

DANB Exam Content Validation Study Summary Reports

This report describes the content validation studies, including job analysis surveys, for the following Dental Assisting National Board, Inc. (DANB®) exams:

Infection Control (ICE®) – See page 9

General Chairside Assisting (GC) – See page 15

Orthodontic Assisting (OA) – See page 22

Radiation Health and Safety (RHS®) – See page 29



Dental Assisting National Board, Inc.
Measuring Dental Assisting Excellence®

DANB has been recognized by the American Dental Association (ADA) as the national certification board for dental assistants since 1989, with over 37,000 Certified Dental Assistant™ (CDA®) and 1,200 Certified Orthodontic Assistant (COA®) certificants nationwide. Since 1948, DANB, a nonprofit organization, has worked within, and has had the continuing support of, the dental community.

History of Dental Assisting Certification

The story behind what we know as DANB certification began nearly a century ago with the inception of the first dental assisting membership association. Many dental assistants don't realize the historic relationship between DANB and the American Dental Assistants Association (ADAA). Today, the two organizations are independent of each other, although they often collaborate.

In 1924, Juliette A. Southard founded the ADAA. According to the ADAA, Southard worked for a New York dentist, Dr. Henry Fowler, in the early 1900s. In 1921, Southard formed a local dental assistants' society in New York. However, she envisioned forming an organization that would bring dental assistants together from across the country. Southard and Jessie Ellsworth, president of the Chicago and Cook County Dental Assistants Association, were allowed to attend the 1923 ADA convention. The following year, the ADAA was officially incorporated in Chicago, IL.

Certification: A Milestone for Assistants

For the next 24 years, the ADAA was hard at work, establishing state constituents, growing its membership numbers, and developing a national certification that would recognize the knowledge and professionalism of dental assistants nationwide. The July/August 1947 issue of *The Dental Assistant* included an article, "Certification for Dental Assistants," which declared the association's intent to establish a certification.

The dream was realized in 1948 when the association founded an affiliate certification board, called the American Dental Assistants Certification Board, Inc. (ADACB). The first CDA certifications were awarded later that year.

An Independent Board

In 1980, the American Dental Assistants Certification Board became a separately incorporated organization and changed its name to the Dental Assisting National Board. In the subsequent years, many changes occurred in dental assisting certification — all with the goals of elevating the profession and protecting the public.

DANB's mission is to promote the public good by providing credentialing services to the dental community. We accomplish and measure the success of this mission through the creation of valid dental assisting exams, recertification requirement integrity, and valuable, visible and accessible DANB exams, certificates and certifications. Over the years, DANB has evolved to serve an increasing number of stakeholders in the dental assisting community, including educators, regulators, dentists, federal agencies and oral healthcare organizations. In all its work, DANB strives to follow the guiding principles of trust, communication, respect, initiative and teamwork.

DANB and the Dental Community

To fulfill its mission of public protection, DANB is committed to developing psychometrically sound exams and certifications. That's why DANB is a member of the Institute for Credentialing Excellence and DANB's CDA and COA certification programs are accredited by the National Commission for Certifying Agencies (NCCA).

DANB's Board of Directors consists of seven directors elected by DANB after nomination by organizations, including the ADA, the ADAA, the American Association of Dental Boards, and the American Dental Education Association. In addition, a certificant-at-large and a public member are elected to serve on DANB's Board for a total of nine Board Directors. Therefore, when changes to DANB policies and programs are first considered, communities of interest are involved directly at the Board level.

DANB exams are developed by committees of oral healthcare professionals from organizations such as the Academy of General Dentistry; the Organization for Safety, Asepsis and Prevention; the American Academy of Oral and Maxillofacial Radiology; and the American Association of Orthodontists.

Dental assistants, certificants, employers, state regulators, and others in the dental community can be assured that DANB always has and will continue to meet the industry standards and best practices to uphold the value of its certifications for many years to come.

DANB Exams

The purpose of DANB exams is to ensure individuals have demonstrated they have acquired the knowledge-based competence required to perform tasks on which competent performance is critical to protect the health and safety of patients and oral healthcare workers.

DANB began administering the General Chairside Assisting (GC) exam in paper and pencil format in 1948 as the only exam component required to earn the CDA certification. Following passage of the federal Consumer-Patient Radiation Safety Act of 1981, state dental regulatory boards began to require dental assistants pass an exam in radiation safety developed by a certification organization that was accredited by NCCA predecessor NCHCA to expose dental radiographs on patients. Although at that time DANB's CDA certification exam included some questions on dental radiography, there were an insufficient number of questions on this topic to meet the federal requirement. Therefore, DANB established a two-exam component structure for the CDA certification program – RHS and GC. DANB began developing the Radiation Health and Safety (RHS) component exam in 1982. The RHS exam was first administered in 1983 and was incorporated as a separate component of the CDA exam in 1985.

Following the 1987 discovery of the human immunodeficiency virus as the cause of AIDS, DANB identified leaders in infection control in the oral healthcare environment to develop a separate Infection Control (ICE) exam for dental assistants. In the early 1990s, DANB's ICE exam committee members included well-known experts such as Dr. James Cottone, Dr. John Molinari, and Dr. Chris Miller, and the DANB certificants who chaired the committee, including Connie Garland and Jackie Krueger.

DANB's ICE exam was first administered in 1991 and became the third component of DANB's CDA certification exam, joining RHS and GC in 1993. This established the "laddering" approach to certification, with each of the CDA component exams (GC, RHS, and ICE) offered and scored separately, and the CDA certification awarded to dental assistants who passed the three component exams within a five-year period.

Since 1997 through August 31, 2020, more than 205,000 assistants have passed DANB's RHS exam and more than 125,000 have passed DANB's ICE exam.

CDA certification is recognized or required in 37 states, plus the District of Columbia.

The RHS exam meets state radiography requirements* in 23 states plus the District of Columbia.

The ICE exam meets state infection control* requirements in five states.

DANB's CDA certification and RHS certificate of knowledge-based competence meet the Department of Veterans Affairs requirement for the expanded duties dental assistant designation. The Indian Health Services and all branches of the U.S. Military encourage DANB certification. The CDA exam is approved for the GIs-to-Jobs program under the Montgomery Bill. DANB collaborates with the Air Force Dental Services (AFDS) to administer the RHS and ICE exams.

**Each state's dental regulatory body implements regulations and establishes rules for delegating legally allowable duties to dental assistants. Passing one or more DANB exam or earning DANB certification only conveys authority to perform these duties in those states that recognize these exams or certification as meeting state dental assisting requirements.*

Exam Background

The majority of the nearly 400,000 dental assistants in the U.S. are on-the-job trained (OJT) with no formal post-secondary education — at least not in dental-related content. All states allow OJT assistants to work, but the duties delegated to them (as compared to assistants who hold DANB certification or complete state dental board-approved education or training) may vary — but not always. This is why, though DANB considers graduation from a formal accredited dental assisting education program to be a “primary way” to demonstrate sufficient preparation to take the GC component of DANB’s CDA certification exam, it is and cannot be the only way. Because of these anti-trust concerns, DANB introduced CDA certification eligibility Pathway II for OJT candidates in 1986.

DANB follows exam development standards from the Standards for Educational and Psychological Testing developed by the American Educational Research Association (AERA), the American Psychological Association (APA), and the National Council on Measurement in Education (NCME) (2013). In addition, the National Commission for Certifying Agencies (NCCA), an Institute for Credentialing Excellence commission with responsibility for accrediting personnel body certification programs, has evaluated the DANB CDA national certification program — including DANB component exams RHS, ICE and GC — using the Standards for the Accreditation of Certification Programs (Revised 2014) and finds that the DANB’s CDA and COA certification programs meet NCCA’s standards, thus recognizing that DANB has followed best practices to assure validity, reliability and objectivity in the testing process. Since 2015 DANB has also demonstrated compliance with the international ISO/IEC Standard 17024:2012 Conformity assessment — General Requirements for Bodies Operation Certification of Persons.

DANB began administering its exams nationwide in a computer-based format in 1995 with the testing vendor Prometric and moved to Pearson VUE in 2003.

Date of first exam administrations:

GC component exam — 1948

RHS component exam — 6/1/1982

ICE component exam — 6/1/1993

OA component exam — 6/1/1986

Content Validation Study Method

DANB is responsible for ensuring that the content of its exams is current and reflects current practice. To this end, DANB conducts a content validation study (CVS) every five to seven years for each of its national exams.

Purpose of a CVS:

Verify what tasks (i.e., not knowledge) are performed in practice that are essential to be performed to protect the public.

The tasks are verified using a job analysis survey.

The job analysis survey data is used to develop the exam outline weightings.

The exam outline describes knowledge required to perform the tasks.

The exam outline is used to develop the exam items

The exam items are used to assess knowledge-based competence.

All DANB CVSs are completed using a sequential mixed methods descriptive study design (Creswell, 2009), combining qualitative (written materials and expert panel) and quantitative (survey) methods.

For existing exams, the most recent exam outline serves as a starting point. For both existing and new exams, related exam outlines, job descriptions relevant to the exam topic, and state requirements are used to identify relevant tasks. A draft task list is generated by DANB staff, based on these materials.

The CVS committee gathers for an in-person meeting to review the draft task list (adding or removing items based on their expertise), develop and finalize frequency and importance scales, and identify relevant demographic items and characteristics to assess on a job analysis survey. Finally, the committee develops a draft exam outline with subdomain weights based on the draft task list and assigns the draft tasks to relevant subdomains. For new exams and new subdomains in existing exam outlines, committee members may be asked to write draft items to ensure items can be written to these categories. When there are substantial changes to an outline (moving content to new subdomains, additions or changes to content, or changes to weighting), immediately let the staff responsible for item writing know so they can view the bank and make sure we have sufficient coverage.

A draft job analysis survey is developed by DANB staff and sent for review to exam development committee members and the DANB Board of Directors. If substantial

changes are recommended, the CVS committee reconvenes by webinar to review and approve. Once the job analysis survey is finalized, the survey is sent to a stratified random sample (stratified by number of DANB certificants in that state) of up to 5,000 DANB certificants who have passed the exam within the last five years and certified individuals who have passed the exam more than five years ago (for existing exams) or who have passed similar tests and/or work within the area assessed by the exam (for new exams and as needed to obtain adequate sample size for existing exams).

A multifaceted Rasch model FACETS (Linacre, 2017) is used to analyze the job analysis task data. The Rasch measurement model (Rasch, 1992) is a logarithmic model that transforms ordered (ordinal) scales to interval scales of measurement (Wright & Mok, 2004). This model makes it possible to order items by difficulty (or ease/difficulty of endorsing an item). A FACETS models extends the basic Rasch model, combining multiple task analysis ratings into a single composite rating for each task statement (N. Wang, 2003; N. Wang & S. Wang, 2003; N. Wang & J. Stahl, 2004). This allows analysts to examine the impact of respondent, item, and rating scale on survey results.

Infection Control Exam Content Validation Study Summary Report

Introduction

The most recent ICE exam content validation study was completed in 2016. The ICE exam is one component of the following certification programs.

- National Entry Level Dental Assistant (NELDA®) certification (ICE, Anatomy, Morphology and Physiology [AMP] and RHS exams)
- Certified Dental Assistant™ (CDA®) certification (ICE, RHS and GC exams)
- Certified Orthodontic Assistant (COA®) certification (ICE and OA exams)

Earning the ICE certificate of knowledge-based competence demonstrates that the individual meets the minimum national standard for knowledge in infection prevention and control believed to be a prerequisite to competence.

Background

The DANB ICE exam is required or recognized as meeting regulatory requirements* in Connecticut, Iowa, New Hampshire, New York and North Dakota, and as a component of the CDA certification program in 33 states, plus the District of Columbia (D.C.). Beginning in August 2008, the U.S. Air Force Dental Service (AFDS) incorporated the ICE exam into its dental assisting curriculum.

**Additional requirements may apply. Please check with your state's dental board or regulatory body for complete information.*

Exam Development

DANB first administered the ICE exam in paper and pencil format in 1993 as a component of the CDA certification program and in 1994 as part of the COA certification program. DANB began administering its exams by computer in 1995.

In 2015, DANB convened the ICE exam committee, a committee of subject matter experts (SMEs) to conduct the content validation study to review and update (if needed) the ICE exam outline. The ICE exam committee includes CDA certificants, dentists and dental infection prevention and control specialists.

Job Analysis Survey Development

DANB Exam Development staff and the ICE exam committee created a list of tasks using the following sources:

- Job descriptions for related job titles
- Tasks legally delegable to dental assistants within state-specific rules and regulations
- SME knowledge and experience
- Vetted dental references

Job descriptions were reviewed from online job databases for 48 states and D.C. Two states (Vermont and West Virginia) and D.C. were not included, as staff could not locate job descriptions for dental assistants in those locations at the time. A review of the task list created was compared to the current ICE exam outline to ensure all applicable tasks were included on the job analysis survey. The draft survey was administered to a group of known SMEs for feedback.

Task List from the Job Analysis Survey

1. Update and review patient medical histories for transmissible diseases.
2. Use immunizations to reduce the risk of communicable diseases.
3. Perform hand hygiene.
4. Perform surgical hand hygiene.
5. Check/assess patients for allergies (e.g., latex, vinyl).
6. Select the appropriate glove for a procedure.
7. Place and remove gloves.
8. Wear protective personal equipment (PPE).
9. Protect patient with PPE.
10. Use in-office or commercial laundry to clean contaminated PPE.
11. Apply protective barriers.
12. Prepare and use chemical disinfecting agents according to manufacturer's instructions.
13. Apply disinfectants.
14. Clean and disinfect dental treatment equipment.
15. Maintain dental handpieces.
16. Sterilize dental handpieces.
17. Clean and disinfect clinical surfaces.
18. Break down/turn over a dental treatment area.
19. Clean housekeeping surfaces.
20. Use pre-procedural mouth rinses on a patient.
21. Use evacuation technique to control aerosols.
22. Use a dental dam during a procedure.
23. Use appropriate tray setups to prevent cross-contamination.
24. Maintain asepsis of reusable devices (e.g., curing lights).
25. Perform aseptic retrieval of materials.
26. Monitor dental unit water lines.
27. Maintain dental unit evacuation lines.
28. Monitor water quality.
29. Use best practices for safely using amalgam.
30. Clean the evacuation trap.
31. Dispose of regulated waste.
32. Dispose of biohazardous waste.
33. Dispose of extracted teeth.
34. Use and dispose of single-use devices (SUDs).
35. Select the proper method for instrument processing based on manufacturer's instructions for use (IFU).
36. Clean instruments before sterilization.
37. Package cleaned instruments for sterilization (e.g., bagging, wrapping).
38. Label sterilization package (e.g., date of sterilization).
39. Monitor the function of an ultrasonic cleaner.
40. Monitor the function of an instrument washer.
41. Prepare instrument processing solutions.
42. Monitor sterilizer functionality.
43. Monitor sterilizer temperature.
44. Monitor sterilizer cycle time.

Task List from the Job Analysis Survey (cont'd)

45. Monitor sterilizer pressure.
46. Interpret a sterilizer error message.
47. Maintain a sterilizer.
48. Perform a biological indicator (BI) test (e.g., spore test).
49. Check a BI test.
50. Document BI test results.
51. Visually inspect sterile packages for integrity.
52. Visually inspect instruments for cleanliness and corrosion.
53. Check the sterility of a package (e.g., peel pouch, cassette, wrap).
54. Update sterilization logs/records.
55. Store sterile supplies and instruments.
56. Disinfect dental impressions and dental appliances.
57. Clean and disinfect the dental laboratory and equipment.
58. Use aseptic techniques for acquiring conventional radiographic images.
59. Use aseptic techniques for acquiring digital radiographic images (e.g., sensors).
60. Use aseptic techniques when processing radiographic images.
61. Maintain automatic processors.
62. Maintain manual processors.
63. Perform asepsis of nitrous oxide/oxygen delivery systems.
64. Maintain the eye wash station.
65. Follow OSHA's Bloodborne Pathogen Standard to protect the worker from an exposure.
66. Follow CDC guidelines to protect the patient and the worker from an exposure.
67. Report occupational exposure injuries to appropriate office personnel.
68. Follow proper first aid protocols after an injury.
69. Use needle safety/sharps practices.
70. Dispose of non-reusable sharps (scalpel blades, suture needles) in sharps containers.
71. Maintain sharps containers.
72. Follow OSHA's Hazardous Communication Standard to protect the worker from potential harm.
73. Use a Safety Data Sheet (SDSs).
74. Label secondary containers.
75. Report quality assurance (e.g., quality improvement) suggestions.
76. Maintain an exposure control plan.
77. Monitor the infection control process for breaches and implement any corrective actions as needed.

Scales

Respondents were asked to use the following scales to assess each task:

Scale 1

Use this scale to indicate how often you personally perform each task.

At least once per day

At least once per week

At least once per month

At least once per year

Never (Not responsible)

Scale 2

How important is competent performance of the following task to the safety and protection of patients and dental healthcare personnel?

Of no importance

Of little importance

Moderately important

Extremely important

Survey Distribution

In March 2016, DANB emailed an invitation to a stratified random sample of 10,000 CDA certificants with an email address in DANB's database to ask them to participate in the finalized job analysis survey.

Return Rate

A total of 476 surveys were returned by the end of April 2016, for a return rate of 5%.

Descriptive Data of Respondents

Of the 476 respondents, 375 listed a work state. These 375 individuals represented 46 states and D.C. While DANB did not receive surveys from representatives practicing in all states, DANB did receive surveys from each region of the country.

The results of the survey indicated that:

- 40% worked in a private practice
- 50% worked in a general dentistry practice
- 39% have been employed as a dental assistant for 16 or more years
- 44% graduated from a Commission on Dental Accreditation (CODA)-accredited dental assisting program

Results of the Job Analysis Survey

The results of the survey were used by DANB to generate a draft of the ICE exam outline domains and weights. The draft was reviewed and edited by the ICE exam committee using their dental assisting experience to decide what a minimally competent dental assistant should be knowledgeable in to perform infection control tasks in a dental setting. The resulting exam outline and domain weightings were independently reviewed, validated and approved by DANB's Board of Directors at its 2016 August Board meeting.

The most significant change to the ICE exam outline was to the number of reporting domains. Previously, there were six (6) reporting domains; the 2018 ICE exam outline was updated to reflect four (4) reporting domains. This change was made so that DANB can provide more reliable (valuable) domain performance ratings to exam candidates who fail the exam. Domain performance rating reliability is increased by increasing the number of items in a given domain (see Tables 1 and 2 below).

Table 1: **2008-2017** ICE exam domain weightings

#	DOMAIN	PERCENT OF EXAM
I	Patient and Dental Healthcare Worker Education	10%
IIA	Prevention of Cross-Contamination and Disease Transmission	20%
IIB	Maintain Aseptic Conditions	10%
IIC	Demonstrate an Understanding of Instrument/Device Processing	15%
IID	Demonstrate an Understanding of Asepsis Procedures	15%
III	Occupational Safety	30%

Table 2: **2018** ICE exam domain weightings

#	DOMAIN	PERCENT OF EXAM
I	Standard Precautions and the Prevention of Disease Transmission	20%
II	Prevention of Cross-Contamination during Procedures	34%
III	Instrument/Device Processing	26%
IV	Occupational Safety/Administrative Protocols	20%

Review of changes reflected on the 2018 ICE exam outline

- No new content was added to the ICE exam outline
- No content was removed from the ICE exam outline
- The outline was reorganized to be in a more logical order in relationship to when the tasks are performed in practice to help exam candidates to prepare to take the exam
- Some of the content in the 2008-2017 exam outline was moved to other categories on the 2018 exam outline where it more appropriately fit

Summary

While there was no new content reflected on the ICE exam outline (that is, the job analysis survey validated that the content of the exam is current in practice today), the exam outline does look different because of the reorganization of content. The new ICE exam outline, which was effective with exams administered beginning **Jan. 1, 2018**, can be found at www.danb.org/

General Chairside Assisting Exam Content Validation Study Summary Report

Introduction

The most recent GC exam CVS was completed in 2017. The GC exam is one component of the CDA certification.

Passing the GC exam demonstrates that the individual meets at least the minimum national standard for knowledge in general chairside assisting believed to be a prerequisite to competence. A general chairside assisting certificate of knowledge-based competence is not issued so as not to be confused by the public with the CDA certification.

Background

DANB's CDA certification is recognized or required to perform specified functions* in 33 states, plus D.C.

**Additional requirements may apply. Please check with your state's dental board for complete information.*

Exam Development

DANB began administering the GC exam in paper and pencil format in 1948 as a component of the CDA certification program. DANB began administering its exams by computer in 1995.

In 2016, DANB convened the GC exam committee, a committee of SMEs to conduct the CVS to review and update (if needed) the GC exam outline. The GC exam committee includes CDA certificants and dentists.

Job Analysis Survey Development

DANB Exam Development staff and the GC exam committee created a list of tasks using the following sources:

- Job descriptions from online job databases for 50 states and D.C.
- Allowable duties from DANB's *State Fact Booklet*
- SME knowledge and experience
- Vetted dental references

The GC exam committee created a draft task list from the state tasks and based on their own expertise. A review of the task list created was compared to the current GC exam outline to ensure all applicable tasks were included on the job analysis survey. The final task list was presented for comments and edits to all current SMEs serving on a DANB exam committee to ensure all general dental assisting-related tasks were included on the survey.

Task List from the Job Analysis Survey

1. Assess patient's physical condition
 2. Review and/or take a dental/health history
 3. Take, monitor and record vital signs
 4. Read patient's chart for medical alerts (e.g., allergies, drug interactions) that could complicate dental care
 5. Perform mouth mirror inspection of the oral cavity to inspect intraoral anatomy
 6. Chart existing conditions (e.g., missing teeth) and/or restorations
 7. Communicate essential patient information to the dentist
 8. Document patient treatment
 9. Review and explain a treatment plan to the patient
 10. Respond to basic medical emergencies (e.g., syncope, heart attack, drug reaction)
 11. Respond to basic dental emergencies (e.g., avulsed tooth, toothache)
 12. Maintain an emergency kit
 13. Evaluate the patient's well-being throughout the dental procedure
 14. Help the patient to manage his/her anxiety during a procedure
 15. Manage patients, including those with diverse or special needs
 16. Manage pain without medication (e.g., distraction techniques)
 17. Assist with application of topical anesthesia
 18. Assist with administration of local anesthesia
 19. Assist with administration of nitrous oxide/oxygen analgesia
 20. Monitor the patient during the administration of nitrous oxide/oxygen analgesia
 21. Set up the operatory (including chair) for the patient
 22. Prepare armamentarium (e.g., setup tray with instruments and required materials) for a procedure
 23. Select rotary instruments for a dental procedure
 24. Use proper ergonomic positions
 25. Use the concepts of four-handed dentistry for general procedures
 26. Perform isolation procedures (e.g., cotton rolls, dental dam, suction)
 27. Perform and/or assist with a vitality test (e.g., cold, percussion, electronic)
 28. Place or assist with placement of topical fluoride
 29. Perform bleaching using various methods
 30. Perform and/or assist with coronal polishing
 31. Assist with oral prophylaxis
 32. Apply and/or assist with application of pit and fissure sealants
 33. Assist with cavity preparation
 34. Select restorative dental materials
 35. Prepare restorative dental materials
 36. Place and/or assist with the placement and removal of retraction cord
 37. Assist with the placement and removal of and/or place and remove matrix bands
 38. Assist with placement of or place, cure and finish composite restorations
 39. Fabricate and/or assist with fabrication of a temporary crown
 40. Assist with sizing and fitting of and/or size and fit stainless steel crowns
 41. Assist with temporary cement placement/removal
 42. Perform and/or assist with an occlusal registration
 43. Take intra- and extraoral photographs
- ### **Task List from the Job Analysis Survey (cont'd)**
44. Select sedative/palliative dental materials
 45. Prepare sedative/palliative dental materials
 46. Assist with interceptive orthodontic procedures (e.g., space maintainer)
 47. Assist with prosthodontics
 48. Assist with restorative dentistry
 49. Assist with periodontal procedures (e.g., root planing)
 50. Assist with placement and removal of periodontal dressings
 51. Assist with endodontic procedures
 52. Assist with implant procedures

**Task List from the Job Analysis Survey
(cont'd)**

- 53. Assist with oral surgical procedures
- 54. Monitor and respond to post-surgical bleeding
- 55. Assist with placement of or remove sutures
- 56. Assist with placement of or remove post-extraction dressings
- 57. Assist with and/or take preliminary impressions
- 58. Assist with or take final impressions
- 59. Fabricate custom impression trays
- 60. Pour impressions
- 61. Trim models
- 62. Evaluate the quality of diagnostic casts
- 63. Fabricate mouth guard and/or bleach trays
- 64. Clean and polish removable and/or fixed appliances
- 65. Fill out lab prescription
- 66. Send, monitor and receive cases sent to the lab
- 67. Provide preventive education to the patient (e.g., nutrition, oral hygiene)
- 68. Provide verbal oral hygiene instruction to the patient
- 69. Provide verbal pre- and/or post-operative instructions to the patient
- 70. Maintain equipment (e.g., reservoirs, handpieces, suction traps)
- 71. Manage inventory (e.g., determine a schedule to reorder supplies)
- 72. Manage patients' financial accounts (e.g., billing)
- 73. Prepare pretreatment authorization (e.g., insurance)
- 74. Perform front desk duties (e.g., answer phones, schedule appointments)
- 75. Refer patients as needed to a dental specialist
- 76. Manage risk for the dental office as it relates to following federal and state regulations
- 77. Manage risk for the dental office as it relates to patient confidentiality (e.g., HIPAA)
- 78. Manage risk for the dental office as it relates to legal documents (e.g., informed consent, waivers)

Scales

How often do you personally perform each task? At least once per

Day

Week

Month

Year

Never (Not responsible)

How important is competent performance of the following task to the safety and protection of patients and dental healthcare personnel?

Not at all

Moderately

Extremely

Survey Distribution

In May 2017, DANB emailed an invitation to 10,000 (CDA certificants and candidates who passed the GC exam) candidates with an email address in DANB's database to ask them to participate in the job analysis survey.

Return Rate

A total of 1,227 surveys were returned by June 2, 2017, for a return rate of 8%.

Descriptive Data of Respondents

Of the 956 respondents who identified themselves as primarily dental assistants, 840 listed a work state. These 840 individuals represented all 50 states and D.C.

The results of the survey indicated that:

- 49% worked in a solo or small private practice (less than 10 employees)
- 28% worked in a large dental practice (10 or more employees)
- 67% worked in a general dentistry practice
- 21% have been employed as a dental assistant for three to five years
- 59% graduated from a CODA-accredited dental assisting program

Results of the Content Validation Study

The SMEs reviewed the performance of the GC job analysis survey tasks.

REMOVED TASKS

After discussing the tasks, the SMEs removed the following three tasks:

Task 46 — Assist with interceptive orthodontic procedures (e.g., space maintainer)

Reason: General dental assistants are not performing these types of tasks. Orthodontics is specialized and only basic knowledge is necessary in a general dental office and is most often taught on the job.

Task 50 — Assist with placement and removal of periodontal dressings

Reason: Periodontal dressings are no longer commonly used in the dental office.

Task 72 — Manage patient financial accounts (e.g., billing)

Reason: While dental assistants should have general knowledge of billing, they should not be managing financial accounts (Note: *No tasks on the current 2018 outline tested this knowledge; therefore, no content was removed from the outline based on removing this task.*)

The following content of the 2018 GC exam outline was removed by the SMEs based on the misfitting tasks above:

IIB2u. Chairside and dental emergency procedures, including but not limited to: *periodontal surgical dressing placement/removal*. (Task 50)

IIIA3ai. Describe how to prepare, mix and store sedative/palliative materials, including but not limited to: *periodontal surgical dressings*. (Task 50)

IIB2p. Chairside and dental emergency procedures, including but not limited to: interceptive orthodontics. (Task 46)

The following areas of the 2018 GC exam outline were also removed by the SMEs:

IIB2x. rotary instruments.

IIC13. Identify and change rotary instruments in dental handpieces.

VA1p. ulcers.

VIA2. Describe how to maintain security and records of controlled substances.

VIC1. communicate effectively and establish working relationships with patients and members of the dental care team.

VIC7. receive and dismiss patient and visitors.

IIB2x. **rotary instruments** and IIC13. **Identify and change rotary instruments in dental handpieces** were removed by the SMEs since these tasks are redundant, as changing and identifying rotary instruments is part of either understanding the armamentarium necessary for a procedure (IIB. **Demonstrate understanding of how to select and prepare armamentarium for chairside dental and/or emergency dental procedures**) or part of assisting with a procedure (IIC. **Demonstrate understanding of how to assist with and/or perform intraoral procedures**).

VA1p. **ulcers** was removed because ulcers are neither an emergency condition nor a cause of complications during dental treatment.

VIC1. **communicate effectively and establish working relationships with patients and members of the dental care team** and VIC7. **receive and dismiss patient and visitors** are soft skills that are hard to test on a knowledge-based assessment.

The remaining content of the GC 2018 exam outline was included in the new GC 2019 exam outline ensuring significant linkage between the current outline and the new outline.

The SMEs added "*traps and suction lines*" for clarification under IIB5. **Describe how to maintain equipment/instruments, including but not limited to.**

The most significant change to the GC exam outline is to the number of domain reporting categories. Previously, there were six (6) domains; the 2019 GC exam outline was updated to reflect four (4) domains. This change was made so that DANB can provide more reliable (valuable) domain performance ratings to exam candidates who fail the exam. Domain performance rating reliability is increased by increasing the number of items in a given domain.

Table 1: **2018** GC exam domain weightings

Task#	Domain	Percent of exam
I	Collection and Recording of Clinical Data	10%
II	Chairside Dental Procedures	45%
III	Chairside Dental and Laboratory Materials	13%
IV	Patient Education and Oral Health Management	10%
V	Prevention and Management of Patient Emergencies	12%
VI	Office Operations	10%

Table 2: **2019** GC exam domain weightings

Task#	Domain	Percent of exam
I	Patient Preparation and Documentation	17%
II	Patient Management and Administrative Duties	17%
III	Four-Handed Chairside Dentistry	50%
IV	Diagnostic and Laboratory Procedures and Materials	16%

The GC 2019 exam outline will go into effect Jan. 1, 2019.

Review of changes reflected on the 2019 GC exam outline

- **Ulcers** was removed because ulcers are neither an emergency condition nor a cause of complications during dental treatment
- **Communicate effectively and establish working relationships with patients and members of the dental care team** and **Receive and dismiss patient and visitors** were removed from the exam, as they are soft skills that are hard to test on a knowledge-based assessment
- Under **Describe how to maintain equipment/instruments, including but not limited to**, *“traps and suction lines”* was added for clarification
- “Collection and Recording of Clinical Data and Prevention” and “Management of Patient Emergencies” were combined and changed to “Patient Preparation and Documentation” and was decreased from 22% to 17% of the exam, in part because some sub-sections were moved to other areas of the exam outline
- “Patient Education and Oral Health Management” and “Office Operations” were changed to “Patient Management and Administrative Duties” and went from 20% to 17% of the exam, in part due to some soft skills being removed from the exam outline (as noted previously)
- “Chairside Dental Procedures” was changed to “Four-Handed Chairside Dentistry” and increased from 45% to 50% of the exam, in part because assisting with dental emergency procedures was added to this section
- “Chairside Dental and Laboratory Materials” was changed to “Diagnostic/Laboratory Procedures and Dental Materials” and increased from 13% to 16% of the exam, in part due to moving some content from “Chairside Dental Procedures” to this section

Summary

While there is no new content reflected on the GC exam outline (that is, the job analysis survey validated that the current content of the exam remains current in practice today), the exam outline does look different because of the reorganization of content and the removal of nonessential information. The GC exam outline changes were effective with exams administered beginning Jan. 1, 2019.

Orthodontic Assisting Exam Content Validation Study Summary Report

Introduction

The most recent OA exam CVS was completed in 2016. The OA exam is one component of the COA certification. The ICE exam is the other component.

Passing the OA exam demonstrates that the individual meets at least the minimum national standard for knowledge in orthodontic assisting believed to be a prerequisite to competence. An orthodontic assisting certificate of knowledge-based competence is not issued so as not to be confused by the public with the COA certification.

Background

DANB's COA certification is recognized or required to perform specified functions* in Connecticut, Maryland, Massachusetts, New Jersey and Oregon. There are over 1,400 COA certificants nationwide.

**Additional requirements may apply. Please check with your state's dental board for complete information.*

Exam Development

DANB began administering the COA exam in paper and pencil format in 1986, and began testing nationwide in a computer-based format in 1995. In June 1986, the RHS component exam was added to the COA exam, which was then composed of the OA and RHS component exams. In June 1987, the RHS exam component was no longer required as part of the COA certification program, as the content was not always appropriate for an orthodontic assistant, and instead radiation health and safety exam content specific to orthodontic assisting was incorporated into the OA exam outline. In June 1994, the ICE component exam was added as a requirement to earn the COA certification. Both component exams (OA and ICE) must be passed within five years to qualify to earn COA certification.

In 2015, DANB convened the OA exam committee, a committee of SMEs to conduct the CVS to review and update (if needed) the OA exam outline. The OA exam committee includes COA certificants and orthodontists.

Job Analysis Survey Development

DANB Exam Development staff and the OA exam committee created a list of tasks using the following sources:

- Current OA exam outline
- Job descriptions from online job databases for 50 states and D.C.
- Allowable duties from DANB's *State Fact Booklet*
- SME knowledge and experience
- Vetted dental references

The OA exam committee reviewed 47 job descriptions from online job databases for 43 states and D.C. Seven states (Delaware, Indiana, Mississippi, Montana, Nebraska, West Virginia and Wyoming) were not included, as job descriptions for orthodontic assistants in these states were not available at that time. The committee reviewed DANB's *State Fact Booklet* to include allowable orthodontic duties for orthodontic assistants by state. Any applicable tasks were added to the initial task list. Vetted dental references were checked to ensure there were no other tasks that had been inadvertently omitted. A review of the task list created was compared to the current OA exam outline to ensure all applicable tasks were included on the job analysis survey.

Task List from the Job Analysis Survey

1. Record the medical/health history (e.g., medications [over-the-counter and prescription], physical and mental conditions, allergies, previous diagnostic medical results).
2. Review and record updated medical/health history.
3. Record patient concerns/chief complaint.
4. Observe a patient's general physical condition, noting any abnormal characteristics (e.g., eating disorders, substance or physical abuse, age-related changes).
5. Observe patient's behavior.
6. Obtain/verify patient's informed consent for routine and/or emergency treatment.
7. Document patient refusal of recommended routine and/or emergency treatment or noncompliance.
8. Ask if the patient has had recent exposure to dental radiation.
9. Record the dental history including patient oral evaluations, noting intraoral/extraoral conditions.
10. Record dental treatment information, plans, progress and/or clinical notes.
11. Record patient exam findings, including compliance.
12. Chart the condition of the oral cavity (e.g., structures, restorations, lesions, periodontal probing depths, missing/abnormal teeth, oral condition [tissue], malocclusions, cleft palate, TMJ, radiographs, hygiene, habits, facial structure, smile evaluation, skeletal and facial and profile findings).
13. Record tooth anatomy and physiology using the Palmer system, quadrant charting, tooth identification, classification of occlusion, periodontal conditions and caries classification.
14. Note potential pathology in the head and neck (e.g., temporomandibular joint disorder manifestation).
15. Obtain diagnostic records (e.g., photographs [facial, intraoral/extraoral], radiographs, intraoral measurements, digital scans, jaw relation, vertical dimensions).
16. Assess the patient for unusual anatomical variations (e.g. tori, exostosis), removable appliances or foreign objects prior to placing image receptors.
17. Acquire intraoral radiographic images (e.g., bitewings, periapical, occlusal, FMX).
18. Acquire extraoral radiographic images (e.g., panoramic, cephalometric).
19. Acquire radiographic images on patients with special needs (i.e., patients with physical, mental or emotional handicaps).
20. Acquire radiographic images on patients with a severe gag reflex.
21. Process conventional radiographic images (i.e., automatic and/or manual).
22. Use standard precautions and personal protective equipment (PPE) during conventional film processing.
23. Perform maintenance, cleaning and quality control checks for automatic film processing.
24. Perform maintenance, cleaning and quality control checks for manual film processing.
25. Maintain/store conventional film.
26. Recycle radiographic materials/chemicals (e.g., lead foil and processing solutions) following EPA regulations.
27. Examine and clean intensifying screens used with panoramic films.
28. Inspect and clean x-ray viewing lights (also called a view box).
29. Manipulate digital radiographic images.
30. Mount and label radiographic images.
31. Evaluate radiographic images for diagnostic quality.
32. Practice radiation safety (e.g., correct patient positioning, follow safety regulations and ALARA) and use protective equipment (e.g., lead aprons) for patient protection.
33. Practice radiation safety (e.g., follow safety regulations and ALARA) and use precautions for operator safety.
34. Use standard precautions during the radiographic exposure procedure to protect the patient/operator (e.g., use of infection control barriers and proper disinfection procedures).
35. Clean and disinfect a lead apron and/or thyroid collar.

36. Use personal protective equipment (PPE) during the radiographic exposure procedure to protect the operator.
37. Perform cephalometric tracings (i.e., landmark identification).
38. Acquire cone-beam computed tomography (CBCT) radiographic images.
39. Use a dental office radiation safety manual.
40. Maintain the dental office radiation safety manual.
41. Perform quality control (QC) checks for radiographic equipment and instruments.
42. Adjust radiographic equipment.
43. Document acquired radiographic images in the dental record.
44. Wear a radiation monitoring badge (i.e., dosimeter).
45. Fabricate a custom impression tray.
46. Take an impression (e.g., PVS, alginate).
47. Take a bite registration (e.g., occlusal registration).
48. Take facebow transfers.
49. Perform laboratory procedures with appropriate material (e.g., gypsum, waxes, acrylic, acrylic substitutes).
50. Pour, trim, evaluate and mount casts (i.e., diagnostic, models, study).
51. Appropriately store laboratory materials (e.g., gypsum, acrylic, bonding agents).
52. Fabricate retainers.
53. Construct fixed or removable appliances (e.g., mouth guards, splints).
54. Fill out laboratory authorization forms.
55. Track laboratory orders.
56. Debride, polish and repair fixed or removable appliances and prostheses.
57. Weld or solder orthodontic bands.
58. Prepare armamentarium setups for orthodontic procedures.
59. Prepare and perform preventive maintenance on equipment used for orthodontic procedures.
60. Prepare the treatment room to receive and treat a patient.
61. Prepare patient for treatment.
62. Place and remove orthodontic separators.
63. Polish teeth before and after placement of bands/brackets.
64. Etch enamel to prepare for bonding.
65. Maintain field of operation (e.g., retraction, suction, irrigation, drying, cotton rolls).
66. Size bands.
67. Select and prepare cement/bonding agent.
68. Assist in bonding of bands.
69. Assist in bonding of orthodontic appliances' brackets.
70. Remove supragingival cement after bonding (brackets or bands).
71. Perform and/or assist with bracket placement.
72. Check for and remove loose or broken bands/brackets.
73. Assist with debanding/debonding procedures.
74. Perform and/or assist with archwire formation (e.g., bending).
75. Perform and/or assist with archwire placement and removal.
76. Insert, secure archwires with ligatures, including cutting and tucking.
77. Place and remove elastics (e.g., chains, interarch).
78. Assist with placement/fitting of intraoral and extraoral orthodontic appliances (e.g., clear aligners and headgear).
79. Perform directed orthodontic adjustments including emergency adjustments.
80. Assist with orthodontic emergencies (e.g., broken wires or appliances).
81. Assist with pre- and post-surgical treatment (e.g., temporary anchorage devices [TADs]).
82. Assist with and/or apply topical anesthetic agents.
83. Respond to medical emergencies according to an action plan.
84. Prevent potential health-related and/or procedure-related emergencies that can occur in an orthodontic office.
85. Provide patient with verbal/written oral hygiene instructions/orthodontic considerations (e.g., after-care instructions [pre- and post-treatment] and appliance care).
86. Provide patient and/or parent/guardian with information on the importance of dental healthcare during orthodontic treatment.
87. Assess patient attitudes regarding oral hygiene care.
88. Explain the effects of all types of fluoride, the advantages of the various modalities of administration, and the dangers and results of overdosage.

89. Incorporate motivational techniques during orthodontic treatment.
90. Explain the relationship of orthodontic treatment to other dental procedures (e.g., extractions, restorations, orthognathic surgery).
91. Provide patient education, including clarifying procedures, tooth anatomy, occlusion, basic nutritional needs and caries education.
92. Provide patient and/or parent/guardian with information on infectious diseases and their relationship to infection control.
93. Provide patients with information regarding the purpose of radiographic exposures.
94. Calm and reassure an apprehensive patient and/or parent/guardian.
95. Manage all types of patients (e.g., children and compromised patients).
96. Perform basic office support (e.g., data entry, appointments, answering phones, recording patient communication).
97. Maintain inventory and proper storage procedures for inventory.
98. Patient accounting (e.g., third-party payments, collecting fees).
99. Begin referral procedures for patient.
100. Follow state/federal regulations.
101. Follow HIPAA requirements (e.g., for radiographic records).
102. Follow legal obligations (e.g., reporting child abuse, illegal procedures).
103. Follow legal requirements for documentation.
104. Correctly manage records (e.g., storing and lending records).
105. Protect the dental practice from malpractice risk.

Scales

Use this scale to indicate how often you personally perform each task.

At least once per day

At least once per week

At least once per month

At least once per year

Never (Not responsible)

How important is competent performance of the following tasks to the safety and protection of the public?

Of no importance

Of little importance

Moderately important

Extremely important

Survey Distribution

In July 2015, DANB emailed an invitation all current COA certificants with an email address in DANB's database (905) to ask them to participate in the job analysis survey.

Return Rate

A total of 112 surveys were returned by Aug. 9, 2015, for a return rate of 12%.

Descriptive Data of Respondents

Of the 112 respondents, 82 listed a work state. These 82 individuals represented 29 states and D.C. While DANB did not receive surveys from representatives practicing in all states, DANB did receive surveys from each region of the country.

The results of the survey indicated that:

- 60% worked in a private practice
- 61% worked in an orthodontic practice
- 43% have been employed as an orthodontic assistant for 16 or more years
- 25% graduated from a CODA-accredited dental assisting program

Results of the Content Validation Study

The most significant change to the OA exam outline was to the number of domain reporting categories. There were formerly eight (8) domains; the 2017 OA exam outline was updated to reflect four (4) domains. This change was made so that DANB can provide more reliable (valuable) domain performance ratings to exam candidates who fail the exam. Domain performance rating reliability is increased by increasing the number of items in a given domain (see Tables 1 and 2 below).

Table 1: **2009-2016** OA domain weightings

TASK#	DOMAIN	PERCENT OF EXAM
I	Collection and Recording of Clinical Data	15%
II	Orthodontic Procedures	36%
III	Chairside Dental Materials	5%
IV	Laboratory Materials and Procedures	5%
V	Patient Education and Oral Health Management	10%
VI	Prevention and Management of Emergencies	5%
VII	Office Operations	5%
VIII	Dental Radiation Health and Safety	19%

Table 2: **2017** OA exam domain weightings

TASK#	DOMAIN	PERCENT OF EXAM
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%

Review of changes reflected on the 2017 OA exam outline

- No new content areas were added to the OA exam outline
- No content was removed from the OA exam outline
- The content areas were reorganized to be in a more logical order in relationship to when the tasks are performed in practice to better help exam candidates to prepare to take the exam
- Radiology remains a stand-alone domain. The percentage of items in this category went from 19% to 18%
- Collection and Recording of Clinical Data increased from 15% to 21% of the exam
- Orthodontic Procedures now includes Chairside Dental Materials, Laboratory Materials and Procedures, and Prevention and Management of Emergencies. These domains were 51% of the exam and are now 35%. Note that some of the content in these areas was moved to other categories where they fit more appropriately (e.g., Collection and Recording of Clinical Data or Patient Education and Office Management)
- Patient Education and Office Management includes Patient Education and Oral Health Management and Office Operations, and includes Patient Management, which was formerly within the Orthodontic Procedures domain. This combined area was 15% of the exam and is now 26% of the exam

Summary

While there was no new content reflected on the OA exam outline (that is, the job analysis survey validated that the current content of the exam remains current in practice today), the exam outline does look different because of the reorganization of content. The OA exam outline, which was effective with exams administered beginning Jan. 1, 2017, can be found at www.danb.org/

Dental Assisting National Board, Inc.
Radiation Health and Safety Exam
Content Validation Study Summary Report

Introduction

The most recent Radiation Health and Safety (RHS®) exam Content Validation Study (CVS) was completed in 2019-2020. The RHS exam is one component of the Certified Dental Assistant™ (CDA®) and National Entry Level Dental Assistant (NELDA®) certification programs.

Earning the RHS certificate demonstrates that the individual meets at least the minimum national standard for knowledge in dental radiation health and safety believed to be a prerequisite to competence.

The resulting exam outline and content weightings were independently reviewed, validated and approved by DANB's Board of Directors at its 2020 Board meeting.

Background

The DANB RHS exam is required or recognized as meeting regulatory requirements* in 22 U.S. states and D.C., and as a component of the CDA certification program in 33 states, plus D.C. Beginning in September 2009, the U.S. Air Force Dental Service (AFDS) incorporated the RHS exam into its dental assisting curriculum.

**Additional requirements may apply. Please check with your state's dental board for complete information.*

Development

DANB began administering the RHS exam in paper and pencil format in 1982 as a component of the CDA certification program and from June 1, 1986, to May 31, 1987, as part of the COA certification program. DANB began administering by computer in 1995.

In 2019-2020, DANB convened the RHS exam committee, a committee of SMEs to conduct the CVS to review and update the RHS exam outline.

Job Analysis Survey Development

DANB Exam Development staff and the RHS exam committee created a list of tasks using the following sources:

- Current RHS exam outline
- Job descriptions from online job databases for 50 states and D.C.
- Allowable duties from DANB's *State Fact Booklet*
- SME knowledge and experience
- Vetted dental references

The RHS exam committee reviewed and edited the RHS tasks. The final task list was presented for comments and edits to all current SMEs serving on a DANB exam committee to ensure no radiological-related tasks were missing from the survey. The RHS exam committee includes CDA certificants, dentists and specialists in dental radiation and safety.

Task List from the Job Analysis Survey

1. Review patient medical and dental histories, including medications.
2. Prepare patient for exposure to x-radiation (e.g., inspect the patient's head and neck for removable appliances and foreign objects).
3. Position patient for intraoral images.
4. Position patient for panoramic radiography.
5. Position patient for cephalometric radiography.
6. Acquire bitewing radiographic images.
7. Acquire periapical radiographic images.
8. Acquire occlusal radiographic images.
9. Acquire panoramic radiographic images.
10. Acquire cephalometric radiographic images.
11. Acquire CBCT (cone-beam computed tomography) scans.
12. Identify different patient radiographic surveys used to view landmarks, teeth and conditions.
13. Modify radiographic technique based on anatomical variations.
14. Select accessories for the radiographic technique used (e.g., cotton rolls, barriers, bite tabs).
15. Select equipment for the radiographic technique.
16. Select image receptor size.
17. Duplicate radiographic film-based images.
18. Set exposure controls (e.g., kVp, mA, exposure time).
19. Use bisecting technique in intraoral radiography.
20. Use paralleling technique in intraoral radiography.
21. Troubleshoot issues with digital image receptors.
22. Demonstrate proper use and care of digital image receptors.
23. Identify function and maintenance of cassettes.
24. Identify advantages and disadvantages of digital radiography.
25. Prepare, maintain and replenish radiographic solutions for manual processors.
26. Prepare, maintain and replenish radiographic solutions for automatic processors.
27. Identify processing conditions for intra- and extraoral radiographic film for manual processors.
28. Identify processing conditions for intra- and extraoral radiographic film for automatic processors.
29. Process exposed intra- and extraoral film using automatic processors.
30. Evaluate radiographic images for diagnostic quality.
31. Identify anatomy that should be present in radiographic images.
32. Identify and correct errors related to acquiring intraoral radiographic images.
33. Identify and correct radiographic film-based processing errors.
34. Identify and correct film handling errors.
35. Identify and correct errors related to acquiring panoramic radiographic images.
36. Identify and correct errors related to acquiring cephalometric radiographic images.
37. Identify and correct errors related to acquiring CBCT scans.
38. Mount digital radiographic images.
39. Label digital radiographic images.
40. Mount film-based radiographic images.
41. Label film-based radiographic images.
42. Use anatomical landmarks to aid in mounting radiographic images.
43. Use film-based radiographic image viewing techniques (e.g., view box).
44. Identify anatomical structures and dental materials observed on radiographic images (e.g., differentiating between radiolucent and radiopaque areas).
45. Manage patients with special needs before, during and after exposure to x-radiation.

46. Use management techniques for patients with a gag reflex.
47. Correct errors related to improperly storing film.
48. Correct errors related to improperly storing digital image receptors.
49. Identify conditions required for manual film processing.
50. Identify conditions required for automatic film processing.
51. Conduct quality assurance checks for digital radiography (e.g., virus scan, software updates).
52. Perform inspections of digital image receptors.
53. Prepare radiographic images according to legal requirements (e.g., view, duplicate, transfer).
54. Store disinfecting agents used in radiography procedures according to regulatory agency requirements.
55. Dispose of materials used during radiography procedures (e.g., barriers).
56. Identify and correct for errors in acquiring digital radiographic images.
57. Explain American Dental Association (ADA) guidelines for patient selection criteria to limit radiation exposure.
58. Apply the principles of radiation protection and hazards in the operation of radiographic equipment.
59. Identify factors affecting x-ray production (e.g., kVp, mA and exposure time) as they relate to patient and operator safety.
60. Identify x-ray machine factors that influence radiation safety (e.g., filtration, shielding, collimation).
61. Protect patient from exposure to x-radiation (i.e., primary and scatter [secondary] x-radiation).
62. Follow protocol to shut down use of an x-ray unit suspected of malfunctioning.
63. Prevent or minimize the need for retakes.
64. Explain effects of exposure to x-radiation on body tissues according to patient age.
65. Reduce patient exposure to x-radiation following the ALARA (As Low As Reasonably Achievable) principle.
66. Address patient concerns about exposure to x-radiation.
67. Acquire informed consent or patient refusal documentation for exposure to x-radiation.
68. Identify sources of x-radiation exposure to operators/other staff while exposing radiographs.
69. Follow safety measures to reduce operator exposure to x-radiation (e.g., barriers).
70. Reduce operator exposure to x-radiation (ALARA).
71. Use a personal monitoring device.
72. Minimize cross-contamination during radiographic procedures (i.e., patient to patient, operator to patient, patient to operator).
73. Use barriers to minimize cross-contamination on radiographic equipment.
74. Use barriers to minimize cross-contamination on image receptors.
75. Use barriers to minimize cross-contamination on computer keyboard and mouse.
76. Dispose of barriers and single-use devices used in radiography.
77. Select and use personal protective equipment (PPE) used during radiography procedures.
78. Follow proper hand hygiene guidelines.
79. Identify critical and semi-critical instruments used during radiography procedures for sterilization.
80. Clean and disinfect clinical contact surfaces.
81. Follow infection control techniques for manual film processing.
82. Follow infection control techniques for automatic film processing.
83. Follow infection control techniques for digital image acquisition and scanning.

Survey Scales

How often do you personally perform each task?

Use this scale to indicate how often you personally perform each task.

Never (Not responsible)

More than once per day

Once per day

At least once per week

At least once per month

At least once per year

Additional directions:

If you do not currently work as a dental assistant performing chairside duties, please respond how often you think those tasks would be performed by a chairside dental assistant. If there are any tasks for which you are unsure how often a chairside dental assistant would perform them, please select Never (Not responsible).

Survey Distribution and Return Rate

In September 2019, the final survey was posted to SurveyMonkey and an announcement was sent by email to a regionally stratified random sample. A total of 1,210 surveys were returned by the deadline, for a return rate of 13%.

Certificants certified between 1-5 years (568 of 3,750 responded = 15%)

Certificants certified for 6 to 10 years (467 of 3,750 responded = 12%)

RHS certificate holders (earned within the past 5 years) (175 of 2,500 responded = 7%)

Descriptive Data of Respondents

Study participants were asked to indicate in which state they live. Study participants represented all states.

After eliminating unusable responses (did not respond to a sufficient number of tasks, were not currently working in the dental field) there were 1,143 usable responses. Of these, 83% responded that serving as a dental assistant was their primary role in the dental setting.

Primary role in the dental setting:

Primary Role	Count
Dental assistant	945
Dental practice manager	60
Dental assisting educator	39
Dental Hygienist	13
Other (e.g., laboratory technician, oral surgery assistant)	62

Review of changes reflected on the 2022 RHS exam outline

- The outline was reorganized to be in a more logical order in relationship to when the tasks are performed in practice to help exam candidates to prepare to take the exam. This change resulted in combining Domains I, II and III (there is no longer a Domain IV). The RHS exam outline, which was effective with exams administered beginning **April 1, 2022**, can be found at www.danb.org or by contacting us at danbmail@danb.org.
- On the survey 52% indicated they are not wearing a personal monitoring device so this was removed from the exam. Not wearing a monitoring device results in minimal risk and usage varies by state.
- All conventional film-based items were removed as most respondents (89%) of the job analysis survey indicated they are using only digital based radiography in their practice and 93% of respondents use digital and manual and/or automatic processing. See table 1 below. Because of this, the film-based exam content has been removed from the exam outline and candidates will no longer be tested on these tasks. See page 34 for the film-based tasks removed from the exam outline.

Table 1: Types of Radiography used in the Dental Setting

Type of Radiography	Count	%
Digital	801	89%
Automatic	48	5%
Manual, automatic, digital	19	2%
Manual and digital	14	2%
Manual and automatic	9	1%
Manual	7	1%

Table 1: **2021** RHS exam domain weightings

TASK#	DOMAIN	PERCENT OF EXAM
I	Expose and Evaluate	26%
II	Quality Assurance and Radiology Regulations	21%
III	Radiation Safety for the Patient and Operator	31%
IV	Infection Control	22%

Table 2: **2022** RHS exam domain weightings

TASK#	DOMAIN	PERCENT OF EXAM
I	Purpose and Technique	50%
II	Radiation Safety	25%
III	Infection Control	25%

Respondents were asked to identify what quality assurance tests conducted in their practice. There were 887 who responded, and they were asked to select all that apply. See the table below for results.

Quality Assurance Test	Count	% of 887
Digital sensor	723	82%
Software updates	624	70%
Monitor	482	54%
Virus Scans	491	55%

Conventional Tasks Removed After Surveying

Task	% Responded Task is Never Performed
Prepare, maintain and replenish radiographic solutions for manual processors.	87%
Identify processing conditions for intra- and extraoral radiographic film for manual processors.	86%
Identify conditions required for manual film processing.	86%
Prepare, maintain and replenish radiographic solutions for automatic processors.	85%
Correct errors related to improperly storing film.	83%
Identify processing conditions for intra- and extraoral radiographic film for automatic processors.	81%
Process exposed intra- and extraoral film using automatic processors.	78%
Mount film-based radiographic images.	78%
Identify conditions required for automatic film processing.	77%
Label film-based radiographic images.	76%
Use film-based radiographic image viewing techniques (e.g., view box).	75%
Duplicate radiographic film-based images.	72%
Identify and correct errors related to acquiring cephalometric radiographic images.	70%
Identify and correct errors related to acquiring CBCT scans.	70%
Follow infection control techniques for manual film processing.	66%
Identify and correct radiographic film-based processing errors.	63%
Identify and correct film handling errors.	63%
Follow infection control techniques for automatic film processing.	61%
Identify function and maintenance of cassettes.	51%