

# Clinic Operations Manual

TEXAS TECH UNIVERSITY  
HEALTH SCIENCES CENTER EL PASO  
WOODY L. HUNT  
SCHOOL OF DENTAL MEDICINE

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## MISSION and VISION

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The **Mission** of the Woody L. Hunt School of Dental Medicine is to improve the oral health of the people of Texas and the greater El Paso community by:

- Focusing on the unique oral and overall health care needs of the border populations; and providing leadership to the practicing community and other area stakeholders;
- Demonstrating excellence in education, research, and patient care.

The **Vision** of the Woody L. Hunt School of Dental Medicine was also developed by the initial leadership team, and is as follows:

- Educate oral health care practitioners for the future
- Develop an innovative educational model
- Contribute to the discovery of new knowledge
- Provide leadership regarding oral health care issues to the greater El Paso area and border region.

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## GENERAL INFORMATION

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The purpose of this document is to provide students, staff, and clinical faculty members at the Texas Tech University Health Sciences Center El Paso (TTUHSCPEP), Woody L. Hunt School of Dental Medicine (WLHSDM), with a comprehensive overview of clinic policies and protocols. It is meant as a teaching tool for current and new faculty and staff to confirm that the information they provide to students and patients is consistent, accurate, and up-to-date.

Providing a clinical environment that supports the delivery of quality patient care in a safe and efficiently-managed environment is the responsibility of all WLHSDM faculty, staff and students. Therefore, the following general procedures apply:

1. It is the responsibility of all students, clinical faculty, and staff to comply with the clinic procedures as published in this clinic manual and with official WLHSDM notices as they are published.
2. A clean, safe, orderly, and hazard-free clinical environment is the responsibility of all students, clinical faculty and staff.
3. Before each patient is seated for an appointment, the student must ensure that the operatory is prepared in compliance with all clinic procedures.
4. As soon as a patient is dismissed, the student must perform appropriate housekeeping and surface disinfection prior to leaving the operatory. In addition, all clinical faculty are responsible for ensuring that compliance with infection control standards are satisfactorily completed.
5. Equipment malfunctions or special housekeeping requirements should be reported immediately to WLHSDM personnel.

### Professional Conduct

The WLHSDM expects its students, faculty, and staff to conduct themselves in a manner that meets the highest professional ideals of the dental profession, consistent with the expectations of an oral health practitioner licensed in the state of Texas. In the delivery of oral health care, all students, faculty, and staff should be cognizant of the principles of professional conduct, as outlined in the ADA Principles of Ethics and Code of Professional Conduct. They are: patient autonomy (“self-governance”), nonmaleficence (“do no harm”), beneficence (“do good”), justice (“fairness”), and veracity (“truthfulness”).

All WLHSDM personnel participating in clinical activities should present a professional demeanor at all times and demonstrate a professional regard for the school’s clinic regulations – an essential element in the academic program. Professional conduct within the educational environment also includes respectful interaction with patients, faculty, staff, and student colleagues.

#### Professional Conduct during Patient Care

- Student doctors shall interact with patients, their families, visitors, faculty, staff and peers in a courteous, considerate manner that conveys respect and appropriate professional courtesy. Adult patients shall be addressed by title and surname unless permission is granted by the patient to use a more informal form of address. Behavior reflecting the dignity, responsibility and service orientation of dental professionals shall be practiced by all individuals.
- Student doctors have an obligation to be respectful of the cultural, religious, ethnic, racial, and life-style diversity of individuals in the dental school community and the community in which the school exists.
- The use of abusive, obscene, derogatory, or profane language will not be tolerated.
- The privacy of the patient and the confidentiality of every patient record shall be maintained in accordance with HIPAA guidelines.
- Behavior reflecting the dignity, responsibility, and service orientation of dental professionals shall be practiced by all individuals.

- No dental student shall perform clinical treatment without supervision from appropriate faculty.
- No student doctor shall perform clinical treatment that in any way compromises the safety of the patient.
- No student doctor shall deliberately neglect or intentionally subject a patient to unnecessary treatment, stress, or anxiety.
- Student doctors shall maintain neat and clean personal grooming and shall dress appropriately for their clinical assignment consistent with the guidelines published in the WLHSDM Student Affairs Handbook.
- Student doctors observing or knowing of incompetent, unethical, or illegal conduct that endangers a patient's health or general welfare shall report this to the Associate Dean for Clinical Services, College Mentor, or other faculty member.
- Student doctors shall not share personal problems, frustrations, or negative comments about student colleagues, faculty, or the WLHSDM with patients or their families.
- Student doctors shall not make any misstatement or act of intentional omission in official records of the EHR for purposes of misrepresentation.
- Student doctors shall not engage in any argument or altercation in the presence of or with patients, family, or visitors.

### **Clinic Attendance**

Clinic attendance is mandatory and is consistent with the guidelines set forth in the WLHSDM Student Affairs Handbook. In cases of illness that would affect scheduled patient care, students are expected to report their absences promptly by telephone to the Clinic Mentor and follow any other guidelines as set forth in the WLHSDM Student Affairs Handbook.

### **Credentialing of Clinical Personnel**

The WLHSDM credentials each clinical student, staff and faculty member having direct contact with patients. Lack of current credentialing information may result in suspension from clinical activities.

#### **Required Faculty credentialing records may include the following:**

- Completed and approved Application for Clinical Privileges for clinical attending faculty
- Valid Texas dental or dental hygiene license, as appropriate
- Current DEA number for all faculty who prescribe controlled substances
- Criminal Background Check
- Current BLS certification
- Proof of Hepatitis B vaccination series or declination statement
- Current Tetanus/Diphtheria/Pertussis
- Annual TB test results
- Influenza vaccine (one dose annually)
- Record of attendance at required clinical training, to include HIPAA training

#### **Required Student credentialing records may include the following:**

- Current BLS Certification
- Medical status – completed physical examination and immunization status at matriculation Varicella (Chicken Pox): Proof of immunity determined by serologic titer.
  - In the event of a negative titer, 2 doses of Varicella Vaccine at least 28 days apart is required.
- Measles (Rubeola): Proof of immunity determined by serologic titer.
  - In the event of a negative titer, 2 doses of MMR at least 28 days apart is required.
- Rubella (German Measles): Proof of immunity determined by serologic titer.
  - In the event of a negative titer, 2 doses of MMR at least 28 days apart is required.
- Mumps: Proof of immunity determined by serologic titer.
  - In the event of a negative titer, 2 doses of MMR at least 28 days apart is required.
- Tuberculosis clearance:
  - a. A 2-step Tuberculin skin test is required. Documentation of TB skin test administered within the last 12 months will be considered as step 1. The 2<sup>nd</sup> TB skin test must be completed at least one

week after the first TB skin test. Proof of a negative TB skin test within the past 3 months will be considered as step 2. TTUHSCEP will administer second TB skin test on Orientation Day.

- b. Students with a history of a positive TB skin test must submit documentation of a positive TB skin test. Documentation of a chest x-ray (CXR) within the last three (3) months and completion of a TB symptom review is required. BCG vaccine does not preclude the need for TB skin testing or chest x-ray.
- c. Students with a positive TB skin test are required to meet with the infection control nurse.

- Hepatitis B: Series of three (3) vaccines followed by a QUANTITATIVE antibody titer. If a student does not develop immunity after the initial series, a second series and re-titer will be required as recommended by CDC. This series must begin prior to matriculation, but may be completed after arrival.
- Tetanus/Diphtheria/Pertussis: Primary series of Tetanus immunizations, plus one dose of adult Tdap. If adult Tdap is more than 10 years old, provide date of last Td and Tdap
- Flu Vaccine: Documentation of vaccine (One dose annually each fall.)
- Meningococcal Vaccine: Documentation of vaccine: (If age < 22)
- Polio Vaccine: Documentation of basic series of oral or inactivated polio immunization.

Students declining vaccines must complete the documents entitled "Disease/Infection Information Sheet for Declined Vaccine" (Attachment J) and submit the completed form(s) to the TTUHSCEP Office of Occupational Health. Students are encouraged to contact the TTUHSCEP Office of Occupational Health if any questions arise.

**Required Clinical Staff credentialing records include the following:**

- Annual TB test results
- MMR
- Current BLS certification
- Tetanus/Diphtheria/Pertussis: Primary series of Tetanus immunizations, plus one dose of adult Tdap. If adult Tdap is more than 10 years old, provide date of last Td and Tdap. Flu Vaccine: Documentation of vaccine (One dose annually each fall.)

**Visiting Students, Faculty, Staff and Program Participants**

The WLHSDM Office of Clinical Affairs may grant temporary clinical privileges to faculty and students who are visiting the WLHSDM, consistent with the following:

- Status documented from their present institution stating faculty appointment or student enrollment. WLHSDM
- Continuing Education (CE) participants must be currently enrolled in the college-sponsored program (i.e., CE course).
- Valid Texas dental or dental hygiene
- license Proof of professional liability insurance
- Criminal background check (as appropriate; determined by the WLHSDM Office of Clinical Affairs)

**Clinic Attire**

1. Faculty, Staff and students are expected to maintain a professional personal appearance. The following dress code guidelines have been designed for students enrolled in the WLHSDM, and are consistent with the WLHSDM Student Affairs Handbook. The intent is to encourage an environment of professionalism as well as promote health and safety for students, patients, and staff and meet compliance with applicable federal, state and local regulations. It is essential that students are in compliance with these guidelines at all times. This will also increase the confidence of patients in the care they will receive by the WLHSDM clinicians.
2. Proper Personal Protective Equipment (PPE) must be worn when providing patient care or simulated patient care or any time there is a potential of exposure to blood or body fluids. Personal protective equipment includes: disposable clinic gown, gloves, face mask, and eye protection.

3. PPE is not to be worn outside of the patient care areas. PPE is NOT to be worn in other areas of the building (elevators, stairs, lobby, restrooms, offices, etc.).
4. Personal Grooming
  - a. Good personal and oral hygiene is expected at all times.
  - b. Fingernails must be trimmed and of no more than moderate length and must in no way interfere in patient care.
  - c. Artificial nails may not be worn during simulation or clinical activities so that glove integrity may be protected.
  - d. Hair, including facial hair, must be clean, neat, and well groomed. If it is longer than chin/shoulder length, it must be secured in a way that it does not interfere with the dental operating field or touch a patient during clinical or laboratory procedures. This is necessary for enforcement of mandatory infection control guidelines.
  - e. All clothing must be clean and wrinkle-free.
  - f. Jewelry - Only non-dangling earrings are acceptable in the simulation and clinical patient care environments. Rings and watches may penetrate rubber gloves and are discouraged.
  - g. Use of chewing gum is not permitted in patient care areas.
  - h. Minimal cosmetics and colognes may be worn to a degree appropriate to the expected amount of patient and visitor contact, and with consideration for peers.
5. Attire for patient care settings
  - a. A disposable over-gown will be worn over scrubs. Clean and matching scrub tops and scrub pants will be worn in all simulation laboratory and clinical patient care environments. Students will be assigned a color of scrubs representing their class.
  - b. Black, short or long- sleeved, non-logo T shirts may be worn under scrub tops.
  - c. Disposable gowns will be worn over scrub outfits during all patient care activities. These gowns must be removed and properly disposed of when departing patient treatment areas.
  - d. Gowns must be changed when they are visibly soiled.
  - e. Clean and conservative closed-toe shoes must be worn in simulation and clinical patient care settings. This includes athletic shoes but does not include hiking-style boots. Socks or hose must be worn with shoes. For reasons of safety and infection control, shoes with holes on the top, known as "Crocs," may NOT be worn in the clinics.
6. Smoking is prohibited on the TTUHSCEP Campus.

### **Clinic Hours**

Normal clinic operations will be Monday through Friday from 8:00 am to 5:00 pm, and will be closed on federal, state and local holidays. Patients with a dental emergency can always call the after-hours phone number and contact the faculty who is on-call.

### **Emergency Care during office hours**

Emergency treatment during regular clinical operations hours is available to all WLHSDM patients. Treating student doctor is expected to attend to emergency care for their patients within their college under the supervision of their clinical mentor. In the event the treating student is not available effort is made to have another student within the same group and the same clinic mentor attend to the patient's emergency. In case where this is not possible, the patient will be seen in the emergency clinic under the supervision of the attending faculty in the emergency clinic. Following the emergency treatment, patients will be rescheduled with their student doctor in their college.

### **After-Hours Emergency Care**

Emergency after-hour service is available for patients in active treatment or on recall at the WLHSDM. Information on available treatment after-hours can be found in the New Patient Brochure, appointment cards, after-hours phone messages(option 1) and the WLHSDM website (this will be posted when clinic opens). The purpose of the service is to provide treatment for patients with complications from treatment received at WLHSDM or other emergency conditions which occur after normal clinic hours, or when the school is closed. When on call doctor receives a call from the after-hour service department, it will come from the number: (800) 440-2851.

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## **PATIENTS' POLICIES**

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### **STATEMENT OF PATIENTS' RIGHTS AND RESPONSIBILITIES**

The Woody L. Hunt School of Dental Medicine, as part of the Texas Tech Health Sciences Center El Paso, is committed to the goal of providing excellent health care to each of our patients. Accordingly, our patients have the following rights and responsibilities regardless of race, color, culture, language, ethnicity, religion, sex, sexual orientation, gender identity or expression, socioeconomic status, age, national origin, physical or mental disability, and / or veteran status:

#### Patients' Rights

1. You have a right to schedule an appointment in a timely manner.
2. You have a right to know the education and training of the dental care team.
3. You have a right to adequate time to ask questions and receive answers regarding your dental/oral health condition and the treatment plan for your care.
4. You have the right to know what the dental team feels is the optimal treatment plan as well as the right to ask for alternative treatment options.
5. You have a right to an explanation of the purpose, probable (short and long term) results, alternatives, and risks involved before consenting to a proposed treatment plan.
6. You have a right to be informed of your continuing health care needs.
7. You have a right to know the expected cost of treatment in advance.
8. You have a right to accept, defer, or decline any part of your treatment recommendations.
9. You have a right to reasonable arrangements for dental/oral health care and emergency treatment.
10. You have a right to receive considerate, respectful and confidential treatment by your dentist and the dental team.
11. You have a right to expect the dental team members to use appropriate infection and sterilization controls.
12. You have a right to inquire about the availability of processes to mediate any disputes about your treatment.

#### Patients' Responsibilities

1. You have the responsibility to provide, to the best of your ability, accurate, honest and complete information about your medical history and current health status.
2. You have the responsibility to report all changes in your medical status and provide feedback about your needs and expectations.
3. You have the responsibility to participate in your health care decisions and ask questions if you are uncertain about your current treatment or the future plans for your treatment.
4. You have the responsibility to inquire about your treatment options and acknowledge the benefits and limitations of any treatment that you choose.
5. You have the responsibility for consequences resulting from declining treatment, or from not following the agreed-upon treatment plan.
6. You have the responsibility to keep your scheduled appointments.

7. You have the responsibility to be available for treatment upon reasonable notice.
8. You have the responsibility to adhere to regular home oral health care recommendations.
9. You have the responsibility to assure that your financial obligations are fulfilled for the health care you have received.

## **WLHSDM STANDARDS OF PATIENT CARE**

The WLHSDM is committed to delivering high-quality care that is comprehensive, patient-centered, and continuously improving. The Standards of Care at WLHSDM have been developed to describe clinical considerations in the assessment and treatment of oral health conditions, and to serve as a basis for clinical decision-making when providing oral health care.

### **Standard 1: Patients' Rights**

- a. All patients will be advised of their rights and responsibilities at the WLHSDM clinics.
- b. Each patient will receive a copy of the WLHSDM Statement of Patients' Rights and Responsibilities prior to receiving treatment.
- c. The patient will be informed of the diagnosis, proposed therapy, estimated treatment time, reasonable treatment alternatives, and the prognosis of treatment.
- d. Reasonably foreseeable inherent risks associated with proposed treatments will be explained to the patient prior to obtaining informed consent for treatment.
- e. The need for any follow-up treatment after active therapy will be explained to the patient.

### **Standard 2: Examination, Diagnosis, Treatment Planning**

- a. Each screening patient will have recorded a chief complaint, and screening dental and medical history. Each screening patient will have vital signs recorded.
- b. Each screening patient will have a general assessment of medical history, a screening extraoral and intraoral examination, and a brief examination of the teeth and the periodontium
- c. Screening patients may have radiographs, as deemed necessary by faculty, to judge the appropriateness of the patient as a teaching case. Patients will be informed, in general terms, of any dental problems discovered as a result of a review of these radiographs.
- d. A medical alert notation will be generated in the record as appropriate.
- e. A medical consultation will be requested, as appropriate.
- f. Qualified academic teaching case patient will receive a comprehensive examination, diagnosis, and treatment plan that is customized and sequenced based on their dental needs.
- g. Individuals not selected for treatment will be informed, in general terms, of their dental problems and given guidance in finding a dental health care provider.
- h. The comprehensive oral evaluation includes but not limited to the following:
  - a. A periodontal evaluation consisting of periodontal charting to assess periodontal pocket depths and attachment levels, and to provide information on the health of the subgingival area.
  - b. An evaluation of teeth for caries, pulpal disease, malocclusion, and defective or inadequate restorations.
  - c. An evaluation of dental prostheses, including orthodontic appliances.
  - d. A risk assessment for dental disease (e.g. caries risk, nutrition risk, periodontal risk) at the initiation of treatment and at prescribed intervals during treatment.

### **Emergency Patient Assessment**

- a. Each new patient with a dental emergency will have recorded a chief complaint, a history of the chief complaint, a medical history, and an examination of the area of complaint, a diagnosis, and a recommended treatment.

- b. Vital signs, a physical evaluation, and a prognosis are to be included if emergency therapy is to be rendered.

### Standard 3: Excellent Oral Health Care

- a. Quality, comprehensive oral health care will be provided in a timely manner.
- b. Clinical findings and diagnoses will be used to develop a logical, comprehensive plan for dental treatment to eliminate or alleviate dental disease and thereby prevent or slow further destructive changes. Where indicated, the treatment plan will include:
  - Diagnoses, etiology and proposed therapy.
  - Any reasonable alternative treatments. Overall
  - and selected tooth prognoses.

#### Treatment Procedures

- a. Where indicated, treatment plans will include:
  - Patient education and training in personal oral health maintenance and reduction of risk for dental disease.
  - Preventive or periodontal therapy, including removal of supragingival and accessible subgingival bacterial plaque and calculus by periodontal scaling, and comprehensive root planing as appropriate.
  - Treatment of teeth by endodontic therapy.
  - Caries removal and restoration, remineralization therapy, and/or application of dental sealants.
  - Removal of teeth with a non-restorable prognosis.
  - Replacement of missing teeth with a complete denture, overdenture, fixed or removable partial denture, or an implant-supported prosthesis.
  - Provision for re-evaluation during and after active treatment.
  - Definition of re-care intervals for patients in continuing comprehensive care as well as completed patients.
- b. When the indicated treatment cannot be provided within the scope of the WLHSDM, patients will be informed of any immediate needs and referred to other dentists or health care providers with the necessary knowledge or expertise to care for the patient.

### Standard 4: Clinical Environment

- a. Patients in the WLHSDM's clinics will be treated in an environment that is safe, satisfactory, and provided in a confidential manner.
- a. All clinical personnel will follow universal precautions, including use of Personal Protection Equipment (PPE), for control of infection and prevention of aerosol pathogens.
- b. At each appointment, students will undergo daily evaluation of their adherence to infection control measures by attending faculty as a component of the "Professionalism Evaluation".
- c. Students and attending faculty will be periodically evaluated by designated clinical staff, who will conduct regular, unannounced infection control evaluations during clinical sessions. Immediate feedback will be provided to faculty and students, and all infractions will be reported to the Assistant/Associate Dean for Clinical Affairs and Patient Care. Summary reports of these unannounced infection control evaluations will be provided to the sub-committee on Clinical Quality Assurance and Safety.

### **HIPAA and Patient Confidentiality**

Due to government regulations, the WLHSDM dental treatment areas are considered work-restricted areas during active treatment of patients. In an effort to comply with government regulations and provide the safest environment, the WLHSDM cannot allow anyone other than the patient in the clinic operatory during active treatment. Faculty and students are not authorized to approve visitors, observers, or volunteers into the clinic area without written permission from the

Office of Clinical Affairs and Patient Care. Bringing non-authorized individuals into the WLHSDM clinics is in direct violation of HIPAA and OSHA guidelines regarding patient care. This creates a potential liability for the University and the WLHSDM, as it not only creates a breach in patient confidentiality, but also the potential for an exposure incident for the visitor.

Under no circumstances should children of a dental patient be left unattended in the waiting areas.

### **Visitors**

Due to patient confidentiality (HIPAA) guidelines, visitors or patients are not allowed to take pictures or videotape any treatment or simulation procedures inside the WLHSDM without written permission from the Office of Clinical Affairs and Patient Care. Any unauthorized personnel taking pictures or videotape should be asked to leave the clinical area until proper authorization has been received.

When special circumstances exist (i.e., the need for sign language or language interpretation, or security personnel, it is necessary to contact the Office of Clinical Affairs and Patient Care prior to scheduling the appointment to ensure that the proper clearance process has been followed. Only one (1) authorized visitor will be allowed. If allowed, the authorized visitor must be seated in a non-rolling chair and wear mask and eye protection.

### **Service Animals**

In accordance with the Americans with Disabilities Act (ADA), service animals are allowed into the WLHSDM building. The ADA defines a service animal as “any guide dog, signal dog, or other animal individually trained to provide assistance to an individual with a disability.” Guide dogs are one type of service animal used by some individuals who are visually impaired, but there are service animals that assist persons with other kinds of disabilities in their day-to-day activities. Be aware that, by law, a health provider can ask if the accompanying animal is a service animal. However, the law forbids anyone from asking for proof. The law also forbids asking the nature of the disability.

Some examples of the assistance that a service animal can provide: alerting persons with hearing impairments to sounds; pulling wheelchairs or carrying and picking up things for persons with mobility impairments; and assisting persons with mobility impairments and balance. Service animals have full access and privileges to enter any place a non-disabled person would be allowed to enter. A certain etiquette is expected when treating a patient who has a service animal:

1. Always speak to the person.
2. DO NOT pet the service animal. This might distract it from its work.
3. DO NOT offer food or treats to the service animal.
4. DO NOT harass or startle a service animal.
5. DO NOT bark or whistle at a service animal.
6. DO NOT try to separate the handler from their service animal.

Any faculty, student, or staff who is afraid of or allergic to dogs/animals is urged to speak to the supervising attending faculty coordinator about having the patient reassigned.

### **Patient Record**

All students, staff and faculty with access to patient records and patient information are committed to protecting the patient's right to privacy and safeguarding any clinical information in their dental health record. All information contained in the patient record is accessed only on a need-to-know basis.

The Health Insurance Portability and Accountability Act (HIPAA) became effective April 14, 2003. All WLHSDM faculty, staff and students must be compliant with these federal regulations. HIPAA training is required and provided annually to all through the University. All faculty, staff and students must also sign a Confidentiality Agreement.

#### **Protecting the Privacy of Patients' Health Information**

1. Information Required To Be Protected.

The privacy of all medical records, billing records, and other individually identifiable health.

2. Boundaries on Health Information Use and Release.

With few exceptions, an individual's health information can be used for health, education, or research purposes only.

- a. Ensure that health information is not used for non-health purposes.

Patient information can be used or disclosed only for purposes of health care treatment, payment and operations. Health information cannot be used for purposes not related to health care without explicit authorization from the individual.

- b. Provide the minimum amount of information necessary.

Disclosures of information must be limited to the minimum necessary for the purpose of the disclosure.

### 3. Ensuring the Security of Personal Health Information.

Federal regulations establish the privacy safeguard standards with which covered entities (e.g., the Texas Tech University Health Sciences Center El Paso and WLHSDM) must comply.

### 4. Penalties for Misuse of Personal Health Information

There are penalties for covered entities that misuse personal health information.

- a. Civil penalties. Covered entities that violate these standards would be subject to civil liability. Civil money penalties are \$100 per incident, up to \$25,000 per person, per year, per standard.

- b. Federal criminal penalties. There would be federal criminal penalties for covered entities that knowingly and improperly disclose information or obtain information under false pretenses. Penalties would be higher for actions designed to generate monetary gain. Criminal penalties are up to \$50,000 and one year in prison for obtaining or disclosing protected health information; up to \$100,000 and up to five years in prison for obtaining protected health information under "false pretenses"; and up to \$250,000 and up to 10 years in prison for obtaining or disclosing protected health information with the intent to sell, transfer or use it for commercial advantage, personal gain or malicious harm.

### 5. Disclosures of Health Information That Do Not Require Patient Authorization.

Within certain guidelines found in the federal privacy standards, covered entities may disclose certain types of information without patient authorization; these types of information are listed below.

- a) Oversight of the health care system, including quality assurance activities.
- b) Public health issues.
- c) Emergency circumstance, identification of a deceased person, or the cause of death. d) For facility patient directories.
- e) For activities related to national defense and security.

Adapted from the HHS Fact Sheet, PROTECTING THE PRIVACY OF PATIENTS' HEALTH INFORMATION, May 9, 2001.

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# PATIENT ASSESSMENT, ASSIGNMENT and STATUS

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## Patient Assessment

All individuals interested in being a patient at the WLHSDM must first receive a screening examination. All screening examinations will be accomplished in the WLHSDM clinic under the supervision of the clinical attending faculty.

### Initial Screening Appointment

Upon arrival to the school for the screening appointment, each prospective patient is to be registered and asked to sign appropriate consent forms. A medical history is recorded, and the preliminary clinical evaluation is then performed by students under the supervision of clinical attending faculty. If the patient is identified as a potential candidate for treatment in the predoctoral program, the initial screening visit will also include radiographs, as determined by the clinical evaluation. Results of the screening exam and a preliminary problem list are to be recorded in the electronic record, which with the demographic and history forms provides a preliminary summary of each patient's needs. Patients accepted as a teaching case will be assigned to a student by the attending faculty supervisor.

## Initial Assignment

Patients are accepted for treatment based on the individual patient's needs and the ability of the school's teaching programs to provide the corresponding care. A patient is considered a "teaching case" if his/her needs are within a student's clinical capability. To ensure that each assigned patient is treated in a comprehensive and timely manner:

1. Patients are assessed and deemed potentially suitable predoctoral patients by the Clinical Mentor and appropriate radiographs are ordered, exposed, and interpreted. Following this appointment, patients are assigned to a primary student provider and appointed for treatment planning.
2. Once a patient is assigned to a student, the patient appears in the student's patient family in the Electronic Health Record (EHR). PSS should contact each newly-assigned patient, identify him/herself and set an appointment for a comprehensive exam within 2 weeks of assignment.
3. Students meet with their Clinical Mentor on a regular basis to review their patient family and the Student's progress in providing care to his/her patients.

## Patient Assignment

Comprehensive care patients, once assigned to a student provider, remain active in a student's family of patients until the student graduates or the patient is approved for transfer to another student (see below). The student is responsible for ensuring that all appropriate periodontal, preventive, or other recalls (i.e., endodontic, removable) are performed in a regular and timely fashion. Comprehensive care is monitored by the Clinic Mentor to ensure continuity and timeliness of care and accuracy in patient status. Assignments and changes in assignments require authorization by the Clinic Mentor. All initial assignment and/or changes must also be electronically made in the EHR. For any and all changes in assignment, the Clinic Mentor must document the reason for the change in the progress notes of the EHR. Reassignment or Transfer of Active Patients (See also Reassignment of a Patient)

1. From one dental student to another: This type of transfer may be done only in exceptional cases and only at the discretion of the Clinic Mentor.
2. Referral from the dental student to dentists in the community: This type of transfer may be initiated by any faculty member in consultation with the Clinic Mentor. The reasons for reassignment may include:
  - a. The treatment of a particular patient is no longer within the scope of the dental student's ability as a result of certain acquired medical and/or physical problems.
  - b. Certain specific procedures are too difficult for the predoctoral dental student to perform. The student will be responsible for resuming the care of the patient once the referral care is completed.
3. Reassignment or referral to a dentist in the community must be made by the Clinic Mentor and immediately recorded in the patient record.

4. From a graduating dental student: Clinic Mentor will transfer patients of graduating dental students respectively to a returning student prior to the beginning of the summer clinic session. The transfer process will be completed by the Clinic Mentor. Transfers must immediately be recorded in the EHR to ensure that responsibility for a patient rests with the appropriate student and timeliness of care continues. Prior to the transfer, the graduating student must personally introduce the patient to the new student.

**Reassignment of a Patient:**

Patients who are transferred from one primary provider to another must be reassessed. The reassessment must include, at a minimum, a review of the patient's:

- Chief complaint
- Vital signs
- Medical history
- Oral hygiene and preventive maintenance status
- Intra- and extra-oral exams
- Diagnosis (es)
- Treatment performed to-date
- Updated appropriate radiographs, if needed
- Treatment plan
- Periodontal maintenance/prophylaxis status (This must be current for a reassignment to occur)

**Management of Continuing Patients' Accounts**

Any patient assigned to a graduating student and designated for reassignment must first have their account audited (even if currently a zero balance). Once the account balance is confirmed, only patients with verified zero balances can be reassigned.

# EXAMINATION, DIAGNOSIS & TREATMENT PLANNING

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The diagnosis and treatment planning of patients is the primary responsibility of the attending faculty. The Clinic Mentor has final approval of all treatment plans within their clinical team.

## Patient Interview, Clinical Examination and Diagnosis

All patients accepted for comprehensive care will receive a comprehensive oral evaluation, appropriate radiographs, and other diagnostic tools, and a treatment plan that is sequenced based on the needs of the patient. Students are expected to perform the following in their examination and diagnosis of the patient.

1. Identify the patient's chief complaint, general needs and expectations.
2. Complete a comprehensive medical and dental history.
3. Perform a clinical examination, including hard and soft tissue. Periodontal examination of the patient must include:
  - Probing depths
  - Clinical attachment levels
  - Bleeding on probing
  - Gingival margin
  - Mucogingival line
  - Furcations
  - Tooth mobility
  - Missing & impacted teeth Prognosis
4. Assess the need for and select appropriate radiographs or electronic imaging required for diagnosis (if not obtained at initial Assessment Clinic visit).
5. Obtain clinical radiographic and other diagnostic information and procedures.
  6. Recognize the normal range of clinical and radiographic findings and deviations that require monitoring or management.
7. Recognize predisposing and etiologic factors that require intervention to prevent disease.
8. Interpret findings from the history, clinical and radiographic examination, and other diagnostic procedures.
9. Obtain medical and dental consultations when appropriate.
10. Integrate subjective and objective clinical findings in the formulation of the diagnosis.
11. Evaluate the prognoses of various treatment options.

## Radiographic Examination

All students using x-ray equipment at the WLHSDM must be under direct supervision of a faculty member or certified radiography technician. Individuals working with radiation equipment will practice proper radiation safety for patient and self as outlined the Radiation Safety section of this manual.

Lead aprons and thyroid shields (latter when appropriate) are to be used during radiographic exposures on patients. Radiology staff and faculty will review and monitor the quality of radiographic images produced. All students will utilize digital radiographs, and any retakes require authorization of a faculty member. Radiographic examinations of patients who are pregnant shall be limited to those necessary to complete emergency dental treatment. All patients, including those seen for an initial screening appointment for the purpose of determining their eligibility as patients, must receive an appropriate clinical examination prior to the ordering of radiographs or other diagnostic aids. The FDA Guidelines for Prescribing Dental Radiographic Exposures on Patients should be used when ordering radiographs (Appendix N). The use of any radiographs on prospective patients at the screening appointment does not require nor automatically convey acceptance to the school as a teaching case. When patients have had recent radiographic procedures from a private office or another institution, a request shall be made for a duplicate copy of the radiographs. .

## Full Mouth Series (FMX)

When performing a full mouth radiographic series, students are issued a set of from the dispensary. Prior to the start check, students are to make a determination of what additional exposures will be necessary based on the patient's existing dentition. The supervising technician or faculty member will confirm or modify the student's

assessment as to what is determined to be clinically appropriate. The additional predetermined intraoral projections will be documented in the EHR and authorized by the technician or faculty member as part of the “start check” procedure. Supervising technicians will dispense these additional plates. NOTE: All radiographs require a documented interpretation. A patient who terminates treatment after radiographic exposure must still have radiographs interpreted and recorded.

### **Cone Beam Computed Tomography ()**

CBCT will be utilized when treatment includes implants, complex extractions and/or endodontics, or if there is evidence of pathology.

### **Treatment Planning**

1. Formulate an individual, comprehensive, sequenced treatment plan using diagnostic and prognostic information from the comprehensive assessment of the patient.
2. Discuss etiologies, treatment alternatives prognoses and preventive strategies with the patient; educate the patient so he/she can participate in the management of his/her own care.
3. Develop, implement and modify a sequenced treatment plan that is customized to meet the patient's goals, values, concerns and special needs.
4. Identify the need for and manage timely referrals when appropriate.

After the treatment plan is completed and with the approval of the supervising faculty, the student presents the case to the patient, explaining all risks and benefits. If the patient is agreeable to the plan, the student finalizes the data in the EHR. The final treatment plan is approved by the Clinic Mentor, the patient then signs the final agreed upon Treatment Plan Estimate and appropriate Informed Consent form(s). Before leaving, the patient is reappointed by his/her CPT Coordinator in conjunction with the student. Clinical staff will review the financial responsibilities of the patient to complete the proposed treatment plan as well as the patient's obligations regarding appointments, and give them a contact number for any questions or problems. Students will not be allowed to treat a patient if the treatment plan and informed consent(s) are not signed. If treatment is performed without the signature, a Clinical Incident Report will be initiated.

### **Treatment Planning of Pediatric Patients**

All treatment planning is completed in the pediatric area of the clinic. Consent forms must be signed by a parent or legal guardian. The pediatric faculty will determine if the patient will be treated in the team area or the pediatric clinic. It is the intent that the majority of treatment will take place in the team setting but there may be conditions that require the supervision of pediatric specialists for treatment.

### **Changing an Approved Treatment Plan (Adult and Pediatric Patients)**

Changes in treatment that are minor (i.e., changes in surfaces, change from endodontics to vital pulp therapy, etc.) may be approved by the supervising attending faculty. He/she must place a note in the EHR justifying the change in treatment. If the treatment change is major (i.e., change from cast gold to CAD-CAM, change to/from fixed or removable prosthesis, unplanned loss of teeth, etc.), the supervising faculty must consult with the faculty who originally planned the treatment to discuss the proposed change and the reason for it. The Clinic Mentor will be the final approving authority. If significant new treatment is planned, a new consent must be signed by the patient and new codes entered in the treatment plan. Changes in fees must be explained to the patient prior to initiation of new proposed treatment.

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# PATIENT COMPLETION, RECALL AND DISCONTINUATION

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## Completion of Active Treatment

Upon completion of an adult comprehensive care patient's treatment plan, the patient's treatment history and account is reviewed by clinical staff, and the patient's next preventive maintenance due date is confirmed. The patient's status in the EHR is then changed to "RECALL" and the student will continue to recall the patient until the student graduates. To successfully perform a case completion, the student must complete the following sequence:

1. 2 to 3 working days prior to scheduling the patient's final appointment, the Patient Service Specialist (PSS) must be notified. The Coordinator will audit the patient's account and treatment history and designate it for clearance if the unpaid balance is zero. If there is an amount owed, the Coordinator/scheduler will research the account to determine the reason for the balance. Items correctable by Business Services, such as data entry errors, will be corrected through the CPT staff. NOTE: Any unpaid balances owed by the patient must be resolved by the student in coordination with the patient. No comprehensive care patient with an unpaid balance can be electronically unassigned from a student's patient family.
2. Review the patient's treatment plan and EHR record for completeness with the Clinic Mentor
3. Include the procedure code for "Patient Care Completion Exam (PCCE)" in the "treatment completed" area of the EHR for the patient's final case completion visit. This code, once entered into the EHR, serves as an electronic identifier that the treatment plan is complete.
4. Complete the Post Treatment Evaluation Form in the EHR. The faculty member that was not the primary supervisor for the treatment plan will review and approve the form.
5. At graduation, if all above steps are satisfied, the PSS will remove the patient from the student's family in the EHR. The Clinic Mentor will transfer the patient to either a continuing dental student or the WLHSDM Recall pool, or inactivate the patient.

## Discontinuing a Patient in Active Treatment

Patients may be inactivated with the approval of a student's Clinic Mentor, and/or the Associate Dean for Clinical Affairs and Patient Care. Reasons for inactivation include but are not limited to:

- An undue number of tardy, cancelled, failed (no-show), or rescheduled appointments.
- Termination requested by patient and verified by the Office of Business Services.
- Determination that patient is not a teaching case.
- Failure to pay for services provided.

Requests will be considered after the student has discussed the patient's case with his/her Clinic Mentor, documented the reason for the request in the EHR, and obtained the approval of his/her Clinic Mentor. The discontinuance form letter (available from a PSS) is prepared by the student and signed by the Clinic Mentor and forwarded to the appropriate CPT Coordinator. Depending on the situation, a more formal letter may be drafted by the PSS- Patient Service Specialist. Inactivation letters are sent by certified mail.

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# THE PATIENT RECORD

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## THE PATIENT RECORD

### Documentation Standards

Each patient's record is a legal document and contains all information and supporting documentation pertinent to that patient's oral health. Patient records contain privileged and confidential information and must be treated as such at all times. The following WLHSDM clinical personnel are authorized to write appropriate notes in the Progress Notes section of the patient's EHR:

- Faculty
- Clinical staff member, as authorized by the Associate Dean for Clinical Affairs and Patient Care
- PSS Patient Services Specialist - Clinic Mentors

Patients have the right to see their record at any time. It is imperative, that records are kept current, accurate and that appropriate entries are made. Progress notes are a documentary of the treatment, so someone who has never seen the patient could read them and understand the entire course of treatment. There must be enough information so that the treatment, encounter, sequence of events, etc. can be reconstructed many years later. Only abbreviations or symbols approved for use at WLHSDM may be used in the EHR. These include procedure codes from the current year CDT codes, tooth #, universal approved medical and dental abbreviations. Students must record patient's chief complaint, vital signs, examinations performed, results of examinations, diagnoses, and informed consent to treatment, treatment, appointments, no-shows, cancellations, tardiness, and other data that may pertain to patient management. All entries by students and staff must be electronically approved by a supervising faculty member. Faculty are responsible for the accuracy, completeness, and appropriateness of all entries in which they provided supervision and/or treatment. Electronic Patient Record and Forms Informed Consent

As the treatment plan is being created, the student should be informing the patient of the various treatment options. Once the proposed treatment plan has been approved by the Clinic Mentor, the student should discuss it with the patient and must obtain the patient's electronic signature of consent to treat. It is a requirement that student and faculty providers inform patients about the nature of their diagnosis, proposed treatment, the risks of the proposed treatment, the alternatives, if any, and the risks associated with the alternatives, including the consequences of no treatment. Every time a diagnosis is made and a treatment plan is recommended, the record must show that the patient was given necessary information, including the opportunity to ask questions, and was satisfied with this information

Prior to beginning treatment at each appointment, the student must ask the patient if there are any questions concerning the treatment planned for the day. This allows the student to recheck for satisfaction with the agreed upon plan as well as for unreasonable patient expectations prior to treatment. This is also an opportunity to review the consent with the patient since it is as important as reviewing the medical history.

The informed patient will be a more cooperative patient, and by encouraging questions and maintaining a dialogue with the patient, the student can demonstrate that the patient had an important part in managing the treatment.

The patient's record must reflect that the effort and time has been taken to discuss the treatment, risks and benefits with the patient, as well as the consequences of not proceeding with some type of therapy. The record must also demonstrate that the discussion was personalized to the patient's needs and understanding and was obtained in a timely manner.

### Additional Special Record Documentation as Appropriate

As the situation requires, the following must also be documented:

1. Missed, cancelled, or late arrival appointments: this may reveal patient responsibility for their own care should negative sequela arise.
2. All conversations with other healthcare providers (i.e. patient's personal physician).

3. All conversations with the patient, including telephone conversations, discussions regarding prescriptions, instructions, unexpected complications, referrals, diagnosis, or treatment, etc.
4. Any equipment or supplies that are unusual or used in a manner different from that specified in written protocols or procedures.
5. If a person with authority initiates or changes treatment according to his/her own professional judgment, that person must document the problem under consideration and reasons for beginning, altering or discontinuing treatment. If he/she does not have authority to act, the note should reflect that pertinent information was passed on to someone who does.
6. If a patient needs controversial, lengthy or invasive tests, document the rationale for the necessity.
7. All results of diagnostic procedures, as well as any actions or treatment decisions made on the basis of test results.
8. The overall achievement of patient care goals such that a reviewer of the record could determine that appropriate care was being monitored, had been provided, and successfully concluded.
9. The rationale when treatment has been discontinued. (For example, the treatment modality has successfully resolved the original clinical problem and therefore is no longer necessary, or has been ineffective and may require additional diagnostic exams, consultations, referrals and/or treatment, or has been harmful to the patient and thus not in his/her best interests with an appropriate follow up to that care.)

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## DENTAL TREATMENT FEE SCHEDULE

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Available in AxiUm and the Office of Clinical Affairs

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# HAZARDOUS MATERIALS

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## Safety Data Sheets (SDS)

Safety Data Sheets (SDS) provide information about chemicals used in the workplace, including information describing the protocol to follow for chemical spills on the floor or on someone's skin. An SDS is on file for each hazardous chemical known to be present in the WLHSDM. SDS's are available in the decontaminated side of Sterilization area. The SDS provides the following information:

- Product Identity
- Hazardous Ingredients
- Physical Data
- Fire and Explosion Hazard Data
- Health Hazard Data
- Reactivity Data
- Spill or Leak Procedures
- Special Product Information
- Special Precautions

Mercury has long been recognized as a hazardous material. Since it contains mercury, dental amalgam is classified as a hazardous material in the work place by OSHA, and excess dental amalgam must be disposed of as hazardous waste. Dental amalgam waste should never be discharged to the sewer or discarded with solid waste or medical waste.

In order to prevent mercury contamination, excess mercury and excess amalgam should be stored in the special containers provided in each clinical dispensary and clinical operatory cabinet. Instructions for their proper use are:

- The air-tight container is labeled as "Scrap Amalgam" and used only for scrap amalgam.
- The container must be kept tightly closed.
- A container that may accidentally become faulty should be replaced immediately.
- It is each Dental Dispensary Assistant's responsibility to make sure that all excess mercury and amalgam are placed in the container.

Mercury can enter the body by inhalation, ingestion or through the skin. For the safety of people who work with mercury, the following policy applies:

1. Latex or vinyl gloves must be worn whenever there is the possibility of amalgam touching the skin. If amalgam does touch the skin, the area must immediately be washed with soap and water.
2. Amalgam must not be heated, as heating will release mercury into the air. Instruments used in the placement of amalgam restorations must be carefully cleaned prior to sterilization.
3. Amalgam capsules and scrap amalgam should be stored away from heat sources.
4. In order to prevent mercury contamination, excess mercury and excess amalgam should be stored in the special containers described above.

## HAZARDOUS MATERIAL SPILL

If a toxic chemical spill occurs, immediately:

1. Alert co-workers and ensure the safety of personnel and patients.
2. Call Facilities at ext.215-4500 and give location of the spill.
3. Contain the spill by carefully following the instructions on the spill kit located in the DECON side of sterilization.
4. If the spill is deemed hazardous, evacuate the area and call Facilities at extension 215-4500.

In the event of a small amalgam mercury spill, immediately call the dispensary associated with your CPT and give the location of the spill. Dispensary personnel will respond to the scene with an amalgam spill kit to clean up the spill.

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# RADIATION SAFETY

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## RADIATION SAFETY

The WLHSDM is committed to delivering the highest quality of care to each of its individual patients and applying advancements in technology and science to continually improve the oral health to the citizens in the Intermountain West region.

The responsibility for clinical radiation safety lies with every individual involved with diagnostic radiology including faculty, students, clinical staff and other individuals who are responsible for the proper use and maintenance of radiation equipment and supplies.

Radiographs are of benefit to the patient when they are of high quality and are used to assist in the diagnosis and management of the patient's oral or maxillofacial condition. However, since ionizing radiation presents some degree of risk to those exposed, all efforts should be made to keep the dose of radiation to the smallest amount consistent with the diagnostic needs of the patient. The objective of this radiation policy is to ensure that the benefits to the patient of diagnostic radiography far exceed the risks of adverse effects by operating under the ALARA concept (As Low As is Reasonably Achievable) with regard to radiation exposure.

### A. Selection of Radiographic Examinations

1. The WLHSDM subscribes to the concept that the selection of a radiographic examination for a patient should be based on the individual patient's health needs, rather than on a standard procedure that is the same for all patients. This is in accordance with guidelines for dental radiographic examinations originally developed by the FDA in 1987 and subsequently revised by the American Dental Association in 2004.
2. Before radiographs are ordered on patients, a review of the medical and dental history and an initial oral examination should be performed to assess the patient's oral health and to determine what additional information is needed from diagnostic imaging in order to make a complete diagnosis and treatment plan. An attempt should be made to obtain radiographs from the patient's prior dentist, if possible.
3. The type of radiographic examination for new patients will vary, depending on the patient's age, developmental status of the dentition, history of past dental care, clinical evidence of oral disease, risk status for dental disease, and information available from prior radiographs.
4. Radiographic examinations of patients already under treatment or returning for periodic recall examination should also be based on the patient's needs.
5. Totally edentulous new patients presenting for fabrication of complete dentures should have a panoramic radiograph made initially to assess the edentulous ridges for suitability for denture construction and to evaluate the jaws for pathology.

### B. Monitoring of Radiographic Examinations

1. All radiographs, including retakes, shall be recorded in the patient's record. The name of the dentist requesting the examination shall also be recorded.
2. Before ordering a radiographic examination, the faculty member should review the patient's record to determine whether new radiographs are indicated.
3. An instructor must inspect the radiographs and indicate the need for retakes before any additional images can be made by the student. If a student requires more than three retakes in a complete set of radiographs, he (she) must take them under the direct supervision of an instructor. Second retakes, if necessary, will be done by an instructor, with the student observing. If the radiographs contain adequate diagnostic information, they should not be retaken merely to demonstrate technical perfection.
4. Patients should not be dismissed until an instructor has inspected and approved the films.

C. Safety Precautions

1. All persons using radiographic equipment must have received formal instruction before exposing patients
2. Students must not serve as live technic mannequins, unless some benefit to the student patient is to be derived by the taking and interpreting of the radiographs.
3. The operator and any supervising faculty member should stand behind a suitable barrier during radiographic exposure except when using the Nomad® handheld device which has an external backscatter shield and internal shielding specially designed to protect the operator from radiation exposure.
4. The operator must not hold the sensor/phosphor plate for the patient.
5. Pregnancy, in itself, is not a barrier to radiographic examination, as long as he benefits to the patient outweigh any potential adverse effect to the fetus. If dental treatment is to be deferred until after delivery, radiographs should also be deferred.
6. Personnel exposure monitoring devices (film badges) should be worn by those faculty and staff who could potentially receive a high radiation dose, e.g., those supervising students in the radiography clinic every day, those working in a clinic with no lead barrier. Experience has shown that these devices are not needed by those with less frequent contact with radiographic procedures, although the devices can be made available to pregnant operators on request.

D. Monitoring of Equipment

1. All x-ray generating equipment will be inspected by the Texas Office of Radiation Control periodically or at the discretion of the Division's Executive Secretary with a maximum time between inspections of five years. This schedule is in compliance with Texas Administrative Code.
2. X-ray machines will be inspected and calibrated biennially, according to the attached quality assurance schedule.
3. Automatic processors and other ancillary equipment will be monitored to assure optimum quality of radiographs, according to the attached quality assurance schedule.
4. All malfunctions in either generating or processing equipment should be reported promptly to the Office of Clinical Affairs and Patient Care.

E. Monitoring of Radiation Policy

1. A formal review must be completed annually and at any other time a request for revisions is made. Once the WLHSDM has hired a Maxillofacial Radiologist, this person will be responsible for annual review of the radiation policy and procedures. Documentation of his/her actions on reviews and requests for revisions will be on file in the Office of Clinical Affairs and Patient Care.
2. Recommendations of the radiologist shall be implemented via the Quality Assurance Committee at the direction of the Dean or his/her designee.

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# QUALITY ASSURANCE and SAFETY

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## QUALITY ASSURANCE

The Quality Assurance Program (QAP) is an ongoing process that assures the standards of care are met and involves administrators, faculty, staff, students and patients. When patient care deficiencies are identified, it is critical that these deficiencies are corrected in a timely manner and, if applicable, changes are made in the appropriate curriculum and/ or clinical policies. Follow-up assessments are an integral part of the overall QAP to determine the success of any corrective measures. Administrative oversight lies with the Office of the Associate Dean for Clinical Affairs and Patient Care through the following individuals/units:

- Director of Quality Assurance and Risk Management
- Clinic Mentors

The WLHSDM has a formal system of quality assurance that is based on standards of care that are measured by a cycle of final case reviews, record audits, patient surveys (Appendix S) and supporting documentation review. Supporting documentation is comprised of but not limited to unusual occurrence reports, unfavorable treatment outcome reports, patient advocate reports and fee adjustment reports. The Standards of Care specifically address informed consent, patients' rights and responsibilities, new patient assessment, emergency patient assessment, comprehensive care patient assessment and treatment procedures. The Associate Dean for Clinical Affairs and Patient Care is responsible for implementation and on-going monitoring of the WLHSDM's quality assurance and safety program and supervision of any corrective actions indicated by analysis of the outcome measures.

All of the Standards have indicators designed to measure quality of care. If measures show an indicator has fallen below the accepted threshold, action recommendations are forwarded by the Quality Assurance Committee and after review by the Associate Dean for Clinical Affairs and Patient Care, to the appropriate individual. The cycle is repeated quarterly to ensure recommendations are implemented, monitored and effective.

## STANDARDS OF PATIENT CARE

The Standards of Patient Care document defines the goals of patient care in a clinical education setting, providing problem based comprehensive care within a general practice model. The Standards are patient-centered, focused on comprehensive care, and written in a format that facilitates assessment with measurable criteria. They specifically address informed consent, patients' rights and responsibilities, new patient assessment, emergency patient assessment, comprehensive care patient assessment, treatment procedures and quality assurance.

1. Patients' Rights  
All patients will be advised of their rights and responsibilities at the WLHSDM clinics.
2. Examination, Diagnosis, Treatment Planning  
Each patient will receive a thorough examination, diagnosis, and treatment plan that is customized and sequenced to their approval.
3. Oral Health Care  
Quality, comprehensive oral health care will be provided in a timely manner.
4. Clinical Environment  
Patients in the WLHSDM's clinics will be treated in an environment that is safe, satisfactory, and provided in a confidential manner.

### Additional Policies

Emergency Patient Assessment

- a. Each new emergency patient will have recorded a chief complaint, a history of the chief complaint, a medical history, an examination of the area of complaint, a diagnosis, and a recommended treatment.
- b. Vital signs, a physical evaluation, and a prognosis are to be included if emergency therapy is to be rendered.

#### Comprehensive Care Patient Assessment

- a. All patients accepted for comprehensive dental care will receive a thorough and systematic examination consisting of the following when appropriate:
  - An evaluation of the periodontium and related structures, mobility of teeth and implants, and the degree of furcation involvement.
  - A periodontal evaluation consisting of a PSR and/or periodontal charting to assess periodontal pocket depths and attachment levels, and to provide information on the health of the subgingival area.
  - An evaluation of teeth for caries, pulpal disease, malocclusion, and defective or inadequate restorations.
  - An evaluation of dental prostheses, including orthodontic appliances.
  - A risk assessment for dental disease (e.g. caries risk, nutrition risk, periodontal risk) at the initiation of treatment and at prescribed intervals during treatment.
- b. Clinical findings and diagnoses will be used to develop a comprehensive plan for dental treatment to eliminate or alleviate dental disease and thereby prevent or slow further destructive changes. Where indicated, the plan will include:
  - Diagnoses, etiology and proposed therapy.
  - Any reasonable alternative treatments. Overall
  - and selected tooth prognoses.

#### Treatment Procedures

- a. Where indicated, treatment plans will include:
  - Patient education and training in personal oral health maintenance and dental disease risk reduction.
  - Preventive or periodontal therapy, including removal of supragingival and accessible subgingival bacterial plaque and calculus by periodontal scaling, and comprehensive root planing as appropriate.
  - Treatment of teeth by endodontic therapy,
  - Caries removal and restoration, remineralization therapy, and/or sealant application.
  - Removal of teeth with a hopeless prognosis.
  - Replacement of missing teeth with a complete denture, overdenture, removable partial denture, fixed partial denture or an implant-supported prosthesis.
  - Provision for reevaluation during and after active treatment.
  - Definition of re-care intervals for patients in continuing comprehensive care as well as completed patients.
- b. When the treatment indicated cannot be provided within the scope of the WLHSDM, patients will be referred to other dentists or health care providers with the necessary knowledge or expertise to care for the patient.

#### QUALITY ASSURANCE AUDITS

Three types of record audits based on who is performing the audit: student, staff and professional/clinical faculty audits are described below:

##### Student Record Audits

Dental students perform a detailed audit of 10% of records from their family of patients two times per year during their clinical years. Successful completion of this activity is necessary for students to “Pass” Dental Skills. The areas that are audited include: consents, health history and medication review, health risk assessment, clinical assessment, treatment

plans, periodontal examination, progress (treatment) notes, radiographs and supervisor authorizations. For successful completion of each audit, any deficiencies found during the record audit must be corrected with monitoring and approval by the supervising attending faculty.

Deficiencies and errors in recordkeeping are noted by the Clinic Mentors and become part of the assessment of the student's professionalism evaluation. The Clinic Mentors assist to resolve any reconcilable deficiencies or errors with the student. Students whose recordkeeping demonstrates multiple deficiencies and/or errors are counseled or remediated as necessary. As with other findings, this information is reported to the QA committee, Clinic Mentors and the Associate Dean for Clinical Affairs and Patient Care. In addition to the follow-up with individual students described above, other corrective actions include providing student seminars and faculty in-service training workshops to communicate patterns and reduce record keeping deficiencies.

#### Staff Record Audits

Staff members also perform record audits. For instance, the staff will audit one student record from each student during each audit cycle to ensure that students follow the audit criteria. Specialty clinic dental assistants and front desk staff regularly audit records in their specific clinic as part of the audit cycle.

#### DETERMINATION OF PATIENT TREATMENT DEFICIENCIES

Patient treatment is continuously assessed to measure its quality and to identify treatment deficiencies following the completion of each procedure and at the post-treatment examination. Students self-assess at each clinic session the quality of the care they provide for patients in the clinical practice teams. The supervising faculty then review the student's performance as part of the assessment process. Deficient treatment is identified and corrected at the time of this assessment, or as soon thereafter as possible depending on the nature of the deficiency. If the same treatment deficiency is detected among a group of students, the responsible attending faculty is notified and counseled to make appropriate changes in their areas of responsibility. The Quality Assurance and Safety program reinforces these principles with multiple monitoring and assessment efforts to determine the occurrence of patient treatment deficiencies as defined by the WLHSDM quality of care indicators. (Appendix T)

There are four data collection components for this part of the quality assurance program as described below.

1. Redo/Remake Data

All procedures that are redone or restorations remade by students are recorded. On a yearly basis, the QA Committee evaluates the results for trends and determines the frequency with which a procedure is redone.

2. Post-Treatment Evaluation

After completing a treatment plan or the disease-control phase of a treatment plan, a faculty member that was not the primary supervisor for the treatment plan will assess the patient's oral condition by conducting a post-treatment evaluation. The faculty member ensures and documents in the patient's record that the chief complaint has been addressed, medical risk has been addressed, soft and hard tissue disease has been resolved or stabilized, no treatment needs remain, and the patient is satisfied with treatment and can perform necessary oral hygiene status measures. The patient is then referred to a recall program for periodontal or preventive maintenance.

3. The Patient Concern Form

Any patient complaint that cannot be resolved on the phone or in person is recorded on a patient concern form by the supervising faculty member. There is a Patient Advocate – Director of Quality Assurance (Temp: Will Henard with consultation from appointed Faculty) available to interview patients who have expressed concerns about some aspect of their experience at the WLHSDM. On a quarterly basis or as needed, the QA Committee prepares a summary of these forms and looks for trends or areas of repeated concern. Feedback is given to those areas of concern.

4. The Treatment Incident Report

An Incident/Injury report must be submitted to the Office of Clinical Affairs within 24 hours of the time of the occurrence of an incident/injury to a patient. When the Incident/Injury Report is completed and returned

to the Office of Clinical Affairs and Patient Care, an investigation into the events of the occurrence will begin. Follow-up is completed within 24 hours of the time the report is received.

A QA staff member and the Office of the Associate Dean for Clinical Affairs and Patient Care conducts regular trend analyses of the incident reports. If determined that further investigation is required for an incident, it is accomplished by a faculty member of the sub-committee on clinical quality assurance and safety. Trends are taken to the committee for corrective action recommendations.

#### PROTOCOL FOR ASPIRATED/SWALLOWED FOREIGN DENTAL OBJECT

Avoid aspiration or swallowing by taking all available precautions (e.g., placement of throat pack, rubber dam, and or positioning of dental chair).

If aspiration/swallowing is suspected:

1. Stop the procedure immediately and do not resume until aspiration has definitely been ruled out.
2. Ask the patient not to swallow.
3. Thoroughly examine the oral cavity.
4. Position the patient to minimize potential for aspiration. The patient may not be aware of swallowing or aspirating a foreign body. If the patient becomes agitated or tries to sit up, allow him/her to do so. The patient may be trying to cough up a foreign body, an indication of aspiration.
5. If item is not found, examine its surrounding area, the patient's clothing, and the dental chair.
6. Immediately inform the supervising clinical faculty and with their direction, mobilize portable emergency unit. Alert the Emergency Team.
7. At the direction of the supervising faculty/Emergency Team, complete the necessary documents to have the patient transported to the affiliated medical facility. (Policy) Inform the medical personnel of the size, shape, and composition of the object. Take a duplicate object (e.g., crown, scalar, bur changer, etc.) if possible, to show to medical personnel.
8. In cooperation with the Clinic Mentor and Director of Quality Assurance, the patient's condition will be monitored at one week intervals (or as otherwise determined by the physician) until swallowed or aspirated object is no longer radiographically visible or is returned by the patient.
9. Ensure that there is an Incident Report filed in the Associate Dean's office and the EHR has an accurate and current account of the incident, including object recovery, a copy of radiographic reports, a copy of the physician's notation of removal/expulsion of the object, and a copy of the physician's notation of initial and follow-up care.

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# INFECTION CONTROL

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## INTRODUCTION

Infection control practices are designed to prevent the transmission of diseases from patient to healthcare worker, healthcare worker to patient, and from patient to patient. Patients and healthcare providers (HCP) may harbor a variety of infectious diseases including, but not limited to, Hepatitis B or C, human immunodeficiency virus (HIV), herpes simplex, cytomegalovirus and influenza, among others. Additionally, the environment of the dental operator may serve as a vector for disease transmission if instruments, devices and contact surfaces are inadequately decontaminated between patients. Because it is not possible to identify all patients and healthcare providers who may carry infectious diseases, the WLHSDM adheres to Standard Precautions as recommended by the Centers for Disease Control and Prevention (CDC). The following procedures and protocols have been written to protect students, staff and faculty from exposure to aerosol pathogens.

Standard Precautions integrate and expand the elements of universal precautions into a standard of care designed to protect HCP and patients from pathogens spread by blood or any other body fluid, excretion, or secretion. Standard precautions apply to contact with 1) blood; 2) all body fluids, secretions, and excretions (except sweat), regardless of whether they contain blood; 3) non-intact skin; and 4) mucous membranes. Healthcare personnel with certain diseases or conditions may pose a risk to patients and therefore their contact should be restricted. Appendix U outlines the work restrictions for these conditions or diseases.

Good infection control minimizes the risk for cross-contamination, provides a safe working environment for all individuals involved in patient care, and demonstrates to patients and the public that we are creating a safe environment for their treatment. All students, staff and faculty in the WLHSDM must follow the procedures described in this document.

Several organizations have published guidelines and/or standards affecting dentistry that are incorporated in this document. The infection control policies of the WLHSDM comply with the current guidance from the

- Centers for Disease Control and Prevention (CDC)
- American Dental Association (ADA)
- American Dental Education Association (ADEA)
- Occupational Safety and Health Administration (OSHA)
- Environmental Protection Agency (EPA)
- USAF Guidelines for Infection Control in Dentistry

In addition, policies included in this document comply with existing state and local regulations. The Exposure Control Plan and Infection Control Policy is a key document to assist clinics and all clinical support areas in implementing and ensuring compliance with the standards, thereby protecting our faculty, staff, students and patients.

## Responsibilities

1. This Exposure Control Plan is mandatory for all WLHSDM personnel.
2. Supervisors will ensure that the procedures of this Plan are followed. This includes making a copy of this Plan available to workers, enforcing compliance with the Plan, ensuring new employees are appropriately trained, and performing follow-up on incident exposures.
3. Workers will perform duties as established in this Plan and as trained.

## Protocols for Limiting Contamination

- Wear protective gloves if exposure to blood contaminated body substances is remotely probable. Gloves will be worn for transporting biohazard containers.
- Anytime gloves are worn, remove the gloves prior to touching anything else and use an antiseptic cleaner until hands can be washed with soap and water.
- Use puncture-proof containers to store sharps and red biohazard-labeled bags for other possibly contaminated

items.

- Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses are prohibited in work areas where there is a reasonable likelihood of occupational exposure.

## DETERMINATION of EMPLOYEE EXPOSURE: CLASSIFICATION

### 1. Moderate to High Risk

This level includes those employees who work directly with human blood or OPIM. These employees fall under the jurisdiction of the OSHA aerosol Pathogens Standard, requiring use of Universal Precautions, initial and annual training, and being offered the Hepatitis B vaccination series and titer. Initial training and the offer of the Hepatitis B vaccine must occur within 10 days of employment or assignment to a position in which they are considered to be at moderate or high risk.

### 2. Low Risk

This level includes those employees who may encounter blood or OPIM in the course of their work and all of the following situations exist:

- The employee can choose to have another designated person clean it up, based on criteria learned in an awareness level of training.
- The employee can clean it up without creating an exposure situation (such as with a mop or other implement with creates distance between the employee and the material).
- The blood or OPIM is not in a liquid state or is otherwise bound into absorbent material and thereby does not constitute "regulated waste". WLHSDM requires that these employees use Universal Precautions, at a minimum, and receive periodic awareness training as deemed necessary by the supervisor, but they are not designated as "at risk" and are not included under the OSHA aerosol Pathogens Standard.

### 3. No Risk

This level includes those employees who are not reasonably expected to encounter human blood or OPIM in the course of their assigned duties, and if they might inadvertently encounter such a situation, there is no expectation that the employees clean it up or handle it themselves. There is no requirement for aerosol pathogens safety training for those in this category.

The following is a list of job classifications at the WLHSDM in which all employees have moderate to high risk of occupational exposure:

- |                                |                                      |
|--------------------------------|--------------------------------------|
| • Dentist                      | • Dental Equipment Repair Specialist |
| • Dental Hygienist             | • Radiology Technician               |
| • Dental Assistant             | • Sterilization Technician           |
| • Dental Laboratory Technician | • Dispensary Staff                   |
| • Dental Student               | • CPT Coordinator/Scheduler          |

The following is a list of all job classifications at the WLHSDM in which all employees have low risk of occupational exposure:

- |                              |                                    |
|------------------------------|------------------------------------|
| • IT Staff                   | • Housekeeping                     |
| • Patient Receptionist       | • Facilities Maintenance Personnel |
| • Cashier                    |                                    |
| • Equipment Repair Personnel |                                    |

The following is a list of all job classifications at the WLHSDM in which all employees have no risk of occupational exposure:

- |          |                            |                    |
|----------|----------------------------|--------------------|
| Business | • Services Staff           | • Database Manager |
|          | • Administrative Assistant |                    |

### 4. General:

- Grounds personnel may face the risk of exposure to human blood during performance of their duties. Blood or blood-contaminated needles, or containers may be encountered. Injuries on University property may result

in blood on the streets or sidewalks.

- Although the only documented occupational risks of HIV and HBV infection are associated with injection, inoculation (including contamination of broken skin) or mucous membrane exposure to blood and other potentially infectious body fluids, as a precaution to University workers, when differentiation between fluid types is difficult, all body substances should be treated as if contaminated with human blood containing HIV or HBV.

## ENGINEERING CONTROLS AND WORK PRACTICE CONTROLS

Engineering controls and work practice controls are used to prevent or minimize exposure to bloodborne pathogens. Examples of engineering controls and work practice controls used at the WLHSDM are listed below.

Examples of engineering controls include, but are not limited to:

- Self-sheathing needles
- Puncture-resistant disposal containers for contaminated sharps, orthodontia wire, or broken glass
- Mechanical needle- recapping devices
- Biosafety-designed cabinets
- Ventilated laboratory hoods

Examples of work practice controls include, but are not limited to:

- Using disposable barriers, where applicable
  - Providing readily accessible hand washing facilities
  - Washing hands immediately or as soon as feasible after removal of gloves
  - At non-fixed sites (e.g., emergency scenes, mobile blood collection sites) that lack hand washing facilities, providing interim hand washing measures, such as antiseptic towelettes and paper towels. Employees can later wash their hands with soap and water as soon as feasible.
  - Washing body parts as soon as possible after skin contact with blood or other potentially infectious materials occurs
  - Recapping needles using only an approved recapping device
  - Prohibiting the shearing, bending or breaking contaminated needles
  - Applying warning labels as appropriate
  - Decontaminating or disinfecting patient materials transported to dental laboratories
  - Prohibiting eating, drinking, smoking, applying cosmetics or lip balm and handling contact lenses in work areas where there is a likelihood of occupational exposure
  - Prohibiting food and drink from being stored in refrigerators, freezers, shelves, cabinets or on counter tops or bench tops where blood or other potentially infectious materials are present
  - Requiring that all procedures involving blood or other potentially infectious materials shall be performed in such a manner as to minimize splashing, splattering, and generation of droplets of these substances
  - Placing specimens of blood or other potentially infectious materials in a container which prevents leakage during collection, handling, processing, storage, transport or shipping
  - Ensuring that equipment which may become contaminated with blood or other potentially infectious materials is decontaminated prior to servicing or shipping. Items not completely decontaminated will be labeled per section (g)(1)(i)(H) of the OSHA Bloodborne Pathogen Standard
- Providing a plumbed, readily accessible, and uncluttered eyewash station where necessary.

Engineering controls and work practice controls will be reviewed annually. The original bloodborne pathogens standard was not specific regarding the applicability of various engineering controls in the healthcare setting. The Needlestick Safety and Prevention Act (effective April 18, 2001) directed OSHA to revise the Bloodborne Pathogens Standard to specify that "safer medical devices, such as sharps with engineered sharps injury protections and needleless systems" constitute an effective engineering control, and must be used where feasible. No one medical device is considered

appropriate or effective for all circumstances. Devices will be selected that, based on reasonable judgment, will not jeopardize patient or employee safety or be medically inadvisable, and will make an exposure incident involving a contaminated sharp less likely to occur. The following will be included in the annual review process per the requirements of the Needlestick Safety and Prevention Act:

- A review of innovations in medical procedure and technological developments that reduce the risk of exposure (e.g., newly available medical devices designed to reduce needlesticks);
- Documented consideration and use of appropriate, commercially-available, and effective safer devices (e.g., describe the devices identified as candidates for use, the method(s) used to evaluate those devices, and justification for the eventual selection);
- Documented input from non-managerial employees responsible for direct patient care regarding the identification, evaluation, and selection of effective engineering controls, including safer medical devices.

## IMMUNIZATION AND TESTING REQUIREMENTS

OSHA, through the implementation of the bloodborne pathogen standard, requires immunization against hepatitis B for all faculty, staff and students who are at risk for occupational exposure to blood and other potentially infectious materials (OPIM). Students must provide proof of immunity to Hepatitis B as part of their pre-matriculation physical examination. Faculty and staff are offered the Hepatitis B vaccination series at the beginning for their employment with . The statement found on Appendix J will be signed if the employee chooses to decline the vaccination at this time.

All students and clinical personnel are required to be vaccinated against measles, mumps, and rubella (MMR), DPT, polio, varicella, and influenza if they are not already immune. Tuberculin skin testing for students is required before matriculation and annually thereafter. Tuberculin skin testing is required for faculty and clinical staff upon employment (salaried or voluntary) and annually thereafter.

## TUBERCULOSIS TRAINING AND EDUCATION

Tuberculosis training and education will be provided to all faculty, staff and students who may contact individuals with suspected infectious tuberculosis. It is the policy of the WLHSDM to refer these patients to hospital settings for treatment. However, patients may enter the WLHSDM for emergency or urgent care who are at high risk for TB. All students, staff and faculty need to be aware of clinical signs and symptoms suggestive of TB and patient risk factors for the disease. The signs and symptoms of the disease include:

- persistent cough (i.e., lasting equal to or greater than three (3) weeks)
- bloody sputum (coughing up blood)
- night sweats
- weight loss
- anorexia (loss of appetite)
- fever
- chills
- lethargy/weakness

Risk factors to consider include:

- past history of TB infection (positive TB skin test result) or inadequate treatment for infectious TB
- close contact to an individual with infectious TB disease
- foreign-born persons from areas where infectious TB disease is common
- medically underserved, low income populations
- age (children under the age of 4 and elderly persons)
- persons who inject illegal drugs
- locally identified groups with high rates of infections (e.g., migrant farm workers, alcoholics, or homeless persons)
- immunocompromised persons (HIV infection)

Other topics to be included in the training program include:

- the mode of TB transmission
- medical surveillance and therapy
- site-specific protocols including the purpose and proper use of controls

- post-exposure protocols to be followed after an exposure incident Treatment of Patients with Active or Suspected Infection with Tuberculosis

1. During initial medical history and periodic updates ask patients about a history of TB disease and symptoms suggestive of TB. Symptoms include chronic cough, coughing blood, night sweats, weight loss, anorexia and/or fever. Note: A positive TB skin test without symptoms does not indicate active infection in most cases.
2. Patients with history and symptoms suggestive of active TB should be promptly referred to a physician for evaluation.
3. Elective dental treatment should be postponed until a physician confirms in writing, using recognized diagnostic evaluations, that the patient does not have active tuberculosis.
4. If urgent dental care must be provided for a patient who has, or is suspected of having, active TB infection, TB isolation practices must be implemented. Treatment provided should be limited to the minimal necessary to relieve the patient's immediate pain. Generally, referral to a medical center with proper isolation rooms will be required. [Respiratory protection (HEPA-filter masks) must be used by the dental care providers when performing procedures on these patients. The respirators must be fit tested prior to each use.] Contact the Office of Clinical Affairs and Patient Care to determine the referral mechanism.
5. Dental Healthcare Personnel (DHCP) with persistent cough and other symptoms suggestive of active TB should be evaluated promptly for TB. The individual should not return to work until a diagnosis of TB has been excluded or until the individual is on therapy and a determination has been made that the worker is not infectious.

from:

Centers for Disease Control and Prevention  
Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in  
Health Care Facilities, 1994.

## UNIVERSAL PRECAUTIONS

“Universal precautions” refer to a set of precautions designed to prevent transmission of HIV, hepatitis B virus (HBV), and other aerosol pathogens when providing first aid or health care. Under universal precautions, blood and certain body fluids of all patients are considered potentially infectious for HIV, HBV and other aerosol pathogens. The relevance of universal precautions to other aspects of disease transmission was recognized, and in 1996, CDC expanded the concept and changed the phrase to standard precautions. Standard precautions integrate and expand the elements of universal precautions into a standard of care designed to protect healthcare workers and patients from pathogens that can be spread by blood or any other body fluid, excretion, or secretion. Standard precautions apply to contact with 1) blood; 2) all body fluids, secretions, and excretions (except sweat), regardless of whether they contain blood; 3) nonintact skin; and 4) mucous membranes. Saliva has always been considered a potentially infectious material in dental infection control; thus, no operational difference exists in clinical dental practice between universal precautions and standard precautions.

### Personal Hygiene

Personal hygiene is an essential part of any infection control program and must be adhered to by all faculty, staff and students who have clinical duties and/or come into contact with blood, body fluids, and tissues. Bathing to maintain cleanliness and eliminate body odor is equally important to a health professional’s development of the doctor-patient relationship. Particular attention must be paid to the hair, facial hair, hands, and skin. Studies have shown that the hair and nails harbor higher levels of bacteria than the skin. Frequently they are not cleaned after each patient encounter, thus leaving residual contamination. Jewelry possesses a similar potential to harbor residual contamination and should be removed if possible.

- Hair: Hair should be cleared away from the face to prevent contamination from spray or splatter produced during dental procedures. Long hair should be tied back to prevent its entry into the treatment area. Hair should be washed on a regular basis to eliminate any residual contamination contracted in the treatment area.
- Facial Hair: Facial hair is to be covered by a beard mask or face shield to prevent contamination from spray or splatter produced during dental procedures.
- Jewelry: Jewelry should not be worn on the hands or arms during patient treatment. It should be removed because it is difficult to clean under jewelry and it may potentially penetrate the gloves being worn. Possible exceptions are a thin, smooth wedding band and wristwatch. Ear studs are acceptable, but hoops are not allowed.
- Nails: Nails must be maintained in a short, clean, and healthy fashion. The rationale for this policy is that the subungual region of the nail harbors the majority of microorganisms on the hand. Removing debris from the fingernails requires vigorous brushing and running water; additional effort is necessary for longer fingernails. In addition, long fingernails may scratch or gouge the patient during the provision of dental treatment. Artificial nails should not be worn within the patient treatment area. Artificial and acrylic nails on healthy hands have not been proven to increase the risk of infection. However, artificial nails harbor various microorganisms and prevent effective handwashing. Higher numbers of gram-negative microorganisms have been cultured from the fingertips of personnel wearing artificial nails than from personnel with natural nails, both before and after handwashing. Fungal growth occurs frequently under artificial nails as a result of moisture becoming trapped between the natural nail and the artificial nail.

Skin: Dental health care workers with injured or cracked skin, erosion, eczema, weeping dermatitis on the hands should exercise caution when cleaning the hands and skin areas. The use of mild soaps and lotion will help resolve these problems. In addition, a change in glove products may be necessary.

## Hand Hygiene

The CDC, OSHA, ADA, ADEA and APIC (Association of Professionals in Infection Control) have published handwashing recommendations and guidelines. All of these organizations agree that handwashing before and after patient contact is the single most effective way to eliminate microbial contamination acquired in the treatment area. Even with emphasis from all these professional organizations, the lack of or improper handwashing still contributes significantly to disease transmission.

At the WLHSDM the following handwashing guidelines will be observed. All faculty, students and staff will wash hands:

- at the beginning of the day;
- when hands are visibly soiled;
- before and after contact with all patients;
- before and after contact with mucous membranes, blood or body fluids, secretions, or excretion, from a human, living or dead;
- after contact with inanimate sources likely to have become contaminated during patient treatment;
- before donning gloves; and
- immediately after removing gloves;
- before leaving the operatory;
- before and after utilizing the rest rooms; • at the end of the day.

Multiple washings for short periods of time are more effective than a single wash for a long period. The 20 second wash is recommended for routine patient treatment (surgical procedures usually require a six minute scrub). Ungloved hands must be washed before and after patient treatment, or whenever they become contaminated. The recommended procedure for handwashing for routine dental procedures in the clinic and for routine laboratory work with contaminated items is in the table on the next page.

Table 1: Hand-Hygiene Methods and Indications

Methods	Agent	Technique	Duration (minimum)	Indications
Routine handwash	Water and nonantimicrobial detergent (e.g., plain soap*)	<ul style="list-style-type: none"> <li>Wet hands and wrists under cool running water</li> <li>Dispense handwashing agent sufficient to cover hands and wrists</li> <li>Rub the agent into all areas, with particular emphasis around nails and between fingers, before rinsing with cool water</li> <li>Dry hands completely with disposable towels before donning gloves</li> <li>Use a towel to turn off the faucet if automatic controls are not available</li> </ul>	15 seconds	<ul style="list-style-type: none"> <li>When visibly soiled,</li> <li>After barehanded touching of inanimate objects likely to be contaminated by blood or saliva</li> <li>Before and after treating each patient (e.g., before glove placement and after glove removal)</li> <li>Before leaving patient-care, laboratory, or instrument processing areas</li> <li>Before regloving after removing gloves that are torn, cut, or punctured</li> </ul>
Antiseptic handwash	Water and antimicrobial agent/detergent (e.g., chlorhexidine, iodine and iodophors, chloroxylenol (PCMX), triclosan)			
Antiseptic hand rub	Alcohol-based hand rub	<ul style="list-style-type: none"> <li>Apply the product to palm of one hand</li> <li>Rub hands together, covering all surfaces of hands and fingers, until hands are dry,</li> <li>Follow manufacturer's recommendations regarding volume of product to use</li> </ul>	Rub hands until the agent is dry,	
Surgical antisepsis	Water and antimicrobial agent/detergent (e.g., chlorhexidine, iodine and iodophors, chloroxylenol (PCMX) triclosan)	<ul style="list-style-type: none"> <li>Remove rings, watches, and bracelets</li> <li>Remove debris from underneath fingernails using a nail cleaner under running water</li> <li>Wet hands and wrists under cool running water</li> <li>Using an antimicrobial agent, scrub hands and forearms for the length of time recommended by the manufacturer's instructions before rinsing with cool water</li> <li>Dry hands completely (using a sterile towel is ideal) before donning sterile surgeon's gloves</li> </ul>	2-6 minutes	<ul style="list-style-type: none"> <li>Before donning sterile, surgeon's glove for oral surgical procedures</li> </ul>
	Water and nonantimicrobial detergent (e.g., plain soap*) followed by an alcohol-based surgical hand-scrub product with persistent activity	<ul style="list-style-type: none"> <li>Follow manufacturer instructions for surgical hand-scrub product with persistent activity</li> </ul>	Follow manufacturer instructions for surgical hand-scrub product with persistent activity	

\*Pathogenic organisms have been found on or around bar soap during and after use. Use of liquid soap with hands-free dispensing controls is preferable.

60%-95% ethanol or isopropanol. Alcohol-based hand rubs should not be used in the presence of visible soil or organic material. If using an alcohol-based hand rub, apply adequate amount to palm of one hand and rub hands together, covering all surfaces of the hands and fingers, until hands are dry. Follow manufacturer's recommendations regarding the volume of product to use. If hands feel dry after rubbing hands together for 10-15 seconds, an insufficient volume of product likely was applied. The drying effect of alcohol can be reduced or eliminated by adding 1%-3% glycerol or other skin-conditioning agents.

## PERSONAL PROTECTIVE EQUIPMENT (PPE)

Personal protective equipment (PPE) is designed to protect the skin and the mucous membranes of the eyes, nose, and mouth of dental health-care personnel (DHCP) from exposure to blood or other potentially infectious materials (OPIM). Use of PPE is dictated by the exposure risk posed by the procedure, not by the known or suspected serologic status of the patient. Primary PPE used in health-care settings includes gloves, surgical masks, protective eyewear, face shields, and protective clothing (e.g., long-sleeved gown, jackets). Shoe and head covers are less frequently used types of PPE, but should be considered if contamination is likely. PPE is only acceptable if it does not permit fluids to pass through and contaminate garments worn underneath. PPE will reduce the potential for blood and salivary exposure between patients and dental health care personnel.

PPE is provided to WLHSDM faculty, staff and students at no cost to them. When there is a potential for occupational exposure, the WLHSDM will provide personal protective equipment such as:

### A. Gloves

1. Wear gloves when a potential exists for contacting blood, saliva, other potentially infectious material (OPIM) or mucous membranes.
2. Wear a new pair of gloves for each patient, remove them promptly after use, and wash hands immediately to avoid transfer of microorganisms to other patients or environments.
3. Remove gloves that are torn, cut or punctured as soon as feasible and clean hands before re-gloving, using alcohol hand rub.
4. Do not wash gloves before use or wash, disinfect or sterilize gloves for reuse.
5. Ensure that appropriate gloves in the correct size are readily accessible.
6. Use appropriate gloves (e.g., puncture- and chemical-resistant utility gloves) when cleaning instruments and performing housekeeping tasks involving contact with blood or OPIM.
7. Consult with glove manufacturers regarding the chemical compatibility of glove material and dental materials used.

### B. Sterile Surgeon's Gloves and Double Gloving During Oral Surgical Procedures

1. Wear sterile surgeon's gloves when performing oral surgical procedures, including periodontal and endodontic surgery.
2. No recommendation is offered regarding the effectiveness of wearing two pair of gloves to prevent disease transmission during oral surgical procedures. The majority of studies among HCP and DHCP have demonstrated a lower frequency of inner glove perforation and visible blood on the surgeon's hands when double gloves are worn; however, the effectiveness of wearing two pair of gloves in preventing disease transmission has not been demonstrated (Unresolved issue).

### C. Protective Clothing

1. Wear protective clothing such as a reusable or disposable gown, clinic jacket, or laboratory coat that covers personal clothing and skin (e.g., forearms) likely to be soiled with blood, saliva or OPIM.
2. Change protective clothing if visibly soiled; change immediately or as soon as feasible if penetrated by blood or other potentially infectious fluids.
3. Remove barrier protection, including gloves, mask, eyewear and gown before departing work area (e.g., dental patient care, instrument processing or laboratory areas).

### D. Masks, Protective Eyewear, Face Shields

1. Wear a surgical mask and eye protection with solid side shields or a face shield to protect mucous membranes of the eyes, nose and mouth during procedures likely to generate splashing or splattering of blood or other body fluids.
2. The mask should be adjusted so that it fits snugly against the face. Keep any beard and mustache

groomed so as not to interfere with the proper fit. Do not touch the front surface of the mask at any time during patient treatment.

3. Change masks between patients or during patient treatment if the mask becomes wet or visibly soiled.
4. Clean with soap and water or, if visibly soiled, clean and disinfect reusable facial protective equipment (e.g., clinician and patient protective eyewear or face shields) between patients.

E. Mouthpieces, resuscitation bags, pocket masks, or other ventilation devices will be provided as necessary.

1. Pocket masks are located in each emergency crash cart.

PPE is appropriate to the situation when it does not permit blood or other potentially infectious materials to pass through to or reach the employee's work clothes, under-garments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time that the protective equipment will be used. Hypoallergenic gloves, glove liners, powderless gloves, or other similar alternatives will be available to those employees who are allergic to the gloves normally provided.

#### Decontamination and Disposal

- Sharps - Do not use sharp objects if an alternative is available. Take precautions to prevent injuries from these objects. Never pick up broken glass without mechanical assistance (e.g. forceps). Keep puncture-resistant containers nearby.
- Disposal containers - Must be labeled and closed during transport. If there is a chance of leakage an additional labeled container should be used. The containers must be disposed of as infectious waste or decontaminated.
- Hand washing - Hands and other skin surfaces should be washed as soon as possible if contaminated. Always clean hands after removing gloves (e.g, using hand sanitizer).
- Cleaning spills - Wearing gloves and other protective equipment as needed for splashing, promptly clean the spill. Absorb excess material with disposable towel, then disinfect the area with a 1:100 household bleach-to water solution. Red biohazard labeled bags should be available for removal of contaminated material from the site.
- Laundry - Any contaminated laundry will be sent to the contracted laundry facility (TBD) where Universal Precautions are observed or placed in a red biohazard labeled bag and sent to an off- campus facility.

#### Medical

Medical expenses incurred by employees acting in the normal course of their duties are to be covered by their medical insurance, provided the established protocols have been followed. WLHSDM Students who are acting in the normal course of the educational / clinical program are to use their health insurance to cover the costs of procedures deemed necessary.

#### Post-Exposure Incident

An Exposure Incident is defined as an event in which a health care professional's potential for infection is heightened after coming into contact with a patient's blood, body fluids, mucous membranes, or broken skin, including saliva. An incident can be anything from a puncture from a contaminated sharp such as an injection needle or a cut from a scalpel blade or suture needle.

If an exposure incident occurs, dental personnel are required to follow CDC and U.S. Public Health Service post-exposure guidelines. These encompass immediate care to the exposure site and provision of appropriate post-exposure prophylaxis. The WLHSDM contracted health care professional will conduct an immediate confidential medical evaluation and follow-up. Following the initial first-aid (clean the wound, flush eyes or other mucous membranes, etc.), the following activities will be performed:

- Document the routes of exposure and how the exposure occurred (needle stick, instrument stick, bur stick, fluid in eye, etc.).
- Wash the exposed area thoroughly with soap and water. Do not use bleach or iodophor as an antiseptic. For fluid exposures to the eyes you should use the closest eye wash station. Splashed to the nose, mouth or skin should be flushed with water.

- Notify the supervising clinical faculty immediately. He/she should accompany you to the operator to be present when the patient (source) is told about the incident.
- Inform the patient that an exposure incident involving fluids from their body has occurred.
- Review the patient's medical history with the patient and your supervising clinical faculty. Remember: The medical history is NOT an accurate diagnostic tool when evaluating an exposure incident as many patients choose not to report all their existing medical conditions. There are however several additional questions you can ask the patient (if appropriate).
  - Have you had any recent blood transfusions?
  - Have you ever been an I.V. drug user?
  - Are you sexually active?

These questions may offend certain individuals as they are very personal but if you have thoroughly explained to the patient about the incident so that the patient understands what has occurred and why we are asking these types of questions they will typically cooperate and answer them.

- Ask the patient if they would be willing to consent to a blood titer at no cost to them. This would be a referral to an appropriate healthcare provider under contract with WLHSDM. It is essential the source patient be tested whenever possible.

#### Procedures for Evaluating An Exposure Incident

The Associate Dean for Clinical Affairs and Patient Care will review the circumstances of the exposure incident to determine:

- Engineering controls in use at the time
- work practices followed
- A description of the device being used protective equipment or clothing that was used at the time of the exposure incident (gloves, eye shields, etc.) location of the incident procedure being performed when the incident occurred employee's training
- If it is determined that revisions need to be made, the Associate Dean for Clinical Affairs and Patient Care will ensure appropriate changes are made to the Infection Control and Aerosol Pathogen Plan. Post Exposure Evaluation and Follow-Up for WLHSDM Employees

1. Emergency first aid should be administered to the exposed employee, as appropriate. For sticks and cuts from contaminated instruments, needles, burs, etc. the wound should immediately be washed with soap and warm water.
2. If the injured person is an employee (i.e., faculty or other staff member) of the WLHSDM, the WLHSDM Clinic Aerosol Pathogens Exposure Report Form can be obtained from the Office of Clinical Affairs and Patient Care.
3. Immediately following an exposure incident, documentation of the route(s) of exposure and the circumstances surrounding the incident are recorded on the "Employers First Report of Injury or Illness" form by the faculty member or supervisor. The circumstances of exposure are recorded, as well as information on the activity in which the worker was engaged at the time of the exposure, the extent to which appropriate work practices and protective equipment were used and, a description of the source of exposure.
4. The WLHSDM makes immediately available to the exposed employee a confidential medical evaluation and follow-up. This evaluation occurs at the contracted healthcare facility and should take place within 2 hours after the exposure. For exposure incidents that occur after 4:30 p.m. the evaluation will take place at the Lone Peak Emergency Room located at 11800 S. State Street Draper, UT 84020, and Telephone: 801-545-8100. Collecting and Testing Employee's Blood
  1. Once an exposure has occurred, the exposed employee is offered the opportunity of having a blood sample drawn.
  2. The Office of Clinical Affairs and Patient Care advises the individual of the confidential testing and the advantages of having testing completed.
  3. If the exposed employee agrees to confidential testing, the employee is directed to the WLHSDM contracted healthcare facility with the completed form.

4. If the employee declines testing, the faculty member or supervisor records that the employee declined testing on the UTF 122 and has the employee sign the form.

#### Written Reports

1. The contracted healthcare provider issues a written report to the Office of Clinical Affairs and Patient Care that indicates that the exposed employee has been informed of the results of the evaluation and that the exposed employee has been informed of any medical conditions resulting from the incident that require further evaluation or treatment.
  2. The health care provider provides complete findings or diagnoses to the exposed employee; however, this remains confidential between the health care professional and the exposed employee. Post Exposure Evaluation and Follow-up for Dental Students
1. Emergency first aid should be administered to the exposed student as appropriate. For sticks and cuts from contaminated instruments, needles, burs, etc. the wound should immediately be washed with soap and warm water.
  2. A Clinical Adverse Event Form is obtained from the Office of Clinical Affairs and Patient Care or any of the CPT administrative offices.
  3. Immediately following an exposure incident, documentation of the route(s) of exposure and the circumstances surrounding the incident are recorded on the UOR form by the supervising faculty member. The circumstances of exposure are recorded, as well as information on the activity in which the student was engaged at the time of the exposure, the extent to which appropriate work practices and protective equipment were used and, a description of the source of exposure.
  4. The WLHSDM makes immediately available to the exposed student a confidential medical examination and follow-up. This evaluation occurs at the WLHSDM contracted medical facility; Lone Peak Emergency Room located at 11800 S. State Street Draper, UT 84020, and Telephone: 801-545-8100. The student must utilize their personal medical insurance and understand that the student is financially responsible for all expenses incurred. Evaluation should take place within 2 hours after the exposure. Written Reports
1. The contracted healthcare provider issues a written report to the Office of Clinical Affairs and Patient Care that indicates that the exposed student has been informed of the results of the evaluation and that the exposed student has been informed of any medical conditions resulting from the incident that require further evaluation or treatment.
  2. The health care provider provides complete findings or diagnoses to the exposed student; however, this remains confidential between the health care professional and the exposed student. Post Exposure Evaluation and Follow-up for Source Individuals
1. In the event of an exposure incident, documentation of the source individual (i.e., the patient) is established and recorded on the Unusual Occurrence Reporting (UOR) Form for exposed students and the Texas Form 122 for exposed employees, unless identification of the source individual is not feasible. The Exposed Individual Report (Appendix Q) is a detailed report on the incident and is completed on all exposed individuals.
  2. The faculty member in attendance asks that the source individual consents to blood testing and advises the individual of the benefits of confidential testing as follows:
    - a. Determining the patient's antibody status to assure the exposed individual of his/her exposure to hepatitis B, hepatitis C, or HIV and, to assure that the exposed individual can begin medical prophylaxis immediately if indicated.
    - b. Reducing the anxiety level of the exposed employee or student.
    - c. Confidential testing requires that the results of the test be filed in the source individual's dental record.
  3. If the source individual refuses blood testing for hepatitis B, hepatitis C, or HIV, the faculty member documents this on the UOR Form or the UT122 Form (student or employee).

4. If the source individual consents to testing, the student should obtain a Source Patient Information Form (Appendix R) to complete along with the Post Exposure Evaluation Consent Form (Appendix P) for the patient to complete. The patient is then directed to the UMC Occupational Health Department or Emergency Department.
  - a. Results of the source individual's testing is also made available to the exposed student or employee on a need-to-know basis if positive.
5. If a patient is exposed parenterally or his/her mucous membrane (eye splash and mouth, etc.) is exposed to the blood or body fluids of a health care worker, the above procedure should also be followed.

#### ASEPSIS IN THE CLINICAL ENVIRONMENT

Clinical asepsis in dentistry refers to the creation of a patient treatment area free of as many pathogenic microorganisms as can be reasonably accomplished. The patient receiving treatment is entitled to:

- A practitioner who is professionally competent and concerned for the patient's health and safety
- Instruments and equipment that are sterile or disinfected (according to acceptable protocols)
- The minimization of pathogenic microorganisms in the treatment area
- Health care providers who are either free from acute (symptomatic) disease or are wearing acceptable protective devices to eliminate the risk of transmitting disease.

The establishment and maintenance of clinical asepsis requires faculty, staff and student compliance with WLHSDM sterilization and disinfection protocols, as well as management of the treatment area.

#### Environmental Surfaces and Equipment

As a result of aerosols and splatter from dental procedures, all operatory surfaces are subject to contamination. These areas are considered to be the "field of contamination". Anything exposed in the field of contamination when a patient is treated must be considered to have been contaminated and requires disinfection or sterilization. Therefore, items that are not meant to be used in treating the patient must not be placed in the field of contamination.

All surfaces in the field of contamination, including countertops, chair, computer monitor, keyboard and mouse, light fixture and dental unit, must be disinfected or covered with plastic wrap at the beginning of the clinic session. If a covered touch surface is compromised and becomes visibly contaminated, it should be cleaned and disinfected with an intermediate level disinfectant (i.e., tuberculocidal claim) before applying the barriers for the next patient. All items must be disinfected before and at the end of the clinic session. Items in the field of contamination must be discarded, disinfected and/or sterilized after each patient. Countertops and surfaces which must be disinfected using the disinfectant wipes include the following:

- Dental unit, light and arm
- Bracket tray, hoses, holders and control buttons
- Chair, controls, headrest and arms
- Operator's chair
- Counter surfaces and drawer pulls
- Towel dispenser and soap dispenser
- Computer keyboard, monitor and mouse

Handles or similar surfaces that may be contaminated by blood or saliva must be wrapped with clear plastic wrap. Items that must be wrapped include:

- Light handle
- Light switch
- Air/water syringe holder
- Saliva ejector/evacuator bracket handle
- High speed evacuator
- Saliva ejector
- Computer keyboard and mouse

The headrest and bracket tray must be protected with the designated covers. Plastic wrap must be removed after each patient and at the end of each clinical period. Gloves must be worn when removing and discarding the used covering.

#### Needlestick and Puncture Wound Precautions

Dental healthcare personnel are continuously exposed to potential percutaneous injury by needles or sharp hand instruments that have been contaminated with blood or saliva. This danger cannot be eliminated, but observance of the following recommendations will reduce the risk of injury.

- Never recap a needle by moving the needle toward another body part, especially the other hand. The “onehanded scoop method” should be used if the needle does not have a built-in safety device. (See “Management of Needles, Anesthetic Cartridges, and Other Sharp Edged Devices” below.) Never recap a needle by a cooperative effort between two people.
- Transfer double-ended instruments as close to the handle center as possible.
- Never break or bend a used hypodermic needle by hand.
- Use a needlestick shield or an approved capping device.
- Place needles, expended sharps, and anesthetic cartridges into the puncture-resistant sharps containers located in each operatory.
- Use special care when exchanging or transferring instruments during and following patient treatment.

Percutaneous injury will occasionally occur even if precautions are observed. When an injury does occur, the injured individual must initiate and follow the procedures outlined later in the WLHSDM Exposure Control Plan.

#### Management of Needles, Anesthetic Cartridges, and Other Sharp Edged Devices

OSHA recommends the use of rigid containers for the disposal of potentially infectious single-use sharp items such as needles, cartridges and other sharp-edged devices. OSHA rules direct that the disposal unit be placed as close to the treatment area as practical and that clean-up procedures minimize the handling and transport of blood contaminated disposables. To comply with this regulation, EPA-approved sharps containers are installed in each dental operatory. The management of needles, carpules and other sharp-edged devices will comply with the following guidelines:

1. Use of the Anesthetic Syringe: When using an anesthetic syringe, it is important to practice needlestick avoidance. Prevention of needlestick injury starts with one basic rule: Never move the exposed needle toward an unprotected body part. The greatest risk to the dental health care worker occurs when needles are recapped. There are two procedures recognized to give adequate safety during the recapping procedure:
  - a. One-Handed Scoop method: This method is accomplished by first leaving the cover on a flat surface. Next, insert the needle into the opened end and lift up so that the cover will fall into place over the needle. Grasp the cover near its opened end with the thumb and index finger of the free hand and press the cover into its tight interlocking position. This can also be accomplished by scooping the cover onto the needle and pressing against the end side until the cover is tight in position.
  - b. Needle cover holder method: The needle cover holder method requires that the cover be placed into a holding device that will either protect the hand that holds the device or stand by itself on the instrument tray. Place recapped needles into the puncture resistant container located in the treatment area and in the dispensary.
2. Disposal of Single Use Sharp-edge Devices: All sharp-edge devices contaminated during patient treatment must be disposed of in the sharps container so that patients, dental assistants and housekeeping staff are protected from a possible percutaneous injury. Restorative matrix bands, stainless steel crowns, pre-formed bands, copper bands, full-crown matrices, pre-fabricated posts, burs, orthodontic wires and other similar devices that are contaminated by blood and/or saliva when they are inserted in the mouth should never be returned directly to the dispensing box. Broken instruments should be returned to the dispensary for replacement. The contaminated items must be disinfected at least at the intermediate-level and returned to the dispensary for sterilization. Transfer of any of these items for trying or use on another patient without proper cleaning and disinfection is potentially hazardous to the health of the second patient.

3. Any sharp items that are small and delicate and become unserviceable during extended use must be disposed of in the sharps container. They are never to be placed in the regular waste system.
4. Maintenance of the Sharps Container: Replacement and disposal of the sharps container must comply with federal, state, local and university requirements of management of regulated medical waste. The following recommendations apply to use of the sharps containers in the WLHSDM:
  - Never place water or any other liquid into the container.
  - Never place cotton rolls, gauze sponges, paper products, or any non-sharp items into the sharps container.
  - Be certain that the metal needle adapter that is part of the anesthetic syringe is not inadvertently removed and discarded with the needle.
  - Notify the PSS when the sharps container is at the full line. WLHSDM housekeeping staff will be notified to replace the full container with an empty one.
  - If it becomes necessary, inform patients or visitors not to touch or manipulate the sharps containers. Failure to comply with your request should be reported to the supervising faculty or Clinic Mentor.

## PROTOCOLS FOR MANAGEMENT OF PATIENT TREATMENT AREAS

Decontamination or sterilization must occur for anything moving into and out of the treatment area. Treatment - generated aerosols, splatters, and the gloved hands of DHCP involved in treatment contain millions of microorganisms from the patient's saliva, mucous membranes and/or blood. The dental healthcare team must be diligent in infection control protocols to prevent movement of this contamination outside of the treatment area. Using personal barriers, the high volume evacuation suction, and a pretreatment mouth rinse can reduce these dangers. Precautions must be taken continuously since contamination cannot be totally eliminated.

Hands, instruments and devices as they are moved out of the treatment area, must be decontaminated or discarded before contacting other surfaces using the guidelines below:

1. Gloved Hands: Gloved hands should be covered with cover gloves whenever the hands move out of the treatment area, except when the gloves are contaminated with blood, pus, or heavily contaminated with saliva. In these cases the gloves should be removed and discarded and the hands washed. When the gloves are removed and discarded, new gloves are used if the hands re-enter the treatment area. When cover gloves are used, they are removed and disposed of upon re-entry into the treatment area.
2. Instruments and cassettes Rinse instruments to remove any visible debris and arrange into the cassette properly. Close the cassette and spray with disinfectant, set aside while dental unit is cleaned and disinfected. Rinse the instrument cassette to remove any excess disinfectant, pat dry, and return to the dispensary or cart.
3. Rotary instruments (burs, stones) Remove debris, replace into the bur block, spray with disinfectant and place in appropriate package.
4. Needles (anesthetic) dispose of needles according to the needle management protocol cited below. The syringe should be returned to the instrument cassette during the treatment. When treatment is completed, the syringe should be disarmed and the accessories discarded into the sharps container.
5. Irrigating Needles - These needles remain in an isolated location of the work area attached to the syringe and are not recapped. After use, the needle is appropriately re-capped and the entire syringe needle complex is placed intact into the sharps container.
6. Crown Forms (celluloid) Items that have entered the mouth but not used are disposed of directly into the general trash.
7. Stainless Steel Crowns, Aluminum Shell Crowns or Copper Bands that do not enter the mouth are placed into a paper cup, sprayed heavily with disinfectant, and returned to the dispensary. The dispensary clerk will prepare the returned items and forward them for sterilization. After the items are sterilized they can be returned to the dispensing boxes.

8. Eyeglasses Do not place into a pocket or protective case unless they have been cleaned by washing gently with the antimicrobial soap in the dental operatory and rinsed with copious amounts of water.
9. Mask Should be removed and discarded whenever it becomes wet or visibly stained. It can be placed onto a contaminated work surface when it is to be reused for the same patient. Masks must not be placed around the neck or pushed up onto the hair. Masks are a single-use item and must be changed between patients.

#### Preparing for Clinical Procedures

Students scheduled to perform a clinical procedure are expected to be as knowledgeable and prepared to deliver patient care as they would be for a didactic examination. This preparation includes knowledge of the procedure and necessary instrumentation, awareness of dental materials to be used, financial implications of the projected care for the patient, and attention to the infection control protocols governing patient care. Once in the treatment area, the following protocols must be adhered to:

#### Preparing the Treatment Area Prior to Patient Arrival

##### 1. Disinfection of Environmental Surfaces

Disinfect all environmental surfaces within the field of operation using the hospital-approved tuberculocidal disinfectant agent supplied in a labeled spray bottle in the clinical area. This will include contaminated counter tops, operator and assistant carts, hose attachments, and the exposed surfaces of the dental chair. The student or staff member should wear utility or cover gloves while applying the disinfectant. The disinfectant should be applied using a wipe-dry-wipe method. The disinfectant should be allowed to air-dry. Prior to seating the patient, the dental chair should be checked for residual moisture and dried with a paper towel if necessary, since residual moisture on the dental chair may stain the patient's clothes.

##### 2. Barriers

Using clean hands, execute the barrier techniques pertaining to the clinical contact surfaces, particularly those that are difficult to clean:

- Wrap light handles, light switch and chair control switches;
- Wrap bracket table with plastic wrap;
- Place fitted headrest covers and bracket tray cover;
- Cover computer keyboard and mouse;
- Wrap air/water syringe holder, saliva ejector/evacuator bracket and handle.

##### 3. Water Lines

The dental units are supplied with a self-contained bottled water system. Fill the bottles with designated water available at the main dispensary. The water lines that supply the air/water syringe and the water-cooled high speed handpiece must be purged by running water through the lines at full pressure for a minimum of twenty (20) seconds. Excess water should be sprayed into the sink or paper cup. (Bottled water need not be changed between patients, but the system should be purged for at least one (1) minute).

##### 4. Patient Records

Sign on to the clinic management system and access the EHR. Prior to leaving the operatory at any time, maintain patient confidentiality by placing the password protected screensaver on the monitor.

##### 5. Instruments

Sterilized instruments, suction tip(s), sterilized air/water syringe tips, a red bag, anticipated materials and supplies for the appointment should be obtained and placed in the operatory by the student.

##### 6. Waste Bags

The plastic bags should be securely taped to the countertop. All blood and saliva contaminated materials will be discarded in the red bag. Nonregulated trash generated during the patient visit will be placed in the clear bag.

##### 7. Suction Tip / Air/Water Syringe

With gloved hands, the student will connect the suction tip(s) and the air/water syringe. When indicated, there will be an infection control check-in by a faculty member or appointed staff, the student will open the sterilized instruments and arrange them on the covered instrument tray.

8. Food and Beverage

All food and beverage is strictly prohibited in all clinical areas at all times. Clinical areas include operatories, dispensary, sterilization, clinic support lab and all radiology areas. CPT offices are not considered a clinical area, but food and beverages should be kept to a minimum in those offices.

Procedures to Follow During Patient Treatment 1.

Pretreatment Mouth rinse

Utilize an appropriate pre-treatment mouth rinse containing an antimicrobial agent such as chlorohexidine rinse prior to surgical procedures.

2. Handwashing and Handcare

Wash hands thoroughly before, during and after patient treatment. During patient treatment, hands must be immediately cleaned whenever gloves are removed. Thoroughly dry hands after each washing.

3. Personal Protective Equipment

Use masks and protective eye coverings during the treatment of the patient.

- a. Gloves: The student will wear appropriate gloves.
- b. Mask: Masks must be worn at all times while treating patient.
- c. Protective Eyewear: Protective eyewear (with side protection) must be worn during patient treatment. Face shield may be substituted.
- d. Clothing: The student is expected to wear appropriate clinic attire (disposal gown over scrubs) when treating patients. If the gown becomes soiled or contaminated, the student must replace it with a clean one before treating the next patient. Gowns should be changed for each clinic session. Gowns may not be worn in areas outside the clinic, including CPT offices.

4. Rubber Dam Isolation

The student will perform all dental procedures with a rubber dam in place when possible.

5. Instrument Handling

All instruments used during the dental treatment must be placed on surfaces covered with plastic only (bracket tray), or on instrument trays/cassettes. Needles must be recapped when not in use, utilizing the scoop or needle cover holder technique as described in an earlier section. Dropped instruments are not to be picked-up or reused; if the instrument is critical to the treatment being provided, obtain a sterilized replacement instrument from the dispensary.

6. Material Supply Carts

Supplies stored in carts may only be accessed with clean hands or over gloves.

7. Patient Records

When possible, the student should dictate the information to a dental assistant or another student who will record data in the patient's record. Over gloves may be used for computer access.

8. Waste Disposal

Throughout the appointment, properly dispose of all items as outlined below, in the red or clear plastic bags.

9. Dental Prostheses, and Laboratory Items (e.g., occlusal records, wax bite rims, etc.)

Dental prostheses should be lightly sprayed with the appropriate disinfectant prior to transporting to the laboratory. Impressions are to be presented in a moist paper towel for inspection by an attending faculty. When

using ultrasonic cleaners, place the item (e.g., denture, temporary restoration) in a sealed, disposable plastic bag filled with cleaning solution into the ultrasonic machine and activate the cleaner. Following removal from the ultrasonic cleaner, dispose of the cleaning solution and disinfect the item before returning it to the patient.

#### 10. Leaving Operatory During Patient Care

When faculty is needed, or any time the student finds it necessary to leave the operatory, gloves should be removed and hands must be washed with either soap and water or alcohol hand rub. When returning to the operatory, hands must be washed again with soap and water or alcohol hand rub prior to gloving.

#### Procedures to Follow During Extra-oral Radiology Procedures:

##### 1. Barrier techniques

All personnel will be expected to wear gloves, masks, eyewear and protective clothing when radiographing patients.

##### 2. X-Ray Equipment

All radiographic equipment will be covered with plastic wrap. The tube head and control panel of the dental xray machine will be covered for each patient use; plastic wrap will be changed between patients.

##### 3. Intraoral film positioning devices

All intraoral film-holding devices will be sterilized between each patient use. The XCP positioning instruments should be obtained from the dispensary. After use, the students should rinse them and return them to the instrument collection area where they will be prepared for sterilization.

##### 4. Surfaces

Any environmental surface which was not covered during patient treatment and which may have become contaminated should be disinfected using the disinfectant adopted for other clinical procedures.

##### 5. Digital radiography sensors/plates and other high-technology instruments

High-technology instruments such as intraoral cameras, electronic periodontal probes, occlusal analyzers and lasers should be cleaned and ideally heat-sterilized or high-level disinfected between patients. However, these items vary by manufacturer or type of device in their ability to be sterilized or high-level disinfected. Digital radiography sensors and plates must be covered with a plastic barrier. The plastic barrier is removed from the plate prior to scanning.

#### Procedures to Follow After Patient Treatment

##### 1. Remove PPE

Prior to dismissing the patient, the student should remove any burs on dental handpieces to avoid accidental contact. The student should remove gown, mask, gloves and wash hands. Care should be taken while removing PPE to avoid touching the face while removing the mask. When removing gowns, care should be taken not to have outside of gown touch scrubs or any exposed part of the body. Gloves must be removed first by peeling away, after which the second glove can be removed from the unprotected hand by inserting a finger under the cuff and peeling it off the hand. The patient can then be escorted from the clinical area.

##### 2. Clean-up PPE

When the student returns to the contaminated dental operatory, the student responsible for cleanup should wear utility gloves, mask, and protective eye wear.

##### 3. Disposal of Sharps

With utility gloves, the instrument tray should be broken down. The suction tips and air/water syringe tips should be dismounted and placed on the instrument tray. Capped needles, surgical blades and other sharp disposable instruments should be set apart from the other contaminated instruments on the tray. All sharps will be properly disposed of in sharps containers.

#### 4. Sterilizable Instruments

Each instrument cassette should be sprayed thoroughly using the disinfectant provided in the operatory. The saturated kits should be set aside until after the treatment area is disinfected and other duties are completed. The kits are then rinsed under running water, removing all visible debris and patted dry with paper towels. The instruments are cleaned, assembled into proper order, the covers are closed, and the kit is returned to the dispensary. Do not hand scrub the individual instruments.

#### 5. Disposal of Infectious Waste

Generally, blood and/or saliva-tinged items are not regulated waste, but any disposable item that is soaked with blood/saliva (i.e., can be squeezed out or blood can be made to flake from the item) are considered regulated medical waste, and should be placed into the red bags. Other waste is considered regular trash.

#### 6. Water Lines and Bottles

The water lines that supply the air/water syringe and the water cooled high speed handpiece must be purged by running water through the lines at full pressure for a minimum of 60 seconds. The excess water should be sprayed into the sink or paper cup. Water bottles should be removed, emptied and placed on the side counter of the operatory. A water-treating tablet must be added to all re-filled bottles.

#### 7. Disposal of Wraps

All disposable wraps should be removed from the treatment operatory. This includes all paper and plastic coverings used during the treatment. The contaminated coverings should be placed in the trash containers under the sink. The red plastic bag containing saliva and blood contaminated materials should be disposed of in designated waste container in the treatment area which are identified with a biohazard label.

#### 8. Environmental Surface Disinfection

Disinfectant solution should be sprayed on all dental operatory surfaces that were not covered but were contaminated during treatment. This includes the dental chair, counter top and sink.

### Procedures to Follow When Using the Clinical Support Workrooms

There is strong circumstantial evidence that infectious disease can be transmitted among dental laboratory technicians and/or dental students handling contaminated patient materials outside of the treatment area. In an effort to minimize the risk to anyone working with patient materials brought out of the treatment area, e.g., impressions, fixed prostheses, removable prostheses, etc., appropriate disinfection protocols should be followed. Anything leaving the treatment area should be disinfected before taking it to a clinical support workroom. Anything returning to the treatment area from a clinical support workroom should be disinfected. In addition, all instruments, equipment and surfaces in the clinical support workrooms should be cleaned after each use and disinfected at the end of the day. Impressions, fixed and removable prostheses, etc. should be rinsed thoroughly under tap water to remove saliva and blood, they should then be sprayed with the disinfectant provided in the dental unit. In addition to disinfecting these items before transporting them to the clinical support workrooms, the following precautions should be followed in workrooms themselves:

- gloves that are used during patient treatment should be discarded before leaving the treatment area and starting work in the clinical support workroom; hand instruments in the clinical support workroom, such as spatulas, mixing bowls, knives, wax carvers, etc. should be cleaned and disinfected between use;
- place paper barriers to maintain cleanliness and asepsis whenever practical; discard barriers after use; rag wheels, brushes, acrylic burs, sandpaper, etc. should be either sterilized, disinfected, or discarded after use; exhaust fans must be operating whenever trimming is complete; protective eyewear and masks should be worn when appropriate;
- clothing should be protected from splatter and airborne debris as much as possible; protective eyewear and thermal protection gloves should be worn when making castings; clinical support workroom work surfaces should be cleaned and disinfected when procedures are complete. Students are required to maintain all clinical support workrooms in a neat, clean, and presentable manner at all times. In order to make this possible, each student must

properly clean the work area(s) before leaving the workroom. This can be easily managed by covering counter tops and work areas with disposable paper and disposing of the soiled paper when work is finished. Uncovered countertops must be wiped with paper towels and left clean and dry. If the area is not clean before beginning work, it is the student's responsibility to clean the work area and leave it clean upon completion of their work.

NOTE: Individual students who do not cooperate with the maintenance of the clinical support workrooms can be denied access to them.

#### Procedures to Follow in Clinical Simulation Areas

Good infection control work habits in the clinical setting are developed through the creation and maintenance of an aseptic environment in the preclinical setting. WLHSDM will be utilizing the clinics as the simulation classroom. Therefore, all clinic protocols will be in effect and enforced during simulation.

#### INSTRUMENT STERILIZATION

All contaminated re-usable instruments, including handpieces that can tolerate heat-sterilizing devices, must be thoroughly cleaned and heat sterilized before use in the treatment of another patient. The dental school provides this support; however each student and clinic support staff person is required to know the school's sterilization protocol.

After completion of patient treatment, the student is responsible for decontaminating all reusable instruments, including rotary instruments, before they leave the treatment area as described above. The dispensary/sterilization assistants will open each cassette, check for missing instruments, and assess the cleanliness of each item. Ultrasonic or mechanical cleaning will be used whenever feasible instead of cleaning by hand. The student is responsible for ensuring that all instruments returned are disinfected and free of visible debris.

##### Sterilization Procedures:

- a. Utility gloves must be worn. Rinse, ultrasonically clean as needed, and rinse instruments again. With same gloves and as needed, scrub debris from only a few instruments at a time using hot water, disinfectant, and a scrub brush. Avoid squeezing sharp ends of double-ended instruments that can penetrate heavy gloves. Dry instruments thoroughly with paper towels.
- b. Inventory the instrument cassette and restock as necessary. Place the instruments in the order indicated on the cassette diagrams.
- c. Date and sign a slow-color-change indicator strip and place with instruments.
- d. Fold and seal bag with sterilization tape.
- e. Sterilize the cassettes.
- f. Perforated metal alginate trays must be scrubbed free of debris, disinfected, and dried thoroughly. Place each tray in a separate sterilization bag. The bag must be sealed with sterilization tape and then submitted for sterilization.
- g. Do not overload the sterilizer. Place bags one finger's width apart on the shelves.

#### Instrument Storage

All sterile items will no longer have an expiration date; loss of sterility is event-related, not time-related. These items may be used as long as the integrity of the package is not compromised (e.g., wet, torn, damaged, or suspected of being contaminated). Examine wrapped packages of sterilized instruments before opening them to ensure the barrier wrap has not been compromised during storage. Re-clean, repack, and re-sterilize any instrument package that has been compromised (e.g., dropped, torn, or wet). Document each label with the sterilizer identification number, load number, operator's initials, and sterilization date.

#### Handpiece Sterilization

Sterilization of handpieces and handpiece motors is required. Sterilization personnel are responsible for all handpiece and motor maintenance and sterilization, following manufacturer's cleaning and sterilization directions. Before autoclaving a handpiece/motor, it will be cleaned with the manufacturer's automated cleaning unit. Handpieces and motors are then

placed in autoclave bags, sterilized and distributed to dispensaries. Occasionally handpieces may not rotate freely after sterilization. If the handpiece is stiff, fit a bur and rotate it with gloved fingers to start it. Operate the handpiece for 30 seconds or until it works freely. If the handpiece still does not function properly, place a note on it with tape and return it to the dispensary.

### Compliance & Training

All employees who have or are reasonably anticipating to have occupational exposure to aerosol pathogens will receive training prior to beginning duties and repeated at least annually. Faculty providing clinical student supervision and clinical staff are expected to be fully knowledgeable of this policy. A copy of this document will be available on the school's web site for reference. It will be reviewed annually with all faculty to insure their awareness of the most up to date content. This policy will be presented to students as part of their infection control training and reviewed annually by their Clinic Mentors. Personnel from Quality Assurance will perform random, weekly checks of faculty, staff and students to ensure compliance with this policy. Minor deficiencies will be noted and corrected immediately. Major deficiencies and recurring violations will be reported to the Office of Clinical Affairs and Patient Care for corrective action.

### Documentation

- Medical records will be maintained for the duration of employment plus 30 years.
- Training records will be maintained for at least 3 years.

### Definitions

- Aerosols: dispersion of fine particles into the air; droplet nuclei that are expelled by an infectious person (e.g. by coughing or sneezing)
- AIDS: Acquired Immune Deficiency Syndrome; disease caused by the human immunodeficiency virus (HIV).  
Airborne transmission: dissemination of microbial aerosols to a suitable portal of entry, usually the respiratory tract.
- Antimicrobial soap: soap containing an active ingredient against skin microorganisms.
- Aseptic technique: use of procedures that break the chain of infection and ideally eliminate cross contamination.  
Barrier protection: the placing of a physical barrier between the patient's body fluids and the health care worker to prevent disease transmission.
- Bioburden: microbial or organic material on a surface or object prior to decontamination.
- Biofilm: mass or layer of live microorganisms attached to a surface, often found in dental unit water lines.
- Bloodborne pathogens: disease-producing microorganisms that are spread by contact with blood or other potentially infected material (OPIM) from an infected person.
- Chain of infection: sequence of events that occurs for an infection to spread.
- Cleaning: physically removing, by scrubbing and washing, infectious agents and organic matter from surfaces on which and in which infectious material may persist.
- Contamination: the introduction of disease organisms or infectious material into or onto normally sterile objects; the presence or reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.
- Decontamination: removing bioburden from objects or surfaces; use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or items is rendered safe for handling, use, or disposal.
- Dental aerosols: small droplets of oral fluid and water generated during the use of handpieces, ultrasonic scalers and air/water syringes.
- Disinfection: the process of killing pathogenic agents by chemical or physical means; reducing the number of pathogenic organisms on objects or in materials so that they pose no threat of disease.

- Droplets: particles of moisture generated by coughing, sneezing, laughing; or procedures such as suctioning, sputum induction, or bronchoscopy which may contain infectious microorganisms but do not remain suspended in the air and normally travel a distance of less than three feet.
- Exposure incident: a specific eye, mouth, or other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's or student's duties in the provision of patient treatment.
- Pathogen: any microorganism capable of causing disease in its host.
- Personal Protective Equipment (PPE): specialized clothing or equipment worn by a health care worker for protection against a hazard.
- Percutaneous: entry by way of or through the skin.
- Sterilization: process by which all forms of life are completely destroyed.
- Standard precautions: guidelines recommended by the Centers for Disease Control and Prevention for reducing the risk of transmission of blood-borne and other pathogens in hospitals. The standard precautions synthesize the major features of universal precautions (designed to reduce the risk of transmission of bloodborne pathogens) and body substance isolation (designed to reduce the risk of pathogens from moist body substances) and apply them to all patients receiving care in hospitals, regardless of their diagnosis or presumed infection status. Standard precautions apply to (1) blood; (2) all body fluids, secretions, and excretions except sweat, regardless of whether or not they contain blood; (3) non-intact skin; and (4) mucous membranes. The precautions are designed to reduce the risk of transmission of microorganisms from both recognized and unrecognized sources of infection in hospitals and other healthcare facilities.

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## APPENDICES

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Appendix A:	Consent for Uses and Disclosures of PHI
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## SUPPLEMENTAL DOCUMENTS

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### Attachment A: Consent for Uses and Disclosures of PHI

#### CONSENT FOR MEDICAL TREATMENT AND USES AND DISCLOSURES OF PATIENT HEALTH INFORMATION FOR TREATMENT, PAYMENT AND HEALTHCARE OPERATIONS (TPO) AT THE WOODY L. HUNT SCHOOL OF DENTAL MEDICINE

Please read, complete and sign the back of this consent form.

*I give my permission to the University Health Sciences Center El Paso, Woody L. Hunt School of Dental Medicine ("Provider"), and its employees, volunteers, agents and independent contractors to educate, interview, examine, perform laboratory procedures and to treat my condition, as they deem necessary. I understand that in case of a life-threatening emergency, this consent may be implied for the time of the emergency.*

*I understand that Provider is a teaching institution; therefore dental residents, post-doctoral dental students, pre-doctoral dental students, dental hygiene students and dental assisting students may participate in my care under the supervision of a physician/dentist. I understand that other outside medical professionals may also be consulted as deemed necessary for my care.*

*For coordination of my care and services, I understand that I may be provided with referrals to off campus specialists and the Provider may assist other treating physicians/dentists in the provision of my care.*

- **Informed Consent:** If my condition requires an outpatient surgical procedure, the practitioner responsible for my care will explain to me the procedure to be performed, the general nature and extent of risks involved in such procedure and the alternative methods, if any.
- **Consent for Minor Students:** If you are a minor, we must have the signature of the parent or legal guardian (appointed by a court of law) on this form before any general treatment may begin, and such consent must be effective until you reach legal age in the State of Nevada (18 years old). Your parent or legal guardian must sign this consent form and receive a Notice of Privacy.
- ◆ **Exemptions to this consent may be granted for a life- threatening emergency or a serious health hazard; in other situations where a minor has been living apart from parents; to emancipated minors with court supporting documents; for family**

#### APPOINTMENT POLICY:

- I agree to arrive at least fifteen (15) minutes early for my appointment.
- I understand that my appointment may be cancelled if I'm late.
- I will check-in at the intake window upon my arrival.
- If I miss two (2) consecutive appointments, (except cancellations or reschedules), I agree to meet with the Office Manager or designee before scheduling another appointment.
- I agree to call 24 hours in advance to cancel my appointment if I'm unable to show.

**planning, contraceptive methods, and screening for sexually transmitted infections under federal and state constitutional law; and counseling and treatment of alcohol and substance abuse.**

**◀ Please turn page for additional uses and disclosures of health information ▶**

I understand and agree that Provider may use or disclose protected health information for treatment, payment and operations in accordance with the Notice of Privacy Practices that I have received, and any posted amendments to that Notice. I understand that Provider will not use or disclose protected health information for any purpose other than as allowed in the Notice of Privacy Practices, unless such use or disclosure is authorized by law or I have provided a written authorization. (*See full explanation of disclosures and rights in the Notice of Privacy Practices*) If I am being treated while I am a student, I consent and agree pursuant to the Family Educational Rights and Privacy Act (FERPA) that my health information may be used and disclosed in accordance with the Notice of Privacy Practices (and any posted revision of that Notice) and the federal Health Insurance Portability and Accountability Act of 1996.

In the process of receiving health care, Provider may initiate a follow up call and a letter may be sent to continue care. Also, patients may receive phone calls to remind them of scheduled appointments.

I understand that if I agree to participate in a research study, I will be provided with a specific authorization to participate. (*See Notice of Privacy Practices*). I have the option to choose not to participate or to withdraw from the study at any time.

I understand that I have the right to revoke this consent in writing, unless Provider has already used or disclosed my information in reliance on the consent.

I understand that I have the right to request restrictions on certain uses and disclosures of my health information to carry out treatment, payment, or healthcare operations and that Provider is not required to agree to the restrictions requested.

Please note: I understand that if I request a restriction that may impede the ability of Provider to provide proper care, or which restricts the release of information required by law to be released, that Provider is unlikely to agree to the restriction and may cancel further services. Further, I understand that if I request a restriction that does not allow Provider to release necessary information to insurance providers, it may affect my ability to obtain reimbursement for medical expenses.

Notice regarding confidentiality of alcohol and drug abuse client records: The confidentiality of alcohol and drug abuse client records maintained by this program is protected by Federal law and regulations (see 42 CFR Part 2). Generally, the program may not say to a person outside the program that a client attends the program, or disclose any information identifying a client as an alcohol or drug abuser unless a) You consent in writing, b) the disclosure is allowed by court order or otherwise authorized by law, or c) the disclosure is made to medical personnel in a medical emergency or to qualified personnel for research, audit, legal or program evaluation. Violation of the Federal law and regulations by a program may be a crime. Suspected violations may be reported to appropriate authorities in accordance with Federal regulations. Federal law and regulations do not protect any information about a crime committed by a patient either at the program or against any person who works for the program or about any threat to commit such a crime. Federal laws and regulations also do not protect any information about suspected child abuse or neglect from being reported under State law to appropriate State or local authorities.

I acknowledge receipt of a copy of the Notice of Privacy Practices, effective \_\_\_\_\_ which contains a more complete description of uses and disclosure of patient health information.

I understand that Provider reserves the right to change the Notice of Privacy Practices and a revised copy will be posted and available when requested. The changes will be applied to all prior and subsequent health information.

**Patient Signature:** \_\_\_\_\_ **Today's Date:**

\_\_\_\_\_

**Print Patient Name:** \_\_\_\_\_ **Date of Birth:** \_\_\_\_\_

**If patient is a minor:**

Patient Representative Signature:

\_\_\_\_\_

Date:

Description of Legal Guardianship: \_\_\_\_\_

Print Name:

Phone No.



**Attachment B: Authorization for Disclosure Of Patient Health Information**

**Patient Name:** \_\_\_\_\_

**Date of Birth:** \_\_\_\_\_

**Address:** \_\_\_\_\_ **Phone**  
**Number** \_\_\_\_\_

**E-**

**Mail:** \_\_\_\_\_

**I hereby authorize:**

**Texas Tech Dental Oral Health Clinic 222 Rick Francis St. El Paso, TX. 79905**

\_\_\_\_\_  
**(Recipient Name) Release Medical/Dental Record Information from/to**  
**Outside Healthcare facility /Physician/Office/patient/other:**

\_\_\_\_\_  
**Address, City, State, Zip Phone #** \_\_\_\_\_

**Fax #** \_\_\_\_\_

**Dates of Treatment** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
(initials) I acknowledge and consent that the released information may contain alcohol, drug abuse, psychiatric, HIV/AIDS information. Information used or disclosed according to this authorization may be subject to re-disclosure by the recipient and no longer protected. This authorization will expire 180 days from the date of my signature unless I revoke the authorization prior to that time or unless otherwise specified by the following date: \_\_\_\_\_.

\_\_\_\_\_  
\_\_\_\_\_  
initials. I understand this authorization may be revoked by me at any time except to the extent that action has been taken in reliance upon it. To revoke authorization contact the Clinical Administrator at (915) 215-6700. I understand Texas Tech Dental may not deny treatment based on my completion of this authorization. Copying fees/charges will comply with all laws/ regulations applicable to release of information. I have read the above and authorize the disclosure of the protected health information as stated.

\_\_\_\_\_  
\_\_\_\_\_  
**Signature of Patient / Legal Representative: Printed Name: Relationship to**  
**Patient: Date/Time: Address / Phone number of requestor (if different from patient information)**  
**Authorization must be signed by patient or legal guardian if patient is under 18 years of age. If**  
**patient is deceased it must be signed by immediate next of kin with copy of death certificate. If**  
**patient cannot sign authorization, Power of Attorney must be presented.**

**Access Type Requested**

**Information to Release**

☐ Consult ☐ H&P ☐ Lab ☐ Operation Report ☐ Radiology Report

☐ Instructions at Discharge

☐ Discharge Summary

☐ Problem List

☐ Medication Record

☐ Medication Allergies

☐ Diagnostic Test

☐ Results Procedures

☐ Other \_\_\_\_\_

☐ Copies of record

☐ Inspection of record

Purpose: ☐ Medical Care ☐ Personal Use ☐ Attorney/Legal

☐ Other: \_\_\_\_\_

Preferred Receipt Method: ☐ In-Person ☐ Mail ☐ E-mail

☐ Other: \_\_\_\_\_

☐ Radiology Images /CD- Submit this authorization to Radiology Phone (915) 215-6700

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**Recipients of Alcohol/Drug/Infectious Disease/Mental Health Records:** This information has been disclosed to you from records protected by federal confidentiality rules (42 CFR Part 2) and state law. These laws prohibit you from making any further disclosure of this information unless further disclosure is expressly permitted by the written consent of the person to whom it pertains or as otherwise permitted by 42 CFR Part 2 or state law. A general authorization for the release of medical information is NOT sufficient for this purpose. The law restricts any use of the information to criminally investigate or prosecute any alcohol or drug abuse patient.





## **Appendix C: HIPAA Business Associate Agreement**

This HIPAA Business Associate Agreement is entered into and made part of the contract between the Texas Tech University Health Sciences Center (TTUHSCEP), for and on behalf of the Woody L. Hunt School of Dental Medicine (hereinafter "School"), and \_\_\_\_, identified as a "Business Associate" in this Agreement, and is effective as of \_\_. This Agreement shall be considered a part of, or an addendum to, the contract between the parties dated \_\_\_\_\_ and any modifications, renewals, or extensions of the Contract (the "Contract").

### **RECITALS**

- A. School desires to disclose, or provide access to, certain health information to Business Associate pursuant to the terms of the Contract. This health information may constitute Protected Health Information, which is defined in 45 CFR 164.501 ("PHI"). In this Agreement, PHI is limited to information created or received by Business Associate from or on behalf of School.
- B. School and Business Associate intend to protect the privacy and provide for the security of any PHI disclosed to Business Associate in compliance with the Health Insurance Portability and Accountability Act of 1996, Public Law 104-191 ("HIPAA") and regulations promulgated by the U.S. Department of Health and Human Services (the "HIPAA Regulations").
- C. As part of the HIPAA Regulations, the Privacy Rule (defined as that part of the HIPAA Regulations in 45 CFR Parts 160 and 164 and any state laws that provide more stringent standards), requires School to enter into a contract with Business Associate prior to the disclosure of PHI.

In consideration of the mutual promises below and the exchange of information pursuant to this Agreement and the consideration flowing from the Contract and its continuation, the parties agree as follows:

- 1. **Definitions.** To the extent any of the terms used in this Agreement require definition or interpretation, such as the terms "business associate", "hybrid covered entity", "data aggregation", "designated record set", "health care operations" or "protected health information", these terms shall have the same meaning as defined and applied in the HIPAA regulations.
- 2. **Obligations of Business Associate.**
  - a. **Use and Disclosure of PHI.** Business Associate shall not use or disclose PHI

except for the purpose of performing Business Associate's obligations under the Contract and as permitted under the Contract and this Agreement, or where disclosure is required by law. Business Associate shall not use PHI in any manner that would constitute a violation of the Privacy Rule if so used by School. Unless otherwise informed, Business Associate should assume that School intends to use and disclose PHI only for treatment, payment and operations, and is not authorized to use PHI for any other purpose. Business Associate will comply with School's Notice of Privacy Practices, to the extent a copy has been provided to Business Associate.

- b. **Disclosure to Others.** To the extent that it is necessary for Business Associate to disclose PHI to a third party, such as an agent or subcontractor, Business Associate must obtain an agreement with the third party, prior to making any disclosure, that third party will abide by the same restrictions and obligations in this Agreement. This includes, among other things, obligations to maintain confidentiality, to make certain records available in compliance with the Privacy Rule, and to report disclosures in violation of the Privacy Rule.
- c. **Appropriate Safeguards.** Business Associate shall implement appropriate safeguards as are necessary to prevent the use or disclosure of PHI except as permitted by this Agreement.
- d. **Reporting of Improper Use or Disclosure.** Business Associate shall report to School in writing of any use or disclosure of PHI in violation of the Contract or this Addendum within five (5) days of becoming aware of such use or disclosure. Business Associate shall also take measures, to the extent practicable, to mitigate any known harmful effect of such an improper disclosure, or alternatively, if requested by School, will cooperate with School in mitigating any known harmful effects.
- e. **Access to Protected Information and Amendment.** If Business Associate, or its agents or subcontractors, has PHI in a designated record set, Business Associate shall make such information available to School or designated individuals for inspection and copying within fifteen (15) days of a request to enable School to fulfill its obligations under the Privacy Rule, including 45 CFR Section 164.524. In addition, within fifteen (15) days of receipt of a request from School, Business Associate, or its agents or subcontractors, shall make such PHI available to School for amendment and incorporate any such amendment to enable School to fulfill its obligations under the Privacy Rule, including 45 CFR Section 164.526.
- f. **Accounting Rights.** Business Associate agrees to account for all disclosures of PHI as required by the Privacy Rule, commencing on the later of April 14, 2003 or the date of this Agreement, and to maintain such records for at least six (6) years. At a minimum, such information shall include: (i) the date of disclosure; (ii) the name of the entity or person who received Protected Information and, if known, the address of the entity or person; (iii) a brief description of Protected Information disclosed; and (iv) a brief statement of purpose of the disclosure that reasonably informs the individual of the basis for the disclosure, or a copy of the individual's authorization, or a copy of the written request for disclosure. Within fifteen (15) days of notice by School of a request for an accounting of disclosures of PHI, Business Associate, or its agents or subcontractors, shall make available to School the information required

to provide an accounting of disclosures to enable School to fulfill its obligations under the Privacy Rule, including 45 CFR Section 164.

- g. **Access to Records.** Business Associate shall make its facilities, systems, policies and procedures, internal practices, books and records relating to the use and disclosure of PHI available to School and to the Secretary of the U.S. Department of Health and Human Services for purposes of determining Business Associate's compliance with the Privacy Rule. In connection with any compliance audit by School or its agents, such records shall be made available within fifteen days (15) of a request.

3. **Termination.**

- a. **Material Breach.** A breach by Business Associate of any material provision of this Agreement shall constitute a material breach of the Contract and shall provide grounds for immediate termination of the Contract. At School's election, Business Associate may be provided with an opportunity to cure the breach.
- b. **Effect of Termination.** Upon termination of the Contract for any reason, Business

Associate shall, at the option of School, return or destroy all PHI that Business Associate or its agents or subcontractors still maintain in any form. If return or destruction is not feasible, as determined by School, Business Associate shall continue to extend the protections of this Agreement to such information.

4. **Liability.** To the extent a lawsuit or claim of any type is made against School, alleging violation of HIPAA by Business Associate, or its agents or subcontractors, Business Associate will indemnify, defend and hold harmless School from any damages or costs pertaining to the lawsuit or claim.
5. **Amendment.** The parties agree to amend this Agreement where necessary to comply with HIPAA and any modifications in the Regulations pertaining to Business Associates.
6. **No Third Party Beneficiaries.** Nothing express or implied in this Agreement is intended to confer any right on any person or entity apart from the parties themselves.
7. **Interpretation.** The provisions of this Agreement shall prevail over any provisions in the Contract that may conflict or appear inconsistent with any provision in this Agreement. This Agreement and the Contract shall be interpreted as broadly as necessary to implement and comply with HIPAA and the Privacy Rule. The parties agree that any ambiguity in this Agreement shall be resolved in favor of a meaning that complies and is consistent with HIPAA and

TTUHSCEP ON BEHALF OF  
Woody L. Hunt School of Dental Medicine

BUSINESS ASSOCIATE the Privacy  
Rule.

\_\_\_\_\_  
Print Name: \_

Date:





## Appendix D: Request for Accounting of Disclosures

Name:		
Date of Request:	Date of Birth	Telephone No.

You may request that we account for disclosures of your Protected Health Information. If you would like this information, please consider the following:

- The list is free one time in any twelve-month period. We may charge you a reasonable fee for additional lists in the same twelve-month period.
- We will typically respond to your request within 60 days.
- We will not list disclosures made more than six years before your request.
- We will not list disclosures made earlier than clinic formation in 2021
- We will not list disclosures of Protected Health Information related to Treatment, Payment, or Health Care Operations or disclosures that you authorized.
- We will not list disclosures that we made to you, to governmental authorities as required by law, to those involved in your care, to comply with national security or intelligence purposes, to correctional institutions or law enforcement, disclosures made as part of a limited data set, and disclosures from our directory.

I am asking a list of disclosures for the following period of time: (be specific)

From: \_\_\_\_\_ To: \_\_\_\_\_

\_\_\_\_\_  
Signature of Patient

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Patient Representative & Relationship to Patient (for minors)

\_\_\_\_\_  
Date

### ***For Office Use Only***

Date Request Received \_\_\_\_\_

Initials \_\_\_\_\_

Date Accounting Provided \_\_\_\_\_

Initials \_\_\_\_\_

If accounting is refused or is limited, state reason: \_\_\_\_\_

\_\_\_\_\_  
Signature of Privacy Officer or Designee

\_\_\_\_\_  
Date

Date Patient Notified \_\_\_\_\_

Initials \_\_\_\_\_



## Appendix E: Request for Amendment of Health Record

Name:		
Date of Request:	Date of Birth	Telephone No.

I am asking for an amendment to the record of my health information as follows (be specific):

Describe the item to change and the date of the item: \_\_\_\_\_

\_\_\_\_\_

State the change that you are requesting: \_\_\_\_\_

\_\_\_\_\_

State the reasons supporting the change: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

- If no reason is given for the request, your request will be denied. You may attach additional information as necessary to explain or support your request.
- If our office did not create the record (for example we receive the record from another health care provider), we cannot amend the record. You will need to contact your former health care provider to request an amendment.
- We will respond to your request in writing, typically within 30 days.
- If we deny the amendment, you may submit a written statement of disagreement. We then have the right to prepare a statement responding to your statement.
- Please note that if we accept the amendment, we do not destroy or alter original records. We will append the amendment to the applicable health record.

\_\_\_\_\_  
Signature of Patient

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Patient Representative & Relationship to Patient (for minors)  
For Office Use Only

\_\_\_\_\_  
Date

### DECISION ON REQUESTED AMENDMENT

Date of Requested Amendment \_\_\_\_\_ Patient Name \_\_\_\_\_

1. **Approved Amendment:** The following request for amendment of information has been approved:

Δ \_\_\_\_\_

Δ \_\_\_\_\_

Δ \_\_\_\_\_

This information will be corrected and other organizations to which this information has been disclosed will be notified as required by federal law.

2. **Amendment Denied:** The request for amendment has been denied for following reasons:

We did not create the record the patient is seeking to amend

The record is accurate and complete

Insufficient factual support for the amendment

The requested amendment does not pertain to the patient's designated record set.

The requested amendment pertains to information that is not available for patient access.

Other (please explain) \_\_\_\_\_

\_\_\_\_\_  
To Patient: This information will not be amended in our records. If you disagree with this decision, you may submit a written statement of disagreement. We have the right to prepare a statement responding to your statement of disagreement and include it in your health record. You will be sent a copy of this statement. Your statement of disagreement will be included in our records and it (or an accurate summary), along with any responsive statement we prepare (or an accurate summary), will be transmitted to any person or entity to whom the affected information is disclosed.

\_\_\_\_\_  
Signature of Privacy Officer or Designee

\_\_\_\_\_  
Date

## Appendix F: Request to Restrict Use or Disclosure of PHI

Name:		
Date of Request:	Date of Birth	Telephone No.

We will only use your protected health information as disclosed in our Notice of Privacy Practices. This form is for the purpose of requesting additional restrictions.

I request the following restrictions on use or disclosure of my health information:

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- We will consider your request, but we do not have to agree to your request.
- We are unlikely to agree to the request if we believe it may impede your care or you seek to prevent disclosures required by law.
- If you request a restriction on information to be conveyed to your insurer or another source of payment, it may impede payment of your claim and/or affect a determination of whether you qualify for services.
- We will respond to your request in writing, typically within 30 days.
- If the restriction is agreed to, we will abide by the restriction. If the restriction is not agreed to, you have the right to decide whether you want to continue treatment without the requested restriction.
- If we agree to the restriction, but we subsequently determine that we cannot continue to abide by the restriction, you will be notified. Again, you will have the right to determine whether you wish to continue treatment without the requested restriction.

\_\_\_\_\_  
Signature of Patient

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Patient Representative & Relationship to Patient (for minors)  
**ONLY**

\_\_\_\_\_  
Date **FOR OFFICE USE**

**Request Received** \_\_\_\_\_ **Initials** \_\_\_\_\_

\_\_\_\_ Restriction Agreed

\_\_\_\_ Restriction Not Agreed

Comments / Reason:

Signature of Privacy Officer or Designee \_\_\_\_\_ Date \_\_\_\_\_

Date Patient Notified \_\_\_\_\_

Initials \_\_\_\_\_

## Appendix G: Request for Alternative Means of Communication

Name:		
Date of Request:	Date of Birth	Telephone No.

This form is for the purpose of requesting that we communicate with you only by specific means or at specific locations.

I request that communications to me (e.g. appointment reminders, follow-up care, etc.) be made only in the following manner (email, fax, telephone, mail, in person) or location:

---

---

- We will usually agree to the request unless it may impede your care.
- In emergencies, we will use any available means to contact you.
- We will typically respond to your request within 30 days.
- If we decide that we can no longer abide by the request, we will notify you.

\_\_\_\_\_  
Signature of Patient

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Patient Representative & Relationship to Patient (for minors)

\_\_\_\_\_  
Date

### FOR OFFICE USE ONLY

**Request Received** \_\_\_\_\_ **Initials** \_\_\_\_\_

Requested form of communication agreed or

Requested form of communication not agreed Comments/Reason:

\_\_\_\_\_

\_\_\_\_\_  
Signature of Privacy Officer or Designee

\_\_\_\_\_  
Date

Date Patient Notified \_\_\_\_\_

Initials \_\_\_\_\_



## Appendix H: Request for Access to Records

Name:		
Date of Request:	Date of Birth	Telephone No.

If you are requesting access to your records, please consider the following:

- You may ask to review and copy information about yourself that is in our records.
- You are not entitled to obtain to psychotherapy notes and information compiled for legal proceedings.
- We may deny you access to your information if the information was received with a promise of confidentiality from an outside entity or person.
- We may suspend or deny access if in our judgment access to the information may affect your well being, or that of another.
- In most circumstances, you will be provided access within 15 days of your request, and copies may be obtained within 30 days of your request.

I am requesting access to my information for the following time period:

From: \_\_\_\_\_ To: \_\_\_\_\_

\_\_\_\_\_  
Signature of Patient

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Patient Representative (for minors)

\_\_\_\_\_  
Relationship of Representative

\_\_\_\_\_  
Date

*For Office Use Only*

☐ Access granted on (date) \_\_\_\_\_ Initials \_\_\_\_\_

☐ Patient informed access denied on (date) \_\_\_\_\_ Initials \_\_\_\_\_

Reason access denied \_\_\_\_\_

## Appendix I: Complaint Regarding Health Information

Name:		
Date of Request:	Date of Birth	Telephone No.

This form is for the purpose of making a complaint about how your health information has been used or disclosed by us, and any violations of the law that you believe have occurred.

Please describe your complaint (be specific):

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What would you like us to do: \_\_\_\_\_

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- We will respond to your complaint as quickly as we can. We will typically respond within 30 days.

\_\_\_\_\_  
Signature of Patient

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Patient Representative & Relationship to Patient (for minors)

\_\_\_\_\_  
Date

For Office Use Only

Action taken and reason: \_\_\_\_\_

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\_\_\_\_\_  
Signature of Privacy Officer or Designee

\_\_\_\_\_  
Date

Date Patient Notified \_\_\_\_\_

Initials \_\_\_\_\_

## Appendix J:

### DISEASE/INFECTION INFORMATION SHEET FOR DECLINED VACCINE

A vaccine for the following disease/infection (as checked) was recommended. This sheet was given to me in order to provide information about the disease/infection, allowing me to make an informed decision about whether to take the vaccine. I am aware that by declining the vaccine, I may be at risk for contracting this disease/infection. Nonetheless, at this time I have opted to decline it. I also understand that I can receive the vaccine at a later date should I chose to do so.

☐ **MEASLES, MUMPS, RUBELLA (MMR vaccine offered)**

**Measles virus** causes rash, cough, runny nose, eye irritation and fever. It can also lead to ear infection, pneumonia, seizures (jerking and staring), brain damage and death.

**Mumps virus** causes fever, headache, and swollen glands. It could lead to deafness, meningitis (infection of the brain and spinal cord covering), painful swelling of the testicles or ovaries, and rarely death.

**Rubella (German measles)** virus causes rash, mild fever, and arthritis (mostly in women). If a woman gets rubella while pregnant, she could have a miscarriage or her baby could be born with serious birth defects.

I understand that the MMR (Measles, Mumps, Rubella) vaccine can protect me against three serious diseases, Measles, Mumps, and Rubella which are all caused by viruses that are spread from person to person through the air.

I further understand that if I contract these diseases, I may spread it to my patients, other healthcare workers, and my family because it is highly contagious through air transmission 4-9 days *before* symptoms appear and up to 4-9 days after the onset.

As a result, I understand I may be restricted from working with patients with Measles, Mumps or Rubella. My supervisor, as well as the Infection Control Chairperson will be notified about these restrictions.

I will be responsible for reporting to my supervisor or Occupational Health, any symptoms that may appear, such as a rash.

☐ **VARICELLA (Varivax Vaccine Offered)**

**Varicella (chickenpox)** is a common childhood disease. It causes a rash, itching, fever, and tiredness. It can lead to severe skin infections, scars, pneumonia, brain damage, or death.

I understand that the Varicella vaccine can protect me against chickenpox which is caused by a virus that can be spread from person to person through the air or by contact with fluid from chickenpox blisters.

I further understand that if I contract chickenpox, I may spread it to my patients, other healthcare workers, and my family because it is highly contagious through air transmission 2 days before symptoms appear, I will also be required to immediately report this to Occupational Health.

☐ **TETANUS, DIPHTHERIA (Td offered) Tetanus (Lockjaw)** is a serious disease that is caused by a germ that enters the body through a cut or wound. It causes serious, painful spasms of all muscles and can lead to "locking" of the jaw which prevents one from opening his/her mouth or swallow and severe autonomic nervous system disorder.

**Diphtheria** is a serious respiratory disease that spreads when germs pass from an infected person to the nose or throat of others. It causes a thick coating in the nose, throat, or airway which can lead to breathing problems, heart failure, paralysis, or even death.

I understand that Td (Tetanus, Diphtheria) vaccine can protect me against these two serious diseases which are all caused by bacteria and are spread from person to person or through cuts, scratches, or wounds.

☐ **TETANUS, DIPHTHERIA, PERTUSSIS (Tdap offered)**

**Tetanus (Lockjaw)** is a serious disease that is caused by a germ that enters the body through a cut or wound. It causes serious, painful spasms of all muscles and can lead to "locking" of the jaw which prevents one from opening his/her mouth or swallow and severe autonomic nervous system disorder.

**Diphtheria** is a serious respiratory disease that spreads when germs pass from an infected person to the nose or throat of others. It causes a thick coating in the nose, throat, or airway which can lead to breathing problems, heart failure, paralysis, or even death.

**Pertussis (Whooping Cough)** causes, among adults as well as children, severe coughing spells, vomiting, and disturbed sleep, and it can lead to weight loss, incontinence, rib fractures, fainting spells, pneumonia, and hospitalization in some cases. I understand that Tdap (Tetanus, Diphtheria, and pertussis) vaccine can protect me against these three serious diseases which are all caused by bacteria and are spread from person to person or through cuts, scratches, or wounds.

**VACCINE DECLINATION FORM**

<b>Print Name</b>	<b>D.O.B.</b>	<b>DEPT.</b>	<b>e-raider #</b>

I understand that results of my blood-work indicate I am not protected against the following disease (s) or infections(s). I am aware that due to my occupational exposure to blood or other potentially infectious materials, I may be at risk of acquiring the following disease or infection:

- |   |   |
|---|---|
| <input type="checkbox"/> Measles, Mumps, Rubella      | <input type="checkbox"/> Varicella (Chickenpox) |
| <input type="checkbox"/> Tetanus, Diphtheria Tetanus, | Diphtheria, Pertussis                           |
|   | <input type="checkbox"/>                        |

I am aware that having the vaccine(s) intended to protect me against the disease(s)/infections(s) noted above has been recommended.

I further understand that if I contract the disease/infection, I may spread it to my patients, other healthcare workers, and/or my family. I may also be restricted from working with certain patient populations. If applicable, my supervisor and Infection Control Chairperson may be notified of these restrictions.

I have received education about the effectiveness of the vaccine and its potential adverse reactions and have been provided an information sheet which includes details about the disease/infection for which the vaccination (s) were recommended.

However, despite the risk of acquiring the disease/infections, I decline the Vaccination(s) at this time.

I understand that by declining this vaccine(s), I continue to be at risk of acquiring the serious disease(s)/infections(s) noted above and would be required to report any developing signs or symptoms of this specific disease/infection.

In the future, if I want to be vaccinated, I can opt to receive the vaccination at no cost to me.

Signature\_\_\_\_\_ Date\_\_\_\_\_Witness

\_\_\_\_\_ Date \_\_\_\_\_

**For office use only:**

Check applicable boxes:

- ☐ Vaccine declined (specify): \_\_\_\_\_
- ☐ Previously had the vaccine – proof or documentation not provided
- ☐ Other reason for declination, please specify: \_\_\_\_\_

Does this employee have:

## HEPATITIS B VACCINE DECLINATION STATEMENT

I understand that due to my potential for occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to myself. However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If, in the future, I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to myself.

Signature\_\_\_\_\_Date \_\_\_\_\_

Witness\_\_\_\_\_Date \_\_\_\_\_

## Appendix K

### APPLICATION FOR CLINIC PRIVILEGES

Dear Provider:

We would like to welcome you to Texas Tech University Health Sciences Center El Paso, Woody L. Hunt School of Dental Medicine. In order to apply for Professional Staff Appointment, clinical privileges, hospital privileges and/or healthcare plan enrollment, you will need to provide the credentialing requirements listed on the following page. The purpose of the credentialing process is to ensure that you, as a practitioner are qualified and competent to exercise the clinical privileges that are granted, provide patient care services within TTUHSCEP -WLHSDM, obtain clinical privileges and be eligible for enrollment to health care plans for reimbursement.

You will need to complete the Texas Standardized Credentialing Application LHL234 Rev.01.07, blank hard copy attached. If you prefer a web enterable form, you may visit the Texas Department of Insurance website to obtain that document at:

<http://www.tdi.state.tx.us/hmo/crform.html>.

Be certain to include your complete work history, explaining any gaps since your professional education completion of employment, current and previous hospital affiliations, three (3) peer references with **current** address and email, phone number and fax number, Professional Liability/Malpractice coverage for the past (5) years and explanation of any questions answered on disclosure questionnaire on malpractice claims. These items are important, and any outdated or incorrect information will delay the credentialing process. If you have completed or are in the process of completing an education program, i.e., residency or fellowship, one of your peer references should be the Program Director. On page (2) two of your Texas Standardized Credentialing Application, you will need to list your primary specialty as the specialty you wish to be listed under the health plan's directory for patients to be referred to you.

You will need to provide your National Provider Identifier (NPI) user name and password so that we can enroll you for Medicare and affiliate you with TTUHSCEP - WLHSDM. If you do not recall this information please call NPI Enumerator at 800-465-3203 to obtain your information. Additionally, the Council for Affordable Quality Healthcare (CAQH) Universal Provider Data Source is a database that collects all provider information necessary for credentialing from the American Dental Association (ADA). Most healthcare plans utilize this database to obtain your credentialing application. If you have a CAQH number, you will need to provide your CAQH number, user name and password, so that we can affiliate you with TTUHSCEP - WLHSDM and update your application information when needed. If you do not recall this information please call the CAQH Provider Help Desk at 800-621-8099. If you do not have a CAQH number, we will assist you in enrollment.

Because your information is highly confidential, delivery of the information is at your discretion. We prefer receiving information via email however, if you do not wish to email certain information, you may fax it to the number below. The fax is in a secured location which is only available to credentialing staff. You may also hand deliver or mail your documents.

**Please use the checklist, to ensure all completed forms and documents are included:**

- ☐ Texas Standardized Credentialing Application LHL234 Rev.01.07 – **Complete all fields, mark any with "NA", Print Name, Initial, Date and Sign**
- **Make extra copies of the pages that you need if there are not enough fields for you to enter all of your information** - (ie. you have more than 2 insurance companies, make extra copies of pg 5, or additional state licensures, make extra copies of pg 2, etc.)
  - **Peer References, please include email address for each:** Three professional peer references from the same field and/or specialty that are not relatives. All peer references should have firsthand knowledge of the applicant's abilities and competence. (Physicians should list physicians, dentists should list dentists, podiatrists should list podiatrists, etc.) For professional's completing or within one year post graduate training programs, one peer reference must be from the applicant's program director or associate program director. **Note:** Professionals in training may not serve as a peer reference.
- ☐ Delineation of Privilege Form, if applicable - **Complete, Print Name, Sign and Date**
- ☐ Faculty Addendum Form - **Complete, Print Name, Sign and Date**
- ☐ TSCA Addendum Form - **Complete, Print Name, Sign and Date**
- ☐ Exclusion Provider Notice - **Print Name, Sign and Date**
- ☐ Bylaws, Policies & Procedure Acknowledgement Form - **Print Name, Sign and Date**
- ☐ Specialty Designation Form - **Complete, Print Name, Sign and Date**
- ☐ ID Verification Form - **Print Name and enter Specialty**
- ☐ Color Copy of Acceptable Documents for Verifying Employment Authorization and Identity (*see Form I-9 List of Acceptable Documents*)
- ☐ Copy of current State of Texas Professional License, and if in any other state
- ☐ Copy of Drug Enforcement Administration Registration (DEA) with a Texas address
- ☐ Copy of Social Security Card
- ☐ Copy of Board Certifications
- ☐ Copy of Dental Education diploma
- ☐ Copy of ECFMG Certificate for foreign graduates
- ☐ Copy of Post Graduate Training certificates -internships, residencies or fellowships
- ☐ Copy of DD214 discharge certificate, for military service
- ☐ Copy of current and previous Professional Liability/Malpractice Insurance Coverage - **Declaration Page with effective date, expiration date, and amount of coverage - 5 years most recent to oldest**
- ☐ Curriculum Vitae (CV) with dates in month/year format (MM/YYYY)
- ☐ National Provider Identifier (NPI), user name and password: <https://nppes.cms.hhs.gov/#/>
- ☐ CAQH number, user name and password: <https://proview.caqh.org/Login?ReturnUrl=%2F&Type=PR>
- ☐ Current color photo, passport size
- ☐ Proof of Immunizations
- ☐ Copy of highest level resuscitation – BLS, ACLS, ATLS, APLS, PALS
- ☐ Procedure Logs for the past 12 months (Must NOT contain any patient information)

\*\*\*\*\* **Return all forms and documents to the address or email listed below**\*\*\*\*\*



## **Appendix L: *Spill Response for Laboratory Personnel***

Response to a chemical spill must occur at several levels. For laboratory workers, some spills must be cleaned-up at the first level - theirs. Other spills must be managed by Environmental Health & Safety. The first question, then, which must be answered, is: "When is a spill really a spill?"

A spill is defined as "**a material out of control**". In a practical sense, the quantity of material is not important. *The essential issue is whether the hazards, the location, and the quantity cause the situation to be beyond the control of the laboratory worker.*

Experience provides some guidelines for deciding whether a spill should be cleaned-up by laboratory personnel or by spill response personnel. For convenience and safety, a minimum quantity beyond which all spills, regardless of the substance, must be reported has been established. Policy states that all spills greater than 1 quart (1 liter) must be reported to Compliance. While this may seem overly stringent to some, experience indicates that over-reporting is preferable to under-reporting.

In addition to the minimum quantity, several other spills must be reported, regardless of the quantity (beyond de minimis).

- All spills of extremely flammable materials (flash point less than 20°F) must be reported.
- All spills of extremely toxic materials (5 mg/kg LD50) must be reported.
- All mercury spills must be reported.
- All personal contaminations must be reported.
- All leaking containers must be reported.
- All uncontrolled compressed gas releases must be reported.

Personnel are responsible to have procedures for spills which are below the reportable level. These procedures are explained below. **Personal Safety**

- The primary consideration for laboratory personnel when a material is spilled is safety. Safety for every person in the laboratory and in the building is of paramount importance. If the spill could potentially harm someone, call Compliance or Public Safety at 911. Otherwise, the laboratory worker who will clean-up the spill must follow specific procedures to do so safely and effectively.

## **Personal Protective Equipment (PPE)**

- Before attempting to clean-up a spill, the lab responder must put on a minimum amount of personal protective equipment (PPE).

Safety glasses

Lab coat

Nitrile or neoprene gloves **Clean-**

## **up Materials**

- Laboratories must have certain supplies available before attempting to clean-up a spill. The actual materials to be used will depend upon the hazards posed by the spilled material. A recommended list of supplies is presented below:

Absorbent pads

Absorbent socks

Acid neutralizer

Activated carbon

Caustic neutralizer

Dust pan & brush

Heavy duty plastic trash bags

Laboratory tongs

One gallon or five gallon plastic bucket with lid

UNLV Hazardous Waste Tags

Note: This procedure is not applicable to spills of Mercury or radioactive materials.

## **Clean-Up Procedure**

1.0 PPE

2.0 Control

3.1 Absorb/Remove

3.2 Acid, Caustic, or other Non-Flammable Liquids

3.3 Flammable Liquids

4.0 Remove broken glass

5.1 Decontaminate

5.2 Acidic Liquids

5.3 Caustic Liquids

5.4 Flammable Liquids

5.5 Container

6.0 Inspect

7.0 Package Spill Residues

8.0 Restock Spill Supplies

1.0 PPE

Don the appropriate PPE. If, during the spill or subsequent actions, any person comes in contact with a chemical, refer to the manufacturers Material Safety Data Sheet for First Aid guidance.

## 2.0 Control

Control the source of the spill, if it is still present. A bottle, for example, which was knocked over, will still have some material in it. The responder should carefully upright the container, place it on an absorbent pad in a safe location, and replace the lid on the container. Any spread of spilled material must also be controlled. This is best done by placing absorbent pads or socks around and on the spill. Many laboratory spills involve broken glass. The spill responder must be careful to avoid getting cut.

## 3.1 Absorb/Remove

### 3.2 Acid, Caustic, or other Non-Flammable Liquids

These are most easily absorbed with absorbent pads and socks. Place used absorbent pads and socks in a trash bag. Frequently, laboratory spills will spread into drawers and behind or under equipment. The responder must be careful to locate all such contaminated areas.

### 3.3 Flammable Liquids

Flammable liquids should be absorbed on activated carbon or absorbent pads and socks. Use approximately 2 pounds of activated carbon per pint (0.5 liters) of liquid. Use the dust brush or spatula to thoroughly mix the activated carbon with the liquid. Use the dust pan and brush to collect all residues. Remove large pieces of broken glass as described in step 4.0 and place all other debris in a plastic trash bag or appropriate container.

## 4.0 Remove broken glass

Using tongs, or carefully using gloved fingers, remove all large pieces of glass and place them in an appropriate container.

## 5.1 Decontaminate

### 5.2 Acidic Liquids

Apply acid neutralizer on all surfaces affected by the spill. Soak up the neutralizer and apply fresh neutralizer. Remove the residues with absorbent pads or paper towels, then thoroughly wash the affected area with hot soapy water. Use absorbent pads to finish cleaning the area.

### 5.3 Caustic Liquids

Apply caustic neutralizer on all surfaces affected by the spill. Soak up the neutralizer and apply fresh neutralizer. Remove the residues with absorbent pads or paper towels, then thoroughly wash the affected area with hot soapy water. Use absorbent pads to finish cleaning the area.

### 5.4 Flammable Liquids

Thoroughly wash the area with hot soapy water. Use absorbent pads to finish cleaning the area.

#### 5.5 Container

Use absorbent pads, neutralizers, and hot soapy water, as appropriate, to remove all traces of spilled material from the container. Remember to clean the bottom of the container.

#### 6.0 Inspect

Carefully check the entire affected area for spill residue, hidden contamination, or unsafe conditions, and act accordingly.

#### 7.0 Package Spill Residues

Place all spill residues and contaminated PPE in plastic bags. Seal the bags and place in the bucket or other appropriate container. Attach a properly completed UNLV Waste Tag on the outside of the container. Place the bucket in the Satellite Accumulation Area.

#### 8.0 Restock Spill Supplies

Gather and restock supplies as needed.

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## Appendix L2: Hazardous Waste

### What is a Hazardous Waste?

A Hazardous Waste, is defined by the United States Environmental Protection Agency in Title 40 of the Code of Federal Regulations (40 CFR) section 261.3. Briefly stated, it says "It exhibits any of the characteristics of hazardous waste identified in subpart C..." or "It is listed in subpart D of this chapter..." Subpart C (40 CFR 161.20 through 261.24) describes four characteristics of hazardous wastes, while subpart D (40 CFR 261.30 through 261.35) contains lists of chemicals and processes that generates hazardous wastes. It is important to remember that a material must first be a waste before it can be a hazardous waste.

#### The Four Characteristics of Hazardous Waste

There are four characteristics that pertain to what a hazardous waste is; if a waste has one or more of the following four characteristics, it is then a hazardous waste.

##### *The Ignitability Characteristic*

Wastes that are regulated as a hazardous waste due to the characteristic of ignitability include:

- Liquids with a flash point less than 140°F
- Solids that are capable (under standard temperature and pressure) of causing fire through friction, absorption of moisture or spontaneous chemical change, and when ignited burns so vigorously and persistently that it creates a hazard.
- Compressed gases that are ignitable as defined by the Department of Transportation (DOT).
- An oxidizer as defined by the DOT.

The characteristic of ignitability carries the waste number D001.

##### *The Corrosivity Characteristic*

Wastes that are regulated as a hazardous waste due to the characteristic of corrosivity include:

- An aqueous (water-based) liquid with a pH less or equal to 2 or greater than or equal to 12.5.
- A liquid that corrodes steel, as specified by the National Association of Corrosion Engineers.

The characteristic of corrosivity carries the waste number D002.

##### *The Reactivity Characteristic*

Wastes that are regulated as a hazardous waste due to the characteristic of reactivity include:

- A material that is normally unstable and readily undergoes violent change without detonating.
- A material that reacts violently with water.
- A material that forms potentially explosive mixtures with water.
- A material that when mixed with water, it generates toxic gases.
- Certain cyanide or sulfide bearing materials.
- A material that is capable of detonation or explosion, or other DOT regulated explosives.

The characteristic of reactivity carries the waste number D003.

### ***The Toxicity Characteristic***

Below are the elements/compounds that are currently regulated as hazardous wastes when present in a waste at or above the concentration listed.

Waste Number Contaminant Regulatory Level (mg/L)

D004 Arsenic 5.00  
D005 Barium 100.00  
D018 Benzene 0.50  
D006 Cadmium 1.00  
D019 Carbon Tetrachloride 0.50  
D020 Chlordane 0.03  
D021 Chlorobenzene 100.00  
D022 Chloroform 6.00  
D007 Chromium 5.00  
D023 o-Cresol 200.00  
D024 m-Cresol 200.00  
D025 p-Cresol 200.00  
D026 Cresol 200.00  
D016 2,4-D 10.00  
D027 1,4-Dichlorobenzene 7.50  
D028 1,2-Dichloroethane 0.50  
D029 1,2-Dichloroethylene 0.70  
D030 2,4-Dinitrotoluene 0.13  
D012 Endrin 0.02  
D031 Heptachlor (+epoxides) 0.01  
D032 Hexachlorobenzene 0.13  
D033 Hexachlorobutadiene 0.50  
D034 Hexachloroethane 3.00  
D008 Lead 5.00  
D013 Lindane 0.40  
D009 Mercury 0.20  
D014 Methoxychlor 10.00  
D035 Methyl ethyl ketone 200.00  
D036 Nitrobenzene 2.00  
D037 Pentachlorophenol 100.00  
D038 Pyridine 5.00  
D010 Selenium 1.00  
D011 Silver 5.00  
D039 Tetrachloroethylene 0.70  
D015 Toxaphene 0.50  
D040 Trichloroethylene 0.50  
D041 2,4,5-Trichlorophenol  
400.00 D042 2,4,6-  
Trichlorophenol 2.00 D017 2,4,5-  
TP (Silvex) 1.00 D043 Vinyl  
Chloride 0.20

### **Listed Hazardous Waste**

The lists of hazardous waste are composed of hundreds of chemicals, chemical mixtures, and the processes associated with their use. There are four different lists; each list is identified by the letters "F", "K", "P" or "U". If a chemical is included in a specific list, then when it, or any mixture of it, becomes a waste, it will be a hazardous waste.

### ***The "F" List***

The "F" list contains 39 separate waste numbers, but regulates hundreds of chemicals from nonspecific sources. This includes (but is not limited to) solvents used in degreasing, solvents in general, distillation of certain chemicals, plating solutions and wastewater treatment residues.

#### ***The "K" List***

The "K" list contains 151 separate waste numbers, but it regulates wastes from specific sources. The sources include organic and inorganic chemical processes, pesticide manufacturing, and petroleum refining.

#### ***The "P" List***

The "P" list contains 122 separate waste numbers, and each waste number is associated with a specific chemical, when they are discarded commercial chemical products, off-specification species, container residues or spill residues. Many common chemical wastes are regulated by the "P" list.

#### ***The "U" List***

The "U" list contains more than 250 separate waste numbers, and each waste number is associated with a specific chemical, that are commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products. The "U" listed wastes are identified as being acutely toxic.

## **Proper Waste Management**

The proper management of all hazardous wastes is mandatory. It is required by Federal and State laws, University policy, and by the need to protect the environment for future generations. The laws and policy define how wastes need to be managed as to protect the environment for future generations. Simply stated "What you landfill or pour down the drain today, you may be eating or drinking tomorrow"; it makes sense to manage all wastes properly.

### **Four Steps to Waste Management**

There are many steps to proper waste management, but you should be concerned with the following: identification; containerization; and accumulation.

#### ***1) Identification***

It is very important to identify the wastes that you or your Department generates. If a waste is not properly identified or characterized, it can't be managed.

#### ***2) Containerization***

It is very important that hazardous wastes are containerized. This helps ensure that they do not evaporate or spill into the environment.

#### ***3) Accumulation***

Most colleges and departments on campus, (art, biology, chemistry, engineering, physics, theater, etc.) have areas where hazardous wastes are accumulated until an adequate amount is ready for disposal. These areas are designated "satellite accumulation areas" (SAA).

State and Federal hazardous waste regulations allow for "satellite accumulation" of hazardous waste as listed in 40 CFR Section 262.34(c). This allows for up to 55 gallons of hazardous waste or 1 quart of acutely ("U" listed) hazardous waste to be *accumulated at or near the point of generation*.

Containers in which hazardous waste is to be put must be in **good condition** (e.g., without leakage, rust, dents or other structural defects), must be compatible with the waste they contain, **remain closed** at all times unless there is addition or removal of waste, and must be **clearly labeled** with the words "Hazardous Waste." Generation of more than 55 gallons of hazardous waste must be removed and placed at the UNLV Hazardous Waste 90-Day Facility within three days. Also, a satellite accumulation area must be **inspected weekly** by the generator of the waste, documenting the condition of containers and area and ensuring proper labeling and handling practices are conducted.

#### **4) Call for Help**

If you or anyone in your Department has a question about waste management, call the Department of Compliance. If you have an after-business hours emergency, contact the Department of Public Safety at 911.

#### **Hazardous Waste Labeling**

As previously stated, all hazardous wastes must be identified and labeled indicating what they are. Below is a discussion of the Federal and State requirements, and how wastes are to be labeled here at WLHSDM.

Federal Law requires that all containers of hazardous waste be identified and labeled as such. This is specified by the US Environmental Protection Agency, as found in 40 CFR. Part 262, Subpart C of this regulation (40 CFR 262), Pre-Transport Requirements, is where the labeling, marking and accumulation of containers of waste are detailed. Below is an important portion of the text:

40 CFR 262.34

"(1) A generator may accumulate as much as 55 gallons of hazardous waste or one quart of acutely hazardous waste listed in Section 261.33(e) in containers at or near the point of generation where wastes initially accumulate, which is under the control of the operator of the process generating the waste, without a permit or interim status and without complying with paragraph (a) of this section provided he:

- (i) Complies with Sections 265.171, 265.172 and 265.173(a) of this chapter; and
- (ii) Marks his containers with either the words "Hazardous Waste": or with other words that identify the contents of the containers

(2) A generator who accumulates either hazardous waste or acutely hazardous waste listed in Section 261.33(e) in excess of the amounts listed in paragraph (c)(1) of this section at or near the point of generation, with respect to that amount of excess waste, comply within three days with paragraph (a) of this section or other applicable provisions of this chapter. During the three-day period the generator must continue to comply with paragraphs (c)(1)(i) through section (ii) of this section. The generator must mark the container holding the excess accumulation of hazardous waste with the date the excess amount began accumulating."

"A generator who accumulates or stores hazardous waste on site shall, in addition to complying with the requirements for labeling set forth in 40 CFR Part 262, include on the label of each container of hazardous waste the hazardous waste number assigned by the United States Environmental protection Agency."

Thus, all containers of hazardous waste must be marked with the words "Hazardous Waste" and the applicable EPA Hazardous Waste Number. This is the minimum information required by law, for all containers of hazardous waste. The maximum quantity of waste that can accumulate at the point of generation is 55 gallons. Also, the waste must be under control (secured) by the person managing it.

#### ***Hazardous Materials Identification Tag***

This is used in place of the common red & white hazardous waste labels. The tag contains additional information, not found on the hazardous waste label. This information is used to track the waste, and helps ensure that all regulated wastes are managed and disposed of properly. The tag is described, line-by-line, below:

**Container ID#**; this field is used to identify and track each container of hazardous waste. The ID number is composed of four sections:

Example: "CHE-133-95-004"

- a) Building ID- Three digit abbreviation. Example; Chemistry would be CHE

b) Room Number- Three digit room number. Example; Room 133 would be 133

c) Calendar Year Generated Two digit year abbreviation. Example; 1995 would be 95

d) Container Number Three digit sequential number. Example; if three containers of waste had already been generated from one room, the next container would be 004

*Date put into use* ; Enter the date that waste was first put into the container

*Date filled* ; Enter the date that the container was filled

*Waste Check boxes* ; most of the regulated wastes generated at WLHSDM are hazardous wastes. Place a check mark in the appropriate box. If unsure, contact Compliance for assistance.

*Waste Composition Information* ; This is the location for where the description of the substance or waste is placed. Be sure to put the common or chemical name, and its approximate quantity. Do not abbreviate or use chemical formulas. Example: Photochemicals containing silver would be described as Spent Developer and Fixer, Contains Silver.

*Generator Information*; Print the following information in the space provided:

- a) Your name
- b) Telephone number
- c) Department
- d) Building
- e) Room number

*Signature*; The tag needs to be signed by a person who is familiar with the waste

*Date*; Include the date when the tag is signed

*Waste Code*; Texas State Law requires that each container of hazardous waste be identified with the applicable EPA Hazardous Waste Number. Contact the Department of Environmental Health & Safety if you are unsure what number(s) apply to your waste

*Accumulation Start Date*; This date will be entered by a staff member of the Department of Compliance.

*RCRA/NON-RCRA Check Boxes*; This section will be completed by a staff member of the Department of Environmental Health & Safety

If you have any questions or problems with completing the Hazardous Materials Identification Tag for any of your regulated wastes, contact the Department of Environmental Health & Safety at 895-4226 as soon as possible.

### **Common Wastes**

Below is a non-comprehensive list of hazardous and non-hazardous wastes generated at UNLV, and the applicable waste codes.

- Art Debris - D005, D006, D007, D010, F003, F005
- Chemistry 116 Waste - D002, D004, D006, D007, D008, D009, D010
- Ethanol - D001
- Flammable Aqueous Solutions - D001, D035, F002, F003, F005
- Formaldehyde - State Regulated Waste
- Mercury Debris - D009
- Nickel-Cadmium Batteries - D006

- Photochemicals - D010, D011
- Refrigerant Oil - F002 **Industrial Wastes**

### **What is an Industrial Waste?**

Industrial wastes include many common wastes that are not hazardous wastes, but still need to be managed more strictly than regular trash. Below is a discussion of some of the industrial wastes found at WLHSDM.

### **Used Oil**

Generators of used oil are required to provide for on-site management and record keeping in addition to those requirements currently enforced. Also, in the regulations, are additional requirements for bulking and blending facilities used by those transporting used oil. Most of the federal used oil management regulations as listed in 40 CFR 279, are incorporated into the Texas regulations for used oil. Used oil is any oil refined from crude oil, or synthetic oil, that has been used and as a result of the use is physically or chemically contaminated. Used oil, if generated in the State of Texas, is not considered a hazardous waste if it is collected to be recycled or burned for energy recovery.

Used oil is jointly managed by the TTUHSC EP Maintenance and Compliance. If you generate a waste oil, contact them to arrange for characterization and proper disposal or recycling.

### Managing Used Oil

Departments on the university campus that generate used oil such as the motor pool must collect and appropriately store the oil. Any laboratories using vacuum pumps also generate used oil. Storage of used oil includes tanks or containers which are in good condition (e.g., without leakage, rust, dents or other structural defects). Included on these storage facilities should be the words, "Used Oil." Weekly inspections should be performed and documented, indicating the relative condition of the containers as well as the general area of storage.

### Mixing Provisions

Newly adopted Texas regulations allow for the mixing of specific non-hazardous materials with used oil. Waste gasoline may be mixed with used oil, provided the resultant mixture does not exhibit any of the following characteristics of a hazardous waste- ignitability, reactivity, corrosivity or toxicity. Waste diesel fuel as well as non-waste diesel fuel may also be mixed with used oil.

Other mixtures with used oil not allowed under the used oil regulations must be managed as a hazardous waste. However, this is not the case if the resultant mixture is shown to be non-hazardous, recycled or burned for energy recovery. **It is very important to consult with the company handling the waste oil mixture to ensure that they can accept and properly manage it.**

Non-hazardous wastes mixed with used oil is allowed provided there is sufficient documentation which is to remain on-site and available for at least three years from the date of mixing.

### Managing Used Oil Spills

Isolated spills of used oil may be controlled with sorbent material such as kitty litter, vermiculite, or any synthetic adsorbent provided the mixture of used oil and sorbent does not contain any free liquid. This mixture may then be disposed of as a solid waste if no free liquid remains.

### Used Oil Filters

Terne is an alloy of tin and lead and functions as a plating for some oil filters. Terne filters are used in buses, heavy duty construction vehicles and tractor-trailers. Because of the lead concentration in terne-plated filters, these filters must be managed as a hazardous waste. However, for such vehicles as automobiles, vans and light duty trucks, non-terne oil filters are used.

Under EPA's final rule effective June 19, 1992, non-terne plated used oil filters are exempt from hazardous waste regulation if the oil filters have been gravity hot-drained. The EPA recommends a hot-drain time of 12 hours and defines "hot-drained" as drained near engine operating temperature and

above 60 degrees Fahrenheit. The following methods are acceptable for exemption from hazardous waste regulations:

- Puncturing the filter anti-drain back valve or the filter dome end and hot-draining.
- Hot-draining and crushing.
- Dismantling and hot-draining.
- Any other equivalent hot-draining method which will remove used oil.

No determination has yet been made regarding fuel filters, transmission oil filters or specialty filters.

### **Antifreeze**

Antifreeze is generated mostly in part from motor vehicle maintenance performed on campus. If the antifreeze is recycled, no waste determination is necessary, but the documentation of the recycling (receipt or bill of lading) must be kept on file.

### **Wipers & Rags**

Cloth wipers and rags are widely used for cleaning applications in several departments on the university campus such as art, publications, engineering, physics and the motor pool. The wipers and rags generated in these departments are contaminated with solvents, inks, oil or grease and therefore must be managed appropriately.

Federal hazardous waste regulations as listed in 40 CFR, Section 262.11, requires that generators of these contaminated wipers and rags determine prior to disposal, whether a hazardous or non-hazardous waste has been generated. If these wipers and rags are not laundered for reuse, several criteria apply to determine if it is a hazardous waste. Several cleaning solvents are listed in the Code of Federal Regulations as hazardous wastes. These solvents have waste number's F001, F002, F003, F005 and include tetrachloroethylene, methylene chloride, 1,1,1-trichloroethane, xylene, acetone, toluene and methyl ethyl ketone. Also, if any of the listed solvents or solvent mixtures constitute 10% of the total, the wipers and rags are managed as a hazardous waste due to the level of toxicity as well as the potential for ignitability through friction or spontaneous chemical changes.

Contamination with other substances such as heavy metals, other organics and pesticides are also possible during use and may render the wipers and rags a hazardous waste. Heavy metals include cadmium, chromium, barium, lead, mercury or silver. Determination of whether or not these wipers and rags are hazardous or non-hazardous may be needed if any of these contaminants are expected.

Once wipers and rags are determined to be a hazardous waste, they need to be regulated as such. Requirements for regulation include a closed container, label describing the contents, and accumulation time requirements.

Wipers and rags which are laundered for reuse, are not considered a hazardous waste and are not regulated by The Texas Department of Environmental Protection. However, the following guidelines must be followed for this exemption:

- Contaminated cloth wipers and rags must be free of any liquid which can be removed by wringing or dripping.
- Contaminated cloth wipers and rags must be stored in sealed containers at all times during onsite storage, transportation to a laundering facility and storage prior to treatment at a laundering facility.

Possible options to consider when using wipers and rags are to change to paper wipes in order to reduce quantity and management costs and to use alternative non-hazardous solvents and materials to reduce the generation of hazardous wipers and rags. A list of alternative chemicals is available from the Business Environmental Program.

## Fluorescent Lamps

Fluorescent lamps and High Intensity Discharge lamps (HID's) are used as a lighting source throughout the campus. Under Federal and State regulations, a business is responsible for determining whether each waste generated is hazardous or non-hazardous; typically fluorescent lamps and HID's contain some mercury vapor, which may cause the lamp to be a hazardous waste when no longer useful. Information on this topic is available through maintenance or compliance offices.

## Light Ballasts

Light ballasts are found in the fluorescent lamp housings, and are located in almost every office or room on campus. Ballasts sometimes fail and need to be removed, or other times they are replaced with a more energy-efficient light fixture. Either way, it is very important to manage waste light ballasts correctly. Older light ballasts contain Poly Chlorinated Biphenyls (PCB's) which are strictly regulated. *All non-PCB ballasts are labeled by the manufacturer as either "Non-PCB" or "No-PCB." If a ballast does not state that it does not contain PCB's it is assumed that it does.* Light ballasts can be divided into four groups:

- Non-Leaking Non-PCB : these can be placed into the normal trash.
- Leaking Non-PCB : these must be managed as an industrial waste - place into a labeled shipping container.
- Non-Leaking PCB : these can be placed into the normal trash or managed as an industrial waste - place into a labeled shipping container.
- Leaking PCB : these must be managed as an industrial waste - place into a labeled shipping container.

## Aerosol Cans

Many aerosol cans are used during normal business; cleaning, painting and printing tend to generate spent aerosol cans. A can that is empty (all product has been used for its intended purpose and the pressure in the can is reaching atmospheric pressure) may be disposed of as a non-hazardous waste.

Occasionally, an aerosol can become plugged or the material is no longer useable. Federal and State regulations require that these aerosol cans be managed differently than empty cans. The cans may be a hazardous waste due to the pressure contained in the can or the contents may pose a hazard.

Most aerosol cans can be safely and properly emptied with an aerosol can puncturing and emptying device. This service is free of charge. If you have *any* aerosol cans, contact compliance/maintenance to arrange for disposal and/or recycling.

## Batteries

Batteries are generated in almost all areas of the University. There are four different types of spent batteries generated; Alkaline, Lithium, Nickel-Cadmium and Lead-Acid.

### Alkaline Batteries

Typically: "AAA," "AA," "C," "D" size batteries

Most all Alkaline batteries in use today are "low-mercury," and can be disposed of in the normal trash. Previously, many alkalines contained an appreciable amount of mercury, which causes the battery to be regulated as a hazardous waste. If you are not sure if your waste alkaline batteries are "low-mercury," contact the maintenance/compliance offices, and a determination will be made.

### Lithium Batteries

Typically: Watch/Computer batteries

All spent or unwanted Lithium batteries are managed as a hazardous waste. This is due to the reactivity potential of the Lithium. Contact compliance or maintenance, if you need to dispose of this type of battery.

#### Nickel-Cadmium (NiCad) batteries

Typically: Rechargeable "AAA," "AA," "C," "D" sizes, Cellular phones, Radio, Power Tool batteries

All spent or unwanted NiCad batteries are managed as a hazardous waste. This is due to the toxicity of the Cadmium. Contact EH&S if you need to dispose of this type of battery.

#### Lead-Acid batteries

Typically: Automotive and special-purpose rechargeable batteries.

All spent or unwanted Lead-Acid batteries are managed as a hazardous waste. This is due to the toxicity of the Lead, and the corrosivity of the acid. Contact maintenance/compliance offices if you need to dispose of this type of battery.

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## Appendix 5-3F: Clinical Adverse Event Form



### WLHSDM Office of Clinical Affairs Occurrence Reporting

Report: Fill out Occurrence report on line at  
<https://ecampus.elpaso.ttuhsc.edu/occurrereport>

# DENTAL RADIOGRAPHIC EXAMINATIONS:RECOMMENDATIONS FOR PATIENT SELECTION AND LIMITING RADIATION EXPOSURE

REVISED: 2012

AMERICAN DENTAL ASSOCIATION  
Council on Scientific Affairs

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Public Health Service  
Food and Drug Administration

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# **DENTAL RADIOGRAPHIC EXAMINATIONS:RECOMMENDATIONS FOR PATIENT SELECTION AND LIMITING RADIATION EXPOSURE**

## **BACKGROUND**

The dental profession is committed to delivering the highest quality of care to each of its individual patients and applying advancements in technology and science to continually improve the oral health status of the U.S. population. These guidelines were developed to serve as an adjunct to the dentist's professional judgment of how to best use diagnostic imaging for each patient. Radiographs can help the dental practitioner evaluate and definitively diagnose many oral diseases and conditions. However, the dentist must weigh the benefits of taking dental radiographs against the risk of exposing a patient to x-rays, the effects of which accumulate from multiple sources over time. The dentist, knowing the patient's health history and vulnerability to oral disease, is in the best position to make this judgment in the interest of each patient. For this reason, the guidelines are intended to serve as a resource for the practitioner and are not intended as standards of care, requirements or regulations.

The guidelines are not substitutes for clinical examinations and health histories. The dentist is advised to conduct a clinical examination, consider the patient's signs, symptoms and oral and medical histories, as well as consider the patient's vulnerability to environmental factors that may affect oral health. This diagnostic and evaluative information may determine the type of imaging to be used or the frequency of its use. Dentists should only order radiographs when they expect that the additional diagnostic information will affect patient care.

Based on this premise, the guidelines can be used by the dentist to optimize patient care, minimize radiation exposure and responsibly allocate health care resources.

This document deals only with standard dental imaging techniques of intraoral and common extraoral examinations, excluding cone-beam computed tomography (CBCT). At this time the indications for CBCT examinations are not well developed. The ADA Council on Scientific Affairs has developed a statement on use of CBCT.<sup>1</sup>

## **INTRODUCTION**

The guidelines titled, "The Selection of Patients for X-Ray Examination" were first developed in 1987 by a panel of dental experts convened by the Center for Devices and Radiological Health of the U.S. Food and Drug Administration (FDA). The development of the guidelines at that time was spurred by concern about the U.S. population's total exposure to radiation from all sources. Thus, the guidelines were developed to promote

the appropriate use of x-rays. In 2002, the American Dental Association, recognizing that dental technology and science continually advance, recommended to the FDA that the guidelines be reviewed for possible updating. The FDA welcomed organized dentistry's interest in maintaining the guidelines, and so the American Dental Association, in collaboration with a number of dental specialty organizations and the FDA, published updated guidelines in 2004. This report updates the 2004 guidelines and includes recommendations for limiting exposure to radiation.

## **PATIENT SELECTION CRITERIA**

Radiographs and other imaging modalities are used to diagnose and monitor oral diseases, as well as to monitor dentofacial development and the progress or prognosis of therapy. Radiographic examinations can be performed using digital imaging or conventional film. The available evidence suggests that either is a suitable diagnostic method.<sup>2-4</sup> Digital imaging may offer reduced radiation exposure and the advantage of image analysis that may enhance sensitivity and reduce error introduced by subjective analysis.<sup>5</sup>

A study of 490 patients found that basing selection criteria on clinical evaluations for asymptomatic patients, combined with selected periapical radiographs for symptomatic patients, can result in a 43 percent reduction in the number of radiographs taken without a clinically consequential increase in the rate of undiagnosed disease.<sup>6,7</sup> The development and progress of many oral conditions are associated with a patient's age, stage of dental development, and vulnerability to known risk factors. Therefore, the guidelines in Table 1 are presented within a matrix of common clinical and patient factors, which may determine the type(s) of radiographs that is commonly needed. The guidelines assume that diagnostically adequate radiographs can be obtained. If not, appropriate management techniques should be used after consideration of the relative risks and benefits for the patient.

Along the horizontal axis of the matrix, patient age categories are described, each with its usual dental developmental stage: child with primary dentition (prior to eruption of the first permanent tooth); child with transitional dentition (after eruption of the first permanent tooth); adolescent with permanent dentition (prior to eruption of third molars); adult who is dentate or partially edentulous; and adult who is edentulous.

Along the vertical axis, the type of encounter with the dental system is categorized (as "New Patient" or "Recall Patient") along with the clinical circumstances and oral diseases that may be present during such an encounter. The "New Patient" category refers to patients who are new to the dentist, and thus are being evaluated by the dentist for oral disease and for the status of dental development. Typically, such a patient receives a comprehensive evaluation or, in some cases, a limited evaluation for a specific problem. The "Recall Patient" categories describe patients who have had a

recent comprehensive evaluation by the dentist and, typically, have returned as a patient of record for a periodic evaluation or for treatment. However, a “Recall Patient” may also return for a limited evaluation of a specific problem, a detailed and extensive evaluation for a specific problem(s), or a comprehensive evaluation.

Both categories are marked with a single asterisk that corresponds to a footnote that appears below the matrix; the footnote lists “Positive Historical Findings” and “Positive Clinical Signs/Symptoms” for which radiographs may be indicated. The lists are not intended to be all-inclusive, rather they offer the clinician further guidance on clarifying his or her specific judgment on a case.

The clinical circumstances and oral diseases that are presented with the types of encounters include: clinical caries or increased risk for caries; no clinical caries or no increased risk for caries; periodontal disease or a history of periodontal treatment; growth and development assessment; and other circumstances. A few examples of “Other Circumstances” proposed are: existing implants, other dental and craniofacial pathoses, endodontic/restorative needs and remineralization of dental caries. These examples are not intended to be an exhaustive list of circumstances for which radiographs or other imaging may be appropriate.

The categories, “Clinical Caries or Increased Risk for Caries” and “No Clinical Caries and No Increased Risk for Caries” are marked with a double asterisk that corresponds to a footnote that appears below the matrix; the footnote contains links to the ADA Caries Risk Assessment Forms ([0 – 6 years of age](#) and [over 6 years of age](#)). It should be noted that a patient’s risk status can change over time and should be periodically reassessed.<sup>8</sup>

The panel also has made the following recommendations that are applicable to all categories:

1. Intraoral radiography is useful for the evaluation of dentoalveolar trauma. If the area of interest extends beyond the dentoalveolar complex, extraoral imaging may be indicated.
2. Care should be taken to examine all radiographs for any evidence of caries, bone loss from periodontal disease, developmental anomalies and occult disease.
3. Radiographic screening for the purpose of detecting disease before clinical examination should not be performed. A thorough clinical examination, consideration of the patient history, review of any prior radiographs, caries risk assessment and consideration of both the dental and the general health needs of the patient should precede radiographic examination.<sup>9-15</sup>

In the practice of dentistry, patients often seek care on a routine basis in part because oral disease may develop in the absence of clinical symptoms. Since attempts to identify specific criteria that will accurately predict a high probability of finding

interproximal carious lesions have not been successful for individuals, it was necessary to recommend time-based schedules for making radiographs intended primarily for the detection of dental caries. Each schedule provides a range of recommended intervals that are derived from the results of research into the rates at which interproximal caries progresses through tooth enamel. The recommendations also are modified by criteria that place an individual at an increased risk for dental caries. Professional judgment should be used to determine the optimum time for radiographic examination within the suggested interval.

## RECOMMENDATIONS FOR PRESCRIBING DENTAL RADIOGRAPHS

These recommendations are subject to clinical judgment and may not apply to every patient. They are to be used by dentists only after reviewing the patient's health history and completing a clinical examination. Even though radiation exposure from dental radiographs is low, once a decision to obtain radiographs is made it is the dentist's responsibility to follow the ALARA Principle (As Low as Reasonably Achievable) to minimize the patient's exposure.

Table 1.

TYPE OF ENCOUNTER	PATIENT AGE AND DENTAL DEVELOPMENTAL STAGE				
	Child with Primary Dentition (prior to eruption of first permanent tooth)	Child with Transitional Dentition (after eruption of first permanent tooth)	Adolescent with Permanent Dentition (prior to eruption of third molars)	Adult, Dentate or Partially Edentulous	Adult, Edentulous
<b>New Patient*</b> being evaluated for oral diseases	Individualized radiographic exam consisting of selected periapical/occlusal views and/or posterior bitewings if proximal surfaces cannot be visualized or probed. Patients without evidence of disease and with open proximal contacts may not require a radiographic exam at this time.	Individualized radiographic exam consisting of posterior bitewings with panoramic exam or posterior bitewings and selected periapical images.	Individualized radiographic exam consisting of posterior bitewings with panoramic exam or posterior bitewings and selected periapical images. A full mouth intraoral radiographic exam is preferred when the patient has clinical evidence of generalized oral disease or a history of extensive dental treatment.		Individualized radiographic exam, based on clinical signs and symptoms.
<b>Recall Patient*</b> with clinical caries or at increased risk for caries**	Posterior bitewing exam at 6-12 month intervals if proximal surfaces cannot be examined visually or with a probe			Posterior bitewing exam at 6-18 month intervals	Not applicable

<b>Recall Patient*</b> with no clinical caries and not at increased risk for caries**	Posterior bitewing exam at 12-24 month intervals if proximal surfaces cannot be examined visually or with a probe		Posterior bitewing exam at 18-36 month intervals	Posterior bitewing exam at 24-36 month intervals	Not applicable
<b>TYPE OF ENCOUNTER (continued)</b>	<b>Child with Primary Dentition</b> (prior to eruption of first permanent tooth)	<b>Child with Transitional Dentition</b> (after eruption of first permanent tooth)	<b>Adolescent with Permanent Dentition</b> (prior to eruption of third molars)	<b>Adult, Dentate and Partially Edentulous</b>	<b>Adult, Edentulous</b>
<b>Recall Patient*</b> with periodontal disease	Clinical judgment as to the need for and type of radiographic images for the evaluation of periodontal disease. Imaging may consist of, but is not limited to, selected bitewing and/or periapical images of areas where periodontal disease (other than nonspecific gingivitis) can be demonstrated clinically.				Not applicable
<b>Patient (New and Recall)</b> for monitoring of dentofacial growth and development, and/or assessment of dental/skeletal relationships	Clinical judgment as to need for and type of radiographic images for evaluation and/or monitoring of dentofacial growth and development or assessment of dental and skeletal relationships		Clinical judgment as to need for and type of radiographic images for evaluation and/or monitoring of dentofacial growth and development, or assessment of dental and skeletal relationships. Panoramic or periapical exam to assess developing third molars	Usually not indicated for monitoring of growth and development. Clinical judgment as to the need for and type of radiographic image for evaluation of dental and skeletal relationships.	
<b>Patient</b> with other circumstances including, but not limited to, proposed or existing implants, other dental and craniofacial pathoses, restorative/endodontic needs, treated periodontal disease and caries remineralization	Clinical judgment as to need for and type of radiographic images for evaluation and/or monitoring of these conditions				

**\*Clinical situations for which radiographs may be indicated include, but are not limited to:**

**A. Positive Historical Findings**

1. Previous periodontal or endodontic treatment
2. History of pain or trauma
3. Familial history of dental anomalies
4. Postoperative evaluation of healing
5. Remineralization monitoring
6. Presence of implants, previous implant-related pathosis or evaluation for implant placement

**B. Positive Clinical Signs/Symptoms**

1. Clinical evidence of periodontal disease
2. Large or deep restorations
3. Deep carious lesions
4. Malposed or clinically impacted teeth
5. Swelling
6. Evidence of dental/facial trauma
7. Mobility of teeth
8. Sinus tract ("fistula")
9. Clinically suspected sinus pathosis
10. Growth abnormalities
11. Oral involvement in known or suspected systemic disease
12. Positive neurologic findings in the head and neck
13. Evidence of foreign objects
14. Pain and/or dysfunction of the temporomandibular joint
15. Facial asymmetry
16. Abutment teeth for fixed or removable partial prosthesis
17. Unexplained bleeding
18. Unexplained sensitivity of teeth
19. Unusual eruption, spacing or migration of teeth
20. Unusual tooth morphology, calcification or color
21. Unexplained absence of teeth
22. Clinical tooth erosion
23. Peri-implantitis

□□Factors increasing risk for caries may be assessed using the ADA Caries Risk Assessment forms ([0 – 6 years of age](#) and [over 6 years of age](#)).

## EXPLANATION OF RECOMMENDATIONS FOR PRESCRIBING DENTAL RADIOGRAPHS

The explanation below presents the rationale for each recommendation by type of encounter and patient age and dental developmental stages.

### **New Patient Being Evaluated for Oral Diseases**

#### **Child (Primary Dentition)**

Proximal carious lesions may develop after the interproximal spaces between posterior primary teeth close. Open contacts in the primary dentition will allow a dentist to visually inspect the proximal posterior surfaces. Closure of proximal contacts requires radiographic assessment.<sup>16-18</sup>

However, evidence suggests that many of these lesions will remain in the enamel for at least 12 months or longer depending on fluoride exposure, allowing sufficient time for implementation and evaluation of preventive interventions.<sup>19-21</sup> A periapical/anterior occlusal examination may be indicated because of the need to evaluate dental development, dentoalveolar trauma, or suspected pathoses. Periapical and bitewing radiographs may be required to evaluate pulp pathosis in primary molars.

*Therefore, an individualized radiographic examination consisting of selected periapical/occlusal views and/or posterior bitewings if proximal surfaces cannot be examined visually or with a probe is recommended. Patients without evidence of disease and with open proximal contacts may not require radiographic examination at this time.*

#### **Child (Transitional Dentition)**

Overall dental caries in the primary teeth of children from 2-11 years of age declined from the early 1970s until the mid 1990s.<sup>22-24</sup> From the mid 1990s until the 1999-2004 National Health and Nutrition Examination Survey, there was a small but significant increase in primary decay. This trend reversal was larger for younger children. Tooth decay affects more than one-fourth of U.S. children aged 2–5 years and half of those aged 12-15 years; however, its prevalence is not uniformly distributed. About half of all children and two-thirds of adolescents aged 12–19 years from lower-income families have had decay.<sup>25</sup>

Children and adolescents of some racial and ethnic groups and those from lower-income families have more untreated tooth decay. For example, 40 percent of Mexican American children aged 6–8 years have untreated decay, compared with 25 percent of non-Hispanic whites.<sup>25</sup> It is, therefore, important to consider a child's risk factors for caries before taking radiographs.

Although periodontal disease is uncommon in this age group,<sup>26</sup> when clinical evidence exists (except for nonspecific gingivitis), selected periapical and bitewing radiographs are indicated to determine the extent of aggressive periodontitis, other forms of uncontrolled periodontal disease and the extent of osseous destruction related to metabolic diseases.<sup>27,28</sup> A periapical or panoramic examination is useful for evaluating dental development. A panoramic radiograph

also is useful for the evaluation of craniofacial trauma.<sup>15,29,30</sup> Intraoral radiographs are more accurate than panoramic radiographs for the evaluation of dentoalveolar trauma, root shape, root resorption<sup>31,32</sup> and pulp pathosis. However, panoramic examinations may have the advantage of reduced radiation dose, cost and imaging of a larger area.

Occlusal radiographs may be used separately or in combination with panoramic radiographs in the following situations: 1. unsatisfactory image in panoramic radiographs due to abnormal incisor relationship, 2. localizations of tooth position, and 3. when clinical grounds provide a reasonable expectation that pathosis exists.<sup>32-34</sup>

*Therefore, an individualized radiographic examination consisting of posterior bitewings with panoramic examination or posterior bitewings and selected periapical images is recommended.*

### **Adolescent (Permanent Dentition)**

Caries in permanent teeth declined among adolescents, while the prevalence of dental sealants increased significantly.<sup>35</sup> However, increasing independence and socialization, changing dietary patterns, and decreasing attention to daily oral hygiene can characterize this age group. Each of these factors may result in an increased risk of dental caries. Another consideration, although uncommon, is the increased incidence of periodontal disease found in this age group compared to children.<sup>36</sup>

Panoramic radiography is effective in dental diagnosis and treatment planning.<sup>30,37,38</sup>

Specifically, the status of dental development can be assessed using panoramic radiography.<sup>39</sup> Occlusal and/or periapical radiographs can be used to detect the position of an unerupted or supernumerary tooth.<sup>40-42</sup> Third molars also should be evaluated in this age group for their presence, position, and stage of development.

*Therefore, an individualized radiographic examination consisting of posterior bitewings with panoramic examination or posterior bitewings and selected periapical images is recommended. A full mouth intraoral radiographic examination is preferred when the patient has clinical evidence of generalized oral disease or a history of extensive dental treatment.*

### **Adult (Dentate or Partially Edentulous)**

The overall dental caries experience of the adult population has declined from the early 1970s until the most recent (1999-2004) National Health and Nutrition Examination Survey.<sup>43</sup>

However, risk for dental caries exists on a continuum and changes over time as risk factors change.<sup>44</sup> Therefore, it is important to evaluate proximal surfaces in the new adult patient for carious lesions. In addition, it is important to examine patients for recurrent dental caries.

The incidence of root surface caries increases with age.<sup>45</sup> Although bitewing radiographs can assist in detecting root surface caries in proximal areas, the usual method of detecting root surface caries is by clinical examination.<sup>46</sup>

The incidence of periodontal disease increases with age.<sup>47</sup> Although new adult patients may not have symptoms of active periodontal disease, it is important to evaluate previous experience with periodontal disease and/or treatment. Therefore, a high percentage of adults may require selected intraoral radiographs to determine the current status of the disease. Taking posterior bitewing radiographs of new adult patients was found to reduce the number of radiological findings and the diagnostic yield of panoramic radiography.<sup>48,49</sup> In addition, the following clinical indicators for panoramic radiography were identified as the best predictors for useful diagnostic yield: suspicion of teeth with periapical pathologic conditions, presence of partially erupted teeth, caries lesions, swelling, and suspected unerupted teeth.<sup>50</sup>

*Therefore, an individualized radiographic examination, consisting of posterior bitewings with selected periapical images or panoramic examination when indicated is recommended. A full mouth intraoral radiographic examination is preferred when the patient has clinical evidence of generalized oral disease or a history of extensive dental treatment.*

### **Adult (Edentulous)**

The clinical and radiographic examinations of edentulous patients generally occur during an assessment of the need for prostheses. The most common pathological conditions detected are impacted teeth and retained roots with and without associated disease.<sup>51</sup> Other less common conditions also may be detected: bony spicules along the alveolar ridge, residual cysts or infections, developmental abnormalities of the jaws, intraosseous tumors, and systemic conditions affecting bone metabolism.

The original recommendations for this group called for a full-mouth intraoral radiographic examination or a panoramic examination for the new, edentulous adult patient. Firstly, this recommendation was made because examinations of edentulous patients generally occur during an assessment of the need for prostheses. Secondly, the original recommendation considered edentulous patients to be at increased risk for oral disease.

Studies have found that from 30 to 50 percent of edentulous patients exhibited abnormalities in panoramic radiographs.<sup>51-55</sup> In addition, the radiographic examination revealed anatomic considerations that could influence prosthetic treatment, such as the location of the mandibular canal, the position of the mental foramen and maxillary sinus, and relative thickness of the soft tissue covering the edentulous ridge.<sup>51,53,55</sup> However, in studies that considered treatment outcomes, there was little evidence to support screening radiography for new edentulous patients. For example, one study reported that less than 4 percent of such findings resulted in treatment modification before denture fabrication, and another showed no difference in postdenture delivery complaints in patients who did not receive screening pretreatment radiographs.<sup>54,56</sup>

This panel concluded that prescription of radiographs is appropriate as part of the initial assessment of edentulous areas for possible prosthetic treatment. A full mouth series of periapical radiographs or a combination of panoramic, occlusal or other extraoral radiographs may be used to achieve diagnostic and therapeutic goals. Particularly with the option of dental

implant therapy for edentulous patients,<sup>57</sup> radiographs can be an important aid in diagnosis, prognosis, and the determination of treatment complexity.

*Therefore, an individualized radiographic examination, based on clinical signs, symptoms, and treatment plan is recommended.*

### **Recall Patient with Clinical Caries or Increased Risk for Caries**

#### **Child (Primary and Transitional Dentition) and Adolescent (Permanent Dentition)**

Clinically detectable dental caries may suggest the presence of proximal carious lesions that can only be detected with a radiographic examination. In addition, patients who are at increased risk for developing dental caries because of such factors as poor oral hygiene, high frequency of exposure to sucrose-containing foods, and deficient fluoride intake (see caries risk assessment forms, [0 – 6 years of age](#) and [over 6 years of age](#)) are more likely to have proximal carious lesions.

The bitewing examination is the most efficient method for detecting proximal lesions.<sup>16,18,58</sup> The frequency of radiographic recall should be determined on the basis of caries risk assessment.<sup>15,59,60</sup> It should be noted that a patient's caries risk status may change over time and that an individual's radiographic recall interval may need to be changed accordingly.<sup>61</sup>

*Therefore, a posterior bitewing examination is recommended at 6 to 12 month intervals if proximal surfaces cannot be examined visually or with a probe.*

#### **Adult (Dentate and Partially Edentulous)**

Adults who exhibit clinical dental caries or who have other increased risk factors should be monitored carefully for any new or recurrent lesions that are detectable only by radiographic examination. The frequency of radiographic recall should be determined on the basis of caries risk assessment.<sup>15,59,60</sup> It should be noted that a patient's risk status can change over time and that an individual's radiographic recall interval may need to be changed accordingly.<sup>61</sup>

*Therefore, a posterior bitewing examination is recommended at 6 to 18 month intervals.*

### **Recall Patient (Edentulous Adult)**

A study that assessed radiographs of edentulous recall patients showed that previously detected incidental findings did not progress and that no intervention was indicated.<sup>62</sup> The data suggest that patients who receive continuous dental care do not exhibit new findings that require treatment.

An examination for occult disease in this group cannot be justified on the basis of prevalence, morbidity, mortality, radiation dose, and cost.<sup>53-55</sup>

*Therefore, no radiographic examination is recommended without evidence of disease.*

## **Recall Patient with No Clinical Caries and No Increased Risk for Caries**

### **Child (Primary and Transitional Dentition)**

Despite the general decline in dental caries activity, recent data show that subgroups of children have a higher caries experience than the overall population.<sup>63,64</sup> The identification of patients in these subgroups may be difficult on an individual basis. For children who present for recall examination without evidence of clinical caries and who are not considered at increased risk for the development of caries, it remains important to evaluate proximal surfaces by radiographic examination. In primary teeth the caries process can take approximately one year to progress through the outer half of the enamel and about another year through the inner half.<sup>20,65-68</sup> Considering this rate of progression of carious lesions through primary teeth, a timebased interval of radiographic examinations from one to two years for this group appears appropriate. The prevalence of carious lesions has been shown to increase during the stage of transitional dentition.<sup>25,69</sup> Children under routine professional care would be expected to be at a lower risk for caries. Nevertheless, newly erupted teeth are at risk for the development of dental caries.

*Therefore, a radiographic examination consisting of posterior bitewings is recommended at intervals of 12 to 24 months if proximal surfaces cannot be examined visually or with a probe.*

### **Adolescent (Permanent Dentition)**

Adolescents with permanent dentition, who are free of clinical dental caries and factors that would place them at increased risk for developing dental caries, should be monitored carefully for development of proximal carious lesions, which may only be detected by radiographic examination. The caries process, on average, takes more than three years to progress through the enamel.<sup>20,65-68</sup> However, evidence suggests that the enamel of permanent teeth undergoes posteruptive maturation and that young permanent teeth are susceptible to faster progression of carious lesions.<sup>70-73</sup>

*Therefore, a radiographic examination consisting of posterior bitewings is recommended at intervals of 18 to 36 months.*

### **Adult (Dentate and Partially Edentulous)**

Adult dentate patients, who receive regularly scheduled professional care and are free of signs and symptoms of oral disease, are at a low risk for dental caries. Nevertheless, consideration should be given to the fact that caries risk can vary over time as risk factors change. Advancing age and changes in diet, medical history and periodontal status may increase the risk for dental caries.

*Therefore, a radiographic examination consisting of posterior bitewings is recommended at intervals of 24 to 36 months.*

## **Recall Patient with Periodontal Disease**

### **Child (Primary and Transitional Dentition), Adolescent (Permanent Dentition), and Adult (Dentate and Partially Edentulous)**

The decision to obtain radiographs for patients who have clinical evidence or a history of periodontal disease/treatment should be determined on the basis of the anticipation that important diagnostic and prognostic information will result. Structures or conditions to be assessed should include the level of supporting alveolar bone, condition of the interproximal bony crest, length and shape of roots, bone loss in furcations, and calculus deposits. The frequency and type of radiographic examinations for these patients should be determined on the basis of a clinical examination of the periodontium and documented signs and symptoms of periodontal disease. The procedure for prescribing radiographs for the follow-up/recall periodontal patient would be to use selected intraoral radiographs to verify clinical findings on a patient-by-patient basis.<sup>28,74</sup>

*Therefore, it is recommended that clinical judgment be used in determining the need for, and type of radiographic images necessary for, evaluation of periodontal disease. Imaging may consist of, but is not limited to, selected bitewing and/or periapical images of areas where periodontal disease (other than nonspecific gingivitis) can be identified clinically.*

## **Patient (New and Recall) for Monitoring of Dentofacial Growth and Development, and/or Assessment of Dental/Skeletal Relationships**

### **Child (Primary and Transitional Dentition)**

For children with primary dentition, before the eruption of the first permanent tooth, radiographic examination to assess growth and development in the absence of clinical signs or symptoms is unlikely to yield productive information. Any abnormality of growth and development suggested by clinical findings should be evaluated radiographically on an individual basis. After eruption of the first permanent tooth, the child may have a radiographic examination to assess growth and development. This examination need not be repeated unless dictated by clinical signs or symptoms. Cephalometric radiographs may be useful for assessing growth, and/or dental and skeletal relationships.

*Therefore, it is recommended that clinical judgment be used in determining the need for, and type of radiographic images necessary for, evaluation and/or monitoring of dentofacial growth and development, or assessment of dental and skeletal relationships.*

### **Adolescent (Permanent Dentition)**

During adolescence there is often a need to assess the growth status and/or the dental and skeletal relationships of patients in order to diagnose and treat their malocclusion. Appropriate radiographic assessment of the malocclusion should be determined on an individual basis.

An additional concern relating to growth and development for patients in this age group is to determine the presence, position and development of third molars. This determination can

best be made by the use of selected periapical images or a panoramic examination, once the patient is in late adolescence (16 to 19 years of age).

*Therefore, it is recommended that clinical judgment be used in determining the need for, and type of radiographic images necessary for, evaluation and/or monitoring of dentofacial growth and development, or assessment of dental and skeletal relationships. Panoramic or periapical examination may be used to assess developing third molars.*

### **Adult (Dentate, Partially Edentulous and Edentulous)**

In the absence of any clinical signs or symptoms suggesting abnormalities of growth and development in adults, no radiographic examinations are indicated for this purpose.

*Therefore, in the absence of clinical signs and symptoms, no radiographic examination is recommended.*

### **Patients with Other Circumstances**

(including, but not limited to, proposed or existing implants, other dental and craniofacial pathoses, restorative/endodontic needs, treated periodontal disease and caries remineralization)

### **All Patient Categories**

The use of imaging, as a diagnostic and evaluative tool, has progressed beyond the longstanding need to diagnose caries and evaluate the status of periodontal disease. The expanded technology in imaging is now used to diagnose other orofacial clinical conditions and evaluate treatment options. A few examples of other clinical circumstances are the use of imaging for dental implant treatment planning, placement, or evaluation; the monitoring of dental caries and remineralization; the assessment of restorative and endodontic needs; and the diagnosis of soft and hard tissue pathoses.

*Therefore it is recommended that clinical judgment be used in determining the need for, and type of radiographic images necessary for, evaluation and/or monitoring in these circumstances.*

## **LIMITING RADIATION EXPOSURE**

Dental radiographs account for approximately 2.5 percent of the effective dose received from medical radiographs and fluoroscopies.<sup>75</sup> Even though radiation exposure from dental radiographs is low, once a decision to obtain radiographs is made it is the dentist's responsibility to follow the ALARA Principle (As Low as Reasonably Achievable) to minimize the patient's exposure. Examples of good radiologic practice include x use of the fastest image receptor compatible with the diagnostic task (F-speed film or digital);

- x collimation of the beam to the size of the receptor whenever feasible; x
- proper film exposure and processing techniques;
- x use of protective aprons and thyroid collars, when appropriate; and

x limiting the number of images obtained to the minimum necessary to obtain essential diagnostic information.

## **RECEPTOR SELECTION**

The American National Standards Institute and the International Organization for Standardization have established standards for film speed.<sup>76,77</sup> Film speeds available for dental radiography are D-speed, E-speed and F-speed, with D-speed being the slowest and F-speed the fastest. According to the U.S. Food and Drug Administration, switching from D to E speed can produce a 30 to 40 percent reduction in radiation exposure.<sup>78</sup> The use of F-speed film can reduce exposure 20 to 50 percent compared to use of E-speed film, without compromising diagnostic quality.<sup>79-85</sup>

Exposure of extraoral films such as panoramic radiographs requires intensifying screens to minimize radiation exposure to patients. The intensifying screen consists of layers of phosphor crystals that fluoresce when exposed to radiation. In addition to the radiation incident on the film, the film is exposed primarily to the light emitted from the intensifying screen. Previous generations of intensifying screens were composed of phosphors such as calcium tungstate. However, rare-earth intensifying screens are recommended because they reduce a patient's radiation exposure by 50 percent compared with calcium tungstate-intensifying screens.<sup>86-89</sup> Rare-earth film systems, combined with a high-speed film of 400 or greater, can be used for panoramic radiographs.<sup>86</sup> Older panoramic equipment can be retrofitted to reduce the radiation exposure to accommodate the use of rare-earth, high-speed systems.

Digital imaging provides an opportunity to further reduce the radiation dose by 40 to 60 percent.<sup>90-93</sup> In digital radiography, there are three types of receptors that take the place of conventional film: charge-coupled device (CCD), complementary-metal-oxide-semiconductor (CMOS), and photo-stimulable phosphor (PSP) plates. Systems that use CCD and CMOS-based, solid-state detectors are called "direct." When these sensors receive energy from the xray beam, the CCD or CMOS chip sends a signal to the computer and an image appears on the monitor within seconds. Systems that use PSP plates are called "indirect." When these plates are irradiated, a latent image is stored on them. The plate is then scanned and the scanner transmits the image to the computer.

## **RECEPTOR HOLDERS**

Holders that align the receptor precisely with the collimated beam are recommended for periapical and bitewing radiographs. Heat-sterilizable or disposable intraoral radiograph receptor-holding devices are recommended for optimal infection control.<sup>94</sup> Dental professionals should not hold the receptor holder during exposure.<sup>86</sup> Under extraordinary circumstances in which members of the patient's family (or other caregiver) must provide restraint or hold a receptor holder in place during exposure, such a person should wear appropriate shielding.<sup>86</sup>

## **COLLIMATION**

Collimation limits the amount of radiation, both primary and scattered, to which the patient is exposed. An added benefit of rectangular collimation is an improvement in contrast as a result

of a reduction in fogging caused by secondary and scattered radiation.<sup>89</sup> The x-ray beam should not exceed the minimum coverage necessary, and each dimension of the beam should be collimated so that the beam does not exceed the receptor by more than 2 percent of the source-to-image receptor distance.<sup>86</sup> Since a rectangular collimator decreases the radiation dose by up to fivefold as compared with a circular one,<sup>86,95,96</sup> radiographic equipment should provide rectangular collimation for exposure of periapical and bitewing radiographs.<sup>86</sup> Use of a receptor-holding device minimizes the risk of cone-cutting (non-exposure of part of the image receptor due to malalignment of the x-ray beam). The position-indicating device should be open ended and have a metallic lining to restrict the primary beam and reduce the tissue volume exposed to radiation.<sup>86</sup> Use of long source-to-skin distances of 40 cm, rather than short distances of 20 cm, decreases exposure by 10 to 25 percent.<sup>86,97</sup> Distances between 20 cm and 40 cm are appropriate, but the longer distances are optimal.<sup>86</sup>

### **OPERATING POTENTIAL AND EXPOSURE TIME**

The operating potential of dental x-ray units affects the radiation dose and backscatter radiation. Lower voltages produce higher-contrast images and higher entrance skin doses, and lower deep-tissue doses and levels of backscatter radiation. However, higher voltages produce lower contrast images that enable better separation of objects with differing densities. Thus, the diagnostic purposes of the radiograph should be used to determine the selection of kilovolt setting. A setting above 90 kV(p) will increase the patient dose and should not be used.<sup>89</sup> The optimal operating potential of dental x-ray units is between 60 and 70 kVp.<sup>86,89</sup>

Filmless technology is much more forgiving to overexposure often resulting in unnecessary radiation exposure. Facilities should strive to set the x-ray unit exposure timer to the lowest setting providing an image of diagnostic quality. If available, the operator should always confirm that the dose delivered falls within the manufacturer's exposure index. Imaging plates should be evaluated at least monthly and cleaned as necessary.

### **PATIENT SHIELDING AND POSITIONING**

The amount of scattered radiation striking the patient's abdomen during a properly conducted radiographic examination is negligible.<sup>98</sup> The thyroid gland is more susceptible to radiation exposure during dental radiographic exams given its anatomic position, particularly in children.<sup>93,99,100</sup> Protective thyroid collars and collimation substantially reduce radiation exposure to the thyroid during dental radiographic procedures.<sup>101,102</sup> Because every precaution should be taken to minimize radiation exposure, protective thyroid collars should be used whenever possible. If all the recommendations for limiting radiation exposure are put into practice, the gonadal radiation dose will not be significantly affected by use of abdominal shielding.<sup>86</sup> Therefore, use of abdominal shielding may not be necessary.

Protective aprons and thyroid shields should be hung or laid flat and never folded, and manufacturer's instructions should be followed. All protective shields should be evaluated for damage (e.g. tears, folds, and cracks) monthly using visual and manual inspection.

Proper education and training in patient positioning is necessary to ensure that panoramic radiographs are of diagnostic quality.

## **OPERATOR PROTECTION**

Although dental professionals receive less exposure to ionizing radiation than do other occupationally exposed health care workers,<sup>75,86</sup> operator protection measures are essential to minimize exposure. Operator protection measures include education, the implementation of a radiation protection program, occupational radiation exposure limits, recommendations for personal dosimeters and the use of barrier shielding.<sup>103</sup> The maximum permissible annual dose of ionizing radiation for health care workers is 50 millisieverts (mSv) and the maximum permissible lifetime dose is 10 mSv multiplied by a person's age in years.<sup>86</sup> Personal dosimeters should be used by workers who may receive an annual dose greater than 1 mSv to monitor their exposure levels. Pregnant dental personnel operating x-ray equipment should use personal dosimeters, regardless of anticipated exposure levels.<sup>86</sup>

Operators of radiographic equipment should use barrier protection when possible, and barriers should ideally contain a leaded glass window to enable the operator to view the patient during exposure.<sup>86</sup> When shielding is not possible, the operator should stand at least two meters from the tube head and out of the path of the primary beam.<sup>103</sup> The National Council on Radiation Protection & Measurements report "Radiation Protection in Dentistry" offers detailed information on shielding and office design.<sup>86</sup> State radiation control agencies can help assess whether barriers meet minimum standards.

## **HAND-HELD X-RAY UNITS**

Hand-held, battery-powered x-ray systems are available for intra-oral radiographic imaging. The hand-held exposure device is activated by a trigger on the handle of the device. However, dosimetry studies indicate that these hand-held devices present no greater radiation risk than standard dental radiographic units to the patient or the operator. No additional radiation protection precautions are needed when the device is used according to the manufacturer's instructions. These include: 1. holding the device at mid-torso height, 2. orienting the shielding ring properly with respect to the operator, and 3. keeping the cone as close to the patient's face as practical. If the hand-held device is operated without the ring shield in place, it is recommended that the operator wear a lead apron.

All operators of hand-held units should be instructed on their proper storage. Due to the portable nature of these devices, they should be secured properly when not in use to prevent accidental damage, theft, or operation by an unauthorized user. Hand-held units should be stored in locked cabinets, locked storage rooms, or locked work areas when not under the direct supervision of an individual authorized to use them. Units with user-removable batteries should be stored with the batteries removed. Records listing the names of approved individuals who are granted access and use privileges should be prepared and kept current.

## **FILM EXPOSURE AND PROCESSING**

All film should be processed following the film and processor manufacturer recommendations. Once this is achieved, the x-ray operator can adjust the tube current and time and establish a

technique that will provide consistent dental radiographs of diagnostic quality. Poor processing technique, including sight-developing, most often results in underdeveloped films, forcing the x-ray operator to increase the dose to compensate, resulting in patient and personnel being exposed to unnecessary radiation.

A safelight does not provide completely safe exposure for an indefinite period of time. Extraoral film is much more sensitive to fogging. The length of time for which a film can be exposed to the safelight should be determined for the specific safelight/film combination in use.

## **QUALITY ASSURANCE**

Quality assurance protocols for the x-ray unit, imaging receptor, film processing, dark room, and patient shielding should be developed and implemented for each dental health care setting.<sup>86</sup> All quality assurance procedures, including date, procedure, results, and corrective action, should be logged for documentation purposes. A qualified expert should survey all x-ray units on their placement and should resurvey the equipment every four years or after any changes that may affect the radiation exposure of the operator and others.<sup>86</sup> Surveys typically are performed by state agencies, and individual state regulations should be consulted regarding specific survey intervals. The film processor should be evaluated at its initial installation and on a monthly basis afterward. The processing chemistry should be evaluated daily, and each type of film should be evaluated monthly or when a new box or batch of film is opened.<sup>86</sup> Abdominal shielding and thyroid collars should be inspected visually for creases or clumping that may indicate voids in their integrity on a monthly basis.<sup>86</sup> Damaged abdominal shielding and collars should be replaced. Table 2 lists specific methods of quality assurance procedures, covering not only inspection of the x-ray unit itself but also of the film processor, the image receptor devices, the darkroom and abdominal shielding and collars.<sup>103,104</sup>

It is imperative that the operator's manual for all imaging acquisition hardware is readily available to the user, and that the equipment is operated and maintained following the manufacturer's instructions, including any appropriate adjustments for optimizing dose and image quality.

## **TECHNIQUE CHARTS/PROTOCOLS**

Size-based technique charts/protocols with suggested parameter settings are important for ensuring that radiation exposure is optimized for all patients. Technique charts should be used for all systems with adjustable settings, such as tube potential, tube current, and time or pulses. The purpose of using the charts is to control the amount of radiation to the patient and receptor. Technique charts are tables that indicate appropriate settings on the x-ray unit for a specific anatomical area and will ensure the least amount of radiation exposure to produce a consistently good-quality radiograph.

Technique charts for intraoral and extraoral radiography should list the type of exam, the patient size (small, medium, large) for adults and a pediatric setting. The speed of film used, or use of a digital receptor, should also be listed on the technique chart. The chart should be

posted near the control panel where the technique is adjusted for each x-ray unit. A technique chart that is regularly updated should be developed for each x-ray unit. The charts will also need to be updated when a different film or sensor, new unit, or new screens are used.

**RADIATION RISK COMMUNICATION**

Dentists should be prepared to discuss with their patients the benefits and risks of the x-ray exam.<sup>105</sup> To help answer patient and parent questions about dental radiology radiation safety, the American Academy of Oral and Maxillofacial Radiology and the Alliance for Radiation Safety in Pediatric Imaging partnered to create a brochure targeted at parents and patients.<sup>106</sup> Table 2.

Quality Assurance Procedures for Assessment of Radiographic Equipment		
The following procedures for periodic assessment of the performance of radiographic equipment, film processing, equipment, image receptor devices, dark room integrity, and abdominal and thyroid shielding are adapted from the National Council for Radiation Protection and Measurements report, "Radiation Protection in Dentistry." <sup>86</sup> Please refer to state guidelines for specific regulations.		
Equipment	Frequency	Method
X-ray Machine	On installation At regular intervals as recommended by state regulations Whenever there are any changes in installation workload or operating conditions	Inspection by qualified expert (as specified by government regulations and manufacturers recommendations).

Film Processor	On installation Daily	<p><b>Method 1: Sensitometry and Densitometry</b>  A sensitometer is used to expose a film, followed by standard processing of the film. The processed film will have a defined pattern of optical densities.  The densities are measured with a densitometer.  The densitometer measurements are compared to the densities of films exposed and processed under ideal conditions.  A change in densitometer values indicates a problem with either the development time, temperature or the developer solutions.  <i>Advantages</i>  Accuracy Speed  <i>Disadvantage</i>  Expense of additional equipment</p> <p><b>Method 2: Reference Film</b>  A film exposed and processed under ideal conditions is attached to the corner of a view box as a reference film.  Subsequent films are compared with the reference film. <i>Advantage</i>  Cost effectiveness <i>Disadvantage</i>  Less sensitive</p>
Image Receptor Devices	Monthly With each new batch of film	<p><b>Method 1: Sensitometry and Densitometry</b>  (as described above)  <b>Method 2: Reference Image</b> (as described above)</p>
Intensifying Screen and Extraoral Cassettes	Every six months	<p>Visual inspection of cassette integrity  Examination of intensifying screen for scratches  Development of an unexposed film that has been in the cassette exposed to normal lighting for one hour or more</p>
Darkroom Integrity	On installation Monthly After a change in the lighting filter or lamp	<p>While in a darkroom with the safelight on, place metal object (such as a coin) on unwrapped film for a period that is equivalent to the time required for a typical darkroom procedure  Develop film  Detection of the object indicates a problem with the safelight or light leaks in the darkroom</p>

Abdominal and Thyroid Shielding	Monthly (visual and manual inspection)	All protective shields should be evaluated for damage (e.g., tears, folds, and cracks) monthly using visual and manual inspection. If a defect in the attenuating material is suspected, radiographic or fluoroscopic inspection may be performed as an alternative to immediately removing the item from service. Consideration should be given to minimizing the radiation exposure of inspectors by minimizing unnecessary fluoroscopy.
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## **TRAINING AND EDUCATION**

Where permitted by law, auxiliary dental personnel can perform intraoral and extraoral imaging.<sup>103</sup> Personnel certified to take dental radiographs should receive appropriate education. Practitioners should remain informed about safety updates and the availability of new equipment, supplies and techniques that could further improve the diagnostic quality of radiographs and decrease radiation exposure. Free training materials are available for limiting radiation exposure in dental imaging through the International Atomic Energy Agency.<sup>107</sup>

## **CONCLUSION**

Dentists should conduct a clinical examination, consider the patient's oral and medical histories, as well as consider the patient's vulnerability to environmental factors that may affect oral health before conducting a radiographic examination. This information should guide the dentist in the determination of the type of imaging to be used, the frequency of its use, and the number of images to obtain. Radiographs should be taken only when there is an expectation that the diagnostic yield will affect patient care.

Dentists should develop and implement a radiation protection program in their offices. In addition, practitioners should remain informed on safety updates and the availability of new equipment, supplies, and techniques that could further improve the diagnostic ability of radiographs and decrease exposure.



## **Appendix P: Laser Safety**

### **Overview**

In accordance to ANSI Z136.3 Health Care Facility Standards for Safe Laser Use, this Safety Manual addendum briefly outlines its applicability to WLHSDM. Safety precautions will apply to all procedural and repair/ maintenance protocols. This addendum is not considered exhaustive, but necessary only in identifying fundamental Laser-related safety precautions and regulations. Please see TTUHSC EP Ops 75.01-75.05 and applies to all persons who operate, service or maintain Intense Pulsed Light or Laser devices on the campus.

### **Hazard Evaluation**

Several Laser devices exist within WLHSDM. Class 2 devices include CD/DVD-drives and Laser printers; and typically pose little to no hazard. Class 3 devices include Laser measuring devices and Laser pointers; and may be an eye hazard. Class 4 devices include dental Lasers; and pose a definite hazard. All Class 3 and Class 4 devices MUST bear a Laser warning label which indicates class, wattage, and wavelength, as well as a Danger sign with warning. Class 3 Lasers exceeding 5mW and all Class 4 Lasers MUST have a key or interlock to turn them on/off, must have a FDA device approval on file, and must be approved for use at the WLHSDM by the Laser Safety Officer (LSO).

### **Control Measures**

#### **Administrative Laser Safety Officer**

A LSO is appointed by the TTUHSC EP. His/her responsibilities shall include determining, reporting, and working to solve Laser safety hazards on campus. S/He will make Laser Standard Operating Procedures (LSOPs) and Laser Procedural Controls (LPCs) which govern Personnel laser use, maintenance, medical surveillance, and environment controls. All SDM personnel are responsible for reporting any laser use to the LSO. The LSO may grant or disallow Laser use at the WLHSDM. The LSO will designate all laser nominal hazard zones (NHZs), all appropriate personal safety protective wear, safety signage and location, and deliver Laser safety training at the WLHSDM.

#### **Training**

All persons using a laser must have been trained and certified according to Texas and have a copy of such certification on file with the WLHSDM. Auxiliaries must have received the same documented training. Records

Records must be kept in one centralized location, the Office of Clinical Affairs. It shall include copies of certifications for all operators, safety training logs, and FDA device approvals/certifications. It shall also include copies of the radiation safety onsite "audits" for compliance.

### **Equipment and Environment**

#### **Protective Equipment**

Proper protective equipment will be provided all personnel using lasers within an NHZ. Within any NHZ: all wall surfaces shall be less reflective, all electrical outlets will be safely grounded and not

require an extension cord, proper ventilation will include local air exchange/ventilation as well as High Volume Evacuation (HVE). Each Laser device must have recommended SOPs for setup and takedown.

#### FDA-approved Devices Only

Class 3 Lasers shall not exceed 5mW (except in an authorized research facility with posted precautions), and shall never be pointed at eyes directly or indirectly (via reflection, scattering, *etc.*). Class 4 Lasers shall be used only within an established and marked NHZ, with appropriate bodily protection (*i.e.*, .1µm filtering mask, gloves, proper wavelength protective eyewear), warnings, and environmental precautions (*i.e.*, no flammable liquids or gases, minimized reflective surfaces). All departments and personnel are required to immediately report Class 3 (over 5mW) and Class 4 Laser devices used at the WLHSDM to the LSO. They will be added to the log of lasers in use at WLHSDM. Treatment Sites

All Laser treatment sites shall meet or exceed ANSI standards. The same applies to all temporary treatment sites (*e.g.*, sim-lab sites). Treatment sites shall be visibly delineated and have the required danger and caution signs conspicuously posted at their boundary (NHZ boundary).

### Laser Safety Program

#### LSO

Responsibilities shall include evaluation of the controls in place to reduce laser hazards, monitoring laser activity, regulation and authorization of laser use, application of protective laser measures, laser incident/accident reporting, and monitoring laser training and education of WLHSDM personnel. Training

Detailed training in Laser safety shall be provided for Health Care Personnel (HCP) using or working in the presence of Class 3B and Class 4 Laser devices. Such training shall be documented and retained with the central Laser archive. All credentialing and/or certification shall include all applicable safety training. Personnel

SDM Laser Safety Training shall be provided to the following: LSO, laser operators, laser technical support staff, auxiliaries and personnel handling Class 4 Laser devices.

#### Programs

Laser safety training shall provide a thorough understanding of all procedures required to establish and maintain a safe work environment during laser use, dispensing/storage, disinfection/sterilization, and repair. Training should be device and procedure specific and harmonious with facility policies, procedures, standards, as well as applicable local, state, and federal regulations.

#### Credentialing/Certification

A laser operator shall not use any laser device beyond the purpose for which it was intended, the scope of his/her training/experience, or the bounds of his/her licensure. Any use shall conform to all WLHSDM standards, regulations and accepted treatment parameters. Any laser credential/certification must include personal laser use, and how to maintain a safe working environment.

### Personnel Medical Surveillance

Operator include only those who have a certificate of laser use on file at WLHSDM, and who the LSO approves to operate a Laser at WLHSDM and its accompanying premises.

Auxiliary personnel include assistants, support personnel and students who have taken laser safety training, and the LSO approves to assist in laser use at WLHSDM and its accompanying premises.

Incidental personnel include all those handling Class 4 Lasers, who have had Laser Safety Training, and the LSO approves for handling Class 4 Laser devices at WLHSDM and its accompanying premises. They are not authorized to activate any Class 4 Laser device, except for recharging purposes.

#### Ocular Health Records

All operators and auxiliary personnel are required to provide baseline ocular health records by a licensed ocular medical examiner prior to operation of any Class 4 Laser device. Such record(s) shall include the following tests for: 1) visual acuity to 20/20, 2) a normal macular field per Amsler Grid or

similar, and 3) normal color vision, for each eye. Any deviation from acceptable/normal requires extended tests until identification of the deviation is reached.

#### Incidents/Accidents

All incidents and accidents are investigated and reported by the LSO. An immediate follow-up ocular examination is required for any suspected victim, with any deviation from their established baseline ocular health fully investigated and reported. Such records shall be included in the central Laser archive, and retained per requirement/regulation/policy.



TEXAS TECH UNIVERSITY  
HEALTH SCIENCES CENTER  
EL PASO

Woody L. Hunt School of Dental Medicine

**WLHSDM CLINIC**  
**Bloodborne Pathogens**  
**Exposure Report Form**

In case of exposure to bloodborne pathogens, complete  
Occurrence Report on line at (see Appendix M)

Appendix Q2: Infection Control Inspection Form

**INFECTION CONTROL INSPECTION FORM**

<b>Date</b>	
<b><u>Cubicle Number</u></b>	
<b><u>Student Number</u></b>	
<b><u>Student Name</u></b>	

<b><u>1st offense</u></b>	<b><u>Verbal Warning</u></b>
<b><u>2nd offense</u></b>	<b><u>Written Warning</u></b>
<b><u>3rd offense</u></b>	<ul style="list-style-type: none"> <li>- <b><u>No credit for procedure</u></b></li> <li>- <b><u>Verification of blood-borne pathogen training class before reinstatement in the clinic</u></b></li> </ul>
<b><u>4th offense</u></b>	<b><u>Referral to the offices of student affairs and clinical affairs</u></b>
<b><u>Note</u></b>	<b><u>The infection control officer or his/her designee will suspend you immediately from clinical activities if any infection control offense poses an immediate threat to the safety of patients, faculty, staff, other students or yourself.</u></b>

<b><u>DLC</u></b>	<b><u>OHC</u></b>	
		<b><u>Personal Protective Equipment</u></b>
		Gloves, Mask, Eye Protection MUST be worn whenever treating patients or working on typodonts.
N/A		All patients must wear protective eyewear during treatment.
N/A		Students must wear protective gowns/barriers/ coats during clinical procedures.
		Hands washed with soap and water or alcohol hand rub before putting on gloves and after taking off gloves.
		Hair must be constrained and kept out of the treatment field.
		<b><u>Disinfection / Sterilization</u></b>
N/A		All instruments/items used for patient treatments must be disinfected and/or sterilized where appropriate (including clinical burs, lab burs, denture polishing wheels.)
N/A		Sterilized instruments/handpieces must be kept sealed until patient is seated, opened in front of patient, and faculty provides approval to proceed.
N/A		All instruments must be re-placed in cassettes and tubs then delivered to sterilization carts located within the clinical area after every patient.
N/A		All cubical surfaces that can be disinfected must be wiped with CaviWipes and sprayed with Zyris disinfectant, between patients.
		Impressions must be disinfected with CaviCide.
		Water lines must be flushed for 20-30 seconds before treatments and after completion of treatment.
		<b><u>Barriers</u></b>

N/A		Barrier tape must be placed on light handles, tray handles, keyboard and mouse if being used while gloved. Then removed after each patient.
N/A		Operatory and x-ray chairs/heads must be covered with barrier tape and covers provided.
		<b><u>Sharps</u></b>
		All sharps must be disposed of in the designated sharps containers only.
N/A		Anesthetic needle caps must cover needle when not in use and placed using cap holder in cassettes.
		Protective cups should cover handpieces holding burs when not in use.
		<b><u>Environment</u></b>
N/A		All countertops, walls and ledges must be kept clean, free, and clear of lab cases, personal items, paper and other items. Models and lab cases stored in cabinets provided.



TEXAS TECH UNIVERSITY  
HEALTH SCIENCES CENTER™  
EL PASO

Woody L. Hunt School of Dental Medicine

**REQUEST TO ADD CLINICAL MATERIALS AND/OR EQUIPMENT**

**NOTE: No material is to be utilized in clinical care at the WLHSDM without prior approval by the Office of Clinical Affairs.**

Submitter\_\_\_\_\_

Date\_\_\_\_\_

Requested Item\_\_\_\_\_

Use/Replacement\_\_\_\_\_

Current Evidence for Addition/Replacement

1.

2.

3.

\_\_\_\_\_ To

**be completed by the Committee:**

Discussion:

Decision\_\_\_\_\_

---

## SUPPLEMENTAL DOCUMENTS

---

### Patient Satisfaction Survey

#### Questions:

Friendliness of the receptionist upon your arrival?

Care and concern of our dentists and dental assistants?

Your phone calls were answered promptly?

Time taken to listen and answer your questions?

How likely are you to recommend our practice and providers to your friends and family? (0 being the least likely, 10 being the most likely)

Please share any other comments or feedback you have about your visit.

#### Answers:

Excellent, Very Good, Good, Fair, Poor



## CLINICAL MONITORING SYSTEM

Item	AACA Responsible Staff	Location	Desired Outcome
Sterilization Records			Records, numbers
Sharps Control			Handled, transported
Medical Waste			Handled, transported
Oxygen Canisters			Ready to Deploy
Fire Extinguishers			Ready to Deploy
Water Lines			Within Biofilm Limits
Housekeeping			Adequate in Treatment Areas
ER Cart			Present, stocked, in date
AED			Ready to Deploy
After Hours Call			Numbers; handled timely
Adverse Events			Records, numbers
Pt. Complaint			Records, type, numbers
Possible Breach			Records, type, numbers
Special Trainings			Records, type, numbers, timely

Records = records of event exist and are well documented

Numbers=threshold numbers set

Handled=handled per recommendations of CDC

Transported=safe transport without incident

Ready to Deploy=working, battery life strong

Limits-Water limits as set by regulation

Adequate=to the CDC level

Present=exist in assigned area

Stocked=contain necessary materials and equipment

n date=not expired

Timely=within a reasonable time for an average person in the area

Type=subcategorized by area or cause

[illegible]

### Plan / Next Steps


## DELINEATION OF CLINICAL PRIVILEGES

***A practitioner requesting clinical privileges must supply evidence of appropriate formal training and if a dental specialist, certification by or educational qualification for examination by the appropriate certification board, or successful completion of an approved training program in the specialty, AND in all instances, current demonstrated competence and experience in the privileges requested:***

Requesting Privileges for: \_\_\_\_\_

Core privileges require a DDS/DMD degree from an ADA-accredited dental school or equivalent.

DIAGNOSTIC PROCEDURES	Requested		Granted	
Clinical Oral Examination	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Intra-oral Radiograph Interpretation	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Panoramic Radiograph Interpretation	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Cephalometric Radiograph Interpretation	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Request and Interpretation of Clinical Pathology Examinations	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Diagnostic Casts	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
PREVENTIVE PROCEDURES	Requested		Granted	
Dental Prophylaxis	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Topical Fluoride Application	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Fabrication of Custom Fluoride Trays	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Application of Sealants to Teeth	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Oral Hygiene Instruction	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Passive Space maintenance Procedures	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other (specify):	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other (specify):	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other (specify):	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
RESTORATIVE PROCEDURES	Requested		Granted	
Conventional Restorative Dentistry Procedures	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Indirect Pulp Capping	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Direct Pulp Capping	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Ceramic Labial Veneer	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other (specify):	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other (specify):	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other (specify):	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
ENDODONTIC PROCEDURES	Requested		Granted	
Pulpotomy	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Pulp Extirpation	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Conventional Root Canal Therapy	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Apexification/Recalcification	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Endodontic Apical Curettage	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Root Amputation	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Apicoectomy	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Retrograde Filling of Tooth	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Hemi-section	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Bleaching of Discolored Teeth	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No

<b>Intentional Reimplantation</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Vital Bleaching	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Non-vital Bleaching	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Delineation of Privileges Form

Page 1 of 4

April 2019

Endodontic Retreatment	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Repair of Internal Perforation	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Revitalization	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other (specify):	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>PERIODONTAL PROCEDURES</b>	<b>Requested</b>		<b>Granted</b>	
Gingivectomy	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Scaling and Root Planing	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Gingival Curettage	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Gingival Flap Curettage	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Osseous Surgery/Crown Lengthening	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Mucogingival Surgery	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Apically Positional Flap Procedure	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Osseous Grafting Procedures	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Provisional Splinting of Teeth	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Guided Tissue Regeneration</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Guided Bone Regeneration</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Pedicle Soft Tissue Graft Procedure	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Free Soft Tissue Graft Procedure	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Localized Delivery of Therapeutic Agents	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Surgical Placement of Endosseous Dental Implants</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Transitional Orthodontic Implants</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Allograft Soft Tissue Procedures	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Osseous Block Grafting from Ramus and/or Symphysis</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Maxillary Sinus Floor Grafting</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Root Amputation	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Hemi-section	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other (specify):	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other (specify):	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>PROSTHODONTIC PROCEDURES</b>	<b>Requested</b>		<b>Granted</b>	
Tooth Replacement w/ Conventional Fixed Prosthodontic Procedures	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Tooth Replacement with Conventional Removable Prosthodontic Procedures	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Construction of Precision Attachments for Retention of Prostheses	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Overdentures	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Immediate Dentures	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Occlusal Analysis/Pantographic Tracing	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Replacement of Teeth with Implant Retained / Supported Abutments</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>TRANSITIONAL ORTHODONTIC IMPLANTS</b>	<b>Requested</b>		<b>Granted</b>	
Repairs to Removable Prosthodontic Appliances	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Repairs to Fixed Prosthodontic Appliances	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Denture Rebase Procedures	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Denture Reline Procedures	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Maxillofacial Prosthetic Replacement for Intra-oral Acquired or Congenital Defects	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Maxillofacial Prosthetic Replacement for Extra-oral Acquired or Congenital Defects	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other (specify):	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other (specify):	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>ORAL AND MAXILLOFACIAL SURGERY PROCEDURES</b>	<b>Requested</b>		<b>Granted</b>	
Extraction of Erupted Teeth	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Surgical Extraction of Erupted Teeth	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Surgical Removal of periapical granuloma/cyst in conjunction with extraction	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Routine Alveoloplasty	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Removal of tori and exostoses	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Intra-oral Biopsy - Soft Tissue	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Intra-oral Biopsy - Hard Tissue	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Closure of Oral Mucosal Lacerations	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Management of Dentoalveolar infection with Oral Antibiotics	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Incision and Drainage of Intra-oral Abscess	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Excision of Hyperplastic Tissue	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Frenectomy	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other (specify):	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other (specify):	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>OTHER PROCEDURES</b>	<b>Requested</b>		<b>Granted</b>	
Administration of Local Anesthesia	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Diagnostic Local Anesthesia Procedures	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Treatment of Geriatric Patients	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Treatment of Medically Compromised Patients	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>SURGICAL PLACEMENT OF ENDOSSEOUS DENTAL IMPLANTS</b>	<b>Requested</b>		<b>Granted</b>	
Treatment of Geriatric Patients	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Treatment of ASA II & III Medically Compromised Patients	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Treatment of ASA IV Medically Compromised Patients	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Minor Tooth Movement Procedures	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Diagnosis and Non-Surgical Treatment of TMJ Disorders	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Occlusal Adjustment	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Desensitization Procedures	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Occlusal Guard Fabrication	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>LASERS</b>	<b>Requested</b>		<b>Granted</b>	
Hard Tissue Laser Procedures	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Soft Tissue Laser Procedures	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other Laser Applications (specify):	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>TYPE OF UTAH DENTAL ANESTHESIA AND ANALGESIA PERMIT HELD:</b>	<b>Requested</b>		<b>Granted</b>	
Class I	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Class II	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Class III	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Class IV	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No

SEDATION / GENERAL ANESTHESIA	Requested		Granted	
Requires documentation of appropriate training and experience for requested privileges. BCLS is required for all techniques. ACLS, PALS or TSBDE approved course is required for all techniques except Nitrous Oxide Conscious Sedation and Enteral Sedation for which only BCLS is required.				
Privileges denoted by an " * " require appropriate permits on your USN faculty or full dental license.				
Nitrous Oxide/Oxygen Inhalation Conscious Sedation*	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Enteral Conscious Sedation*	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Intravenous Conscious Sedation*	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Deep Sedation*	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
General Anesthesia*	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other (specify):	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other (specify):	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
SPECIALTY PRIVILEGES IN ORAL MEDICINE, RADIOLOGY AND PATHOLOGY	Requested		Granted	
Intra-oral Biopsy – Soft Tissue	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Intra-oral Biopsy – Hard Tissue	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Administration of Local Anesthesia for Diagnostic Purposes	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Treatment of Benign Tumors by Intra-lesional Injection	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Treatment of Oral Mucosal Lesions by Intra-lesional Injection	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Request and Interpretation of Clinical Laboratory Examinations	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Diagnostic Microscopic Histopathology	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Diagnostic Microscopic Cytology	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Diagnostic Immuno-fluorescence Microscopy	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
INTERPRETATION OF CULTURES	Requested		Granted	
Non-surgical Management of Diseases of the Oral Region	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Diagnosis and Non-surgical Management of TMJ Disorders	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Diagnosis and Non-surgical Management of Atypical Facial Pain	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Interpretation of Conventional Intra-oral Radiographs	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Interpretation of Panoramic Radiographs	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Interpretation of Extra-oral Diagnostic Radiographs, CT, MRI	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Sialography	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Tomography	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other (specify):	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other (specify):	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other (specify):	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Privileges denoted by **bold face type** require evidence of advanced training.

#### REQUEST FOR CLINICAL PRIVILEGES

I hereby request clinical privileges as listed in this delineation.

\_\_\_\_\_  
Applicant Signature

\_\_\_\_\_  
Date

**APPROVALS** (Only two signatures are required)

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Director of Clinical Dental Care

---

Date

---

Associate Dean for Academic Affairs

---

Date

---

Associate Dean for Clinical Care

---

Date



## **Appendix V: Reference Outline of Endodontic Treatment**

(Developed by Santiago Batres, DDS, MAGD; Alex Gonzalez, DDS, MAGD)

### **DIAGNOSIS AND TREATMENT PLAN**

- **PRELIMINARY PERIAPICAL RADIOGRAPH**

A diagnostic periapical radiograph(s) of the tooth to be treated is to be used to get an idea of the working length of the canal(s) using the measurement feature in MIPACS. The radiograph(s) must show the entire length to include the apex of the root and be taken at an angle that will yield an image that proportionately relates to the actual length of the tooth.

- **COMPLETED ENDODONTIC DIAGNOSIS FORM IN axiUm EHR**

This is an endodontic diagnostic worksheet to work you through on endo related case.

### **ACCESS**

After isolating the tooth with a rubber dam, a conservative access opening should be prepared with a high speed hand piece and a #4 round bur initially, and refined with an EndoGuard bur. Entry into the pulp chamber should be done with a slow speed hand piece and a #4 or #6 round bur and the pulp chamber cleaned of organic debris with the same bur and a spoon excavator. Care should be taken to go through the roof of the pulp chamber, but avoid going through the floor. The access opening should be large enough to de-roof the pulp chamber, allow for straight line access, and give you adequate visibility of the pulpal floor.

### **LOCATE THE CANAL(S)**

Once the floor of the pulp chamber is located and cleaned, the canal(s) orifice can be located with the double ended endo explorer or a large hand file. The orifice opener can then be used to create a funnel in the opening of the canals to ease finding them with a file and help establish straight line access to all canals. A #10 hand file can then be advanced to navigate the canal(s), establish the initial glide path and approximate the length of each canal from the periapical radiograph. The Apex locator feature of the EndoPilot system can then be used to obtain working length. Once confirmed, the reference point and working length can be noted and recorded. In locating the canals, knowledge of root anatomy is essential. Remember that there are variations that occur in nature, so expect the unexpected. If the canal is located buccal or lingual to the center of the tooth, there is probably a second canal on the other side of center.

### **GLIDE PATH AND PREPARATION**

Having confirmed the reference point and working length, the #15-.03 PathGlider can be advanced to length to expand the glide path. As an option, the pulp chamber can be filled with NaOCl at this time. Prepare the canal(s) using the #25-.04 F360 file, take the file to length. If further shaping is desired, continue shaping with the #35-.04 F360 file. Cleaning and lubrication of each file and irrigation of the canal are critical steps in navigating and shaping the canals during the endodontic procedure.

These steps should be repeated each time a file is withdrawn from the canal after working it:

1. Wipe debris from the file with a 2X2 gauze, sponge or other method
2. Rinse debris from the canal with sodium hypochlorite from the irrigating syringe
3. Inspect the file visually for any damage
4. Lubricate the file with RC Prep before working the canal again

. 13, 2023

#### **MASTER CONE FIT, FINAL RINSE AND AGITATION**

Rinse out the canal(s) and eliminate moisture by placing Micro-aspirator tip in orifice(s). Take and fit an appropriate sized master gutta percha cone to length and confirm fit with x-ray(s) and tugback. Once confirmed, prepare the canal(s) for obturation:

1. Rinse with NaOCl for 20-30 seconds, followed by agitation with EndoActivator for 30 seconds
2. Rinse with EDTA for 20-30 seconds, followed by agitation with EndoActivator for 30 seconds

#### **OBTURATION**

After rinsing, dry canal(s) with Micro-aspirator and appropriate paper points, coat  $\frac{1}{8}$  to  $\frac{1}{2}$  master cone(s) with Bioseal and insert to length/reference point. Cut excess gutta percha off with downpack unit and condense with endo plugger (double-ended). Take final x-ray. With larger canal(s) lateral condensation with accessory gutta percha cones or a thermoplastisized backfill method could be employed.

#### **THINGS TO REMEMBER...**

1. Let the endo hand piece do the work, do not force it.
2. Establish a reference point for the file (rubber stopper) and be consistent with it.
3. If the file will not go to length, re-establish your glide path with hand files.
4. It's trying to work that last millimeter that most file separations happen.
5. If you are rushed at the end of the procedure, best to temporize and reappoint. FYI: You probably will not be able to complete treatment in one appointment. Find a stopping point.



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## APPENDIX W

Dear [PATIENT NAME],

I am writing to inform you, that effective immediately, I will no longer be able to act as your dentist. I have made this decision due to your inappropriate behavior toward myself and my staff.

In the event you should require emergency care within 30 days of the date on this letter, I will make myself available or assist you in finding an emergency appointment elsewhere.

I recommend you find another dentist immediately to ensure your good oral health. You can find a new dentist by asking for recommendations from your family and friends. Once you find a new dentist, my staff will copy your file and forward it to your new provider.

Sincerely,

**Will Henard**

Senior Clinical Department Administrator | WLHSDM  
Texas Tech University Health Sciences Center El Paso  
*Mailing:* 5001 El Paso Drive, MSC 24002 | El Paso, Texas 79905  
*Physical:* 222 Rick Francis Street, | El Paso, Texas 79905  
*Direct:* [719.761.6119](tel:719.761.6119) | *Office:* [915.215.4457](tel:915.215.4457)  
[ttuhscep.edu/sdm](http://ttuhscep.edu/sdm) | [www.give2tech.com](http://www.give2tech.com)

## Oral Health Clinic

### Operating Policy and Procedure

## Appendix X

### SDM-CP-02 Policy for the Administration of Nitrous Oxide/Oxygen

#### Purpose:

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This policy is written as a reference and guideline for the School of Dental Medicine to ensure that the quality and standards imposed on this modality of pain control is superior.

#### Scope and Distribution:

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This policy applies and will be distributed within WLHSDM – Clinical Practice, and a copy will be provided to clinic and administrative staff.

#### Review:

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This policy will be reviewed annually in September 1<sup>st</sup>, but is subject to change by the Associate Dean of Clinical Affairs in the case of unexpected circumstances.

#### Procedure:

---

- State the name of department and the location(s) covered by this policy.
  - Woody L Hunt School of Dental Medicine (WLHSDM), TTUHSC EP, 222 Rick Francis, MSC 24002, El Paso, TX 79905
- Purpose.
  - The use of nitrous oxide is encouraged for appropriate clinical experiences for the students and patients of the WLHSDM and to be recognized as a useful and safe modality for pain control.
- Indications:
  - Nitrous oxide/oxygen is indicated for apprehensive patients, medically compromised patients and patients with a hyperactive gag reflex.
- Student Clinicians:
  - Nitrous oxide/oxygen can only be given by students who have completed a Woody L. Hunt School of Dental Medicine 14 hour course of didactic training, including a clinical component (TSDB Rule 110.3), in the correct administration of nitrous oxide and oxygen sedation.
- Faculty Qualification
  - Faculty for supervising the administration of nitrous oxide/oxygen inhalation are governed by the Texas State Board of Dental Examiners which require that all dentists who administer nitrous oxide/oxygen inhalation must have a current dental license. Upon request licensed dentists should be able to produce documentation of previous education and/or a history of clinical use of nitrous oxide/oxygen inhalation analgesia.
  - Faculty members overseeing administration of nitrous-oxide inhalation analgesia must be supported with possessing a nitrous oxide license achieved by one of the following:

- Satisfactory completion of an ADA/CODA approved or recognized pre-doctoral dental or postdoctoral dental training program which affords comprehensive training necessary to administer and manage nitrous oxide/oxygen inhalation sedation; or
  - Is a Texas licensed dentist, has a current Board-issued nitrous oxide/oxygen inhalation sedation permit, and has been using nitrous oxide/oxygen inhalation sedation in a competent manner immediately prior to the implementation of June 1, 2011 shall automatically hold this permit; or
  - Satisfactory completion of a comprehensive training program consistent with that described for nitrous oxide/oxygen inhalation sedation administration in the American Dental Association (ADA) Guidelines for Teaching Pain Control and Sedation to Dentist and Dental Students. This includes a minimum of fourteen (14) hours of training, including a clinical component, during which competency in inhalation sedation technique is achieved. Acceptable courses include those obtained from academic programs of instruction recognized by the ADA commission on Dental Accreditation (CODA); or courses approved and recognized by the ADA Continuing Education Recognition Program (CERP); or courses approved and recognized by the Academy of General Dentistry (AGD) Program Approval for Continuing Education (PACE).
- Equipment:
    - All analgesia (nitrous-oxide only) equipment shall be fail-safe, meaning that the equipment cannot function without an ongoing available supply of at least 100% pure oxygen. Nitrous-oxide/oxygen machines currently employed for use at the WLH School of Dental Medicine are not connected to a central supply of nitrous-oxide and oxygen.
    - It should be noted that analgesia machines are to be readily available as secondary tools of urgent medical care for airway support that allows 100% oxygen at least 15 liters per minute. The primary tool for the administration of 100% oxygen are the oxygen cylinders associated with the crash carts in the clinic.
    - The equipment should be checked quarterly for leakage and should never be used without scavenging equipment. To do so violates a significant standard of care issue.
  - Post-Operative:
    - All nitrous oxide administrations shall conclude with a minimum of 5 minutes of pure 100% oxygen – more if deemed appropriate by the clinician.
  - Documentation:
    - All uses of nitrous oxide shall be recorded in a proper manner with information as indicated on the axiUm form CONSED—Nitrous Oxide Administration Record and save it as part of the patient's permanent electronic record.
    -
  - Delegation:
    - Nitrous oxide/oxygen monitoring and administration may be delegated under direct supervision to appropriately trained personnel. The supervising dentist is responsible for determining the maximum dosage of nitrous oxide/oxygen analgesia. The maximum dose of nitrous oxide/oxygen anesthesia that a student is allowed to give is 50% without the direct instruction by the attending faculty to increase the dose to a higher percentage.
  - Other State Board Requirements to note:
    - Patient Evaluation: Patients considered for nitrous oxide/oxygen inhalation sedation must be suitable evaluated prior to the start of any sedative procedure. In healthy or medically stable individuals (ASA

I,II), this may consist of a review of their current medical history and medication use. However, patients with significant medical consideration (ASA III, IV) may require consultation with the patient's primary care physician or consulting medical specialist.

- The dentist must induce the nitrous oxide/oxygen inhalation sedation and must remain in the room with the patient during the maintenance of the sedation until pharmacologic and physiologic vital sign stability is established.

**Disclaimer:**

TTUHSC EP – WLHSDM reserves the right to interpret, change, modify, amend or rescind any policy in whole or in part at any time without the consent of employees.

Policy Number: <b>SDM-CP-02</b>	Original Approval Date: <b>11-01-2021</b>
Version Number: <b>1</b>	
Signatory approval on file by:	
<div>Richard C. Black, DDS, MS Founding Dean</div> <div>Woody L. Hunt School of Dental Medicine</div>	<div>Faddy F. Faddoul, DDS, Associate Dean of Clinical Affairs</div>

## Appendix Y

### SDM-CP-03Texas Tech Dental –DENTAL LABORATORY INFECTION CONTROL PROCEDURE

**Purpose:** Infection control procedures are designed to protect students, patients, faculty and staff of the Dental Laboratory. In addition, these procedures will help prevent the cross-contamination of appliances.

#### **Scope and Distribution:**

This policy applies and will be distributed to all personnel within the WLHSDM.

#### **Review:**

This policy will be reviewed annually in September 1<sup>st</sup>. but is subject to change by the Associate Dean of Clinical Affairs in the case of unexpected circumstances.

#### **Procedure:**

- State the name of department and the location(s) covered by this policy.
  - Woody L Hunt School of Dental Medicine - OHC, TTUHSC EP, 222 Rick Francis, MSC 24002, El Paso, TX 79905
- Identify the positions impacted by this policy.
  5. Dentists
  6. Dental Students
  7. Dental Assistants
  8. Lab Technicians
  9. Dispensary and Sterilization Assistants

The Lab Case protocols are as follows:

6. Student generates Lab Order Form in Axiom
7. Lab order form is received with a stipulated due date (Lab cases WILL NOT begin until lab has received a lab order in hand)
8. All cases are appointed 7 working days following the retrieved lab order with the exception of dentures being 7 working days for fabrication and appointed on the 10th day
9. Once prosthesis/appliance have been completed they are properly disinfected (see outgoing disinfecting protocol)
10. Case is bagged in a clear plastic bag with corresponding patient/student details along with a QA form attached and placed in dispensary
11. Students will pick up completed cases from the dispensary window where they are in color coded bins depending on the type of prosthesis/appliance on the patient's appointed date
12. Students are to fill out the lab QA form and return it once case is delivered
13. Lab Slips are archived along with the QA form and placed in a binder
14. Handling and Packaging Prostheses Prior to sending to labs (internal or external)
  - All appliances and prosthesis (dentures, crowns, etc.) that come into contact with the oral cavity must be cleaned and disinfected prior to shipping to any lab, internal or external.
  - Appropriate PPE must be worn during disinfecting process
  - Wash appliance then spray with CAVICIDE prior to packaging
  - Any appliance that cannot be disinfected must be place in a plastic bag with a biohazard sticker
    - Lab slip must identify that the appliance has not been disinfected to alert lab personnel to handle appropriately.
15. The following procedures apply to all INCOMING appliances into the In House Dental Laboratory:

1. All outgoing cases should be properly cleaned, disinfected and packaged
2. All outgoing cases are cleaned and disinfected before being shipped to remove any debris or pathogenic micro-organisms.
3. Spray appliance with Cavicide and allow to sit for 3 minutes.
4. Thoroughly rinse the appliance and allow to completely dry.
5. Pack appliance in a plastic bag with diluted mouthwash
6. Seal and deliver.

## **REFERENCES**

1. The American Dental Association Council on Scientific Affairs. The use of cone-beam computed tomography in dentistry. *J Am Dent Assoc* 2012;143(8):899-202.
2. Anbiaee N, Mohassel AR, Imanimoghaddam M, Moazzami SM. A comparison of the accuracy of digital and conventional radiography in the diagnosis of recurrent caries. *J Contemp Dent Pract* 2010;11(6):E025-032.
3. Senel B, Kamburoglu K, Ucok O, et al. Diagnostic accuracy of different imaging modalities in detection of proximal caries. *Dentomaxillofac Radiol* 2010;39(8):501-11.
4. Ulusu T, Bodur H, Odabas ME. In vitro comparison of digital and conventional bitewing radiographs for the detection of approximal caries in primary teeth exposed and viewed by a new wireless handheld unit. *Dentomaxillofac Radiol* 2010;39(2):91-4.
5. Tracy KD, Dykstra BA, Gakenheimer DC, et al. Utility and effectiveness of computeraided diagnosis of dental caries. *Gen Dent* 2011;59(2):136-44.
6. Atchison KA, White SC, Flack VF, Hewlett ER. Assessing the FDA guidelines for ordering dental radiographs. *J Am Dent Assoc* 1995;126(10):1372-83.
7. Atchison KA, White SC, Flack VF, Hewlett ER, Kinder SA. Efficacy of the FDA selection criteria for radiographic assessment of the periodontium. *J Dent Res* 1995;74(7):1424-32.
8. Pitts NB, Kidd EA. The prescription and timing of bitewing radiography in the diagnosis and management of dental caries: contemporary recommendations. *Br Dent J* 1992;172(6):225-7.
9. Smith NJ. Selection criteria for dental radiography. *Br Dent J* 1992;173(4):120-1. 10. Hintze H. Screening with conventional and digital bite-wing radiography compared to clinical examination alone for caries detection in low-risk children. *Caries Res* 1993;27(6):499-504.
11. Hintze H, Wenzel A. Clinically undetected dental caries assessed by bitewing screening in children with little caries experience. *Dentomaxillofac Radiol* 1994;23(1):19-23.
12. Ferguson F, Festa SA. Radiography for children and adolescents. *N Y State Dent J* 1993;59(2):25-9.
13. Henderson NJ, Crawford PJ. Guidelines for taking radiographs of children. *Dent Update* 1995;22(4):158-61.
14. Wenzel A. Current trends in radiographic caries imaging. *Oral Surg Oral Med Oral Pathol* 1995;80(5):527-39.
15. White SC, Heslop EW, Hollender LG, et al. Parameters of radiologic care: An official report of the American Academy of Oral and Maxillofacial Radiology. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2001;91(5):498-511.
16. Newman B, Seow WK, Kazoullis S, Ford D, Holcombe T. Clinical detection of caries in the primary dentition with and without bitewing radiography. *Aust Dent J* 2009;54(1):2330.
17. Clark HC, Curzon ME. A prospective comparison between findings from a clinical examination and results of bitewing and panoramic radiographs for dental caries diagnosis in children. *Eur J Paediatr Dent* 2004;5(4):203-9.

18. Hopcraft MS, Morgan MV. Comparison of radiographic and clinical diagnosis of approximal and occlusal dental caries in a young adult population. *Community Dent Oral Epidemiol* 2005;33(3):212-8.
19. Tinanoff N, Douglass JM. Clinical decision-making for caries management in primary teeth. *J Dent Educ* 2001;65(10):1133-42.
20. Arrow P. Incidence and progression of approximal carious lesions among school children in Western Australia. *Aust Dent J* 2007;52(3):216-26.
21. Lith A. Frequency of radiographic caries examinations and development of dental caries. *Swed Dent J Suppl* 2001(147):1-72.
22. National Institute of Dental Research. The prevalence of dental caries in United States children, 1979-1980. *Department of Health and Human Services - National Institutes of Health*. 1981;NIH publication no. 82-2245. 23. National Institute of Dental Research. The national survey of dental caries in U.S. School Children: 1986-1987.

*Department of Health and Human Services - National Institutes of Health*. 1989;NIH publication no. 89-2247.

24. Kaste LM, Selwitz RH, Oldakowski RJ, et al. Coronal caries in the primary and permanent dentition of children and adolescents 1-17 years of age: United States, 1988-1991. *J Dent Res* 1996;75 Spec No:631-41.
25. National Center for Chronic Disease Prevention and Health Promotion. Oral Health: Preventing Cavities, Gum Disease, Tooth Loss, and Oral Cancers at a Glance 2011. [www.cdc.gov/chronicdisease/resources/publications/AAG/doh.htm](http://www.cdc.gov/chronicdisease/resources/publications/AAG/doh.htm) (accessed November 14, 2011).
26. Research Science and Therapy Committee American Academy of Periodontology. Position paper: Periodontal diseases of children and adolescents. *J Periodontol* 2003;74(11):1696-704.
27. Oh TJ, Eber R, Wang HL. Periodontal diseases in the child and adolescent. *J Clin Periodontol* 2002;29(5):400-10.
28. Corbet EF, Ho DK, Lai SM. Radiographs in periodontal disease diagnosis and management. *Aust Dent J* 2009;54 Suppl 1:S27-43.
29. Hollier LH, Jr., Sharabi SE, Koshy JC, Stal S. Facial trauma: general principles of management. *J Craniofac Surg* 2010;21(4):1051-3.
30. Alcala-Galiano A, Arribas-Garcia IJ, Martin-Perez MA, et al. Pediatric facial fractures: children are not just small adults. *Radiographics* 2008;28(2):441-61; quiz 618.
31. Sameshima GT, Asgarifar KO. Assessment of root resorption and root shape: periapical vs panoramic films. *Angle Orthod* 2001;71(3):185-9.
32. Witcher TP, Brand S, Gwilliam JR, McDonald F. Assessment of the anterior maxilla in orthodontic patients using upper anterior occlusal radiographs and dental panoramic tomography: a comparison. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2010;109(5):765-74.
33. Tai CC, Miller PA, Packota GV, Wood RE. The occlusal radiograph revisited. *Oral Health* 1994;84(11):47-50, 53.
34. Taylor NG, Jones AG. Are anterior occlusal radiographs indicated to supplement panoramic radiography during an orthodontic assessment? *Br Dent J* 1995;179(10):377-81.

35. Tomar SL, Reeves AF. Changes in the oral health of U.S. children and adolescents and dental public health infrastructure since the release of the Healthy People 2010 Objectives. *Acad Pediatr* 2009;9(6):388-95.
36. Albandar JM, Tinoco EM. Global epidemiology of periodontal diseases in children and young persons. *Periodontol 2000* 2002;29:153-76.
37. Atieh MA. Diagnostic accuracy of panoramic radiography in determining relationship between inferior alveolar nerve and mandibular third molar. *J Oral Maxillofac Surg* 2010;68(1):74-82.
38. Le T, Nassery K, Kahlert B, Heithersay G. A comparative diagnostic assessment of anterior tooth and bone status using panoramic and periapical radiography. *Aust Orthod J* 2011;27(2):162-8.
39. Nohadani N, Ruf S. Assessment of vertical facial and dentoalveolar changes using panoramic radiography. *Eur J Orthod* 2008;30(3):262-8.
40. Garvey MT, Barry HJ, Blake M. Supernumerary teeth--an overview of classification, diagnosis and management. *J Can Dent Assoc* 1999;65(11):612-6.
41. Tsai HH. Panoramic radiographic findings of the mandibular growth from deciduous dentition to early permanent dentition. *J Clin Pediatr Dent* 2002;26(3):279-84.
42. Anthonappa RP, King NM, Rabie AB, Mallineni SK. Reliability of panoramic radiographs for identifying supernumerary teeth in children. *Inter J Paediatr Dent* 2012;22(1):37-43.
43. National Institute for Dental and Craniofacial Research. Dental Caries (Tooth Decay) in Adults (Age 20 to 64).  
<http://www.nidcr.nih.gov/DataStatistics/FindDataByTopic/DentalCaries/DentalCariesAdults20to64> (accessed March 21, 2012).
44. Centers for Disease Control and Prevention. Recommendations for using fluoride to prevent and control dental caries in the United States. *MMWR* 2001;50(No. RR-14).
45. Ritter AV, Shugars DA, Bader JD. Root caries risk indicators: a systematic review of risk models. *Community Dent Oral Epidemiol* 2010;38(5):383-97.
46. Topping GVA, Pitts NB. Clinical Visual Caries Detection. *Monogr Oral Sci* 2009;21:15-41.
47. Hugoson A, Sjodin B, Norderyd O. Trends over 30 years, 1973-2003, in the prevalence and severity of periodontal disease. *J Clin Periodontol* 2008;35:405-14.
48. Rushton VE, Horner K, Worthington HV. Screening panoramic radiography of new adult patients: diagnostic yield when combined with bitewing radiography and identification of selection criteria. *Br Dent J* 2002;192(5):275-9.
49. Rushton MN, Rushton VE. A study to determine the added value of 740 screening panoramic radiographs compared to intraoral radiography in the management of adult (>18 years) dentate patients in a primary care setting. *J Dent* 2012;40(8):661-9.
50. Rushton VE, Horner K, Worthington HV. Routine panoramic radiography of new adult patients in general dental practice: relevance of diagnostic yield to treatment and identification of radiographic selection criteria. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2002;93(4):488-95.
51. Jindal SK, Sheikh S, Kulkarni S, Singla A. Significance of pre-treatment panoramic radiographic assessment of edentulous patients--a survey. *Med Oral Patol Oral Cir Bucal*. Jul 2011;16(4):e600-6.

52. Edgerton M, Clark P. Location of abnormalities in panoramic radiographs of edentulous patients. *Oral Surg Oral Med Oral Pathol* 1991;71(1):106-9.
53. Sumer AP, Sumer M, Guler AU, Bicer I. Panoramic radiographic examination of edentulous mouths. *Quintessence Int* 2007;38(7):e399-403.
54. Masood F, Robinson W, Beavers KS, Haney KL. Findings from panoramic radiographs of the edentulous population and review of the literature. *Quintessence Int* 2007;38(6):e298-305.
55. Awad EA, Al-Dharrab A. Panoramic radiographic examination: a survey of 271 edentulous patients. *Int J Prosthodont* 2011;24(1):55-7.
56. Bohay RN, Stephens RG, Kogon SL. A study of the impact of screening or selective radiography on the treatment and postdelivery outcome for edentulous patients. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1998;86(3):353-9.
57. Feine JS, Carlsson GE, Awad MA, et al. The McGill consensus statement on overdentures. Mandibular two-implant overdentures as first choice standard of care for edentulous patients. Montreal, Quebec, May 24-25, 2002. *Int J Oral Maxillofac Implants* 2002;17(4):601-2.
58. da Silva RP, Assaf AV, Pereira SM, et al. Validity of caries-detection methods under epidemiological setting. *Am J Dent* 2011;24(6):363-6.
59. Steiner M, Buhlmann S, Menghini G, Imfeld C, Imfeld T. Caries risks and appropriate intervals between bitewing x-ray examinations in schoolchildren. *Schweiz Monatsschr Zahnmed* 2011;121(1):12-24.
60. Patel S, Bay RC, Glick M. A systematic review of dental recall intervals and incidence of dental caries. *J Am Dent Assoc* 2010;141(5):527-39.
61. Pitts NB. The use of bitewing radiographs in the management of dental caries: scientific and practical considerations. *Dentomaxillofac Radiol* 1996;25(1):5-16.
62. Garcia RI, Valachovic RW, Chauncey HH. Longitudinal study of the diagnostic yield of panoramic radiographs in aging edentulous men. *Oral Surg Oral Med Oral Pathol* 1987;63(4):494-7.
63. Dye BA, Thornton-Evans G. Trends in oral health by poverty status as measured by Healthy People 2010 objectives. *Public Health Rep* 2010;125(6):817-30.
64. Dye BA, Arevalo O, Vargas CM. Trends in paediatric dental caries by poverty status in the United States, 1988-1994 and 1999-2004. *Int J Paediatr Dent* 2010;20(2):132-43.
65. Shwartz M, Grondahl HG, Pliskin JS, Boffa J. A longitudinal analysis from bite-wing radiographs of the rate of progression of approximal carious lesions through human dental enamel. *Arch Oral Biol* 1984;29(7):529-36.
66. Berkey CS, Douglass CW, Valachovic RW, Chauncey HH. Longitudinal radiographic analysis of carious lesion progression. *Community Dent Oral Epidemiol* 1988;16(2):83-90.
67. Mejare I, Kallest I C, Stenlund H. Incidence and progression of approximal caries from 11 to 22 years of age in Sweden: A prospective radiographic study. *Caries Res* 1999;33(2):93-100.
68. Sheiham A, Sabbah W. Using universal patterns of caries for planning and evaluating dental care. *Caries Research* 2010;44(2):141-50.
69. Chankanka O, Marshall TA, Levy SM, et al. Mixed dentition cavitated caries incidence

and dietary intake frequencies. *Pediatr Dent* 2011;33(3):233-40.

70. Gruythuysen RJ, van der Linden LW, Woltgens JH, Geraets WG. Differences between primary and permanent teeth in posteruptive age dependency of radiological changes in enamel during the development of approximal caries. *J Biol Buccale* 1992;20(1):59-62.
71. Kotsanos N, Darling AI. Influence of posteruptive age of enamel on its susceptibility to artificial caries. *Caries Res* 1991;25(4):241-50.
72. Woltgens JH, Eddy EJ, Geraets WG. Posteruptive age dependency of cariogenic changes in enamel of permanent teeth of children. *J Biol Buccale* 1990;18(1):49-53.
73. Cardoso CA, Magalhaes AC, Rios D, Lima JE. Cross-sectional hardness of enamel from human teeth at different posteruptive ages. *Caries Res* 2009;43(6):491-4.
74. Gutteridge DL. The use of radiographic techniques in the diagnosis and management of periodontal diseases. *Dentomaxillofac Radiol* 1995;24(2):107-13.
75. National Council on Radiation Protection and Measurements, ed *NCRP Report No. 160 - Ionizing Radiation Exposure of the Population of the United States*. Bethesda: National Council on Radiation Protection and Measurements; 2009.
76. American National Standards Institute. Photography - Intra-oral dental radiographic film - Specification. *New York: American National Standards Institute*. 1997;ANSI/NAPM IT2.49-1997. ANSI/ISO 3665:1996.
77. American National Standards Institute. Photography - Direct-exposing medical and dental radiographic film/process systems - Determination of ISO speed and ISO average gradient. *New York: American National Standards Institute*. 1983;ISO 5799:1991. ANSI PH2.50-1983.
78. U.S. Food and Drug Administration. Dental Radiography: Doses and Film Speed. <http://www.fda.gov/Radiation-EmittingProducts/RadiationSafety/NationwideEvaluationofXRayTrendsNEXT/ucm116524.htm>. (accessed August 2011).
79. Farman TT, Farman AG. Evaluation of a new F speed dental X-ray film. The effect of processing solutions and a comparison with D and E speed films. *Dentomaxillofac Radiol* 2000;29(1):41-5.
80. Hadley DL, Replogle KJ, Kirkam JC, Best AM. A comparison of five radiographic systems to D-speed film in the detection of artificial bone lesions. *J Endod* 2008;34(9):1111-4.
81. Alkurt MT, Peker I, Bala O, Altunkaynak B. In vitro comparison of four different dental Xray films and direct digital radiography for proximal caries detection. *Oper Dent* 2007;32(5):504-9.
82. Schulze RK, Nackat D, D'Hoedt B. In vitro carious lesion detection on D-, E-, and Fspeed radiographic films. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2004;97(4):529-34.
83. Sheaffer JC, Eleazer PD, Scheetz JP, Clark SJ, Farman AG. Endodontic measurement accuracy and perceived radiograph quality: effects of film speed and density. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2003;96(4):441-8.
84. Syriopoulos K, Velders XL, Sanderink GC, van Der Stelt PF. Sensitometric and clinical evaluation of a new F-speed dental X-ray film. *Dentomaxillofac Radiol* 2001;30(1):40-4.
85. Woolhiser GA, Brand JW, Hoen MM, et al. Accuracy of film-based, digital, and

enhanced digital images for endodontic length determination. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2005;99(4):499-504.

86. National Council for Radiation Protection & Measurements, ed. *NCRP Report No. 145 Radiation Protection in Dentistry*. Bethesda: National Council on Radiation Protection and Measurement; 2003.
87. Gratt BM, White SC, Packard FL, Petersson AR. An evaluation of rare-earth imaging systems in panoramic radiography. *Oral Surg Oral Med Oral Pathol* 1984;58(4):475-82.
88. Kaugars GE, Fatouros P. Clinical comparison of conventional and rare earth screen-film systems for cephalometric radiographs. *Oral Surg Oral Med Oral Pathol* 1982;53(3):322-5.
89. Goren AD, Lundeen RC, Deahl II ST, et al. Updated quality assurance self-assessment exercise in intraoral and panoramic radiography. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2000;89(3):369-74.
90. Gavala S, Donta C, Tsiklakis K, et al. Radiation dose reduction in direct digital panoramic radiography. *Eur J Radiol* 2009;71(1):42-8.
91. Alcaraz M, Parra C, Martinez Beneyto Y, Velasco E, Canteras M. Is it true that the radiation dose to which patients are exposed has decreased with modern radiographic films? *Dentomaxillofac Radiol* 2009;38(2):92-7.
92. Dannewitz B, Hassfeld S, Eickholz P, Muhling J. Effect of dose reduction in digital dental panoramic radiography on image quality. *Dentomaxillofac Radiol* 2002;31(1):50-5.
93. Kaeppler G, Dietz K, Herz K, Reinert S. Factors influencing the absorbed dose in intraoral radiography. *Dentomaxillofac Radiol* 2007;36(8):506-13.
94. Centers for Disease Control and Prevention. Guidelines for Infection Control in Dental Health-Care Settings - 2003. *MMWR* 2003;52(No. RR-17):31.
95. Freeman JP, Brand JW. Radiation doses of commonly used dental radiographic surveys. *Oral Surg Oral Med Oral Pathol* 1994;77(3):285-9.
96. Gibbs SJ. Effective dose equivalent and effective dose: comparison for common projections in oral and maxillofacial radiology. *Oral Surgery Oral Med Oral Pathol Oral Radiol Endod* 2000;90(4):538-45.
97. Gibbs SJ, Pujol A, Jr., Chen TS, James A, Jr. Patient risk from intraoral dental radiography. *Dentomaxillofac Radiol* 1988;17(1):15-23.
98. Gibbs SJ. Biological effects of radiation from dental radiography. Council on Dental Materials, Instruments, and Equipment. *J Am Dent Assoc* 1982;105(2):275-81.
99. Hujoel P, Hollender L, Bollen AM, et al. Head-and-neck organ doses from an episode of orthodontic care. *Am J Orthod Dentofacial Orthop* 2008;133(2):210-7.
100. Ohman A, Kull L, Andersson J, Flygare L. Radiation doses in examination of lower third molars with computed tomography and conventional radiography. *Dentomaxillofac Radiol* 2008;37(8):445-52.
101. Kircos LT, Angin LL, Lorton L. Order of magnitude dose reduction in intraoral radiography. *J Am Dent Assoc* 1987;114(3):344-7.
102. Sinnott B, Ron E, Schneider AB. Exposing the thyroid to radiation: a review of its current extent, risks, and implications. *Endocr Rev* 2010;31(5):756-73.
103. Lambert K, McKeon T. Inspection of lead aprons: criteria for rejection. *Health Phys*

2001;80(5 Suppl):S67-9.

104. Michel R, Zorn MJ. Implementation of an X-ray radiation protective equipment inspection program. *Health Phys* 2002;82(2 Suppl):S51-3.
105. U.S. Food and Drug Administration. Pediatric X-ray Imaging. 2012  
<http://www.fda.gov/Radiation-EmittingProducts/RadiationEmittingProductsandProcedures/MedicalImaging/ucm298899.htm>. (accessed August 2012).
106. Alliance for Radiation Safety in Pediatric Imaging in partnership with the American Academy of Oral and Maxillofacial Radiology. What Parents Should Know about the Safety of Dental Radiology. 2011  
<http://www.pedrad.org/associations/5364/files/What%20Parents%20Should%20Know%20aboutthe%20Safety%20of%20Dental%20Radiology.pdf>. (accessed August 2012).
107. International Atomic Energy Agency. Diagnostic and Interventional Radiology. 2012  
[https://rpop.iaea.org/RPOP/RPoP/Content/AdditionalResources/Training/1\\_TrainingMaterial/Radiology.htm](https://rpop.iaea.org/RPOP/RPoP/Content/AdditionalResources/Training/1_TrainingMaterial/Radiology.htm). (accessed August 2012).