Orthodontic Assisting (OA)

Exam Outline and Suggested References

The OA exam is a component of the Certified Orthodontic Assistant (COA®) certification program.

**COA component exams**

Orthodontic Assisting (OA)
Infection Control (ICE®)

Effective 01/01/2017

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Exam Outline Overview

OA Exam Weighting by Domain

I. Collection and Recording of Clinical Data (21%)
II. Dental Radiation Health and Safety (18%)
III. Orthodontic Procedures (35%)
IV. Patient Education and Office Management (26%)

OA Exam Administration

- Number of Questions: 210
- Time for Exam: 165 minutes
- Tutorial Time: 5 minutes
- Comment Time: 5 minutes

DANB uses computer adaptive testing (CAT) to present questions to candidates. Each candidate starts with a question at or around the pass point. If the candidate gets a question correct, the next question will be slightly harder. If the question is incorrectly answered, the next question will be slightly easier. Question selection takes into account the content of the question, as each candidate is presented with the same percentage of questions from each domain on the exam outline. Using this method of testing, DANB can more accurately pinpoint a candidate’s ability level. The average candidate will get around 50% of the questions correct and around 50% of the questions incorrect. The candidate’s score is based on the difficulty of the questions that were answered correctly.
OA Exam Outline

DANB exams are created using the exam outline, which is annually reviewed by subject matter experts (e.g., Certified Orthodontic Assistant [COA®] certificants and dentists). The outline is developed using a Content Validation Study (CVS), which includes a job analysis survey where practicing COA certificants are surveyed about how often tasks are performed and how important competent performance of tasks is to the health and safety of the public. This study is conducted every five to seven years to ensure the outline is consistent with current clinical practices. DANB’s Board of Directors approves all updates to DANB exam outlines. The OA exam measures a candidate’s knowledge of national orthodontic assisting practices.

NOTE: DANB uses “image receptor” to refer to conventional film or sensors used for digital imaging.

Domain I: Collection and Recording of Clinical Data (21%)

A. Medical/dental history.
   1. Describe how to record a medical and dental history using interviews and written questionnaires.
   2. Describe how to record the purpose of a patient’s visit and/or chief complaint.
   3. Describe how to record data from medical laboratory reports onto the medical history.
   4. Demonstrate how to assess the patient’s psychological status.

B. Preliminary examination.
   1. Demonstrate how to assess a patient’s general physical condition and note any abnormal characteristics, including but not limited to:
      a. evidence of an eating disorder.
      b. substance or physical abuse.
      c. age-related changes.
   2. Demonstrate how to note conditions associated with orthodontic problems, including but not limited to:
      a. facial symmetry.
      b. habits (e.g., thumb sucking, mouth breathing, bruxism).
      c. oral abnormalities or speech difficulties.
   3. Identify the morphologic types and locations of teeth in the primary and permanent dentition.
   4. Identify tooth surfaces.
   5. Demonstrate how to note normal and abnormal findings in the head and neck region.
C. Demonstrate understanding of how to document treatment, including but not limited to:
   1. prescriptions (e.g., medication, instructions).
   2. present treatment and/or medication.
   3. recommended treatment and patient acceptance or refusal of recommendation.
   4. patient compliance.
   5. temporomandibular joint disorder.
   6. radiographic images.

D. Charting.
   1. Identify permanent and primary teeth using the Universal numbering and Palmer (quadrant) notation systems.
   2. Define how to chart and transcribe oral cavity conditions, including but not limited to signs of:
      a. caries.
      b. periodontal conditions.
      c. malocclusions.
      d. temporomandibular joint disorder.

E. Diagnostic aids.
   1. Describe how to prepare for and assist with the collection of diagnostic data, including but not limited to:
      a. intra- and extraoral photographs.
      b. landmarks and trace cephalometric/head plate radiographs.
      c. temporomandibular joint radiographs and landmarks.
      d. impressions, including but not limited to how to:
         i. modify impression trays.
         ii. mix, deliver and store irreversible hydrocolloid (alginate) impression material.
         iii. mix, deliver and store other impression materials.
      e. bite registrations for study models.
      f. facebow registrations for mounting models.
      g. diagnostic casts, including trimming, finishing and mounting models on an articulator.
Domain II: Dental Radiation Health and Safety (18%)

A. Expose and evaluate.

1. Identify appropriate radiographic technique.
   a. Define purpose of intra- and extraoral radiographic images, including but not limited to:
      i. periapical.
      ii. bitewing.
      iii. occlusal.
      iv. panoramic.
      v. cephalometric.
      vi. cone beam computed tomography (CBCT).
   b. Select appropriate image receptor to examine, view or survey conditions, teeth or landmarks, including but not limited to:
      i. caries.
      ii. temporomandibular joints.
      iii. periodontal conditions.
      iv. apical pathologies.
      v. sinus areas.
      vi. dental anomalies.
      vii. edentulous arches.
      viii. localization of impacted teeth and foreign objects.
      ix. dental implants.

2. Select patient management techniques used before, during and after radiographic exposures.
   a. Address patient concerns about exposure to radiation.
   b. Describe patient management techniques, including for patients with special needs.

3. Describe techniques used to acquire radiographic images.
   a. Select appropriate equipment.
   b. Define radiographic exposure concepts, including but not limited to:
      i. film speed.
      ii. kilovoltage.
      iii. milliamperage.
      iv. collimation.
      v. filtration.
      vi. film density.
      vii. latent image.
c. Intraoral
   i. Define factors that influence exposure quality, including but not limited to:
      a) mA setting.
      b) kVp setting.
      c) primary beam angles (horizontal and vertical).
      d) PID length.
      e) exposure time.
   ii. Identify parts and functions of an x-ray film packet.

d. Extraoral
   i. Describe technique for acquiring images using:
      a) panoramic radiography.
      b) cephalometric radiography.
      c) cone beam computed tomography (CBCT) imaging.

4. Evaluate radiographic images for diagnostic value.
   a. Describe features of a diagnostically acceptable radiographic image.
   b. Identify and correct errors related to acquiring intraoral radiographic images.
   c. Identify and correct extraoral radiographic image errors (e.g., patient positioning).

5. Describe how to prepare radiographic images for legal requirements, viewing, and duplication.
   a. Identify methods for duplicating.
   b. Identify information that must legally appear on the mount label.

B. Conventional film processing.
   1. Describe how to prepare, maintain, and replenish radiographic solutions for automatic processors.
      a. Functions of processing solutions.
      b. Procedures for maintaining the integrity of processing solutions.
      c. Use of personal protective equipment (PPE).
   2. Describe how to process exposed intra- and extraoral films using automatic processors, including but not limited to:
      a. processing conditions and procedures.
      b. correct errors related to processing.
      c. correct errors due to improper film handling.
   3. Describe how to dispose of chemical agents and other materials according to the local regulatory agency, in compliance with the Occupational Safety and Health Administration (OSHA) Hazard Communication standard.
4. Describe how to implement quality assurance procedures (e.g., record solution temperatures, record dates of solution changes, test film runs, clean and maintain equipment, inspections).

C. Radiation safety – patient/operator.

1. Apply principles of radiation protection, health physics and hazards related to the use of radiographic equipment, including but not limited to:
   a. factors affecting x-ray production (e.g., kVp, mA, exposure time).
   b. characteristics of x-radiation.
   c. x-ray machine factors that affect radiation safety (e.g., concepts of filtration, shielding, collimation, PID length).
   d. x-radiation physics:
      i. primary radiation.
      ii. secondary (scatter) radiation.
   e. protocol for suspected x-ray machine malfunctions.

2. Demonstrate knowledge of patient/operator safety measures to provide protection from x-radiation.
   a. Major causes of unnecessary x-radiation exposure.
   b. X-radiation biology:
      i. short- and long-term effects on cells and tissues.
      ii. x-radiation doses and effective dose.
   c. Safety measures to reduce x-radiation exposure to patients/operators (ALARA).
   d. Guidelines that determine frequency of exposure.

3. Describe techniques for monitoring x-radiation exposure (e.g., personal monitoring device).
Domain III: Orthodontic Procedures (35%)

A. Describe orthodontic procedure preparations, including but not limited to:
   1. prepare the treatment area.
   2. select and order appropriate armamentarium.
   3. seat and prepare the patient.

B. Describe how to prepare armamentarium for orthodontic procedures, including but not limited to:
   1. adjustments and routine office visits.
   2. appliance delivery.
   3. fitting and adapting extraoral headgear.
   4. orthodontic emergencies.
   5. placement and removal of bands, brackets, archwires, and ligatures.
   7. placement and removal of separators.

C. Describe orthodontic procedures, including but not limited to:
   1. maintain the field of operation using isolation, retraction, suction, irrigation or drying.
   2. assist with and/or polishing of teeth before placement of bands/brackets.
   3. assist with and/or placement of topical medications.
   4. prepare orthodontic bands for cementation.
   5. remove supragingival cement after banding.
   6. use fixed and removable orthodontic appliances.
   7. assist with pre- and post-surgical treatment (e.g., temporary anchorage devices [TADs]).
   8. perform and/or assist with orthodontic procedures, including but not limited to:
      a. adjustments and routine office visits.
      b. archwire formation.
      c. archwire placement, ligation and removal.
      d. band/bracket removal.
      e. cementing or bonding bands/brackets.
      f. fitting and adapting extraoral headgear.
      g. fitting of bands.
      h. orthodontic emergencies (e.g., broken wires or appliances).
      i. placement and removal of separators.
      j. elastics.
D. Chairside dental materials.
   1. Describe how to prepare, mix, deliver, and store dental materials, including but not limited to:
      a. cements.
      b. etchants, bonding agents and adhesives.

E. Demonstrate understanding of laboratory procedures, including but not limited to:
   1. debride, polish and repair fixed or removable appliances and prostheses.
   2. construct fixed or removable appliances.
   3. select acrylic products or acrylic substitutes.

F. Demonstrate understanding of medical emergencies.
   1. Potential risks and prevention of medical emergencies in patients with past histories of conditions.
   2. Medications related to the patient’s present and/or past medical/dental history.
   3. Preventive measures used following drug administration to avoid drug-induced emergencies.
   4. Signs and symptoms of medical conditions/emergencies likely to occur in the dental office.
   5. Chairside emergencies.

G. Demonstrate understanding of dental emergencies (e.g., signs and symptoms of dental conditions/emergencies likely to occur in the dental office).
   1. Soft tissue inflammations of the oral cavity.
   2. Traumatic oral/facial injuries.
   3. Broken, loose or displaced orthodontic appliances.
   4. Implement and/or assist with procedures for the management of dental emergencies.
Domain IV: Patient Education and Office Management (26%)

A. Patient education.
   1. Demonstrate understanding of dental health education, on topics including but not limited to:
      a. functions of the primary and permanent teeth and the relationship of the supporting structures.
      b. etiology of dental disease (e.g., caries, periodontal disease).
      c. stages of eruption and exfoliation of the teeth.
      d. importance of occlusion, and the development, classifications and possible results of malocclusion.
      e. function of the temporomandibular joint (e.g., range of motion).
      f. dental healthcare during orthodontic treatment.
   2. Explain and clarify procedures and treatment (e.g., extractions, restorations, orthognathic surgery).
   3. Demonstrate understanding of fluoride (e.g., effects of the different types, advantages of administration modalities, dangers of overexposure).

B. Demonstrate how to provide pre- and post-treatment instruction.
   1. Oral and written instructions.
   2. Proper care and wearing of fixed and removable orthodontic appliances.

C. Demonstrate plaque control techniques for the patient, including but not limited to:
   1. preventive oral healthcare.
   2. tooth brushing techniques.
   3. plaque disclosing aids.
   4. oral hygiene devices (e.g., brushes, interdental aids [e.g., flossing], oral rinses, irrigating aids).

D. Evaluate patient's current oral healthcare and progress/response to home care.
E. Demonstrate how to provide nutrition guidance.
   1. Evaluate and provide instruction on basic nutritional needs related to dental health, including but not limited to:
      a. nutrition and oral health during orthodontic treatment.
      b. which foods and beverages should or should not be eaten during orthodontic treatment, and why.
      c. relationship of carbohydrates to oral health.

F. Demonstrate understanding of patient management.
   1. Calm and reassure an apprehensive patient and/or parent/guardian.
   2. Manage all types of patients (e.g., patients with special needs).

G. Demonstrate understanding of patient reception, communication and accounting.
   1. Establish working relationships with patients and members of the dental care team.
   2. Maintain appointment control.
   3. Explain fees and financial arrangements to a patient, as directed by the dentist.
   4. Collect fees and issue receipts.
   5. Explain basic concepts of third-party payment to a patient, as directed by the dentist.
   6. Initiate patient referral procedures, as directed by the dentist.

H. Legal aspects of dentistry.
   1. Demonstrate understanding of legal records.
      a. Legal significance of medical and dental histories.
      b. Items included as part of a legally documented patient record.
      c. Precautions in lending records to another dental office.
      d. How to store items in patient records (e.g., radiographs, histories, correspondence).
      e. How to record patient telephone communication and dental and medical consultations.
   2. Demonstrate understanding of legal responsibilities and regulations.
      a. Legal protocols.
      b. Responsibilities and/or obligations of the dentist and patients in the dentist-patient relationship.
      c. Informed consent and how to document consent for dental care.
      d. Maintain the patient’s right to privacy (e.g., HIPAA).
      e. Protect the dental practice from malpractice risk.
      f. Legal responsibilities of the dental assistant in relation to the state dental practice act.
      g. Document patient refusal of recommended routine and emergency treatment.
I. Supply and inventory control.

1. Describe how to maintain and control supplies, including but not limited to:
   a. Record and inventory items used.
   b. Order supplies, instruments and equipment.
   c. Rotate expendable supplies.
   d. Rotate non-expendable supplies.
   e. Manage back orders.

2. Describe how to maintain the security and records of controlled substances.
OA Exam Suggested References

DANB exam committees use the following textbooks and reference materials (excluding the Additional/Optional Study Resources) to develop this exam. This list does not include all the available textbooks and materials for studying for this exam; these are simply the resources that exam committee subject matter experts determined as providing the most up-to-date information needed to meet or surpass a determined level of competency for this exam. Any one reference will likely not include all the material required to study to take and pass the exam.

This list is intended to help prepare for this exam. It is not intended to be an endorsement of any of the publications listed. You should prepare for DANB certification and component exams using as many different study materials as possible.

Textbook References

Organizational References
   - DANB OA Review
   - DANB OA Practice Test
   - Glossary of Dental Terms
State Regulations

Each state’s dental board implements regulations and establishes rules for delegating legally allowable duties to dental assistants. Passing one or more of the DANB component exams or earning DANB certification only conveys authority to perform these duties in those states that recognize these exams or this certification as meeting state dental assisting requirements. This information is available at www.danb.org.