b>A7.</b> Ability to cement temporary restoration, leaving restoration stable and in place without excess cement.
<b>A8.</b> Ability to mix, place, and contour sedative filling material.
<b>A9.</b> Ability to prepare tooth surface for placement of temporary restoration.
<b>A10.</b> Ability to place temporary restoration with a smooth surface without voids.
<b>A11.</b> Ability to place temporary restoration with proper occlusion, no excess O/B/L, and correct proximal box form (anatomically and margins).
<b>A12.</b> Ability to apply infection control procedures.
<b>A13.</b> Ability to place Tofflemire matrix and wedge.

APPENDIX C: RDA ABILITY STATEMENT RATINGS BY SME

	SME 1	SME 2	SME 3	SME 4	SME 5	SME 6	SME 7	SME 8	SME 9	SME 10	AVG
A1	1	1	2	2	2	1	2	1	2	2	1.6
A2	1	1	2	1	2	1	2	1	1	2	1.4
A3	2	2	2	1	2	1	2	2	2	1	1.7
A4	2	2	2	2	2	1	2	3	2	2	2
A5	3	3	2	2	2	2	2	3	2	2	2.3
A6	1	1	2	2	2	2	1	2	1	1	1.5
A7	2	2	3	2	2	2	2	2	2	2	2.1
A8	2	2	3	1	2	1	2	2	2	1	1.8
A9	1	1	2	2	2	2	2	1	1	2	1.6
A10	1	2	2	2	2	1	2	2	2	1	1.7
A11	2	2	3	3	2	1	2	3	2	2	2.2
A12	1	1	1	1	2	1	1	1	1	1	1.1
A13	1	3	2	2	2	1	2	3	1	2	1.9

Rating Scale: 0 - Does not apply to my job; Not required, 1 - Acquired before licensure; 2 - Acquired mostly before licensure; 3 - Acquired mostly after licensure; 4 - Acquired after licensure.

APPENDIX D: LINKAGE BETWEEN RDA PROCEDURES AND OA  
RESULTS



**PROCEDURE: Taking Impressions (Direct/Indirect Restorations)**

Task/Ability Statement	KSAs Required to Perform Task
<p>T21. Take impressions for direct and indirect provisional restorations.</p> <p>A1. Ability to take an accurate impression.</p> <p>A12. Ability to apply infection control procedures.</p>	<p>K41. K of types of impression materials and techniques and procedures for their application and placement.</p> <p>K69. K of laws and regulations pertaining to infection control procedures related to "Dental Healthcare Personnel" (DHCP) environments.</p> <p>K74. K of protocols and procedures for purging dental unit waterlines and hand pieces (DUWL).</p> <p>K84. K of procedures and protocols for the disposal of biological hazardous waste and Other Potentially Infectious Materials (OPIM).</p>

**PROCEDURE: Direct and Indirect Restorations (Place matrices and wedges)**

Task/Ability Statement	KSAs Required to Perform Task
<p>T14. Place matrices and wedges</p> <p>A12. Ability to apply infection control procedures.</p> <p>A13. Ability to place Tofflemire matrix and wedge.</p>	<p>K29. K of types of wedges and the techniques and procedures for their use.</p> <p>K30. K of techniques and procedures for using matrix bands with or without band retainers</p>

**PROCEDURE: Fabricating Dental Provisional**

Task/Ability Statement	KSAs Required to Perform Task
<p>T18. Fabricate and adjust direct and indirect provisional restorations.</p> <p>A1. Ability to take an accurate impression.</p> <p>A2. Ability to prepare non-monomer acrylic resin material to fabricate an indirect restoration.</p> <p>A3. Ability to fabricate acrylic temporary restoration without fractures, cracks, or voids.</p> <p>A4. Ability to fabricate acrylic temporary restoration with proper margins, tooth contours, and acrylic finish lines.</p> <p>A5. Ability to adjust acrylic temporary restoration with proper tooth contours, appropriate occlusal and proximal surfaces, and appropriate embrasures and contacts.</p> <p>A6. Ability to prepare bonding agent and apply it to temporary restoration for cementation.</p> <p>A7. Ability to cement temporary restoration, leaving restoration stable and in place without excess cement.</p> <p>A8. Ability to mix, place, and contour sedative filling material.</p> <p>A9. Ability to prepare tooth surface for placement of temporary restoration.</p> <p>A10. Ability to place temporary restoration with a smooth surface without voids.</p> <p>A11. Ability to place temporary restoration with proper occlusion, no excess O/B/L, and correct proximal box form (anatomically and margins).</p> <p>A12. Ability to apply infection control procedures.</p> <p>A13. Ability to place Tofflemire matrix and wedge.</p>	<p>K34. K of irregularities in margins that affect direct and indirect provisional restorations.</p> <p>K35. K of techniques used to eliminate open margins when placing restorative materials.</p> <p>K36. K of methods for identifying improper occlusal contacts, proximal contacts, or embrasure contours of provisional restorations.</p> <p>K37. K of techniques and procedures for mitigating the effects of improper occlusal contacts, proximal contacts, or embrasure contours of provisional restorations.</p> <p>K42. K of techniques and procedures used to mix and place provisional materials.</p> <p>K43. K of techniques and procedures for bonding provisional veneers.</p>

**PROCEDURE: Direct and Indirect Restorations (Place bases and liners)**

Task/Ability Statement	KSAs Required to Perform Task
<p>T13. Place bases and liners.</p> <p>A8. Ability to mix, place, and contour sedative filling material.</p> <p>A9. Ability to prepare tooth surface for placement of temporary restoration.</p> <p>A12. Ability to apply infection control procedures.</p>	<p>K28. K of types of base and liner materials and the techniques and procedures for their application and placement.</p>

**PROCEDURE: Direct and Indirect Restorations (Place bonding agent)**

Task/Ability Statement	KSAs Required to Perform Task
<p>T17. Place bonding agent</p> <p>A6. Ability to prepare bonding agent and apply it to temporary restoration for cementation.</p> <p>A9. Ability to prepare tooth surface for placement of temporary restoration.</p> <p>A12. Ability to apply infection control procedures.</p>	<p>K5. K of indications and contraindications for the use of bonding agents</p> <p>K32. K of types of bonding agents and the techniques and procedures for their application and placement.</p> <p>K43. K of techniques and procedures for bonding provisional veneers.</p>

**PROCEDURE: Direct and Indirect Restorations (Cementation procedures)**

Task/Ability Statement	KSAs Required to Perform Task
<p>T19. Perform cementation procedure for direct and indirect provisional restorations.</p> <p>A6. Ability to prepare bonding agent and apply it to temporary restoration for cementation.</p> <p>A7. Ability to cement temporary restoration, leaving restoration stable and in place without excess cement.</p> <p>A9. Ability to prepare tooth surface for placement of temporary restoration.</p> <p>A12. Ability to apply infection control procedures.</p>	<p>K48. K of types of cements and the techniques and procedures for their application, placement, and removal</p>

**PROCEDURE: Direct and Indirect Restorations (Place temporary filling material)**

Task/Ability Statement	KSAs Required to Perform Task
<p>T15. Place temporary filling material.</p> <p>A8. Ability to mix, place, and contour sedative filling material.</p> <p>A9. Ability to prepare tooth surface for placement of temporary restoration.</p> <p>A10. Ability to place temporary restoration with a smooth surface without voids.</p> <p>A11. Ability to place temporary restoration with proper occlusion, no excess O/B/L, and correct proximal box form (anatomically and margins).</p> <p>A12. Ability to apply infection control procedures.</p> <p>A13. Ability to place Tofflemire matrix and wedge.</p>	<p>K29. K of types of wedges and the techniques and procedures for their use.</p> <p>K30. K of techniques and procedures for using matrix bands with or without band retainers</p> <p>K31. K of types of temporary filling materials and the techniques and procedures to mix, place, and contour them</p>

**PROCEDURE: Direct and Indirect Restorations (Apply etchant)**

<p>T16. Apply etchant to tooth surface (tooth dentin or enamel) for direct and indirect restorations.</p> <p>A9. Ability to prepare tooth surface for placement of temporary restoration.</p> <p>A12. Ability to apply infection control procedures.</p>	<p>K33. K of types of etchants and the techniques and procedures for their application and placement</p> <p>K46. K of indications and contraindications for the use of etching agents.</p>
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**PROCEDURE: Direct and Indirect Restorations (Removing indirect provisional restorations)**

<p>T22. Remove indirect provisional restorations.</p> <p>A9. Ability to prepare tooth surface for placement of temporary restoration.</p> <p>A12. Ability to apply infection control procedures.</p>	<p>K33. K of types of etchants and the techniques and procedures for their application and placement</p> <p>K46. K of indications and contraindications for the use of etching agents.</p>
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