



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

Certified Dental Assistant (CDA) Exam Blueprints

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General Chairside (GC) Exam Blueprint

- (10%) **I. COLLECTION AND RECORDING OF CLINICAL DATA**
- A. Demonstrate understanding of basic oral and dental anatomy and physiology
 1. Bones
 2. Muscles
 3. Glands/lymphatics
 4. Nerves
 5. Blood vessels
 6. Teeth
 7. Oral cavity
 8. Others

 - B. Preliminary Examination
 1. Record the purpose of patient's visit and/or chief complaint.
 2. Assess patient's general physical condition, including skin, gait, etc., and note any abnormal characteristics, including evidence of eating disorders, substance abuse or physical abuse, and age-related changes.
 3. Identify the surfaces of the tooth.
 4. Recognize, describe and note any abnormal findings in the head and neck region, including:
 - a. oral manifestations of systemic diseases.
 - b. periodontal/diseases and conditions of mucosa.
 - c. oral pathologic conditions.

 - C. Charting
 1. Identify the permanent and primary teeth according to the Universal Numbering System.
 2. Chart conditions in the patient's oral cavity and accurately transcribe the record.
 - a. Observe/record suspected carious lesions.
 - b. Chart existing conditions e.g. restorations, impaction, missing teeth
 - c. Chart periodontal conditions, including mobility, furcation involvement and pocket depth.
 - d. Chart existing endodontics and periapical pathology

 - D. Diagnostic Aids
 1. Prepare for and assist with the collection of diagnostic data, such as radiographs, pulp tests, photographs, and occlusal registrations.
 2. Pour and take impressions for diagnostic study casts.

- E. Treatment Documentation
 1. Record treatment and prescriptions (e.g. medication, instructions) on patient's chart.
 2. Record recommended treatment and patient's acceptance or refusal of recommendation.
 3. Record patient's compliance.

- F. Vital Signs
 1. Take and record pulse rate and description.
 2. Observe and record respiration rate.
 3. Measure and record blood pressure.
 4. Take and record temperature.

- (45%) **II. CHAIRSIDE DENTAL PROCEDURES**
 - A. Four-Handed Dentistry Techniques
 1. Prepare the treatment room for the patient.
 2. Prepare appropriate treatment trays with armamentarium in sequence of use and delivery position.
 3. Seat and prepare patient; position and adjust equipment.
 4. Implement four-handed dentistry concepts in all treatment procedures.
 - a. Assume correct positions.
 - b. Perform instrument transfers.
 - c. Maintain access and visibility of treatment procedures.

 - B. Selection and Preparation of Armamentarium
 1. Select, prepare, and/or modify impression trays for appropriate uses.
 2. Select and prepare tray set-ups and all necessary armamentaria for general dentistry and dental emergency procedures, including:
 - a. Anesthetics.
 - b. Amalgam restorations.
 - c. Bleaching.
 - d. Composite restorations.
 - e. Crown and bridge preparation/cementation.
 - f. Desensitization of the teeth.
 - g. Endodontic therapy.
 - h. Extractions.
 - i. Removable partial or full dentures.
 - j. Fluoride application.
 - k. Immediate dentures.
 - l. Impactions.
 - m. Incision and drainage.
 - n. Initial/secondary impressions.
 - o. Interceptive orthodontics.

- p. Occlusal equilibration/adjustment.
- q. Oral examination.
- r. Oral prophylaxis.
- s. Periodontal procedures.
- t. Periodontal surgical dressing placement/removal.
- u. Implants.
- v. Root planing and curettage.
- w. Rubber dam application.
- x. Sealant application.
- y. Stainless steel crown placement/removal.
- z. Suture placement/removal.
- aa. Temporary cementation.
- bb. Temporary restoration.
- cc. Treatment of dry socket.
- dd. Rotary instruments.

C. Perform or Assist with Intraoral Procedures

1. Maintain field of operation during dental procedures through the use of retraction, suction, irrigation, drying, etc.
2. Place and remove cotton rolls.
3. Assist with and/or polish teeth.
4. Assist with and/or apply topical fluoride.
5. Assist with and/or perform a vitality test
6. Assist with and/or control minor bleeding after any surgical procedure.
7. Assist with, place, and/or remove temporary cement.
8. Assist with and/or remove excess cement from the coronal surfaces of teeth, restorations, and appliances.
9. Assist with and/or apply and remove the rubber dam.
10. Prepare, assist with, and/or apply and remove matrix bands.
11. Assist with and/or apply topical anesthetic to site of injection.
12. Assist with and/or monitor the administration of nitrous oxide/oxygen analgesia.
13. Identify and change rotary instruments in dental handpieces.
14. Using the concepts of four-handed dentistry, assist with general dentistry and dental emergency procedures, including:
 - a. Administration of anesthetics.
 - b. Cavity preparation and restoration.
 - c. Crown and bridge restoration preparation, temporization, and cementation.
 - d. Desensitization of the teeth.
 - e. Endodontic therapy.
 - f. Oral surgery.
 - g. Fabrication of removable partial or full dentures.
 - h. Fluoride application.
 - i. Occlusal equilibration/adjustment.

- j. Occlusal registration.
- k. Oral examination and data collection.
- l. Oral prophylaxis.
- m. Periodontal procedures.
- n. Placement of sealants.
- o. Placement of stainless steel crowns.
- p. Post-operative treatment and complications.
- q. Implants.
- r. Suture placement and removal.
- s. Taking initial/secondary impressions.

- D. Patient Management
 - 1. Demonstrate ability to calm and reassure apprehensive patients.
 - 2. Manage patients, including patients with special needs
 - a. Employ the principles of patient management during routine clinical procedures.
 - 3. Monitor and record patient's response to drugs/medications.

(9%) **III. CHAIRSIDE DENTAL MATERIALS (PREPARATION, MANIPULATION, APPLICATION)**

- A. Impression
 - 1. Prepare, mix, deliver and store the following materials for impressions:
 - a. Irreversible hydrocolloid (alginate)
 - b. Reversible hydrocolloid.
 - c. Elastomerics (polyether, polyvinylsiloxane).
 - d. Waxes.
- B. Restorative
 - 1. Prepare, mix, deliver, and store restorative materials, including:
 - a. amalgam.
 - b. cements.
 - c. composites.
 - d. dentin bonding materials.
 - e. glass ionomers.
 - f. temporary restorative materials.
 - g. varnishes, bases, and liners.
 - 2. Prepare and/or seat temporary crowns.
- C. Sedative/Palliative
 - 1. Prepare, mix and store sedative/palliative materials, including:
 - a. Periodontal surgical dressing.
 - b. Post-extraction dressings.
 - c. Sedative dressings.

- D. Other Dental Materials
 - 1. Select and manipulate the various finishing, polishing, and cleaning agents.
 - 2. Prepare, mix, deliver, and store other dental materials, including:
 - a. Bleaching agents.
 - b. Bonding agents.
 - c. Endodontic materials.
 - d. Etchants.
 - e. Glass ionomer materials.
 - f. Pit and fissure sealants.

(4%) **IV. LAB MATERIALS AND PROCEDURES**

- A. Selection and Manipulation of Materials
 - 1. Select and manipulate the various gypsum products.
 - 2. Select and manipulate the various dental waxes.
 - 3. Select and manipulate the various acrylic products or acrylic substitutes.
 - 4. Properly store gypsum and acrylic products and dental waxes.
- B. Laboratory Procedures
 - 1. Fabricate and evaluate diagnostic casts, including trimming and finishing.
 - 2. Polish removable appliances and prostheses.
 - 3. Polish fixed appliances and prostheses.
 - 4. Polish complete/partial dentures.
 - 5. Fabricate custom impression trays.

(10%) **V. PATIENT EDUCATION AND ORAL HEALTH MANAGEMENT**

- A. Oral Health Information
 - 1. Implement patient dental health education presentations on topics such as:
 - 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 the eruption and exfoliation of the teeth.
 - d. Classifications and importance of occlusion.
 - e. Functions of saliva.
 - f. Advantages and disadvantages of various restorative materials or procedures.
 - g. Effect of systemic disease on the healing process.
 - h. Special dental health needs due to physical status, age, etc.
 - i. Personal oral habits that may compromise general health.
 - 2. Explain and clarify the procedures and services being delivered and their consequences to patient and/or family.

3. Explain to the patient the effects of all types of fluoride, the advantages of the various modalities of administration, and the dangers and results of overdose.

B. Pre/Post Treatment Instruction

1. Provide patient with oral and written pre- and post- treatment instructions, including instruction on prescribed medications.
2. Instruct the patient in how to care for removable and non-removable appliances and prostheses.

C. Plaque Control Techniques

1. Evaluate the patient's oral health care status and habits.
2. Provide preventive oral health care information to the patient based on individual needs.
3. Instruct the patient in appropriate toothbrush selection and brushing techniques.
4. Select and use plaque disclosing aids in patient education.
5. Select and use oral hygiene devices such as brushes, floss, interdental aids, oral rinses, and irrigating aids.
6. Evaluate the patient's progress in and response to homecare therapy.

D. Nutrition

1. Provide instruction and evaluate basic nutritional needs of individual patients as they relate to dental health.
2. Explain to the patient the relationship of carbohydrates to the development of dental caries.

(12%) **VI. PREVENTION AND MANAGEMENT OF EMERGENCIES**

A. Medical

1. Identify conditions that may cause medical emergencies in patients with past histories, or conditions such as:
 - a. Alcohol/substance abuse.
 - b. Allergies.
 - c. Angina pectoris
 - d. Arthritis or rheumatism.
 - e. Asthma.
 - f. Blood dyscrasias.
 - g. Cancer.
 - h. Cardiovascular disease.
 - i. Diabetes mellitus or hypoglycemia.
 - j. Emphysema.
 - k. Epilepsy.
 - l. Hypertension or hypotension.
 - m. Kidney or liver problems.

- n. Prostheses and heart valve replacements.
 - o. Respiratory infection.
 - p. Rheumatic fever or congenital heart disease.
 - q. Ulcers.
 - r. Pregnancy.
2. Recognize medications related to the patient's present and/or past medical/dental history.
 3. Demonstrate preventive measures to be used following drug administration to avoid drug-induced emergencies.
 4. Recognize the signs and symptoms related to specific medical conditions/emergencies likely to occur in the dental office, including:
 - a. Airway obstruction.
 - b. Cardiovascular or cerebrovascular irregularities.
 - c. Diabetes- or epilepsy – related incidents.
 - d. Reactions to drugs, anesthetics.
 - e. Respiratory irregularities, including hypo- or hyperventilation, asthma.
 - f. Shock.
 - g. Syncope (fainting).
 - h. Contagious diseases
 5. Respond to and assist in the management of chairside emergencies, such as:
 - a. Allergic reactions.
 - b. Blood loss.
 - c. Cardiovascular or cerebrovascular irregularities.
 - d. Emergencies produced by metabolic or neurologic disease.
 - e. Respiratory irregularities, obstructions.
 - f. Shock.
 - g. Transient unconsciousness.
 6. Assemble and maintain appropriate emergency supplies, drugs, and equipment.
 - a. Recognize the uses of drugs in the prevention and/or effective management of an emergency.
 7. Prepare and post a listing of emergency support personnel (ambulance, fire department, emergency squad, hospital, physician in building, etc.).

B. Dental

1. Recognize the signs and symptoms related to specific dental conditions/emergencies likely to occur in the office.
 - a. Recognize the types of soft tissue inflammations of the oral cavity.
 - b. Oral contagious diseases.
2. Implement and/or assist with appropriate procedures for the management of dental emergencies.

(10%) **VII. OFFICE OPERATIONS**

A. Supply and Inventory Control

1. Maintain and control supplies.
 - a. Record and inventory items used.
 - b. Order supplies, instruments and equipment to maintain specified levels.
 - c. Rotate expendable supplies according to the expiration date.
 - d. Rotate non-expendable supplies according to the inventory control system.
 - e. Manage backorders according to the inventory control system.
2. Maintain security and necessary records of controlled substances.

B. Maintenance of Equipment/Instruments

1. Perform preventive maintenance on the equipment and instruments in the treatment room, as per manufacturers' instructions.
2. Provide appropriate care and storage of supplies such as sterile disposable products, nitrous oxide, oxygen, etc.

C. Patient Reception, Communication, and Accounting

1. Communicate effectively and establish good working relationships with patients and with other members of the dental care team.
2. Receive and dismiss patients and visitors.
3. Become familiar with the appointment control process.
4. Explain fees charged to a patient as directed by the dentist.
5. Understand basic concepts of third-party payment.
6. Initiate referral procedures for the patient as directed.
7. Become familiar with computers as used in the dental office.

D. Legal Aspects of Dentistry

1. Records
 - a. Identify the legal significance of medical and dental histories.
 - b. Identify items included as part of a legally documented patient record.
 - c. Implement precautions necessary in lending records to another dental office.
 - d. Differentiate among the various types of patient data in the dental office.
 - e. File items, including radiographs, histories, correspondence, etc., into individual patient records.
 - f. Record patient telephone communication and professional dental and medical consultations.

2. Legal Responsibilities and Regulations
 - a. Identify the factors and precautions necessary to prevent lawsuits against dental personnel.
 - b. Identify the responsibilities and/or obligations of the dentist and patients in the dentist-patient relationship.
 - c. Obtain consent for routine and emergency office dental care.
 - d. Maintain the patient's right to privacy according to HIPAA regulations.
 - e. Identify the action that a dental assistant should take after a threat to sue for malpractice.
 - f. Recognize the legal responsibilities of the dental assistant in relation to the State Dental Practice Act.
 - g. Document any patient refusal of recommended routine and emergency treatment.
 - h. Be aware of updates in Occupational Safety and Health Administration (OSHA) and Centers for Disease Control and Prevention (CDC) guidelines, and maintain office compliance.

Radiation Health and Safety (RHS) Exam Blueprint

- (42%) I. EXPOSE AND EVALUATE**
- A. Select appropriate radiographic technique.
 - 1. Describe use and purpose of various intraoral and extraoral radiographs, such as:
 - a. periapical.
 - b. bitewing.
 - c. occlusal.
 - d. panoramic.
 - e. cephalometric and other extraoral views.
 - 2. Select appropriate radiographic film to examine, view, or survey conditions, teeth, or landmarks, such as:
 - a. caries.
 - b. temporomandibular joint.
 - c. periodontal conditions.
 - d. apical pathology.
 - e. sinus areas.
 - f. dental anomalies, such as supernumerary teeth.
 - g. edentulous arches.
 - h. localization of impacted teeth, foreign objects, etc.
 - i. dental implants.
 - B. Select appropriate equipment for radiographic techniques.
 - 1. Describe purpose or advantage of accessories for radiographic techniques, including film holders, cotton rolls, bitewing tabs, bite blocks, lead apron, and thyroid collar.
 - 2. Select appropriate film size and film speed (sensitivity) depending on patient characteristics and exposure technique indicated.
 - 3. Describe purpose and advantage of dual (double) film packets.
 - 4. Storage.
 - a. Inspect and evaluate film storage areas for proper temperature, humidity, radiation protection and inventory control.
 - 1. Identify and correct errors related to improperly storing exposed and unexposed radiographic film.
 - C. Select infection control techniques and barriers to minimize cross-contamination in the operatory according to ADA/CDC and OSHA guidelines.
 - D. Select patient management techniques before, during, and after radiographic exposure.
 - 1. Address patient concerns about radiation, including patient refusal of radiography.
 - 2. Describe techniques for patient management while exposing radiographs, including patients with special needs.

- E. Expose dental films, using various techniques.
 - 1. Define radiographic exposure concepts, including:
 - a. film speed.
 - b. kilovoltage.
 - c. milliamperage.
 - d. collimation.
 - e. filtration.
 - f. film density.
 - g. latent image.
 - 2. Intraoral
 - a. Define factors that influence quality of exposure, such as:
 - 1. mA setting.
 - 2. kVp setting.
 - 3. primary beam angles (horizontal and vertical).
 - 4. PID (cone) length.
 - 5. exposure time.
 - b. Compare paralleling and bisecting angle techniques, including advantages and disadvantages of each.
 - c. Name the parts and functions of a radiograph film packet.
 - 3. Extraoral
 - a. Identify function and maintenance of film cassettes and intensifying screens.
 - b. Describe appropriate technique for exposing (patient positioning)
 - 1. panoramic radiography.
 - 2. cephalometric radiography.
- F. Demonstrate basic knowledge of digital radiography and other modern imaging techniques.
 - 1. Advantages/disadvantages of digital radiography
 - 2. Image receptors
 - 3. Infection control for digital equipment
- G. Evaluate radiographs for diagnostic value.
 - 1. Describe features of a diagnostically acceptable radiograph.
 - 2. Identify and correct errors related to exposing intraoral radiographs, including:
 - a. elongation.
 - b. foreshortening.
 - c. horizontal overlapping.
 - d. cone cutting.
 - e. light image.
 - f. dark image.
 - g. film bending.
 - h. reverse film (herringbone or tire track effect).
 - i. blank (clear) film.
 - j. blurred image.
 - k. superimposed image.
 - l. double exposure.
 - m. film placement errors.
 - n. black film

3. Identify and correct errors related to exposing panoramic radiographs, including patient positioning errors.

(13%) II. PROCESS

- A. Prepare, maintain, and replenish radiographic solutions for manual and automatic processors.
 1. Describe functions of processing solutions.
 2. Describe procedures for maintaining the integrity of processing solutions.
- B. Process exposed intra- and extraoral radiographs by use of manual and automatic techniques, but not limited to:
 1. Identify optimum conditions and procedures for processing radiographs.
 2. Identify and correct errors related to radiographic processing, including:
 - a. fogging.
 - b. light and dark images.
 - c. clear (blank) film.
 - d. partial images.
 - e. overlapped films.
 3. Identify and correct errors due to improper film handling, including:
 - a. scratches.
 - b. white or black lines.
 - c. static electricity artifacts.
 - d. fingerprints.
- C. Practice infection control for radiographic processing, following ADA/CDC and OSHA guidelines.
- D. Properly store chemical agents used in radiography procedures according to the local regulatory agency, in compliance with the OSHA Hazard Communication Standard.
- E. Properly dispose of all chemical agents and other materials used in dental radiography procedures.
- F. Implement quality assurance procedures (e.g., daily recording of solution temperatures, dates of solution changes, test film runs, clean and maintain equipment, knowledge of periodic inspections).

(11%) III. MOUNT AND LABEL

- A. Mount radiographs using buccal (facial) view.
 1. Identify anatomical landmarks that aid correct mounting.
 2. Match specific tooth views to specified tooth mount windows.
 3. Demonstrate appropriate technique for optimum viewing.
- B. Identify anatomical structures, dental materials and patient information observed on radiographs, including differentiating between radiolucent and radiopaque areas.
- C. Prepare radiographs for legal requirements, viewing, and duplication.

1. Identify methods for duplicating radiographs.
2. Identify information that must legally appear on the mount label.
3. Identify reasons for exposing and retaining radiographs.

(21%) IV. RADIATION SAFETY – PATIENT

- A. Apply the principles of radiation protection and health physics and hazards in the operation of radiographic equipment.
1. Demonstrate knowledge of the factors affecting x-ray production, including kVp, mA, and exposure time.
 - a. Describe the characteristics of x-radiation.
 2. Demonstrate understanding of x-ray machine factors that influence radiation safety, including concepts of filtration, shielding, collimation, and PID (cone) length.
 3. Demonstrate understanding of x-radiation physics:
 - a. primary radiation.
 - b. scatter (secondary) radiation.
 4. Describe protocol for suspected x-ray machine malfunctions.
- B. Practice patient safety measures to provide protection from x-radiation.
1. Identify major causes of unnecessary x-radiation exposure.
 2. Demonstrate understanding of x-radiation biology.
 - a. Short- and long-term effects of x-radiation on cells and tissues.
 - b. Demonstrate understanding of concepts of x-radiation doses, and effective dose.
 3. Identify ways to reduce x-radiation exposure to patients (ALARA).
 4. Identify guidelines that determine frequency of exposure.

(13%) V. RADIATION SAFETY – OPERATOR/OTHER STAFF

- A. Practice operator safety measures to provide protection from x-radiation.
1. Identify sources of x-radiation to operators/other staff while exposing radiographs.
 2. Identify safety measures to reduce operator x-ray exposure.
 3. Demonstrate understanding of x-radiation physics and biology pertaining to the operator exposure.
- B. Describe techniques for monitoring individual x-radiation exposure.
1. Describe the ALARA principle as related to operator safety.
 2. Explain the function of a personal monitoring device.

Infection Control (ICE) Exam Blueprint

- (10%) I. PATIENT AND DENTAL HEALTH CARE WORKER EDUCATION**
- A. Demonstrate an understanding of infectious diseases and their relationship to patient safety and occupational risk.
 - B. Demonstrate an understanding of the procedures and services being delivered and their consequences to the patient, family, other patients, and dental health care personnel.
 - C. Demonstrate an understanding of the need for immunization against infectious diseases, such as hepatitis B.
- II. STANDARD/UNIVERSAL PRECAUTIONS AND THE PREVENTION OF DISEASE TRANSMISSION**
- (20%) A.** Prevent cross-contamination and disease transmission
- 1. Perform proper hand hygiene.
 - 2. Use disposable items whenever possible.
 - 3. Protect the patient and operator through the use of barrier techniques, masks, gloves, protective eyewear, clinic attire, dental dam, and other safety items.
- (10%) B.** Maintain aseptic conditions
- 1. Identify the modes of disease transmission.
 - 2. Properly dispose of biohazardous and other waste generated in the dental office according to federal regulations.
 - 3. Properly store all instruments.
- (15%) C.** Perform sterilization procedures
- 1. Prepare dental instruments and equipment for sterilization.
 - 2. Use the appropriate method for sterilization of dental instruments, equipment and supplies.
 - 3. Use the appropriate system for monitoring, sterilization of dental instruments, equipment and supplies.

- (15%) D. Environmental Asepsis
1. Prepare surfaces for disinfection.
 2. Use the proper method of disinfection for environmental surfaces including the treatment, laboratory, darkroom, instrument processing and equipment areas.
 3. Maintain dental water unit lines
 4. Prepare and use chemical agents according to manufacturer's instructions.
 5. Identify proper use of environmental protective barriers.

(30%) III. **OCCUPATIONAL SAFETY**

- A. Follow the standards and guidelines of occupational safety for dental office personnel, including the following:
1. Follow regulations described in the OSHA Bloodborne Pathogens Standard.
 2. Incorporate engineering and work practice controls.
 3. Follow regulations described in the OSHA Hazard Communication Standard.
 4. Perform appropriate first aid procedures, document and report all incidents, such as cuts/punctures from instruments, needlesticks, or chemical exposures as described in the OSHA Bloodborne Pathogens and Hazard Communication Standards.
- B. Incorporate all safety measures when using chemical and physical hazards, such as, but not limited to:
1. mercury.
 2. nitrous oxide.
 3. caustic agents and other chemicals.
 4. airborne particles and contaminants.
 5. bonding materials.
 6. curing light.
 7. lasers.
 8. latex.
- C. Maintain and document a quality assurance (quality improvement) program for infection control and safety throughout the dental office.