

DENTAL HEALTH CARE WORKERS MANUAL
OF KING ABDULAZIZ UNIVERSITY DENTAL HOSPITAL – Version 12

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Introduction

The KAUDH was inaugurated at the year 2013 under the patronage of KAU. KAUDH is one of the major operating components at KAU aiming to provide support and assistance to promote oral health care through oral disease management and prevention. KAUDH has cooperation agreement with KAUFD to provide assistance and tools to strengthen the undergraduate and postgraduate programs. In addition, KAUDH has collaboration with the SCHS as a recognized training center for residency training programs. Furthermore, major regional and national governmental as well as private oral health care providers in the kingdom collaborate with KAUDH to for mutual benefits including KAMC, KFAFH, MOH and private dental schools. KAUDH aims to provide exceptional and innovative high quality comprehensive oral health care in a timely manner to all patients.

KAUDH Vision Statement

Excellence in dental services according to local and global standards.

KAUDH Mission Statement

- Providing safe and comprehensive oral health care for seniors, adults, children, and patients with special needs
- Fulfilling our responsibility towards the community to improve quality of life
- Creating a sustainable health, educational, and research environment.

KAUDH Strategic Goals

Over the next five years (2025 – 2030), the KAUDH strategic objectives, will be concerned with four main pillars. They are addressed by the KAUDH and all stakeholders. KAUDH aspires to deliver its vision, mission, and values, as well as develop and improve the skills of its staff.

The Four main pillars are:

- People centered care
- Sustainability
- Community Engagement
- Education & Research

KAUDH's vision, mission, strategic goals compliments KAUFD's vision, mission, and goals. Both where developed with an input from the same stakeholders.

KAUFD Vision Statement

A world-leading college in the field of dentistry

KAUFD Mission Statement

Achieving global leadership by improving academic and research programs and providing distinguished service to the community and comprehensive patient care in oral and maxillofacial health while ensuring sustainability and continuous development

KAUFD Strategic Goals

Aligned with KAUDH's strategic plan, the KAUFD strategic objectives, will be concerned with four main concepts.

Academic Excellence

Promoting academic excellence

Research, Innovation, and Entrepreneurship

Achieving research leadership in the field of dentistry

Patient Care and Community Impact

Providing exceptional service to patients and the community

Influential Leadership and Institutional Sustainability

Enabling influential leadership and institutional sustainability

This manual serves as a practical guide for clinical practice at the KAUDH. All DHCW must abide by this manual, gain a thorough understanding of its contents, and reference this manual as often as necessary. DHCW, including students, are held responsible and accountable upon receiving a copy of this manual (signature required).
KAUDH Mandates that all DHCW must adhere to the KAUFD/KAUDH Professional Code of Conduct and Ethics, and to all rules and regulation laid out in this CPPM. Violations Point system is put to monitor and record infarction to rules and regulation. The descriptions provided in this manual is intended to inform all DHCW of the range of possible consequences for failing to uphold the standards of conduct. In each case, factors such as the nature and gravity of the incident, the motivation underlying the behavior, the DHCW's disciplinary history, the impact of the behavior on the community, and precedent in similar cases will be considered in determining the appropriate disciplinary action(s). Failure to comply with any disciplinary action will result in additional conduct charges and may result in additional disciplinary action(s).

Code of Conduct

The University adopts a holistic approach towards preparing and training students academically, scientifically, ethically, socially, and culturally, based on the teachings of the Holy Quran and the example of the Prophet Mohammad (Peace be upon Him). The University believes that the following tenets are instrumental in helping students to be honest and sincere in the quest for knowledge, to be Islamic in actions, words and appearance, to follow the correct guidelines regarding academic achievement, to be diligent, patient and to persevere in the face of difficulties, to be wary of cheating in exams and plagiarism in assignments, to respect all members of the dental team and provide patients with the best available care.
Islam provides a holistic moral guide to daily activities to any individual. Furthermore, it provides direct teachings on the correct conduct during particular situations. The Islamic

code of conduct is a complete and detailed guide that complements the ADA Principles of Ethics and Code of Personal Conduct. The following document merges these Principles in a coherent manner that provides professionals at KAUFD with the globally accepted guidelines of conduct with an Islamic identity.

KAUFD believes in providing students with a safe and supportive learning environment that not only nurtures clinical competency and knowledge but also models an ethical and professional working environment that produces qualified dentists. Such environment provides ongoing opportunities for student-centered growth and development and encourages creativity and innovation. Furthermore, KAUFD acknowledges diversity and promotes communication and collaboration among others based on equity and mutual respect. Graduates of KAUFD are expected to continue doing good and practicing excellence to serve the community and improve humanistic culture.

KAUFD requires that students sign acknowledgment of receipt and understanding of this document. This document is an official document that has been approved by KAUFD's Faculty Board and KAU's Presidency.

The following document has Five parts:

PART I: Academic integrity

PART II: Humanistic virtues and the five Islamic necessities.

PART III: Shared ethical responsibilities of health care team members.

PART IV: Globally known principles of ethics, adapted to our own Islamic teachings.

PART V: KAUFD guidelines for professional attire and demeanor.

PART VI: Consequences of infringement of such guidelines.

PART I: ACADEMIC INTEGRITY:

Academic integrity at KAUFD is described as a set of values including maintenance of academic standards, avoidance of cheating or plagiarism, honesty and rigor in research and academic publishing. As such, academic dishonesty may include acts of violation of academic integrity including plagiarism, data fabrication, deception, cheating, bribery,

sabotage, professorial misconduct, and impersonation, assuming a student's identity with intent to provide an advantage for the student.

A. Attendance:

Students at KAUFD are expected to be in class on time and to participate fully in learning activities. Class attendance and participation are mandatory for all lectures, labs, and sessions. Exceeding the maximum permissible absences (10% or more) will deprive the student from attending the final exams.

B. Academic Dishonesty:

Academic dishonesty is defined as “illegal and unethical behaviors that individual displays during testing of his/her knowledge and ability”. Academic dishonesty can include individual’s behaviors such as cheating, changing exam papers, stealing exam papers from examination hall, changing results of the exam, exhibiting physical or verbal aggressive behaviors to people administering the exam and disregarding the rules of the exam.

The following list describes some acts of academic dishonesty:

Cheating: any attempt to give or obtain unauthorized assistance in a formal academic exercise. This may be, but is not limited to, the use of material, study aids or communication.
Plagiarism: the adoption and/or reproduction of original creations of another author without due acknowledgement.
Data fabrication: The falsification of data, information, or citations in any formal academic exercise.
Deception: Providing false information to an instructor regarding a formal academic exercise (e.g., giving a false excuse for missing a deadline).
Bribery: Giving assignment answers or test answers for money.

Impersonation: assuming a student's identity with intent to provide an advantage for the student.
Regarding Plagiarism, KAUFD decided, for undergraduate students, that 20% is acceptable for citing other people's work, above this cut-off it is considered infringement and students will receive "zero" mark for the submitted assignment. Students, however, are given one chance in the preliminary draft "only", where 30% is considered acceptable, and for which the student will receive written feedback to correct and resubmit.
This is applied on written assignments, be it coursework, theses, research papers, project reports in the case of theses. Instructors are expected to run student work on one of plagiarism detection software and required to provide feedback and instructions to students.

KAUFD use the following software for detection of plagiarism:

- ❖ Authenticate.
- ❖ Turnitin.com.
- ❖ SafeAssign (within blackboard).
- ❖ Google and Google Scholar (can be used as initial step in plagiarism detection).

C. Honor Pledge and Oath:

The Faculty of Dentistry at King Abdulaziz University (KAUFD) promotes and maintains high standards of academic integrity among its students. It has a code with an honor pledge, which all students should memorize and abide by. Violations to the honor code has penalties, which may range from failing an exam to dismissal from the university in accord with KAU policies and regulations. KAU Student Disciplinary Regulations

https://studentaffairs.kau.edu.sa/pages-23001.aspx).

KAUFD Students are reminded every year with the CODE at the orientation day and should sign "KAUFD Honor Pledge" included in their student logbook "My Backpack".

KAUFD Honor Pledge states:

"As a member of KAUFD community, I pledge on my honor to uphold the principles of honesty and responsibility at my faculty. I understand that such acts violate the Honor Code and undermine the community of trust."

PART II: HUMANISTIC VIRTUES AND THE FIVE ISLAMIC NECESSITIES:

A. Humanistic Virtues: Humanistic virtues are virtues that the health care professional must possess to carry on daily activities and use in his/her dealings with others in the workplace. This includes dealings with patients, colleagues, and other clinic staff. They represent human qualities that are needed in the health profession and play a large role in shaping the personality of a health care professional.

The humanistic virtues are:

1. Respect for human beings:

Absolute respect forms a fundamental of dealing with others in the workplace and insure humane interactions.

2. Respect for human values and needs:

Ignoring human values and needs when dealing with others moves the health care provider from the circle of best interest of patients or co-workers to a paternalistic or dictatorship relationship.

3. Compassion:

Dealing with vulnerable individuals requires compassion which can be felt before being practiced by health care professionals in their dealings with patients and other vulnerable populations.

4. Empathy:

Showing empathy towards patients and other individuals in the workplace has a tremendous effect on health care provision as well as maintaining a healthy work environment. It is empathy, not sympathy that needs to be communicated by health care professionals to others and will help increase the compliance level among all.

5. Honesty:

Being honest is what makes the trust relationship flourish between health care professionals and others in the workplace. Honesty without rudeness and with respect is required in interpersonal communication to build a mutual trust relationship.

6. Integrity:

This requires the health care professional to act in a manner that shows stability in his/her actions regardless of changing circumstances and with considering service as the primary concern not prestige or profit.

7. Humility:

Being down to earth, but with professional boundaries is needed in the daily interactions of health care professionals. Scientific or academic ranks do not define an individual but rather place a burden of responsibility on them rather than a privilege.

8. Competence:

Acknowledging one's skills' boundaries protects the health care provider and the patient from any harm or legal matters that could arise from overconfidence bias. Thus, improving personal skills is required to a level beyond which the health care provider must consider referring the patient to a more skilled and specialized dentist.

9. Prudence:

Critical thinking skills play a major role in the provision of high-quality health care. Therefore, health care professionals must strive to employ their critical thinking skills combined with their knowledge, experience, and best available evidence when it comes to decision-making in a clinical setting.

B. The Five Islamic Necessities:

The five Islamic necessities are fundamentals that Muslims must live and abide by. They reflect respect and protection of human dignity regardless of religion, gender, color, race, ethnicity, or any other humanly subdivisions. These five necessities assure equality in dealings with others in any given society and in our case working in health care settings. The five necessitates are:

1. Religion preservation.
2. Body and soul preservation.
3. Mind preservation.
4. Family preservation.
5. Wealth and money preservation.

PART III: SHARED ETHICAL RESPONSIBILITIES OF HEALTH CARE TEAM MEMBERS

A. RESPONSIBILITIES TOWARDS SELF:

These include the following responsibilities:

1. Securing ways that produce self-wellbeing in all forms enabling the health care professional to practice dentistry safely.

2. Seeking medical, social, or psychological help whenever needed.

3. Preserving self-image by avoiding circumstances or acts that may affect the health care professional though social media or any other means.

B. RESPONSIBILITIES TOWARDS THE ORGANIZATION AND THE PROFESSION:

These include the following responsibilities:

1. Ensuring that all clinical certifications and other requirements are being met. These requirements are:

1-1. Valid professional registration by the Saudi Commission for Health Specialties (SCFHS).

1-2. Valid basic life support (BLS) certificate

1-3. Evidence of annual training in patient confidentiality and personal data protection, occupational health and safety, and infection prevention and control (IPAC).

1-4. Valid malpractice insurance policy

2. Minimizing waste of resources including, but not limited to, dental materials or misuse of instruments, appliances, or any other organizational belongings.

3. Limiting the spread of infection and the disposal of potentially infectious human materials, e.g., proper disposal of sharps and proper disposal of environmentally harmful materials and hazards.

4. Translating the organizational mission, vision, and goals to reality in daily activities and practices.

5. Maintaining a good reputation of the health care organization and the profession without defamation or distribution of misleading information verbally or electronically.

6. Following the organization recommendations regarding appropriate attire and demeanor.

7. Abiding by organizational policies and memos that regulate the provision of care to patients and regulates the interactions between workers in the workplace.

8. Maintaining a life-long learning attitude to improve the profession through joining professional scientific organizations and societies that help in keeping the health care professional updated in his/her field of service.

C. RESPONSIBILITIES TOWARDS PATIENTS;

The health care professional must be aware of his/her responsibilities towards patients as well as the patients' rights.

1. Health care professional responsibilities towards patients include:

1.1. Respecting patient's privacy

1.2. Maintaining patient's confidentiality

1.3. Keeping promises

1.4. Being truthful

1.5. Considering patient's values and personal preferences in treatment decisions

1.6. Acquiring and maintaining the expertise necessary to perform professional tasks.

2. Patients' rights include:

2.1. Being informed of the dentist assigned to their care, and requesting a change of dentist through the Patient Relations Office where justified. Patients are allocated according to the complexity of their case and the availability of a suitable provider.

2.2. Knowing the education and training level of the dentist and the dental care team

2.3. Taking adequate time to ask questions and receive answers regarding their dental condition and treatment plan.

2.4. Knowing what the dental team feels the optimal treatment plan is. Patients also have the right to ask for alternative treatment options

2.5. Having an explanation of the purpose, probable (short and long term) results, alternatives and risks involved before consenting to a proposed treatment plan

2.6. Being informed of continuing heath care needs

2.7. Knowing in advance the expected cost of treatment

2.8. Accepting, deferring, or declining any part of their treatment recommendations

2.9. Having reasonable arrangements for dental care and emergency treatment

2.10. Receiving considerate, respectful, and confidential treatment by their dentist and dental team

2.11. Expecting the dental team members to use appropriate infection and sterilization controls

2.12. Inquiring about the availability of processes to mediate disputes about their treatment.

D. RESPONSIBILITIES TOWARDS COLLEAGUES, CLINIC STAFF AND OTHER HEALTH CARE PROFESSIONALS:

These include the following:

1. Building a relationship among health care workers that is based on mutual trust and collaboration.

2. Dealing justly with colleagues without defamation or belittlement of their scientific rank or experience.

3. Avoid redirecting patients away from a colleague who started their treatment or telling patients not to see a specific colleague either in a direct or indirect way.

4. Dealing with colleagues, clinic staff, and other health care professionals with utter humility and respect.

E. RESPONSIBILITIES TOWARDS THE PUBLIC

These include the following:

1. Volunteering to help improve health care in communities, schools, and workplaces upon request.
2. Participation in campaigns to educate the public.
3. Providing oral health advice whenever asked, whether in a clinical setting or elsewhere.
4. anticipating in research projects and publishing articles in highly ranked journals to empower the public with up-to-date knowledge in the profession.
5. Providing honest and truthful information on social media platforms that the public follow.

PART IV: GLOBALLY KNOWN PRINCIPLES OF ETHICS, ADAPTED TO OUR ISLAMIC TEACHINGS:

CODE OF PROFESSIONAL CONDUCT:

PRINCIPLE 1:

PATIENT AUTONOMY – الإنسان مكرم

Definition:

Patient Autonomy means "Self-Governance". The dentist has a responsibility to respect the patient's
rights to self-determination and confidentiality."
The holy Quran states: "And We have certainly honored the children of Adam…" (Surat Al-Isra'; 17:70) indicating that all life must be honored regardless of color, gender or creed. As such, dentists must provide their patient with treatment options keeping in

consideration their desires and abilities. Such treatment must not infringe the patient's rights. Patients must be respected and be provided the best available treatment while respecting their privacy and confidentiality and providing them the right to obtain all information pertaining to them.

RELATED CODE OF PROFESSIONAL CONDUCT:

Patient Involvement

The dentist has an obligation to explain and educate the patient on the diagnosis of their oral health status. Treatment plan, as well as all the reasonable treatment options must be disclosed and discussed with the patient, and the patient must be involved in deciding which treatment option is preferable to him within his desires and limitations.

Patient Health Records

The dentist has a duty to keep accurate and up-to-date health records of their patients. Every procedure must be truthfully reported and safeguarded in order to protect the welfare of the patient. In the event the patient requests copies, such copies must be made available, with or without a nominal fee and irrespective of the patient having completed payment for the treatment (when applicable). Copies include any part of the Health record, including radiographs. In the event of referral, the Health Record of the patient may be disclosed to the referral dental practitioner, as this is beneficial to the patient.

Academic Use of information within Health Records:

In instances when information in the Health Record of the patient is needed for academic purposes, confidentiality must be upheld. Any information that may indicate the identity of the patient must be omitted or this will be seen as infringement of patient confidentiality and is punishable by the law.

PRINCIPLE 2:

NON-MALEFICENCE

لا ضرر ولا ضرار

DEFINITION: What is non-maleficence?

Non-maleficence means "Do no harm". The dentist has a duty to refrain from harming the patient"1 The Prophetic saying states: "On the authority of Abu Sa'Eed Sa'ad bin Sinaan al-Khudree who reported that the Messenger of Allah (Peace and Blessings be upon Him) said: There should be neither harming nor reciprocating harm." The dentist has an obligation to protect the patient from harm. This is achieved by keeping knowledge and skills current, being aware of one's limitations and impairments and knowing when to refer to a specialist or other professional including auxiliaries.

RELATED CODE OF PROFESSIONAL CONDUCT:

2.1. Education:

The dentist's role as a professional is based on his skills and knowledge, and as such, these must be current and updated at all times to ensure the best service is provided to the patient.

2.2. Consultation & Referral:

The welfare of the patient is the primary concern of the dentist and should the need arise the dentist is ethically obliged to refer the patient for treatment or consultation if he cannot provide the necessary treatment or diagnosis. Upon completion of treatment and/or consultation, the patient shall return to the treating dentist unless he specifically asks to remain with another clinician.

2.3. Use of auxiliary personnel:

It is the duty of the dentist to ensure that the auxiliary personnel involved in the treatment of the patient be competent and qualified. Furthermore, any treatment delegated to them must remain under the supervision of the dentist and he/she is ultimately responsible for the welfare of the patient.

2.4. Personal Impairment:

It is a breach of ethics to work on a patient under the influence of any toxic material or medication that causes cognitive and clinical impairment. Should a dentist be aware of such impairment in a colleague, he/she is ethically obliged to report it.

2.5. Post-exposure and blood-borne pathogens:

Should the dentist be infected with a blood-borne pathogen, and the patient is exposed during a procedure, they are ethically required to inform the patient of their status. Should the dentist be the "source" individual, he/she is obliged to provide all pertaining information and the relevant tests.

2.6. Patient Abandonment:

The commencement of treatment is a binding obligation to the dentist to complete it. Should the treatment need to be halted in case of referral, the patient must be given due notice and explanation. Under no circumstance is the patient to be dismissed without proper care to ensuring his/her continued welfare.

2.7. Personal Relationship with the patient:

Dentists must avoid any personal relationship with the patient that may jeopardize the professional judgment of the treatment, or that may pose a confidentiality breach conflict.

2.8. Sexual harassment:

KAUFD does not tolerate sexual harassment by any means whether verbal or physical. All faculty, employees, students, and patients are expected to be treated with dignity and respect.

2.9. Hazing:

KAUFD forbids any conduct of initiation into or affiliation with any student organization that endangers the physical or mental health, safety and wellbeing of any student or person.

2.10. Use of facilities:

Dental clinics, computers, and other facilities at KAUFD are university belongings and are expected to be handled with caution and care. Users may not attempt to destroy, damage, or degrade university belongings; nor use them for personal or commercial reasons without written authorization.

PRINCIPLE 3:

BENEFICENCE
الإحسان

DEFINITION: What is Beneficence?

Beneficence means to "do good". It is the duty of the dentist to promote the health and welfare of the patient.1 The Arabic equivalent "Ihsan" has a wider meaning of "doing good" and includes the perfection and good, kind conduct that must accompany all actions taken by the dentist.
The Prophetic saying states: On the authority of Abu Ya'la Shaddad bin Aws (may Allah be pleased with him), that the Messenger of Allah (peace be upon him) said: "Verily, Allah has prescribed excellence in everything –" Narrated by Muslim.
This clearly denotes the responsibility of the dentist to ensure the welfare and safety of the patient and the community. This is fulfilled with the provision of competent treatment in a timely manner, while respecting the desires of the patient and within and to the best of the abilities of the dentist. Such treatment must be provided with due consideration to the fees (if applicable) and such treatment must not be sacrificed on account of financial circumstances.

RELATED CODE OF PROFESSIONAL CONDUCT:

3.1. Community Service:

Dentists are ethically obliged to use their clinical skills, knowledge, and expertise in the improvement of the health of the public and as such be leaders in their community.

3.2. Research & Development:

Any result generated through investigation by the dentist, should be made available to the dental community if such result can benefit patients and promote health.

3.3. Patents & Copyrights:

Dentists may secure patents and copyrights as long as they do not hinder or restrict research or practice.

3.4. Neglect & Abuse:

It is an ethical obligation for dentists to familiarize themselves with signs of abuse and neglect and be aware of organizations to which such signs are to be reported. If such signs are found on adults, such reporting must be done while respecting the wishes of the patient. Should such abuse be seen in minors or individuals under the care of guardians, reporting must be carried out to the appropriate authorities while circumventing the guardians.

3.5. Professional Demeanor in the Workplace:

It is incumbent on the dentist to act in a manner that is respectful and non-litigious in the workplace. Dentists are ethically obliged to act cooperatively within their dental team, be communicative and thus optimize the care provided to the patient.

PRINCIPLE 4:

JUSTICE
العدل

DEFINITION: What is Justice?

Justice means “Fairness”. It is the duty of the dentist to treat patients justly. Dentists have a professional obligation to treat everyone fairly, patients, colleagues, and the dental team. The dentist is ethically bound to provide treatment without prejudice1.
The Holy Quran states: “Indeed We have sent Our Messengers with clear proofs, and revealed with them the Scripture and the Balance (justice) that mankind may keep up

justice" (Surat Al-Hadid; 57:25) And: "Indeed, Allah orders justice and good conduct…" (Surat Al-Nahl; 16:90) And: "Be just: that is nearer to piety" (Surat Al-Maeda; 5:8).

RELATED CODE OF PROFESSIONAL CONDUCT:

4 .1. Patient Selection:

KAUFD acknowledges diversity and does not tolerate discrimination on all aspects including race, gender, nationality, religion, disability and socioeconomic status. It is unethical for a dentist to refuse treating a patient based on race, religion, nationality, color or gender. Furthermore, denying treatment to a patient known to be infected with any infectious disease (for example human immunodeficiency virus, hepatitis B, or hepatitis C virus) is unethical and unaccepted, if this is the only reason to refuse treatment. It follows guidelines that all patients should be treated as potentially infectious and therefore no discrimination is made based on their infectious status, when known.

4.2. Emergency Service:

It is the ethical obligation of the dentist to provide arrangements for the patient for possible after-hours emergency. Should the dentist be involved in the treatment of a patient not under their care, as an emergency service, he/she shall refer the patient back to their dentist once the emergency care is completed, while recording all the information in the patient health record.

4.3. Justifiable Criticism:

Dentists are ethically obliged to inform the patients of their current oral health status including criticism of previous treatment if it is communicated professionally without reproachful comments. Dentists must report poor or faulty treatment in a non-litigious and professional manner.

PRINCIPLE 5:

VERACITY
الصدق والأمانة

DEFINITION: What is Veracity?

Veracity is "Truthfulness". It is the duty of the dentist to communicate truthfully.1 The Prophetic saying states: on the authority of Abdullah bin Mas'ud (May Allah be pleased with him) reported: The Prophet (peace be upon him) said, "Truth leads to piety and piety leads to Jannah. A man persists in speaking the truth till he is enrolled with Allah as a truthful. [Agreed upon]." Truthfulness and honesty must accompany all actions and communications done by the dentist.

RELATED CODE OF PROFESSIONAL CONDUCT:

5.1. Representation of Care:

Dentists must not represent care to their patients falsely or in a misleading manner.

Dental Amalgam:

The ADA has reached the consensus that the removal of an amalgam restoration that is in good condition and is not causing allergy to the patient, under the pretense that it is "toxic", is unethical. The dentist has the obligation to inform the patient of the harmlessness of leaving the restoration and must not mislead the patient. Should the patient insist on the removal, the dentist can oblige once all information is disclosed.

5.2. Representation of Fee:

1.2.1 Overbilling:

It is unethical to overbill a patient or falsify treatment records of a patient under a particular coverage (insurance or personal) when applicable.

1.2.2 Treatment Dates:

It is unethical to change treatment dates for the purpose of obtaining (financial) benefits.

1.2.3 Dental Procedures:

It is unethical for the dentist to claim having carried out a certain procedure for the sole purpose of reimbursement or greater payment.

5.3. Disclosure of Conflict of Interest:

When the dentist claims benefits to a treatment of material, verbally or written, he/she is ethically obliged to disclose any conflict of interest whether monetary or personal with the company/parties providing the material/device.

5.4. Reporting Adverse Reactions:

Dentists must report any adverse reactions to materials and/or devices should they occur to the regulatory body of their country (such as FDA). Lack of reporting is considered an infringement of ethical conduct.

5.5. Unearned Degrees and False specialization:

It is unethical for the dentist to work without the appropriate certification or with falsified documents. It is unethical for a dentist to assume the role of a specialist without having received, completed, and attained the degree.

Section 1: Patients' Rights and Responsibilities

1.0 KAUDH Commitment and Obligation

1.0.1 King Abdulaziz University Dental Hospital (KAUDH) is committed to ensuring that patients are treated with respect, compassion, and empathy throughout their healthcare journey. KAUDH acknowledges the importance of involving patients and their families in decision-making processes through the established **Patients and Families Council, which provides a structured forum for patient and family input into institutional governance and care improvement.**

1.0.2 KAUDH is obligated to inform all patients about their rights and responsibilities upon registration. This information is communicated through written flyers provided to patients at reception, posters displayed throughout the facility, and the Patient and Family Council communications. The complete Patient Bill of Rights Policy (APP-PDC-05) is available through the Patient Relations Office on request.

1.1 Patients' Rights and Responsibilities

Patients receiving treatment at KAUDH have the right to the following:

1. Receive high standards of care consistent with accepted professional practice.
2. Be treated with dignity and respect regardless of race, sex, nationality, religion, personal values and beliefs, culture, disability, or any other factors. KAUDH does not tolerate discrimination on any of these grounds.
3. Be granted full confidentiality of their personal information, diagnosis, tests, treatment, and medical records, unless they or their legal guardians grant permission to release them, or when legally required. All records are maintained and protected in

the electronic health record (R4) system in compliance with MOH and applicable data protection regulations.

4. Be given information on the identity and qualifications of all clinicians and care team members working on them, and the names of all professional care providers assigned to their treatment (Policy APP-PDC-05 #4.2.20).

5. Be given full information, privately and confidentially, on their condition and the treatment they are receiving; be given a choice when more than one alternative exists; and be given the option to refuse treatment, along with the risks of no treatment and the expected outcome of various treatment options.

6. Be informed of the cost of treatment, when applicable.

7. Be given a consent form to sign prior to the commencement of treatment, in accordance with the KAUDH Informed Consent Policy (IPP-PDC-10). Consent is treated as a shared decision-making process, not merely a signature.

8. Be treated in a clean, safe, and secure environment.

9. Be informed in advance of any cancellation or change to their appointment.

10. Be granted continuity of care and completion of treatment in accordance with the KAUDH Comprehensive Care Policy (IPP-PDC-19) and Referral Policy (IPP-PDC-17), including appropriate emergency dental treatment meeting KAUDH standards of care.

11. Have their medical records accessible, with official authorization, only to:

a. The medical team caring for the patient.

b. The quality management programme team.

c. The health facility research team.

d. People with written authorization of the patient, legal guardian, or legal authorities.

e. The patient themselves, upon request through the Patient Relations Office. Copies must be made available in a timely manner.

12. Receive information in plain language, free from professional terminology, to ensure full comprehension of their care.
13. Receive a prompt and adequate response to reasonable requests for treatment or services within the scope and capacity of KAUDH.
14. Request a second opinion or have their care transferred to another dentist if they are not satisfied with the care or opinion of their treating provider.
15. Be provided with privacy during examination, clinical procedures, and care — including the right to know the identity and purpose of all personnel attending during treatment.
16. Be fully involved in all decisions regarding their treatment, including medication and treatment options, in keeping with the principle of Patient Autonomy.
17. Discuss and receive information about their specific medication therapy, possible adverse side effects, and drug interactions.
18. Have their medication therapy monitored for safety and efficacy; KAUDH will make reasonable efforts to detect and prevent drug allergies, adverse reactions, and contraindications.
19. Be provided with Arabic and/or English interpreter services. Patients who communicate in other languages will be accommodated based on available translation resources.
20. Have any complaint acknowledged and fully investigated, and be provided with a written response, in accordance with the KAUDH Complaint Policy (APP-PDC-29).
21. Be protected from physical assault or harm during their care at KAUDH.
22. Receive appropriate protection and accommodations if they are children, persons with disabilities, or elderly patients.
23. Have the freedom to refuse to participate in any research, teaching, or demonstration activity without this affecting the care they receive.

24. Be part of the Patients and Families Council and contribute to institutional improvement through their feedback and representation.
25. Receive appropriate assessment and management of pain, and to be informed about the nature of their pain and the measures available to relieve it.
26. Be informed of the outcomes of the care and treatment provided, including any unanticipated outcomes, in a timely and compassionate manner.
27. Refuse or discontinue treatment to the extent permitted by law, after being informed of the medical consequences and the available alternatives. Exercising this right shall not affect the patient's right to continued appropriate care for the same or any other condition.
28. Have their personal, cultural, religious, and spiritual values and beliefs respected and reasonably accommodated during the provision of care.
29. Express concerns, complaints, or suggestions through the Patient Relations Office without fear that doing so will compromise or adversely affect the quality of care they receive.

1.2 Patient Expectations

Patients may expect the following from KAUDH:

1. KAUDH will inform patients of the care and services that are provided and how to access them.
2. Clear signage and wayfinding will be provided throughout the hospital and clinics to enable patients and families to navigate the facility.
3. The KAUDH environment to be clean, safe, and secure.
4. To be greeted by all staff and DHCWs in a courteous and polite manner when in KAUDH premises.

5. When attending for emergency care, patients will be assessed on arrival and their urgency of need and priority of care will be determined through triage, with care provided accordingly.
6. To be informed of the date of their discharge in advance and to be given details of aftercare arrangements following any procedure.
7. That their family will be kept informed of their progress, provided that the patient has agreed to disclose such information (refer to KAUDH Confidentiality Policy APP-PDC-11).
8. All staff and DHCWs to maintain a high degree of professionalism and confidentiality in all interactions with patients.

1.3 Patient Responsibilities

The goal of KAUDH is to assure that every patient receives the best possible health care. Patients are expected to fulfil the following responsibilities during their care at KAUDH:

1. Provide complete and accurate personal information, including full name, address, telephone number, date of birth, and valid identification.
2. Provide accurate and complete information about medical complaints, allergies, past illnesses, hospitalisations, medications, pain, previous medical and dental treatment, and any other matters relevant to their health.
3. Declare their risk category for infectious transmission.
4. Provide detailed and timely information regarding any changes in their health condition.
5. Keep appointments, arrive on time, and cancel in a timely manner if they cannot attend, so that the appointment may be reallocated to other patients in need.

6. Continue their care after leaving KAUDH, including following up on further treatment and home care instructions.
7. Communicate clearly whether they understand the planned course of treatment and what is expected of them.
8. Follow oral health advice provided by their dental professional, or discuss any concerns with the professional if they do not wish to do so.
9. Accept the consequences of their own decisions and actions if they choose to refuse or not comply with the care, treatment, and service plan offered by their healthcare provider.
10. Inform staff of their needs in a respectful manner.
11. Inform KAUDH if they do not wish to have other people present during their care.
12. Be considerate of the rights and needs of other patients, students, faculty, and staff within the institution.
13. Inform the Patient Relations Office if they are not satisfied with the care they received.
14. Preserve institutional and public properties.
15. Use institutional facilities and properties safely and appropriately.
16. Follow the rules, regulations, and guidelines of the institution.
17. Follow safety and security measures and instructions of the institution.
18. Observe a complete ban on smoking in and around KAUDH and King Abdulaziz University premises.
19. Treat all staff, students, and other patients with courtesy. The use of abusive, offensive, or threatening language or behaviour toward any person in KAUDH is prohibited.
20. Understand that violations of the responsibilities outlined above, or any other behaviour deemed unacceptable by KAUDH, may result in KAUDH exercising its

disciplinary procedures under the Violation Point System and the student conduct regulations.

KAUFD/UDH Confidentiality and Information Security Agreement:

All DHCW and visitors are responsible to maintain the security and confidentiality of all protected health information for all patients. All information pertaining to patients being treated at KAUDH is recorded in the EHR-R4 system to safeguard and secure each patient's Health information. Access to this system upholds all standards of privacy and confidentiality by allowing only password protected users to access the information.

Patient Health Information (PHI):

Information relating to the past, present or future health of an individual that identifies or could be used to identify the individual and is transmitted or maintained in any other form whether electronic, paper, or verbal.

Confidential Personal Information ("PI") includes, but is not limited to the following:
A person's first name and the last name or first initial and last name in combination with any one or more of the following data elements that relate to the individual:

- National identification card number,
- Driver's license number or
- Residence card number.
- and/or other information obtained from KAUFD/KAUDH records which, if disclosed, would constitute an unwarranted invasion of privacy.

Group Practice system (GPS) at KAUFD/UDH

Structure:

It is a system that ensures maximum patient care and educational benefits. This is achieved through comprehensive care.

Parties involved in the system are grouped into "cliques". Each clique is made up of the following:

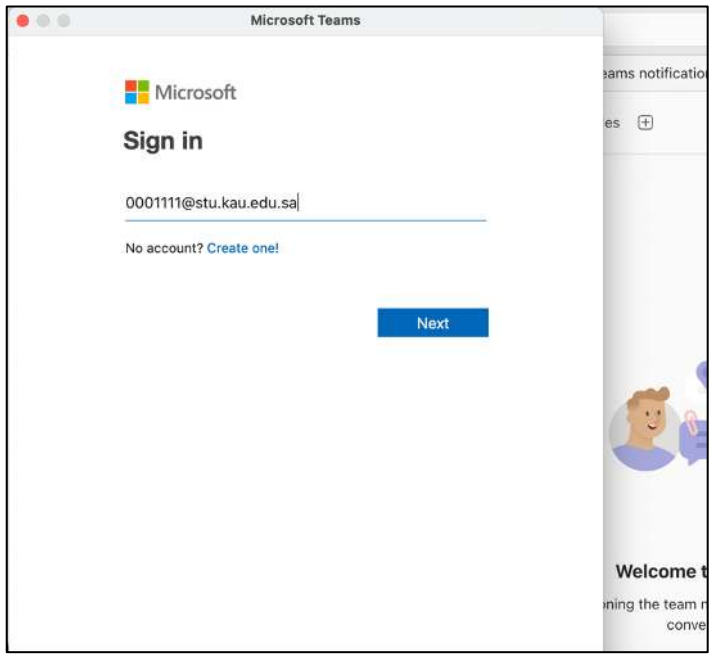
- Student attending in a clinical year (4th, 5th, and 6th)
- Patient advocate; a general dental practitioner (GDP)
- Case manager

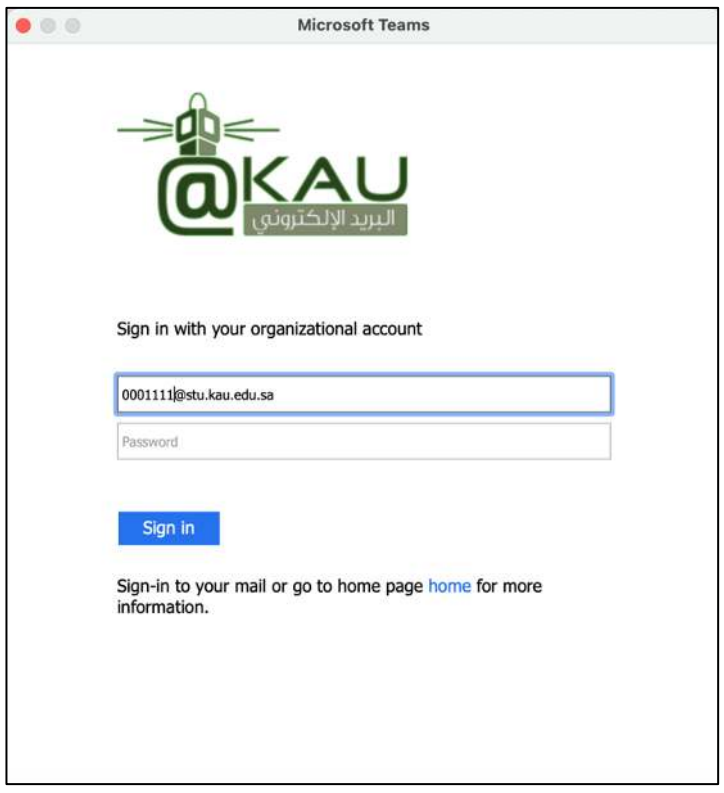
All parties are expected to communicate professionally and efficiently with one common medico-moral concept in mind "the patient's interests always come first."

Communication Plan:

The GPS system depends on Microsoft applications, mainly Microsoft Teams (MS Teams), in which you will receive case offers, communicate with your case manager or GDP for guidance.

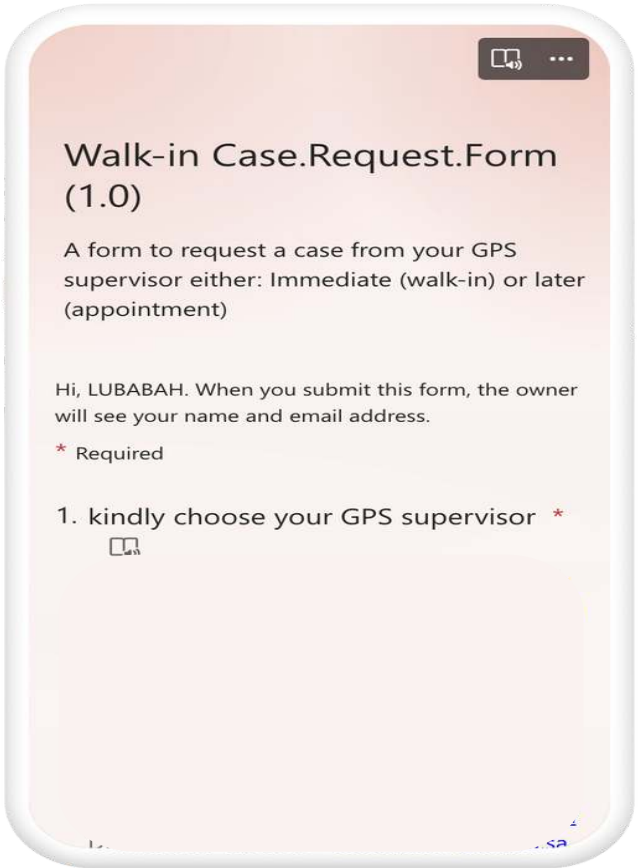
After downloading MS teams, please sign in using your student number followed by (@stu.kau.edu.sa) as shown in figure 1-2. After that you'll be redirected to the KAU log in webpage in which you will enter your student number and password.

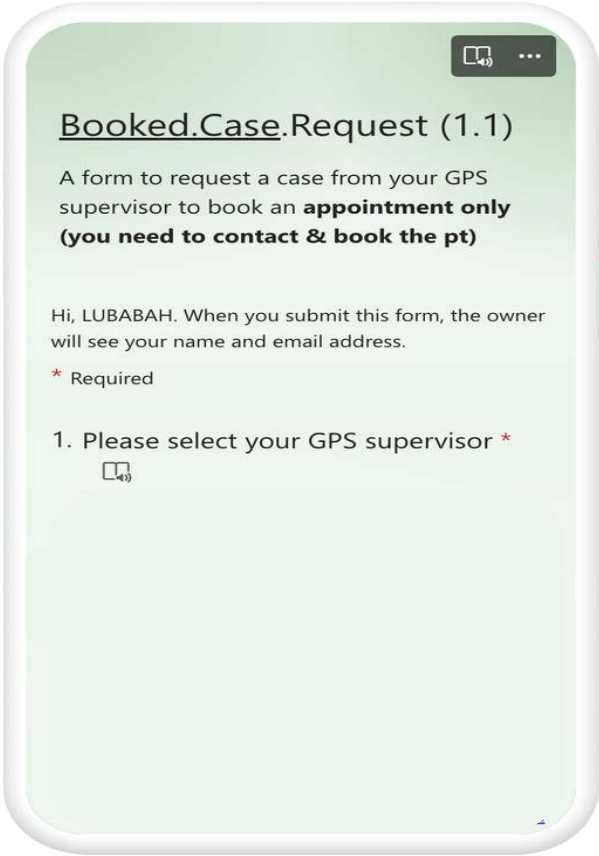



Microsoft Teams
@KAU
البريد الإلكتروني
Sign in with your organizational account
0001111@stu.kau.edu.sa
Password
Sign in
Sign-in to your mail or go to home page home for more information.

How to request a case

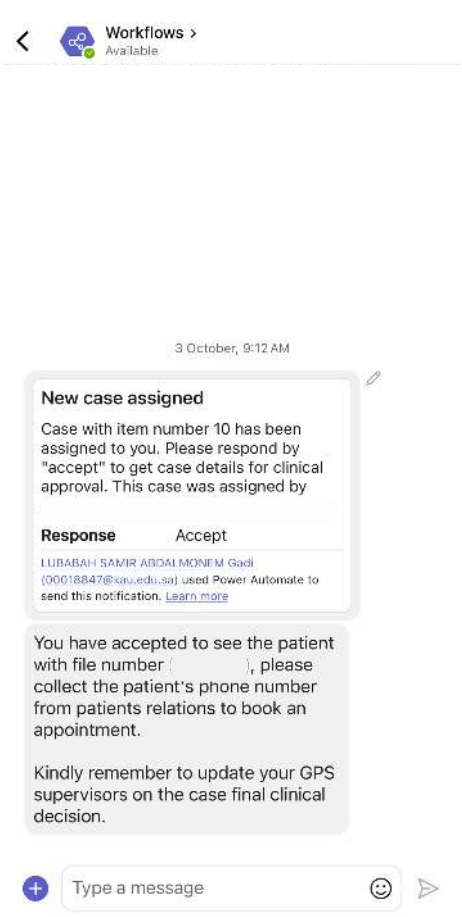
To request a case you can either choose to see the patient now by requesting a walk-in case, or to obtain patient details then book the patient on a future session, by filing a booked case request.

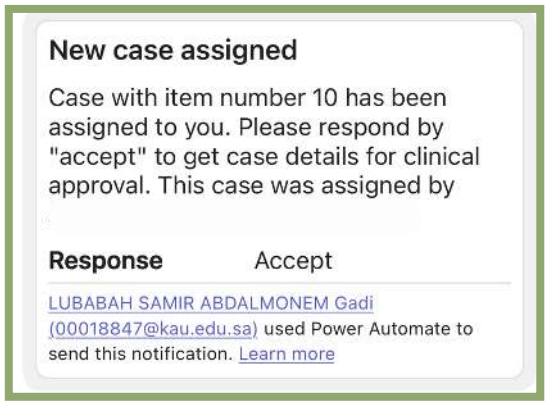




Walk-in requests

- For **same-day** patient allocation.
- The form is open **daily** during the weekdays:
  - **Morning sessions**: 7:00 AM to 11:00 AM
  - **Afternoon sessions**: 12:00 PM to 3:00 PM
- If a patient is available, you'll receive an **offer via Teams**.
  - If you **accept** within **10 minutes**, the **file number** will be sent to you automatically, and you'll be asked to head down to the GPS office to receive the patient.
  - If you do **not respond within 10 minutes**, the case will be **offered to another student**.





2. Booked Case Request

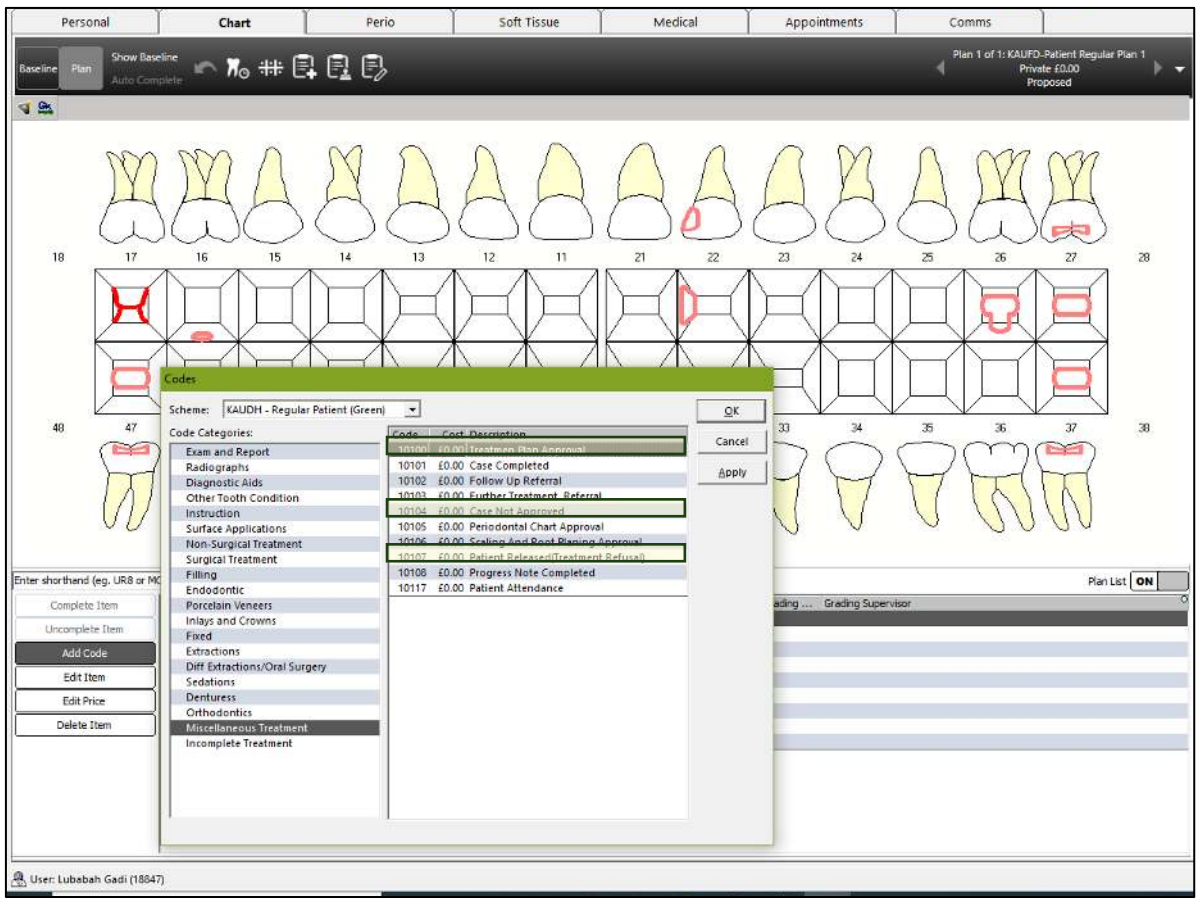
- For **scheduled cases**, to be assigned in the coming days/weeks.
- The form is open only **once every two weeks**.
  - If you try to submit more than one request during this period, you will receive a **Teams message** notifying you to wait until the next request cycle.
- If a patient is available, you will be sent an **offer via Teams**.

You must respond within 1 day (24 hours); otherwise the case will be offered to another student. When you accept, you will receive the patient's file number. Ask the reception desk to contact the patient and book the appointment. Once the file number is received, a two-week timer is set to confirm case approval or not, so please do not request a case unless you are ready to see a new patient.

Mandatory Documentation for All Cases (Walk-In & Booked)

Regardless of whether the patient is accepted or rejected, documentation on the R4 system is mandatory. One of the following must be documented and signed by a clinical supervisor:

- ✅ **Case is approved**
- ❌ **Patient refused treatment**
- ❌ **Case is not approved**



Once the patient was booked, even if it was (Check file) the case is considered your responsibility, as this is a patient who awaits care which is affecting the patient's quality of life! Failure to document a clear note and obtain a supervisor's signature means you will still be held responsible for the patient and no longer receive additional patients.

Documentation Example (for Case Rejection)

If the case is **not suitable** for your level, follow these steps:

- In the **progress note**, write: *"Dr. [Name] advised that the case is too complex for undergraduate level."*
- From the **Plan** window in R4:
  - Click **Add Code** → **Miscellaneous** → **Case Not Approved** → Click **OK**

3. **Call the supervisor** who advised on the rejection.
    - Ask them to **complete the code using their password** and **lock the progress note**.
4. Then contact your GDP to report on case progress, so the patient can be removed from under your care.

Registering a Patient You Introduce

A patient introduced by a student is registered through the:
Student Patient Registration Form **(Stu.Pt.Reg)** This applies to:

- Patients needing **a new file**, or
- Patients with **an existing file** being transferred.

GPS allocates the patient according to the complexity of the case and the student's requirements; registration does not guarantee allocation to the student who introduced the patient.

Sharing Patients

The GPS system aims to deliver comprehensive care, thus senior students (6th or 5th years) are encouraged to allow juniors to complete simple treatments in Phase I while they manage Phases II and III. To share a patient:

1. Please inform your supervisor to register the 2nd student's name
2. Ensure the treatment was carried on, knowing that the referrer is considered the primary care giver and is responsible for the treatment to be completed by the referee.

Important Reminders

- **Verbal case requests** or walking into the GPS office to request **will not be accepted**. If you suspect that your requests and not being sent, please contact your GDP supervisor.

- **Case transfers** from interns or colleagues must be **registered and approved** via the process above.
- All **acceptances and rejections must be documented in R4**.
  - Verbal communication or messages via WhatsApp or social media **do not count** as official documentation.
- Treating or booking a patient who has not been allocated to you through GPS, or approaching the reception desk for unallocated patients, is a violation and is reported through an OVR (Occurrence Variance Report).
  - Repeated violations will lead to **penalties**.

Complaints and suggestions regarding the GPS system can be done by referring to the section on the OVR system in the Dental Healthcare Workers Manual of King Abdulaziz University Dental Hospital V10

https://drive.google.com/file/d/1e0BnxnwkjGP53JipAJ1gV2cuMI5Hl5qG/view?usp=sharing

Procedures:

Confidentiality of Information:

All DHCWs will maintain the information confidentiality through the following:

- Access, use, and disclose PI and PHI whether in the form of paper or electronic records only to perform the assigned duties or educational activities and in a manner consistent with the policies and procedures of KAUDH.
- Maintain the confidentiality of all PI and PHI.
- Never discuss any confidential information with any unauthorized persons.
- Discuss confidential information only in non-public areas when required as part of work or education-related duties or activities.

Keep patient information concealed from patients, visitors, and individuals who are not involved in the patient's care.

- Use KAUFD/KAUDH resources including computers, email, photography, video, audio, or other recording equipment only for job-related duties or educational related activities.
- Do not take PI or PHI off the KAUFD/KAUDH campus unless formally authorized by the KAUDH Privacy Officer (the Hospital Director or delegate), and keep it fully secured.

Computer, Systems, and Electronic Health Record Access:

All KAUDH workforce members must abide with the following procedures:

- Access the patients' records for job or education-related duties or activities only.
- Do not access the records of family members including minor children, except for assigned job or education-related duties.
- Protect access to patient and other job and education-related accounts, privileges, and associated passwords.
- Use a strong password on computer, laptop, and smartphone, store it in a secure place and do not share with anyone.

- Held accountable for all accesses made under their login and password and any activities associated with the use of their access privileges

Computer Security:

- Store all PI or PHI on secured systems, encrypted mobile devices, or other secure media.
- Do not change KAUFD/KAUDH computer configuration unless specifically approved to do so.
- Do not disable or alter the anti-virus and/or firewall software on KAUFD/KAUDH computer.
- Logout or lock computer sessions prior to leaving a computer.
- Do not download, install, or run unlicensed or unauthorized software on University- issued media.
- Use a personal computing device for KAUFD/KAUDH functions and connect it to a KAUFD/KAUDH network only if it meets the same security requirements as a KAUFD- issued or owned

All KAUFD workforce members are obliged to safeguard patient confidentiality and protected information even after they are no longer working at KAUFD.

Most Common HIPAA Violations:

1. Employees disclosing information – Employees' gossiping about patients to friends or coworkers is also a HIPAA violation that can cost a practice a significant fine. Employees must be mindful of their environment, restrict conversations regarding patients to private places, and avoid sharing any patient information with friends and family.
2. Medical records mishandling – Another very common HIPAA violation is the mishandling of patient records.
3. Lost or Stolen Devices – Theft of PHI (protected health information) through lost or stolen laptops, desktops, smartphones, and other devices that contain patient information can result in HIPAA fines.
4. Texting patient information –While it may seem harmless, it is potentially placing patient data in the hands of cyber criminals. Encryption programs that allow confidential information to be safely texted should be used in that case.
5. Social media - Posting patient photos on social media is a HIPAA violation. While it may seem harmless if a name is not mentioned, someone may recognize the patient and know the doctor's specialty, which is a breach of the patient's privacy. Make sure all employees are aware that the use of social media to share patient information is considered a violation of HIPAA law.
6. Employees illegally accessing patient files - Employees accessing patient information when they are not authorized is another very common HIPAA violation. Whether it is out of curiosity, spite, or as a favor for a relative or friend, this is illegal and can cost a practice substantially. Also, individuals that use or sell PHI for personal gain can be subject to fines and even prison time.
7. Social breaches - An accidental breach of patient information in a social situation is quite common, especially in smaller more rural areas. Most patients are not aware of HIPAA laws and may make an innocent inquiry to the healthcare provider or clinician

at a social setting about their friend who is a patient. While these types of inquiries will happen, it is best to have an appropriate response planned well in advance to reduce the potential of accidentally releasing private patient information.

8. Authorization Requirements - A written consent is required for the use or disclosure of any individual's personal health information that is not used for treatment, payment, healthcare operations, or permitted by the Privacy Rule. If an employee is not sure, it is always best to get prior authorization before releasing any information.
9. Accessing patient information on home computers – Most clinicians use their home computers or laptops after hours from time to time to access patient information to record notes or follow-ups. This could potentially result in a HIPAA violation if the screen is accidentally left on, and a family member uses the computer. Make sure your computer and laptop are password protected and keep all mobile devices out of sight to reduce the risk of patient information being accessed or stolen.
10. Lack of training - One of the most common reasons for a HIPAA violation is an employee who is not familiar with HIPAA regulations. Often only managers, administration, and medical staff receive training although HIPAA law requires all employees, volunteers, interns, and anyone with access to patient information to be trained. Compliance training is one of the most proactive and easiest ways to avoid a violation.

Human Rights and Information Confidentiality:

1. KAUDH prohibits any discrimination against patients with disabilities and those with illness such as: AIDS, HIV and Hepatitis C.
2. Dentists may require modifications to routine practices based on the risks associated with certain dental procedures, if they are employed for all patients undergoing the same procedures. The Health Insurance Portability and Accountability Act states that all Medical Records should be treated with utmost confidence. Violations are a criminal

act. The Ministry of Health in Saudi Arabia (http://www.moh.gov.sa) has mandated that all patient information be treated in confidentiality.

The information contained in patient records is confidential and must not be released to anyone without the consent of the patient, or his/her authorized representative, or as required or allowed by law. Therefore, it is important to remember that patient records should sensitive. Medical information should not be recorded or posted where it could easily be seen by others. A medical alert should be coded in such a way that only staff recognize the significance of the information, while the exact nature of the condition should be documented within the patient's chart. R4 login and password protection should be used to to prevent unauthorized access.

In addition, screen savers and other measures should be employed to ensure information on computer screens is not visible to other patients in the clinics.

The patient and his/her family are entitled to:

1. Discuss the treatment with the patient or his/her legal guardian confidentiality.
2. Cover the patient private parts unless a medically urgent situation arose.
3. Maintain the confidentiality of the patient's information, diagnosis, tests, treatment, and medical records. That is unless the patient or legal guardian grants the permission to release them or unless it's legally needed.
4. Refuse to see anyone not concerned with providing the health service, including visitors.
5. Patient medical record is accessible only to:
    i. The medical team caring for the patient.
    ii. The quality management program team.
    iii. The health facility research team.

iv. People with a written authorization of the patient, legal guardian, or legal authorities.

6. Have separated male and female waiting areas.
7. Transfer the patient to a private examination room if his room was not suitable for examination.
8. Ensure the presence of someone of the same sex as the patient in the examination room.
9. Ensure that the patient doesn't stay in the examination room more than needed.

Section 2: Credentialing and Responsibilities of DHCWs

2.1 Credentialing of Dental Healthcare Workers

2.1.1 Predoctoral Students and undergraduates

- Professional Classification and Registration Record
- BLS Certificate
- Medical Malpractice Insurance
- Pass the patient confidentiality and personal data protection evaluation
- Required Health test and Vaccination Certificate
- Attendance of the hospital orientation
- Pass the KAUDH Orientation Course Exam

2.1.2 Postgraduate DHCW

- Professional Classification and Registration Record
- BLS Certificate
- Medical Malpractice Insurance
- Pass the patient confidentiality and personal data protection evaluation
- Annual clearance form
- Supervision of eligible supervisor
- Required Health test and Vaccination Certificate
- Attendance of hospital orientation
- Pass the KAUDH Orientation Course Exam
- Program Acceptance Letter

2.1.3 Residency Programs Trainees

- Professional Classification and Registration Record
- BLS Certificate
- Medical Malpractice Insurance
- Pass the patient confidentiality and personal data protection evaluation

- Annual clearance form
- Supervision of eligible supervisor
- Required Health test and Vaccination Certificate
- Attendance of hospital orientation
- Pass the KAUDH Orientation Course Exam
- Program Acceptance Letter

2.1.4 Credentialing of KAUDH/KAUFD Staff and Members:

- Professional Classification and Registration Record
- BLS Certificate
- Medical Malpractice Insurance
- Pass the patient confidentiality and personal data protection evaluation
- Required Health test and Vaccination Certificate
- Pass the KAUDH Orientation Course Exam

A DHCW who cannot perform the physical component of BLS may be granted a documented exception for a limited period (maximum 12 months), approved by the Cardiopulmonary Resuscitation Unit on the basis of a physician's statement of the functional limitation and its expected duration (no diagnosis). The exception covers the physical component only: the knowledge component and its written test, the duty to recognize a cardiopulmonary arrest and call MERT, and an assigned alternate emergency role remain required. Fear of performing CPR, previous course failure, scheduling, workload or course cost are not accepted reasons. Others who are not health care providers including patient Affairs officers, IT and biomedical engineers are instructed call the Medical Emergency Response Team (MERT) in case of emergency (see section 10 of this manual, page 118).

2.2 Roles and Responsibilities

2.2.1 Predoctoral Students and undergraduates Responsibilities

1. Patients should be identified by 2 approved identifiers (Patient's name and file number). in any instance which may involve the change of the treatment provider, including during appointment scheduling, registration, and before any dental procedure.
2. All students must always have scheduled available supervision in the clinics.
3. Attend prior to the patient's booked appointment and sign in attendance with the nurse in charge in the designated area.
4. Ensure the cleanness of the clinic before starting
5. Wrap surfaces according to the infection control standards.
6. Assure that the patient is booked on the electronic system R4.
7. Meet the patient at the waiting area and accompany him/her to the clinic.
8. Record the patient's vital signs (blood pressure, heart rate, respiratory rate) when clinically indicated, and always before surgical or invasive procedures, for patients classified ASA II or above, and whenever the medical history changes; inform the patient to seek medical attention if needed.
9. Obtain only and all the necessary but required instruments and materials for the dental procedure to be performed by the beginning of the session.
10. Treat patients ethically ensuring their dignity and confidentiality are respected.
11. Ensure patients' safety at all times and apply radiation safety measures.
12. Adhere to the DRESS CODE accepted by KAUDH and display a valid ID.
13. Dismiss the patient 15 minutes prior to the end of the session.
14. Rebook patients on R4 according to their needs either as follow up, referral or discharge.
15. Document all procedures fully and efficiently in the electronic file R4 with the supervisor's electronic approval.
16. Return all instruments to the CSSD.

17. Remove all wrappings and clean the clinic efficiently.
18. Dispose of all sharps appropriately.
19. Report any breach to patients' safety or well-being to the supervisor immediately.
20. Sign out prior to leaving the clinics with the nurse in charge.
21. Report any incidents violating the standards (anonymous).
22. Report any equipment failure and/or lack of material supply to the nurse in charge immediately.

2.2.2 Postgraduate Students and Trainees Responsibilities

1. All trainees must have an on-call supervision during working in the clinics.
2. Patients should be identified by 2 approved identifiers (Patient's name and file number). in any instance which may involve the change of the treatment provider, including during appointment scheduling, registration, and before any dental procedure.
3. Attend prior to the patient's booked appointment and sign in attendance with the nurse in charge in the designated area.
4. Ensure the cleanness of the clinic before start using it.
5. Ensure the wrapping of the surfaces meet the infection control standards of KAUDH.
6. Assure that the patient is booked on the electronic system R4.
7. Meet the patient at the waiting area and accompany him/her to the clinic.
8. Record the patient's vital signs (blood pressure, heart rate, respiratory rate) when clinically indicated, and always before surgical or invasive procedures, for patients classified ASA II or above, and whenever the medical history changes; inform the patient to seek medical attention if needed.
9. Obtain only and all the necessary but required instruments and materials for the dental procedure to be performed by the beginning of the session.

10. Treat patients ethically ensuring their dignity and confidentiality are respected.
11. Always ensure patients' safety and apply radiation safety measures.
12. Adhere to the DRESS CODE accepted by KAUDH and display a valid ID.
13. Dismiss the patient 15 minutes prior to the end of the session.
14. Rebook patients on R4 according to their needs either as follow up, referral or discharge.
15. Document all procedures fully and efficiently in the electronic file R4 with the supervisor's electronic approval.
16. Return all instruments to the CSSD.
17. Ensure removal of all wrappings and cleanness of the clinic efficiently before leaving the unit. If working extends beyond the working hours, then remove all wrapping, and clean the clinic efficiently yourself.
18. Dispose of all sharps appropriately.
19. Report any breach to patients' safety or well-being to the supervisor immediately.
20. Sign out prior to leaving the clinics with the nurse in charge.
21. Report any incidents violating the standards (anonymous). Report any equipment failure and/or lack of material supply to the nurse in charge immediately.

2.2.3 Dental Assistant's Roles and Responsibilities

1. Adhere to the infection control standards of KAUDH.
2. Monitor the dental students and trainees' attendance by time.
3. Report any incidents violating the standards of KAUDH.
4. Report any equipment failure and/or lack of material supply to the maintenance team and/or nurse in charge and follow up.
5. Handling needle prick incidents as per the infection control protocol at KAUDH.
6. Provide the material supply from the trolley with materials in term of qualities and quantities relevant to the clinical session.

7. Clean and wrap the postgraduate dental trainees' units' surfaces according to the infection control standards.
8. Follow the Infection Prevention and Control protocol in managing sharp containers.
9. Provide chair side assistance to the postgraduate trainee in their designated unit according to the department procedural list and when dental assistance to postgraduate ratio allows.
10. Provide chair side assistance and full range of services to the general practitioners and consultants at all time

2.2.4 DHCW (KAUFD/KAUDH Staff Members) Roles and Responsibilities

A. Each clinical staff member (faculty, staff) who has direct contact with patients in clinic (DHCW) are to be credentialed through his/her department and approved by the KAUDH Medical Director. The following documents are required for this process:

1. Copy of National ID
2. SCHS registration and credentialing.
3. Valid BLS Certificate
4. Approved privileges form authorized by Department Head
5. Updated Medical Clearance (not exceeding 3 months) including immunization forms
6. KAUDH Clearance Form when Applicable
7. Copy of the Accessibility Exam results

B. Once documents are verified KAUDH/KAUFD staff will sign a declaration to abide by and be held responsible for the KAUDH policies.

C. The Office of KAUDH Medical Director will direct staff member to KAUDH Security Unit to obtain the KAUDH ID and to the KAUDH IT Unit to activate HIS.

2.3 Orientation Program Overview

As part of the onboarding process, all new students are required to complete the Dental Hospital Orientation Program, which provides a comprehensive understanding of the hospital's operational framework, safety protocols and professional responsibilities. The orientation is delivered either as in-person lectures or online through the hospital orientation platform, which holds the recorded lectures and videos and the end-of-course test. It covers the hospital's Vision, Mission and Core Values, Electronic Medical Record (EMR) usage, Patient Rights and Responsibilities, Eligibility to Practice and Credentialing, the Group Practice System (GPS), Communication Channels and OVR Reporting, Infection Control, Radiation Safety, Medication Safety, Occupational Safety, the roles of students and dental assistants, CSSD protocols, equipment safety, emergency response and fall-risk prevention. The orientation is complete only when the participant has finished all lectures and passed the test; a certificate of completion is then issued and kept on the participant's eligibility file, and system activation and clinic access follow.

2.4 Clearance Process

The clearance process for clinical training is conducted electronically and applies to Undergraduate and postgraduate students. This process ensures that each student has returned all borrowed instruments and equipment, has no unresolved OVR (Occurrence Variance Report) against them, has completed all required entries in the electronic health record system, and has properly transferred their patients.
The clearance is verified by the Head of the Department. For 3rd, 4th, and 5th-year students, any missing items or incomplete requirements will be communicated via email. Only students who complete all clearance steps will be allowed to begin their clinical training in the following academic year.

For 6th-year, interns and postgraduate students, upon successful completion of the clearance process, a physical clearance form signed by the Hospital Director will be issued as official confirmation of their completion.

Section 3: Occurrence Variance Report - OVR

3.1 Occurrence Variance Report (OVR)

Occurrence Variance Report is the system used at KAUDH for reporting and investigating incidents that affect employees, faculty members, medical/resident staff, research assistants, students, patients, visitors, and property of the University.
It is an electronic reporting system established by the patient safety team through which one can report any issue that may negatively affect the quality of patient care.
The report is sent confidentially to the intended person and email is sent to confirm receipt of the request, and the status of the report.

3.1.1 Definitions:

Incident:

any event which is not consistent with the routine operation of the KAUDH and that adversely affects or threatens to affect the wellbeing of the employees, faculty members, resident/assistant staff, consultants, research assistants, patients, students, visitors, or property of the KAUDH, regardless of whether an actual injury is involved or not.

Sentinel Event:

An unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof. Serious injury specifically includes loss of limb or function. The phrase "or the risk thereof" includes any process variation for which a recurrence would carry a significant chance of a serious adverse outcome.

Near Miss:

is an event or situation that could have resulted in an accident, injury, or illness, but did not, either by chance or through timely intervention. An example of a near miss would be surgical or other procedure almost performed on the wrong patient due to lapses in

verification of patient identification but caught at the last minute by chance. Near misses are opportunities

3.1.2 General Instructions

You can file a report in three steps. The steps are outlined and illustrated below.

Step 1: Access the system.

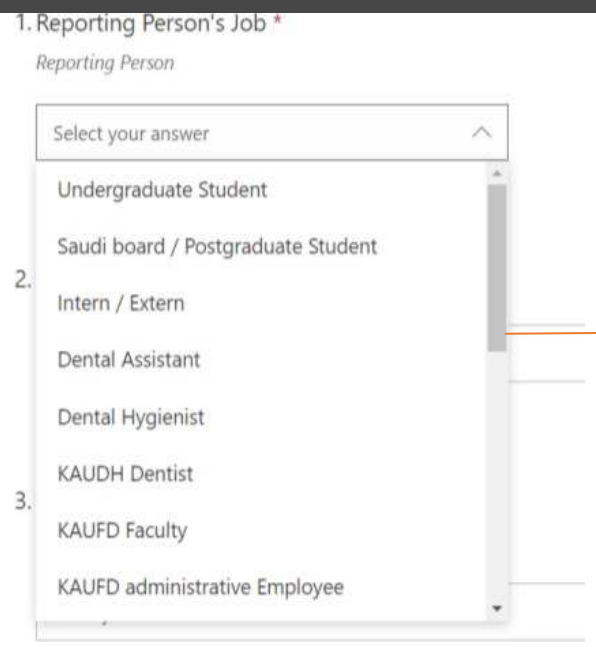
- Scan the code
- Select OVR at the E- Service Page
- To log in use Job/Student ID followed by the @kau.edu.sa
  (For example: 0000001@kau.edu.sa)
- Use KAU services password (Anjiz / ODUS plus / Blackboard ... etc.)


بلّغ
OVR
نظام التبليغ عن الحوادث
Occurrence Variance Reporting
نظام مركزي لحصر وتطوير برامج رصد المخالفات وتحسينها
سيكون استخدام النظام للمتابعة وتحسين الجودة بطريقة غير عقابية
لن يتم استخدام المعلومات الواردة في بلّغ
ضد أي فرد كوسيلة وحيدة للإجراءات التأديبية
Scan the code
امسح الكود
1
مستشفى الأسنان الجامعي
UDH
الخدمات الإلكترونية
بلّغ
from e-Services Page choose the type of service
بعد الدخول للخدمات الإلكترونية اختر نوع الخدمة
2
Microsoft
Sign in
00042219@kau.edu.sa
Can't access your account?
Next
The log in should be with the Job/Student ID
in this format 00042269@kau.edu.sa
and use KAU services password (Anjiz / ODUS plus / Blackboard ... etc)
يجب تسجيل الدخول باستخدام الرقم الوظيفي / رقم الطالب بالطريقة التالية
00042269@kau.edu.sa
وباستخدام كلمة المرور الخاصة بخدمات الجامعة (انجز / اوديوس بلس / بلاك بورد ... الخ)
3

Step 2: Fill the form.



Choose the language (Arabic or English)



Choose the job/ title (student, doctor, dental assistant, etc.)

2. Date of Event *

8/23/2022

3. Time of Event *

e.g 11:00 am (12hr format)

11:30 am

4. Location of Event

- (●) Building 10 (Speciality Clinics)
- ( ) Building 11 (Dental Hospital)
- ( ) Building 12 (Dental Faculty)
- ( ) Building 14 (Class rooms and offices)

5. Building 10 (Speciality Clinics)

Ground Floor - Lobby

Select the date, time, and location of the incident/ event to be reported.

6. Type of the Report *

- ( ) Incident report
- ( ) Violation
- ( ) Complain
- ( ) Violence

Select the type of the report to be submitted.

3.1.2.1 Incident Report

To report an event regarding the safety of patients, healthcare practitioners, employees, or facility visitors.

7. Incident Type

- ◯ Issues Regarding Patient & Healthcare Workers Safety
- ◯ Treatment Error
- ◯ Patient Record Error
- ◯ Breach of patients' rights in any way or form
- ◯ Negligence
- ◯ Fall

Select the type of the incident.

The sub-list varies according to the incident type.

8. Issues Regarding Patient & Healthcare Workers Safety

- ◯ Patient identification issue
- ◯ Failure to check past medical history
- ◯ Leaving x ray room open during exposure
- ◯ Needle stick
- ◯ Medication Error
- ◯ Adverse event (Before/ during / after Procedure)
- ◯ Inhalation (crown/ burs___)
- ◯ Radiology Repeated exposure
- ◯ Injury (direct injury to Pt)
- ◯ Other

8. Treatment Error

- ◯ Wrong tooth ext / restoration
- ◯ Iatrogenic damage to adjacent tooth
- ◯ Breaking the tooth and dismissing the patient without further action
- ◯ Other

8. Patient Record Error

- ◯ Wrong Radiograph
- ◯ Wrong Biopsy Report
- ◯ Other

8. Breaching Patient privacy

Enter your answer

8. Negligence

- ◯ Failure to refer patient
- ◯ Delayed referral
- ◯ Treating without consent
- ◯ Other

8. Fall

- ◯ Patient
- ◯ Visitor
- ◯ KAUDH/FD Employee
- ◯ Student
- ◯ Other

9. Name of Person

Enter your answer

10. Age

Enter your answer

11. If minor, was child supervised?

- ◯ Yes
- ◯ No

12. Gender

- ◯ Male
- ◯ Female

13. Witness

Enter your answer

14. Cause of the fall

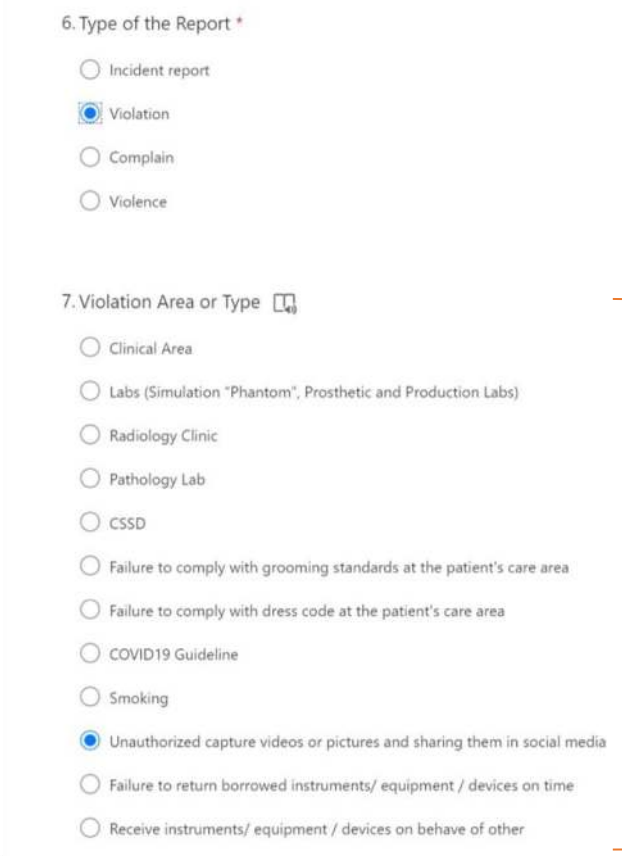
Enter your answer

15. Fall Assessment

- ◯ No apparent injury sustained (no bruising, no head injury, no pain, unaffected mobility)
- ◯ Minor injury sustained (signs of bruising, minor wounds to skin including the face, slight discomfort)
- ◯ Major/ Serious injury

3.1.2.2 Violation

To report a violation regarding KAUDH policies and regulations select the type and the location of the violation.

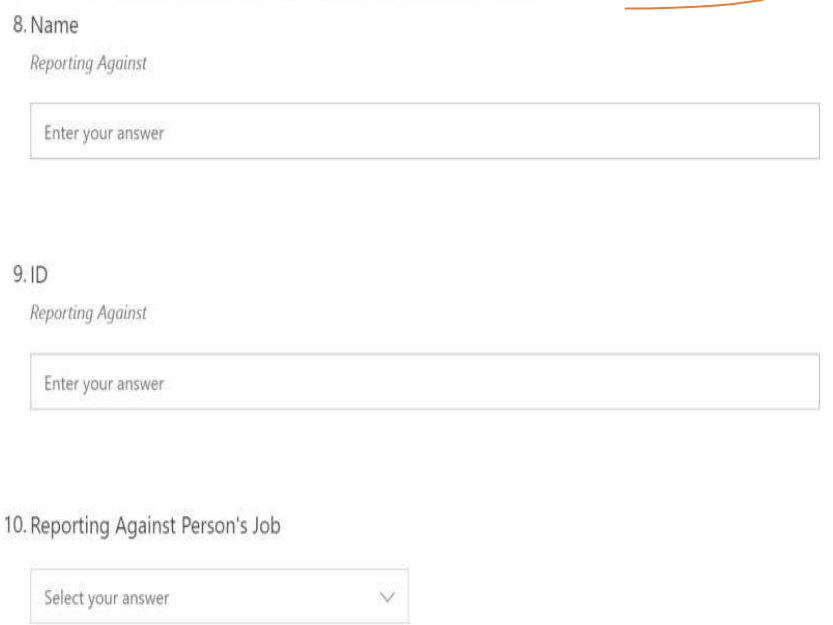

6. Type of the Report *

- Incident report
- Violation
- Complain
- Violence

7. Violation Area or Type

- Clinical Area
- Labs (Simulation "Phantom", Prosthetic and Production Labs)
- Radiology Clinic
- Pathology Lab
- CSSD
- Failure to comply with grooming standards at the patient's care area
- Failure to comply with dress code at the patient's care area
- COVID19 Guideline
- Smoking
- Unauthorized capture videos or pictures and sharing them in social media
- Failure to return borrowed instruments/ equipment / devices on time
- Receive instruments/ equipment / devices on behave of other

Select the type/ location of the violation.


8. Name

Reporting Against

Enter your answer

9. ID

Reporting Against

Enter your answer

10. Reporting Against Person's Job

Select your answer

Report the name and the job of the violator

3.1.2.3 Complain

To report a delay or unavailability of a service select

6. Type of the Report *

- ○ Incident report
- ○ Violation
- ◉ Complain
- ○ Violence

7. Complain of :

- ○ Person (Student, Dental assistant, Receptionist ... etc.)
- ○ CSSD Department
- ○ Maintenance Department
- ○ Patient Relation Department
- ○ Radiology Department
- ○ Production Lab
- ○ Pathology Lab
- ○ Phantom / Prosthetic Lab
- ○ IT Unit
- ○ Biomedical Engineering Unit
- ○ Other

The sub-list varies according to the complaint.

8. Patient Relation Department

- ◯ Booking appointment without referral
- ◯ Booking Patient on Cancelled Clinic
- ◯ Not Present
- ◯ Unprofessional Personal
- ◯ Other
- ◯ CSSD technician did not collect instrument from clinics
- ◯ contaminated instrument
- ◯ Area not covered by technician
- ◯ Unprofessional Personal
- ◯ Other

8. Maintenance Department

- ◯ Issue regarding cleanliness of the area
- ◯ Blocked Sink
- ◯ Cleaners not present
- ◯ Bad odor
- ◯ Unprofessional
- ◯ Other

8. Production lab

- ◯ Delayed delivery
- ◯ Lost records
- ◯ Appliance not fitting
- ◯ Unprofessional
- ◯ Other

8. Pathology Lab

- ◯ Delayed results
- ◯ Other

8. Phantom / Prosthetic Lab

Enter your answer

8. IT Unit

- ◯ Not responding to a technical issue requests
- ◯ Incomplete response to an issue requests
- ◯ Other

8. Biomedical engineering

- ◯ broken instrument or equipment
- ◯ Delayed
- ◯ Incomplete
- ◯ Other

3.1.2.4 Violence

To report violence, select from the verbal or physical abuse list

6. Type of the Report *

- ○ Incident report
- ○ Violation
- ○ Complain
- ◉ Violence

7. Physical Abuse

- ☐ Punching
- ☐ Hitting
- ☐ Spitting
- ☐ Kicking
- ☐ Restraining
- ☐ Burning
- ☐ Head butting
- ☐ Biting
- ☐ Pushing
- ☐ Grabbing
- ☐ Throttle
- ☐ Throwing
- ☐ Breaking bones
- ☐ Throwing things

8. Verbal Abuse

- [ ] Name calling
- [ ] sarcastic tone
- [ ] Demeaning Comments
- [ ] Threat
- [ ] Accusations
- [ ] Other

9. Name

Reporting Against

Enter your answer

10. ID

Reporting Against

Enter your answer

11. Reporting Against Person's Job

Select your answer

Step 3: Submit the report.



Upon submission you will receive a confirmation e-mail.

A New Violation no.111

KAUFD-UDH Notification

Dear

Your report is recorded and the details of this report are shown below:

Report Type: Violation-COVID19 Guideline

Status: New

كلية الطب
الأسنان
مستشفى
الأسنان
الجامعي
KAUFD-
UDH
OVR

ext: 7xxxx
p: (012) 695 200
e: den-

3.1.3 Supervisor- Head of Department responsibility

1. Ensure that all employees are aware of the OVR and the method of reporting an incident.
2. Conduct an immediate follow-up of the incident by reviewing initiated incident report Ensuring:
    a. Accurate completion of the OVR form.
    b. Accurate immediate corrective actions taken at the time of the occurrence.
3. Implement corrective measures to prevent recurrences of the events (recommendation to prevent future reoccurrence).
4. Conduct any further assessment and documenting of the incident/ event.
5. Provide recommendation for long action plan as preventive measure.
6. Implement and monitor the recommended improvement plan.
7. Submit complete report to head of department within 72 H.

3.1.4 Patient safety team:

1. Investigate critical safety related occurrences.
2. Document the result of investigations and corrective measures taken and forward it to the quality department.

3.1.5 Annual Evaluation:

An annual evaluation of the incident report system shall be conducted and reported to the Quality Department as part of the annual evaluation of the department quality management plan by the head of department.

Section 4: Health Information System and Patient Electronic Records

4.1 Health Information System (HIS)

What is R4?

R4 is a dental practice management system allowing accessibility to Patient Related information including personal and medical data as well as clinical charting.

4.1.1 HIS Access

Upon submission of the required documentation (Section 2), DHCWs will receive HIS training and a user account according to their clinical credentials and privileges. DHCWs are responsible for maintaining the secrecy and security of their R4 username and password.
It is the responsibility of the user to create a strong password and to safeguard its confidentiality. At no time should the user grant access to his/her account by providing someone else the password

4.1.2 Changing Your Password

Step 1. Switch to R4's Main menu window, or to the Welcome screen
Step 2. Choose Edit > Change Password. The Change Password dialog will be displayed.
Step 3. Choose a new password. For advice on password selection, see Logging in and out, Passwords.
Step 4. Make sure that Caps Lock is off, and then type your current password in the Old Password text box (Your old password is requested so that other people cannot change your password). Type your new password in the New Password and Confirm boxes, make sure that you type the same password in each box.
Step 5. Press OK. If you entered the old password correctly, and your two new passwords were identical, your new password will be required the next time you log into R4. If you typed the wrong old password, or different new passwords, a pop-up message will prompt you to go back to the Change Password dialog to try again.

4.2 Patient Electronic Records

All Patients must have an electronic record and be booked in the R4 System to receive treatment.



Enter Username and password given to you by the R4 Clinical+ Team to access the system.

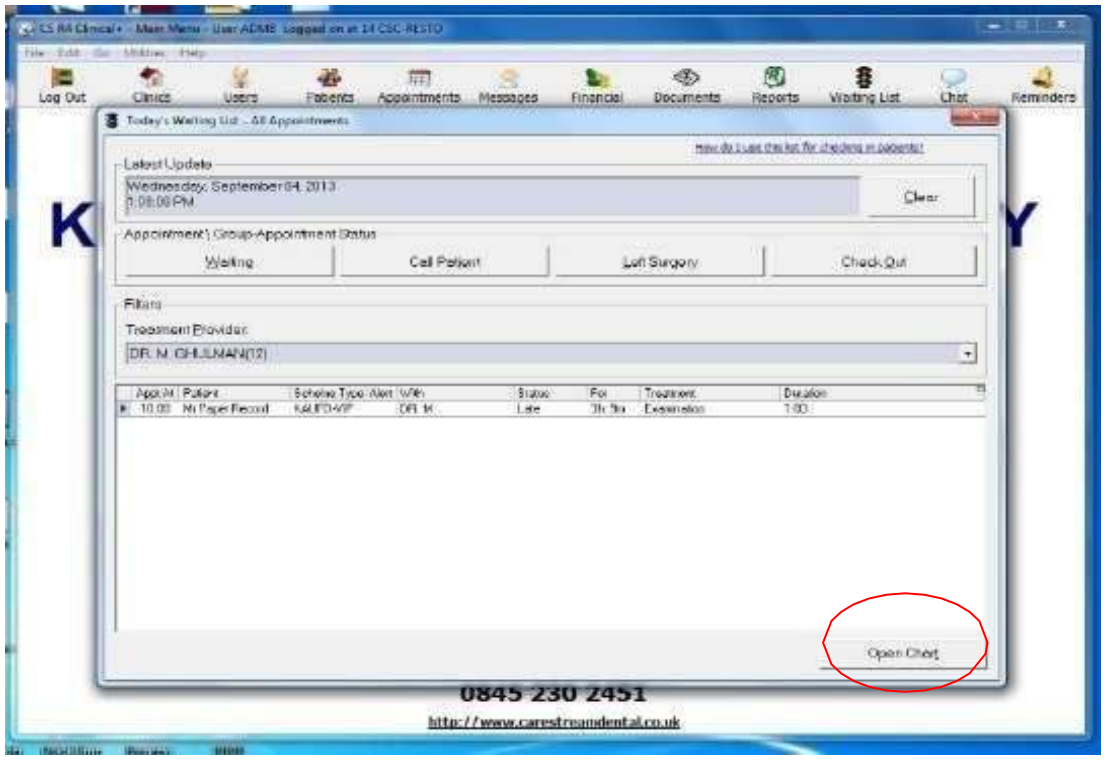
The Welcome window appears showing that you have logged into the system.



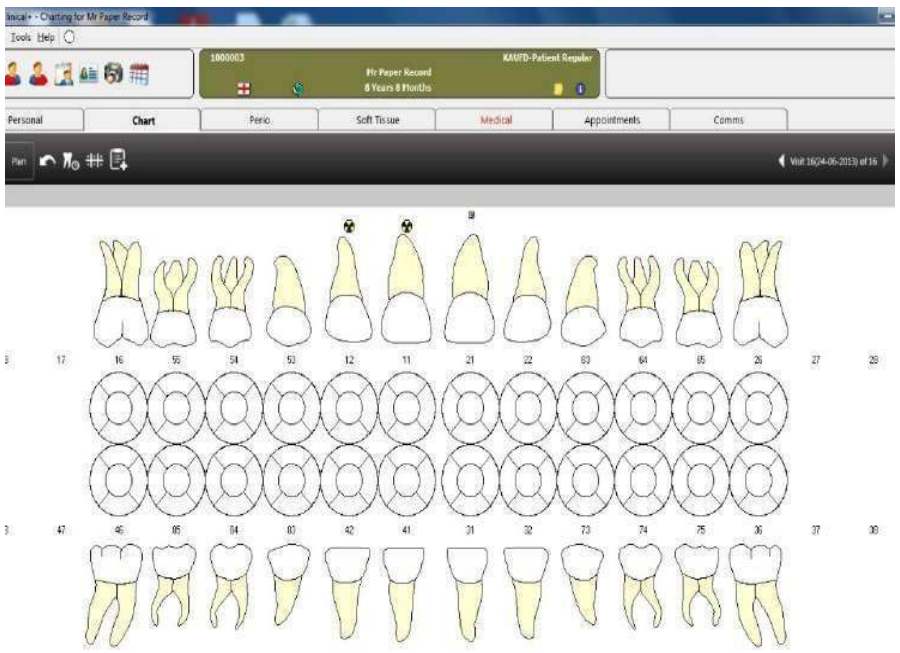
4.2.1 Accessing Patient File

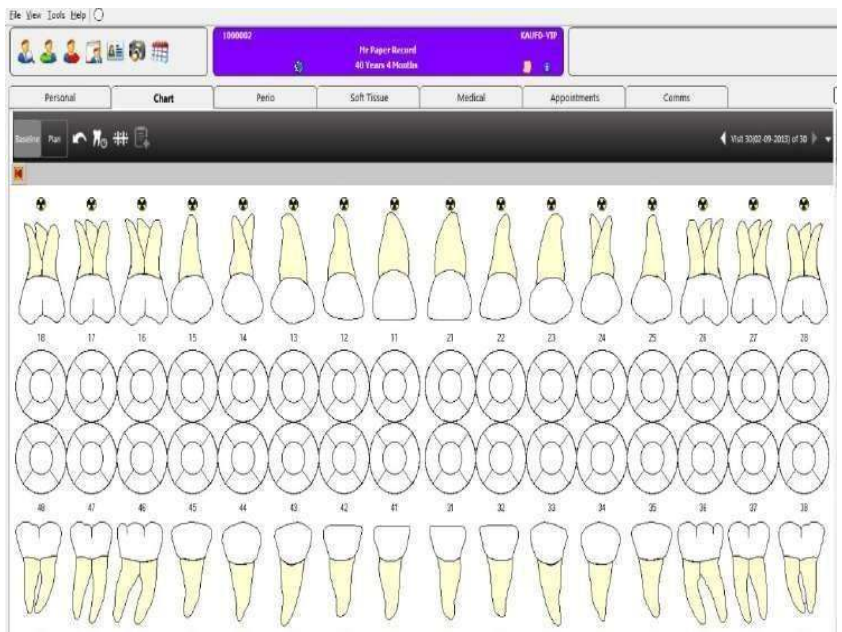
To access your patient, click on the Waiting list button.
The Waiting option allows you to see all the patients booked under your name on a specific day. The Waiting List is only to be used on that specific day; it will not allow you see your future or past appointments.
The DHCW providing treatment must ask the patient's full name to use their corresponding records. Select your patient and then click on the open chart button as shown.


KING ABDULAZIZ UNIVERSITY
DENTAL HOSPITAL
UDH
مستشفى الأسنان الجامعي
University Dental Hospital
Carestream Dental Ltd
0845 230 2451
http://www.carestreamdental.co.uk


Log Out
Clinics
Users
Patients
Appointments
Messages
Financial
Documents
Reports
Waiting List
Chat
Reminders
Today's Waiting List - All Appointments
Latest Update
Wednesday, September 04, 2013
1:08:00 PM
Clear
Appointment \ Group Appointment Status
Waiting
Call Patient
Left Surgery
Check Out
Filters
Treatment Provider
DR. M. GHULMAN(02)
Appt At
Patient
Scheme Type
Alert
Wks
Status
For
Treatment
Duration
Open Chart
0845 230 2451
http://www.carestreamdental.co.uk

This will display the baseline chart or the clinical examination chart.
There are 3 types of charts: Adult, child under the age of 12 and periodontal chart.



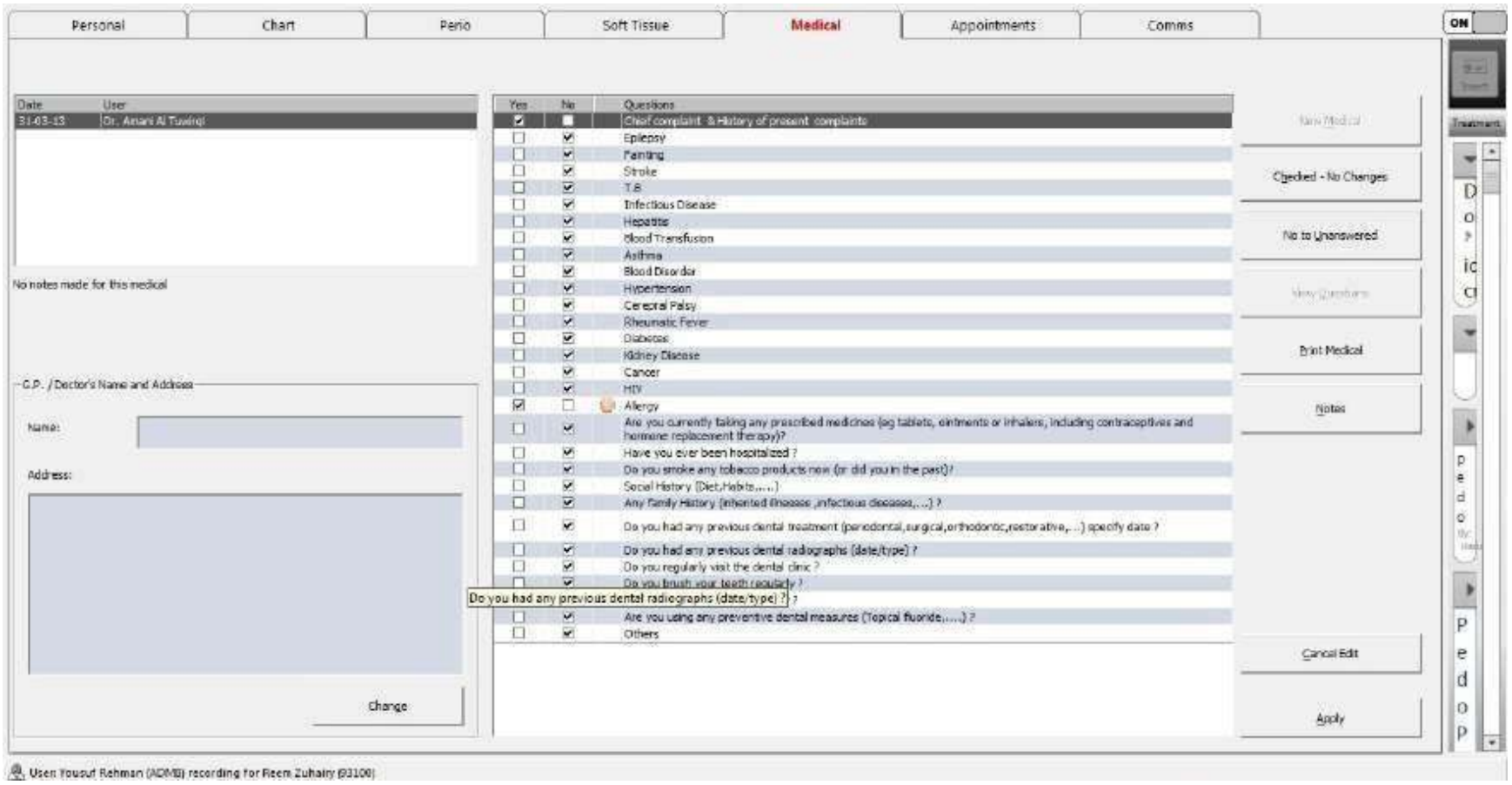


4.2.2 Patient Medical History

Complete the patients' medical history, and/or confirm that the information previously supplied is still accurate. The R4 saves the patients' medical history as answers to medical questions in the list and allows you to amend the set of questions you ask. These facilities are available from the Medical Tab. the figure shows the dialog as it appears for a new patient. To record a set of answers, press the New Medical button.
When you do so:

a. A grid appears, showing a list of medical questionnaires completed for this patient.
b. You can change responses in the list of questions.

c. The Cancel, Edit, Apply, and Notes buttons are enabled. Press the Apply button to save changes made. Press Cancel Edit to discard these changes.

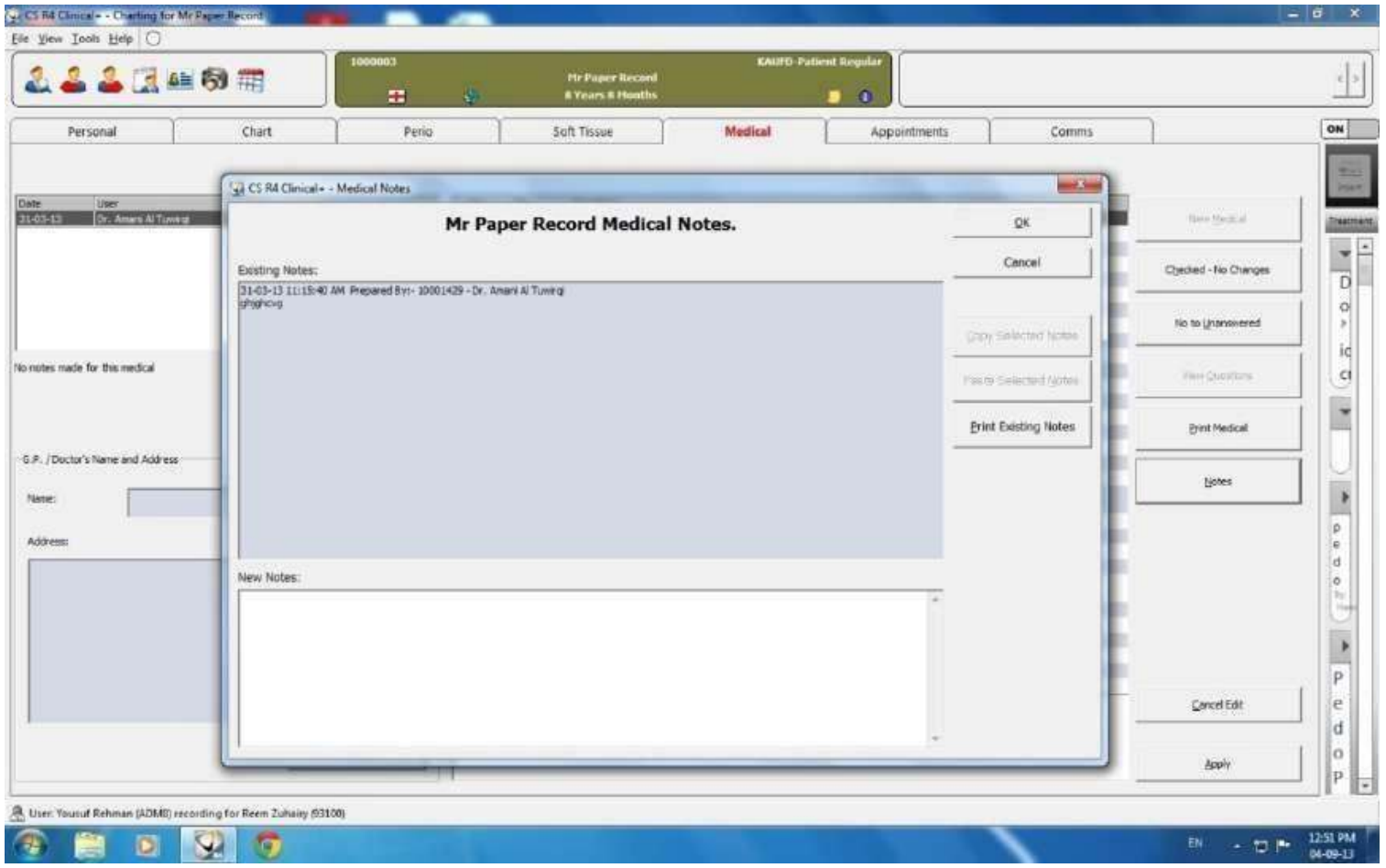


Press the Notes button to display a dialog box where you can record notes related to this set of responses from the questionnaire, it could also be used to record any other extra information about the patient.

When you have finished recording responses, press Apply or OK. The responses are added to the list of questionnaires for this patient and are used as the starting point for future sets of responses.

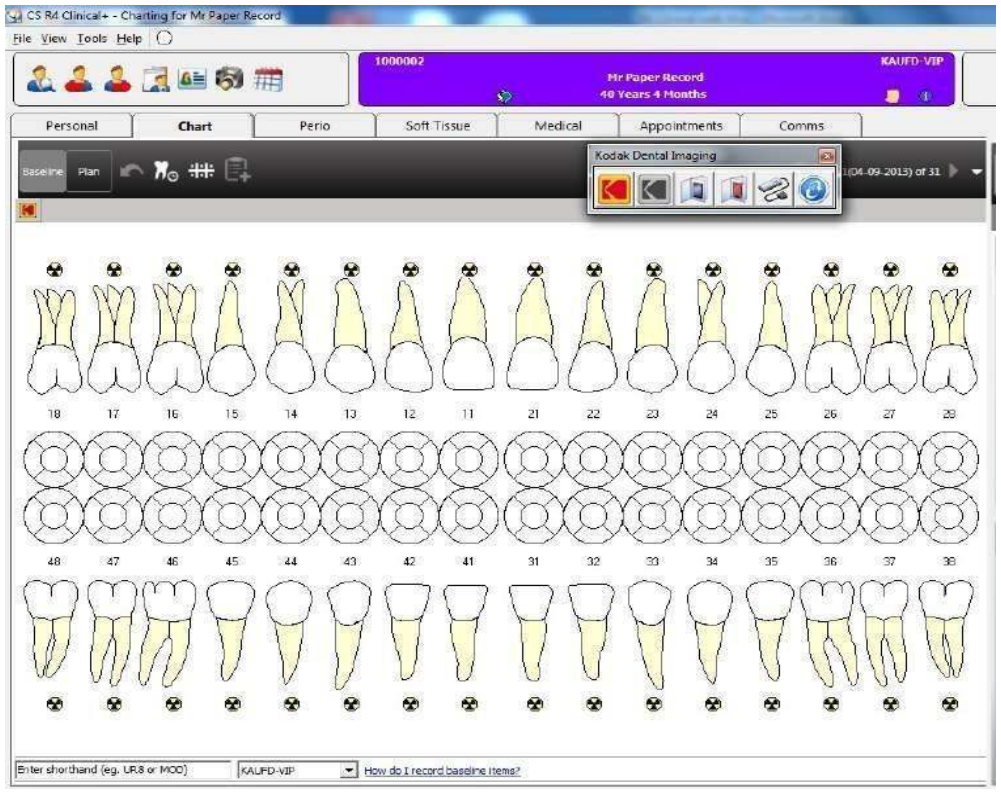
Important Note: Remember once the Apply button is pressed and the medical record is saved, it cannot be altered or changed in any way, so please do confirm all the answers to questions is correct before you press the Apply button.

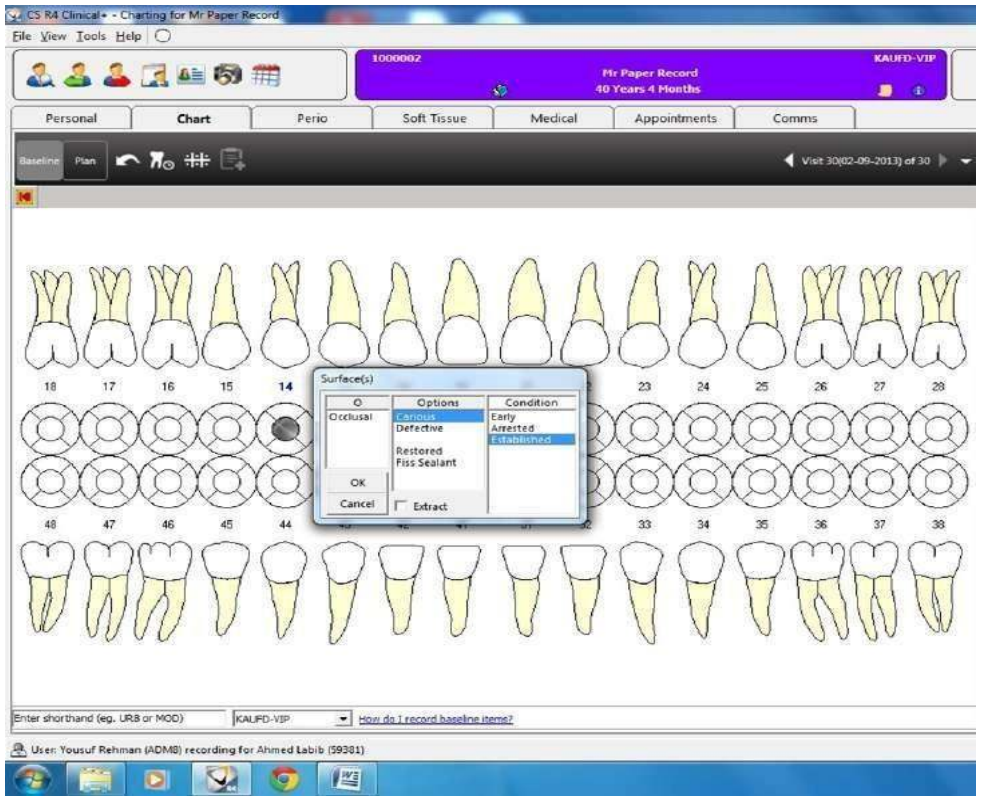
To view the Radiographs, click the button on the top left corner, a tool bar will appear on the top of the chart and then click the first red button.



4.2.3 Baseline Chart

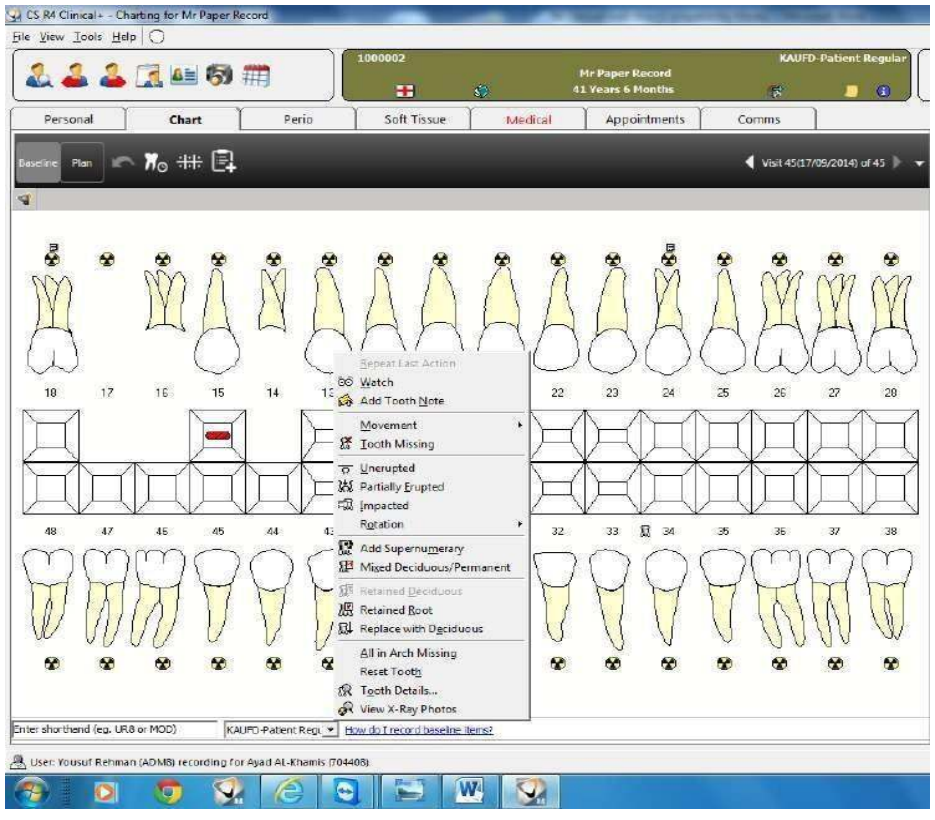
Dental chart is the clinical intra-oral examination of the patient, where the existing findings are recorded by clicking on each tooth. Figure 9 shows the options from the left click which are indicated for conditions affecting the tooth's surface e, crown, or the roots.

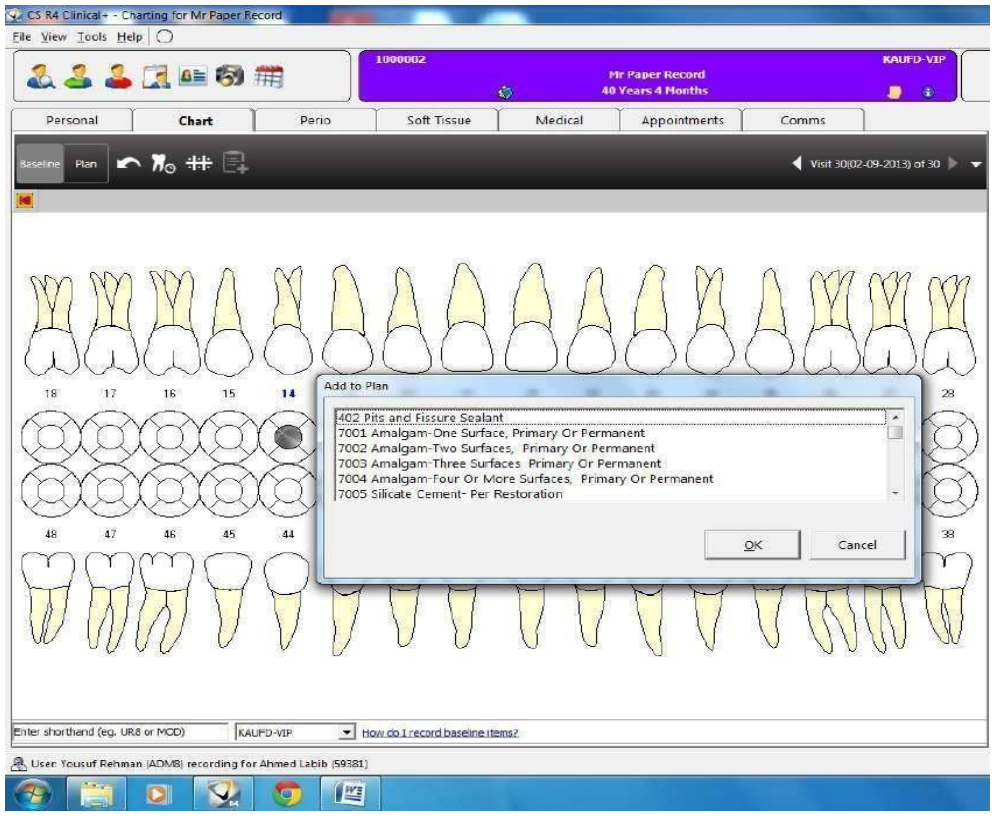




The right click of the mouse is used to record findings affecting the whole tooth structure, for instance retained root, impacted or missing tooth. Upon completing the dental charting, the treatment plan can be documented in the R4

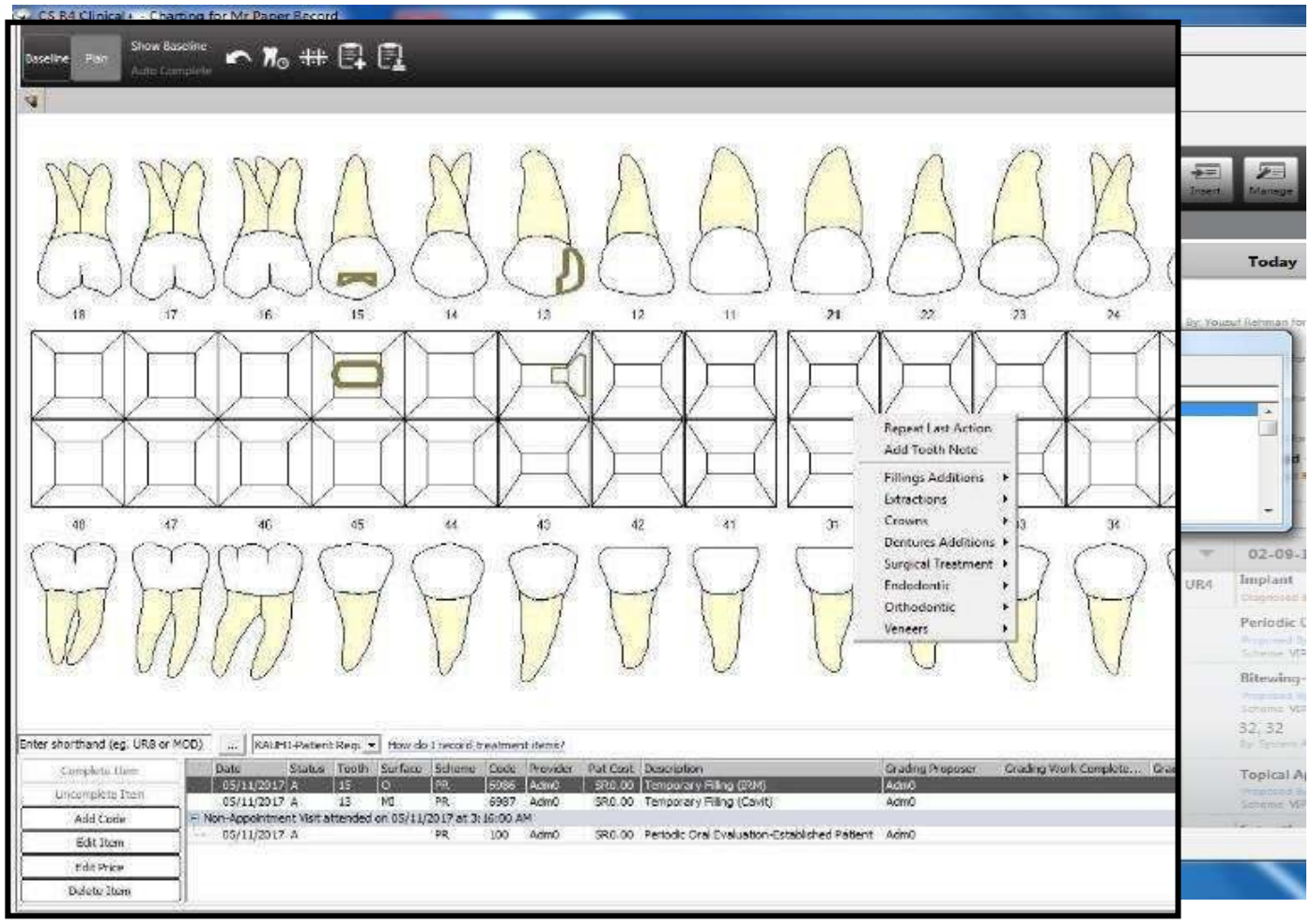
There are two ways to enter the proposed treatment in the treatment plan section.



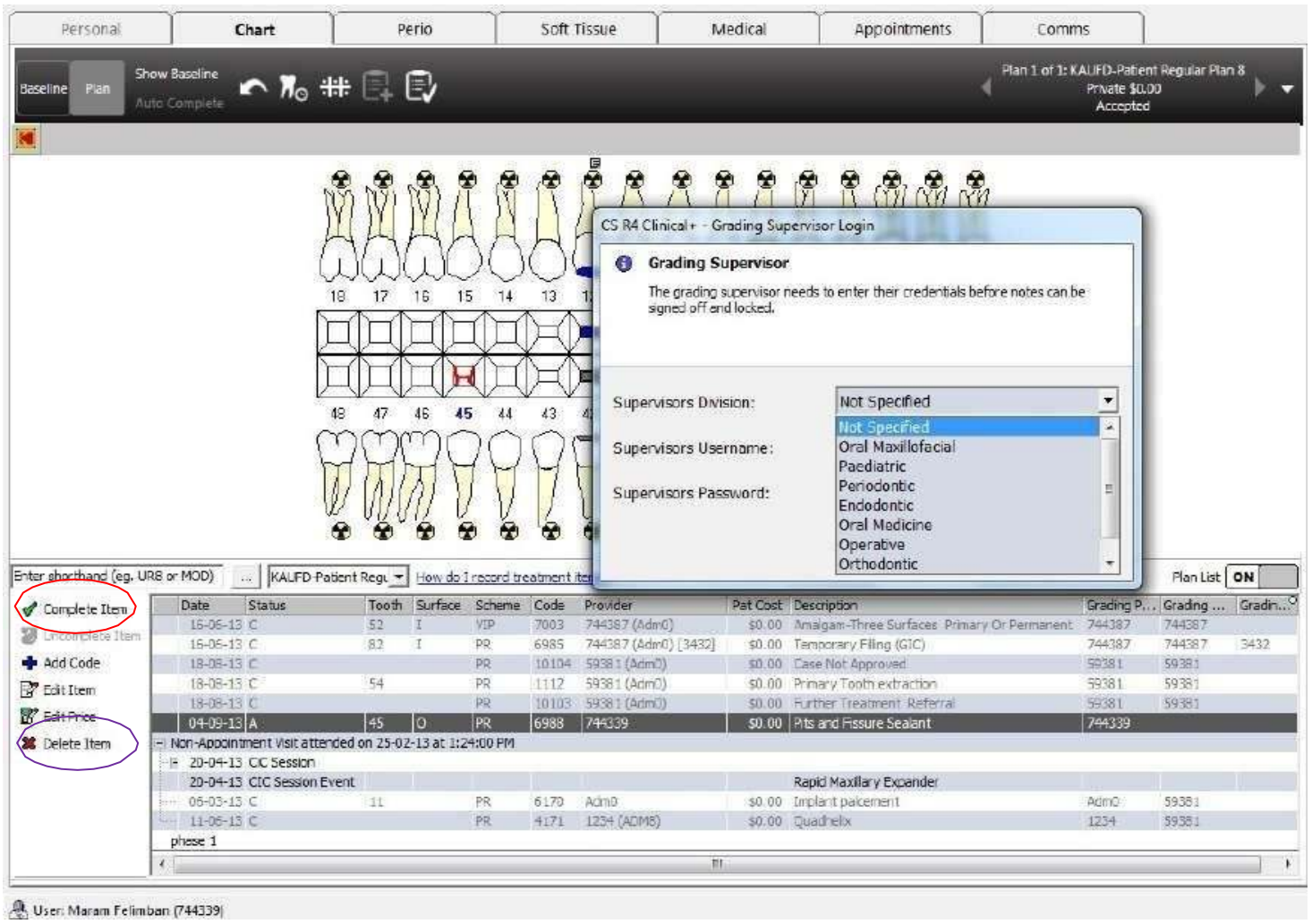


Through the baseline itself as shown in, where the treatment options appear when documenting findings on the tooth's crown, roots, or the surfaces.
From the treatment plan window by clicking the plan tab next to the baseline tab. Options of the right and left click are available and like the dental chart. Left click options consists of treatment procedures that are used for the surfaces, crown, or the roots respectively.

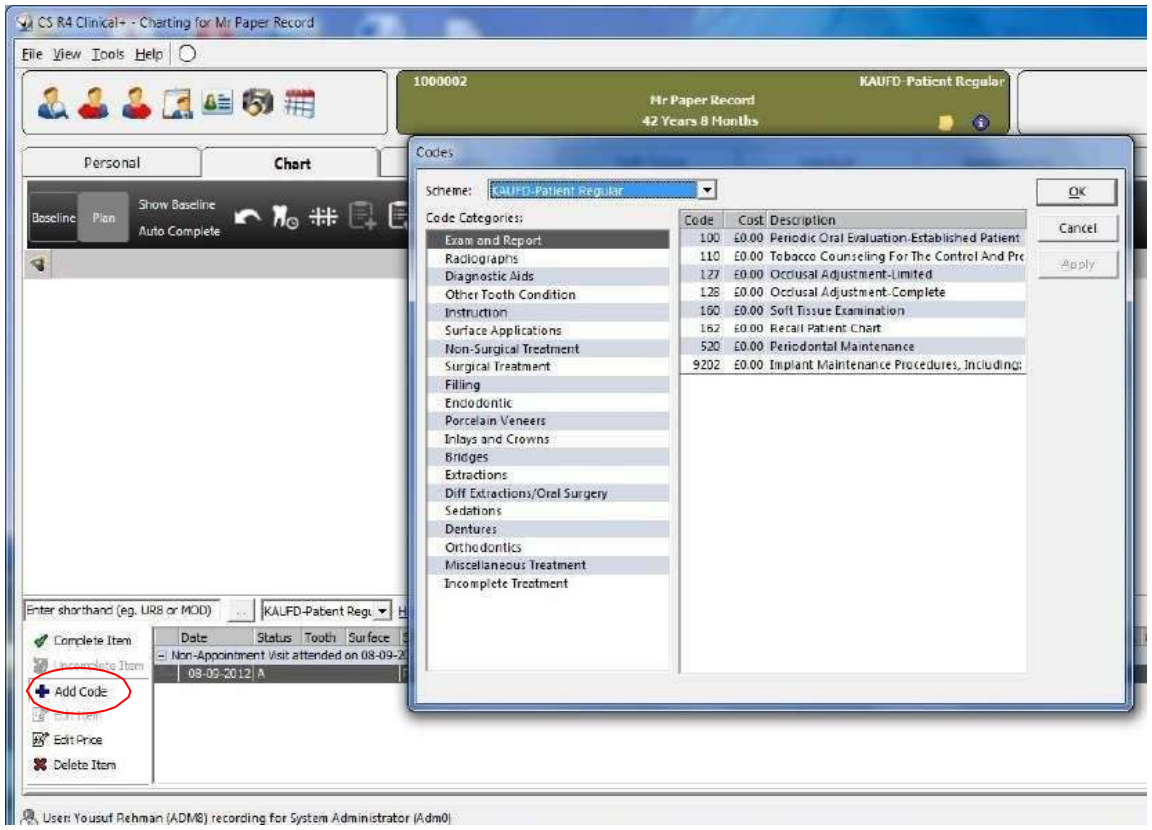
Treatment procedures affecting the whole tooth structure such as extraction can be recorded using the right click of the mouse.
All treatment procedures are recorded in the treatment plan chart in a tabular form.
In cases where clinical supervision is mandated, the completed treatment plan must be authorized by the clinical supervisor.



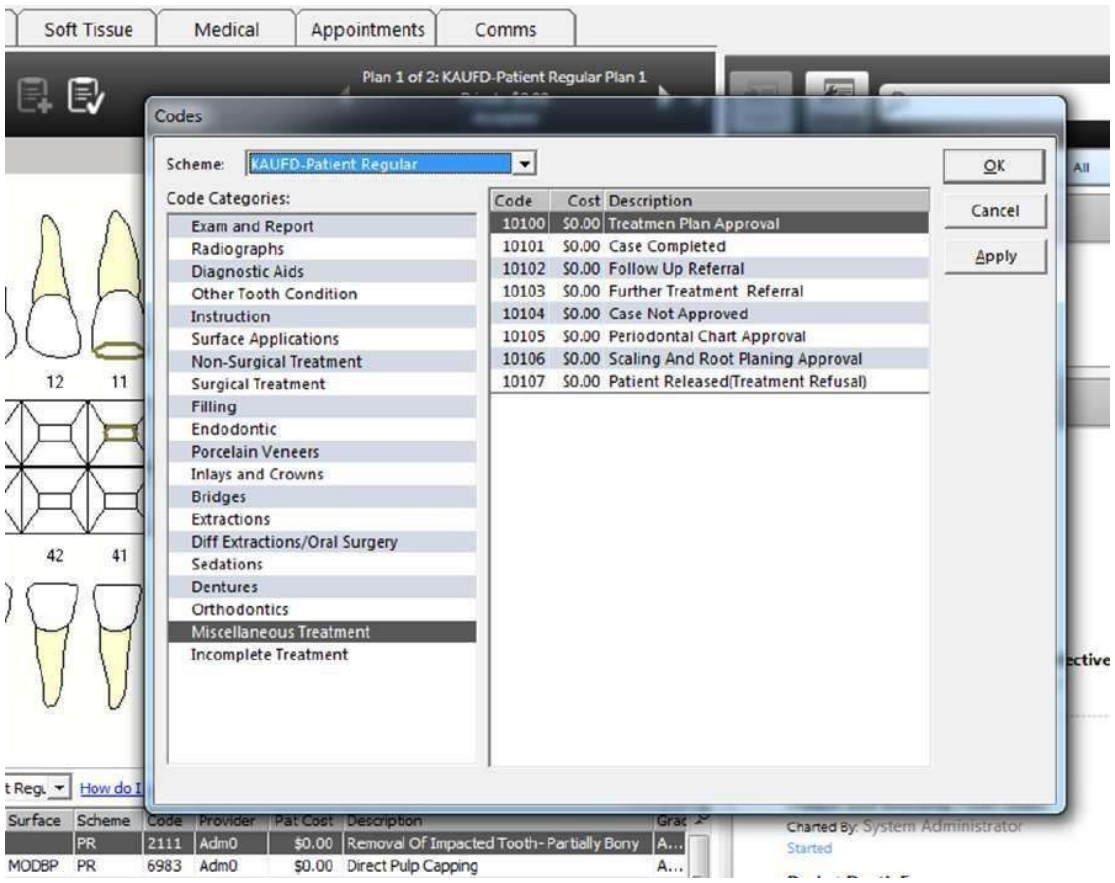
The completed treatment will be highlighted in grey with the DHCW ID and the supervisor ID when applicable and the status turns to C indicating it has been completed. Any wrongly entered item can be deleted with Delete item button.



Any treatment that is non-tooth specific can be found in Add code button. This will bring up a list of codes for you to choose from such as when requesting Radiographs using the Add code button then select the type of radiographs required.



The Completed Case and Treatment Plan Approval codes are available in the Add Code button under the Miscellaneous Treatment category.



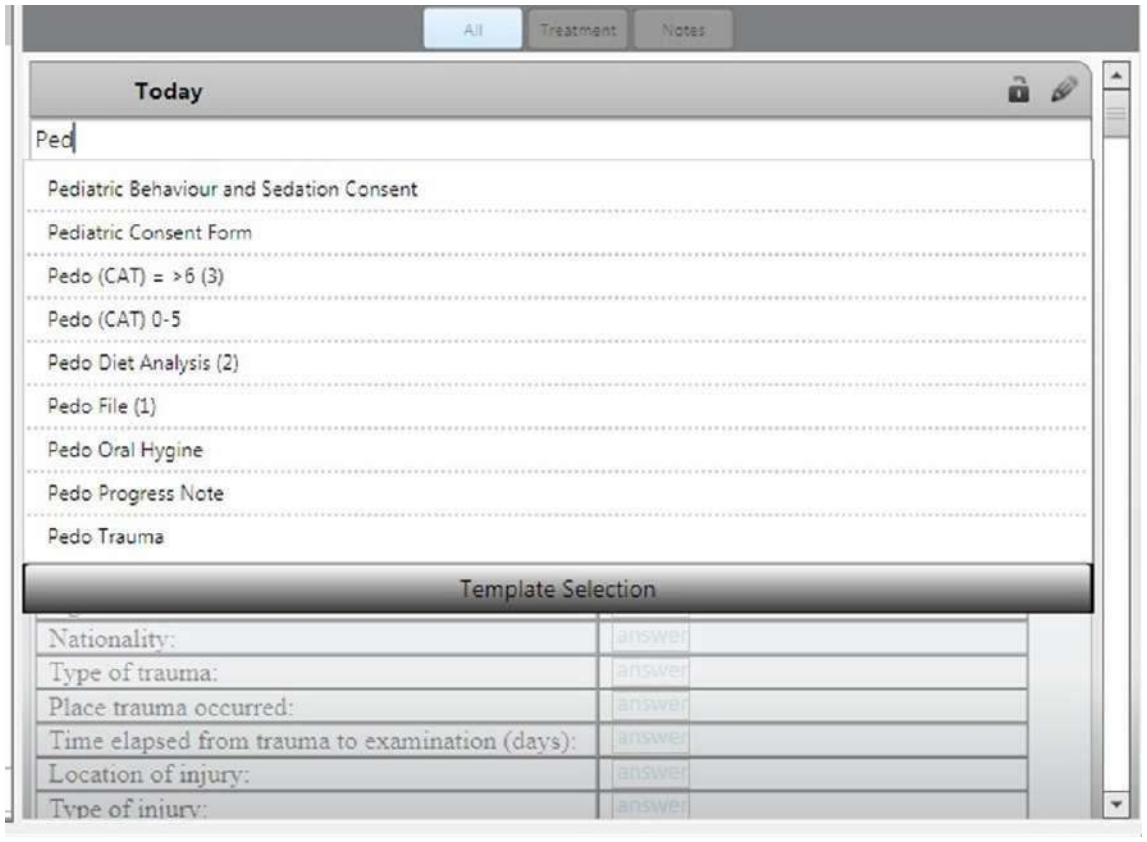
When you open a patient's chart, the Clinical Notes panel is displayed on the right. When accessing a patient’s clinical notes, the ten most recent visits are automatically loaded and displayed. Access to more visits is achieved by clicking on links.
When a treatment item is proposed or charted, the information is automatically saved into the clinical notes history and cannot be deleted. You can however add information as text to the note when necessary.

The following information is automatically saved:

1. Charted clinical conditions.
2. Tooth number and the associated note.
3. Proposed Treatment plan and treatment options based on the charted clinical conditions.
4. Treatment plan charting activities and charted clinical history conditions.
5. Periodontal charting activities and soft tissue clinical history information.
6. Treatment plan including financial information.
7. Soft tissue, chart, occlusal, and cosmetic exam information associated with an exam template.
8. Non-treatment events, such as questionnaires, referrals, and basic periodontal examination information that occur in the practice management or imaging software.
9. All information entered the baseline chart is displayed in brown.
10. Proposed treatment codes are displayed in blue.
11. Upon Completion of treatment, the completed treatment code is displayed in green.
12. Date and time the clinical note were entered.

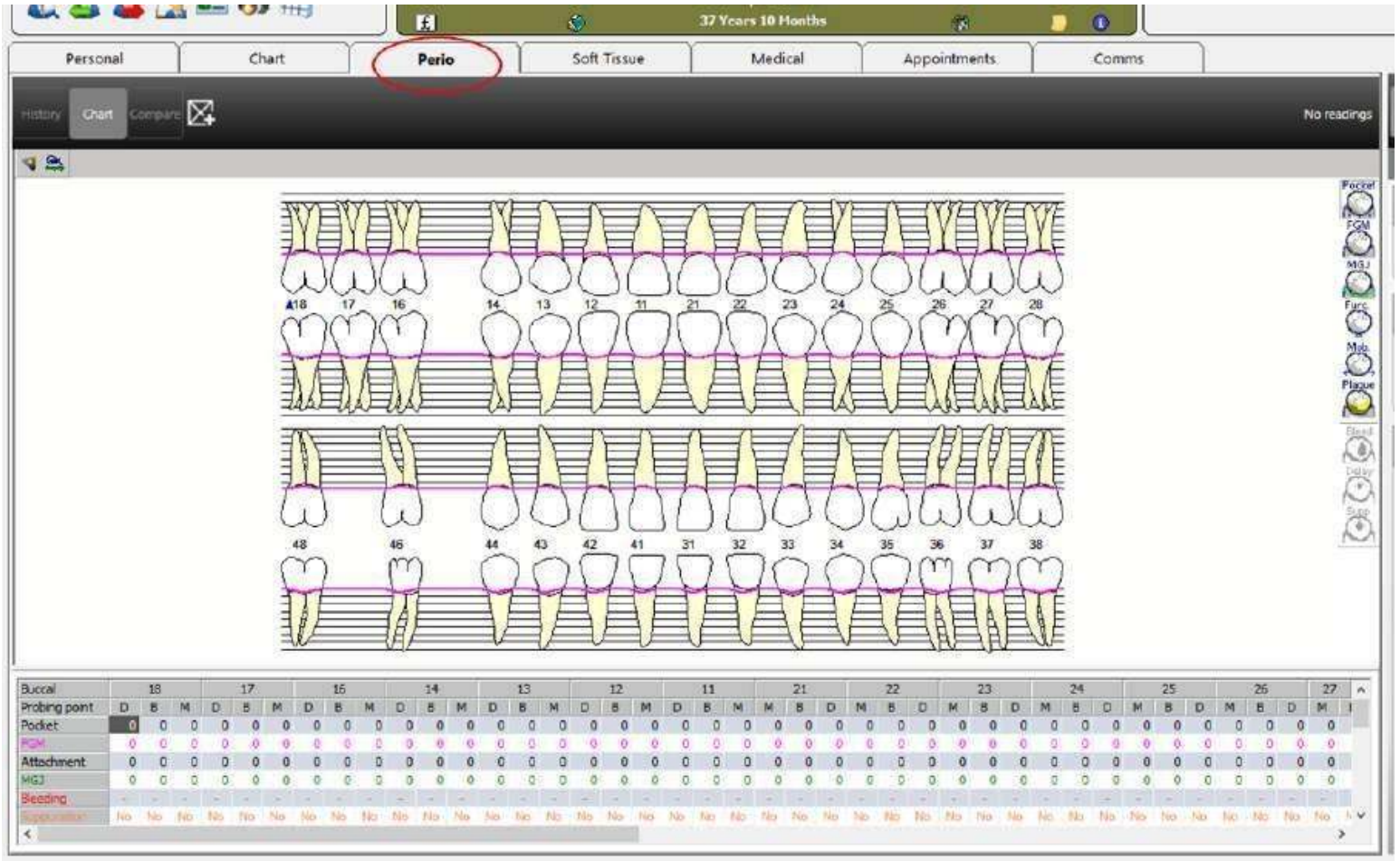
4.2.4 Pediatric Information Template

The template is available on the clinical notes panel and can be inserted by typing Ped or st (for student periodontal sheet) and a list will appear as shown. All department related templates are also available on the notes panel like the pediatric department. For other department templates please type in the first three letters of the required specialty, type end for the endodontics diagnosis form and the template list will appear.

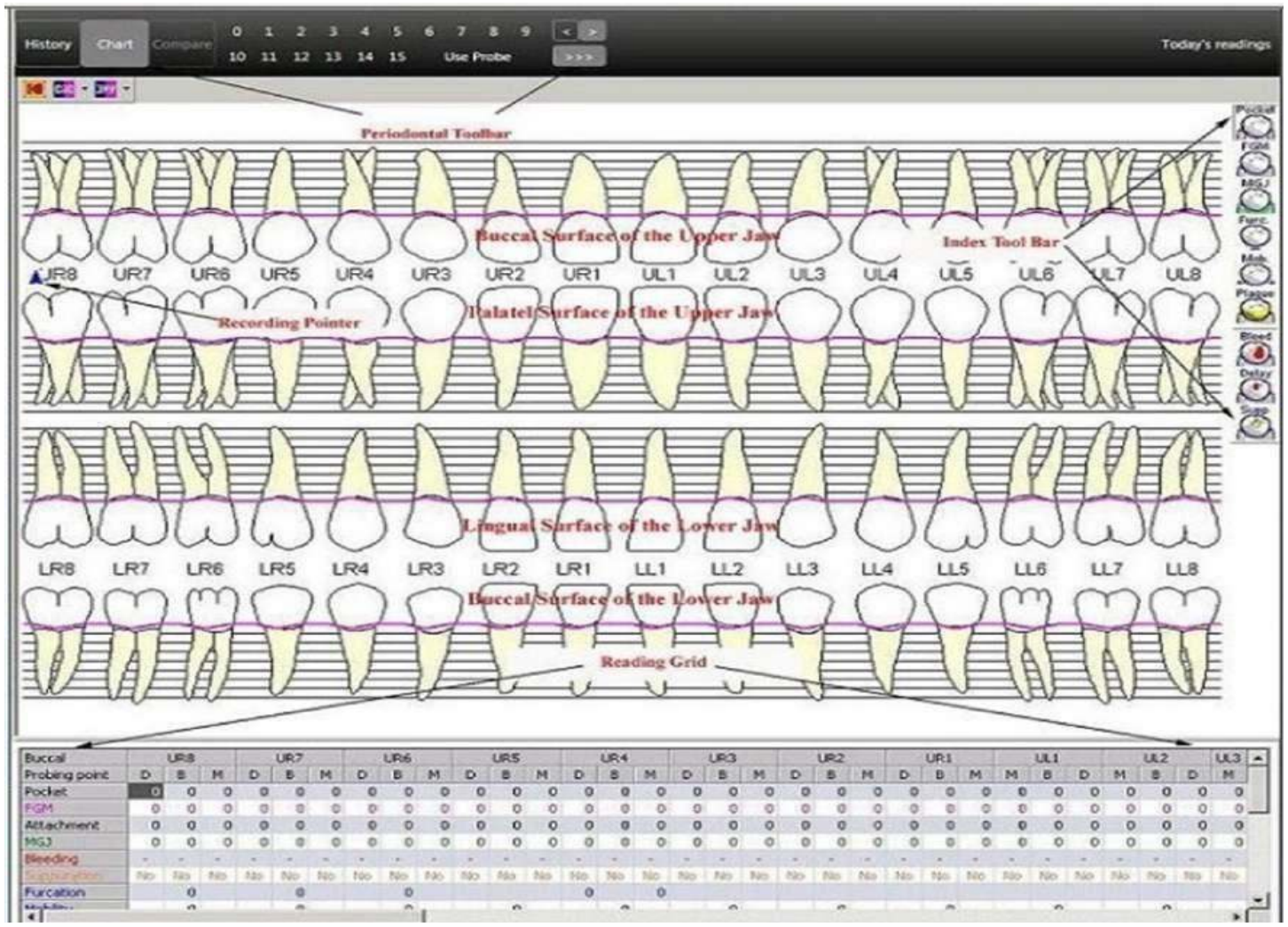


4.2.5 Periodontal Charting

To access the periodontal charting place clinic on the Perio button above the chart as shown



The main parts of the periodontal chart are shown. The Recording Pointerindicates the point currently being recorded. The pointer will by default always start from the Upper Right Quadrant and will auto advance from right to left on the Buccal Surface of the upper jaw, then go to the Palatal surface on the upper jaw and move left to right.
It then goes to the Lingual surface on the lower jaw and moves right to left, from there it goes to the Buccal Surface on the Lower Jaw and moves left to right.

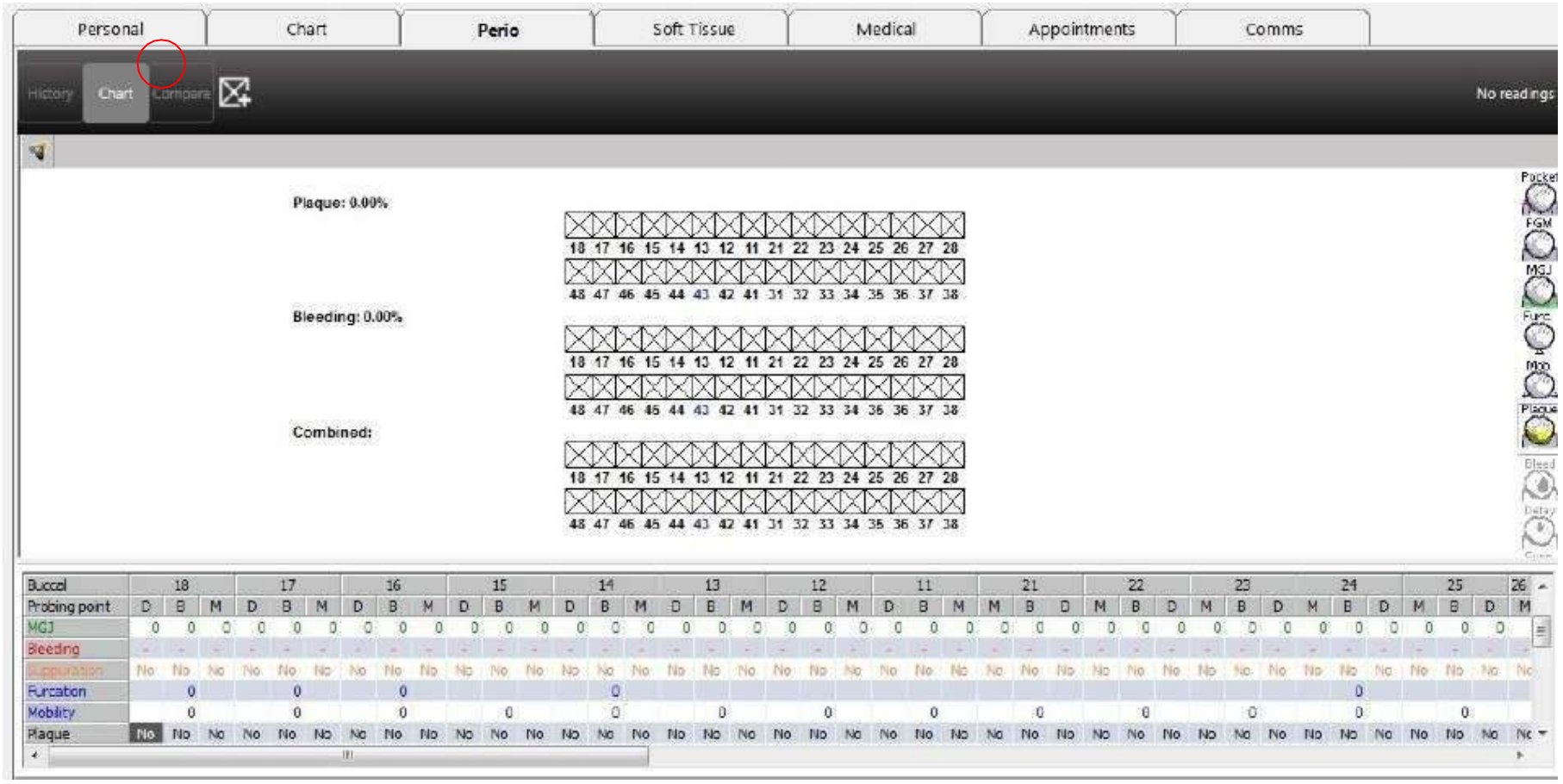


4.2.6 Plaque and Bleeding

To start the periodontal chart please click the start recording box on the top. Once the R4 user has initiates the plaque charting session, plaque will be recorded against the relevant surface through a single click on a tooth surface quadrant (Fig 20). The switch between plaque and no plaque is marked using the yellow marker indicating plaque deposits while bleeding is marked using the red. If the surface contains both, bleed is marked using a smaller triangle within the tooth quadrant.

Plaque and Bleeding can also be added using the Keyboards' arrow keys to move across the rows from tooth to tooth, from row to row and between the plaque and bleeding charts.

Plaque and Bleeding is marked by using the surface initial to select that surface (M=Mesial, B=Buccal, D=Distal, P=Palatal and L=Lingual)

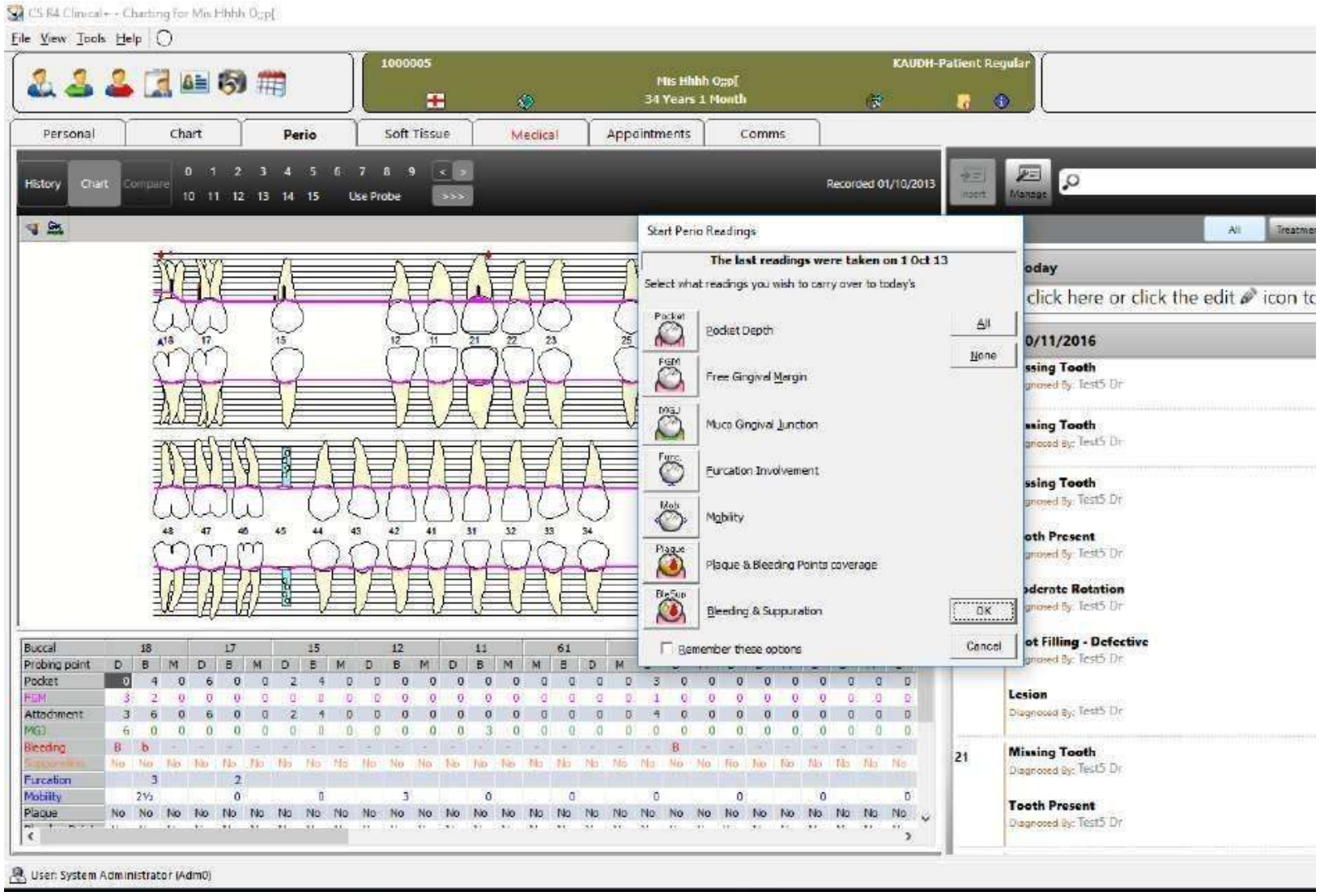


Upon completing the plaque and bleeding charts, the scores will be presented as 'read-only', and no further modification is permitted until the following day when the ability to start a periodontal examination reset.

If for any reason you were unable to complete recording the periodontal charting on a previous session, click start recording, a pop-up message appears as shown in fig 21. On

the message window click All and then Ok. This will copy all the previous recorded data into a new periodontal chart and allowing the continuation of the charting.

In case where a new periodontal charting is needed, do not click on ALL, make sure the

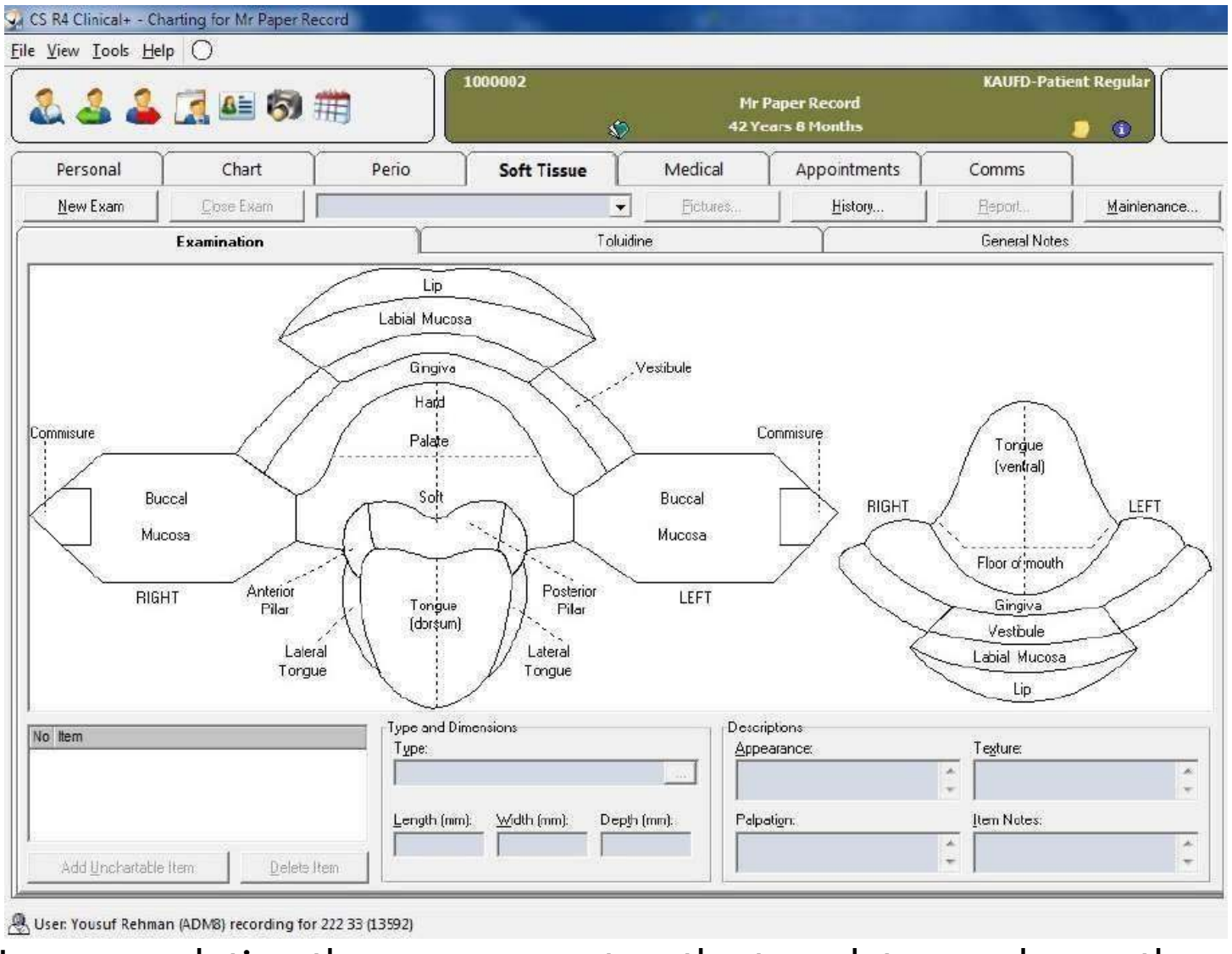


data is not bold as shown above. Click Ok to start a new Perio chart.

Please note that previous recorded periodontal cannot be deleted or modified.

4.2.7 Soft Tissue Exams

The Soft Tissue Exam allows you to record a full soft tissue examination for oral lesions as well as recording the findings of a clinical and palpation examination including findings of a toluidine blue mouthwash. The examination and mouthwash results are recorded graphically. As with other charts, the system records history to monitor areas of concern.



Upon completing the progress notes, the templates, and any other extra information and when applicable, the notes / MPE must be authorized by the clinical supervisor using the lock symbol on the top right corner of the notes panel.

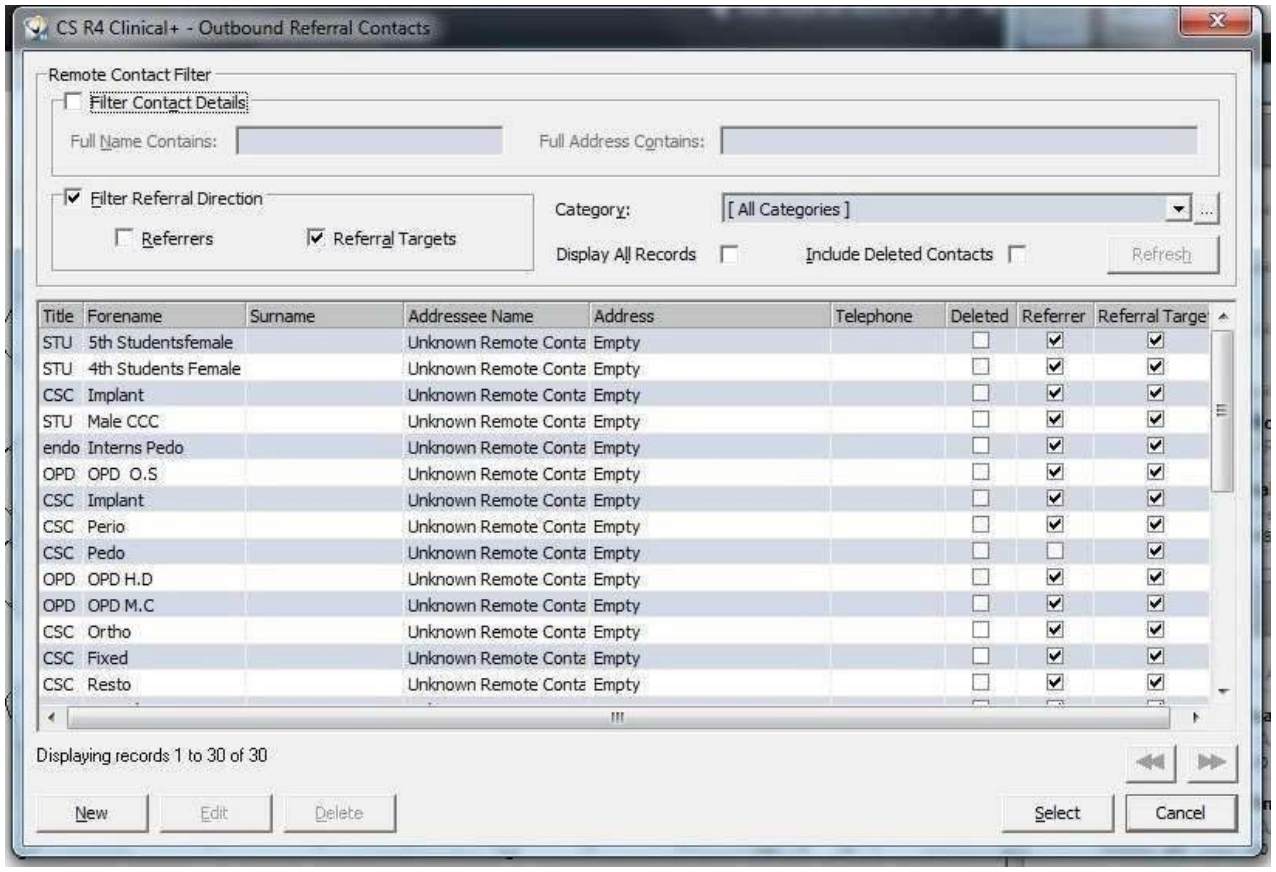
4.2.8 Referral to Other Clinics/Departments

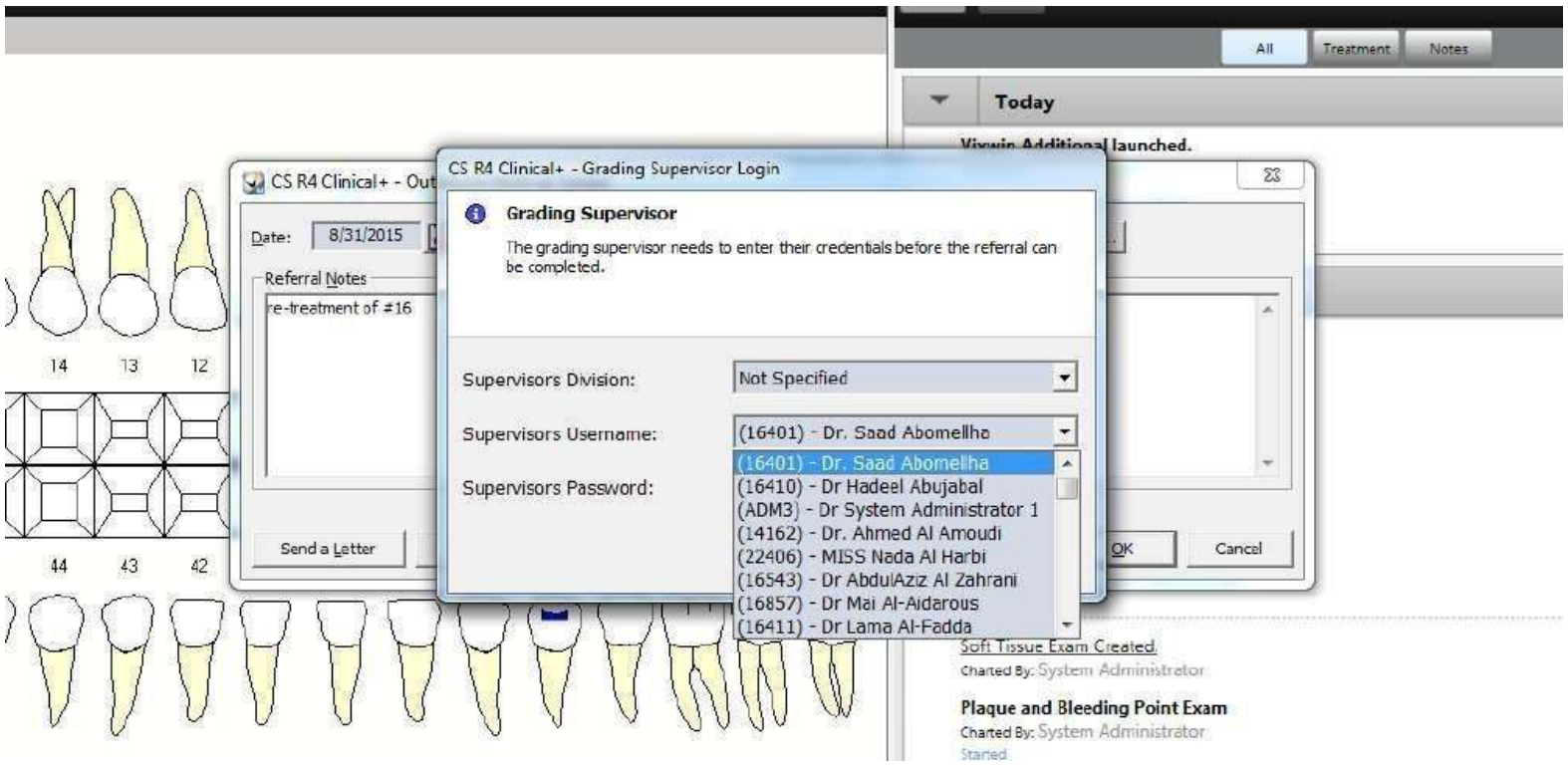
To refer the patient to another clinic, click Tools then Refer Patient Out, a window appears as shown. To select the Referred location/contact click the box with the dots to view the referral contacts.



Select the referral contact from the Contact List and click select then type the reason for Referral in the Referral Notes area and Click OK (figures 24 and 25). The patient is referred

to the clinic concerned, and the reception will be able to view the referral and give him/her the appropriate appointment with the concerned clinic.





When applicable, a clinical supervisor must approve the referral to the concerned department, and a supervisor pop-up window will appear once you click OK. This procedure is mandatory as the referral will not be completed without the supervisors' approval.



At The end of each patient's treatment appointment

- All R4 users must logout from the CS R4 Clinical+ to prevent unauthorized access to patient as health information is private and should be protected.
- R4 users must logout to be able to log in from other clinic, as R4 does not permit a user to be logged on at two portals at once.

For technical support and in cases of any queries please call the KAUDH Information Technology Unit.

Section 5: Infection Prevention and Control (IPAC)

The following IPAC guidelines are mandatory for all DHCW. Compliance with and violations of the KAUDH IPAC guidelines are monitored and recorded using the violation point system. These regulations aim to ensure the standard of care is maintained to prevent the transmission of infectious diseases while providing dental care. All DHCW must abide by these guidelines. To ensure compliance with the KAUDH guidelines, the department of Infection Prevention and Control IPAC must implement the following:

1. All new KAUDH DHCWs employs must receive clinics-specific training in infection prevention and control as part of their orientation, and whenever new tasks, procedures or equipment are introduced.
2. Infection Prevention and Control Training should be supplemented whenever necessary and reviewed at least annually by means of staff meetings, attendance at continuing education courses.
3. All DHCWs should receive training that includes information about their exposure risks, infection prevention and control strategies specific to their occupational tasks, and the management of any work-related illness or injury.

Eating and Drinking



Eating and drinking is prohibited in all clinical areas, laboratories, CSSD, dispensaries.

5.1 Principles of Infection Prevention and Control (IPAC)

The IPAC program focuses on strategies to reduce the risk of transmission. These strategies include:

1. Identifying, communicating, and implementing standards and guidelines by setting required policies and procedures.
2. Effective occupational health and safety programs for all KAUDH, including written procedures for the workplace and guidance on immunization.
3. Educating KAUDH workers, as well as patients and their families, about everyone's role in infection prevention.
4. Ongoing review of policies and procedures, and evaluation of the IPAC program.

The three main modes of transmission of micro-organisms are:

Direct Transmission

Direct physical contact with blood, oral fluids, or other materials

Indirect Transmission

Contact with an intermediate contaminated object, such as a dental instrument, equipment, or an environmental surface.

Droplet Transmission

The exposure of the oral, nasal, or conjunctival mucosa with droplets, spatter or spray containing micro-organisms generated from an infected person, such as by coughing, sneezing, or talking.

Infection Prevention and Control (IPAC) principles Include:

5.1.1 Patient Assessment

A. Screening of Patients

Patients' health condition may relate to a dental problem, such as an oral infection or a post-operative complication, but it may also relate to a non-dental problem, such as a severe respiratory illness (e.g. influenza) or simply a bad cold.

B. Standard Precautions

Standard precautions used to describe basic standards of infection prevention and control that are required for safe patient care.

5.1.2 Routine Practices

Such practice is designed to reduce the risk of transmitting pathogens from moist body substances and protects both DHCWs and patients and is based on the concept that all patients are potentially infective, even when asymptomatic, thus, safe practice standards must routinely apply when in contact with blood, body fluids and secretions (e.g. saliva), mucous membranes and non-intact skin.

There are four principles that are inherent in routine practices:

A. Risk Assessment
B. Hand Hygiene
C. Use of Personal Protective Equipment
D. Safe Handling and Disposal of Sharps

A. Risk Assessment

This is carried out prior to any interaction with the patient to determine the interventions that are required to prevent the transmission of infection. The risk of transmission varies depending on the type of dental procedure performed and the likelihood of exposure to blood, body fluids, mucous membranes, and non-intact skin. Additional factors include the

general health status of the patient, the characteristics of the patient, the physical environment, and resources available as well as the immune status of the DHCWS.

B.Hand Hygiene

Hand hygiene is the single most important measure for preventing the transmission of micro- organisms and includes the use of plain or antimicrobial soap with running water, or alcohol- based hand rub with 70-90% alcohol-based when:

- Hands are visibly soiled (including with powder from gloves) or contaminated with body fluids.
- Before and after direct contact with individual patients.
- After contact with environmental surfaces, instruments, or other equipment in the dental operatory.
- After contact with dental laboratory materials or equipment.
- Before eating or drinking.

General Instruction for Hand Hygiene:

1. Liquid soap should be provided in disposable pump dispensers.
2. Bar soap should not be used.
3. Hand lotion to prevent dry or cracked skin also should be available in disposable pump dispensers.
4. Petroleum-based hand lotions should not be used, because they can affect glove integrity.
5. Avoid the use of hand jewelry and prosthetic nails. (Jeweler interferes with proper hand hygiene, while prosthetic nails have been implicated in hospital outbreaks involving fungal and bacterial infections.)
6. Disposable pump dispensers of liquid products should be discarded when empty and not “topped-up” or refilled.

7. Hand hygiene facilities located as close as possible to all dental operatory and, preferably, in clear sight of patients.
8. If they are out of sight, patients should be made aware that hand hygiene is taking or has taken place.
9. Soap dispensers should be placed at every sink.
10. Alcohol-based hand rub dispensers should be strategically located for ease of use.
11. Disposable towels should be readily available at each facility.
12. Taps should be turned off with the aid of a paper towel to avoid re-contamination of hands.
13. If renovating, consider installing hands-free faucets.
14. A hand wash sink should not be used for any other purpose.
15. Do not clean equipment or discard waste in a hand wash sink. Maintain separate facilities for these tasks.
16. Keep clean equipment away from sinks to avoid contamination.

Hand Hygiene Techniques

a. When using Soap and Water for Routine Care.
   i. Wet hands with warm, not hot, water
   ii. Apply adequate amount of soap to achieve lather.
   iii. Rub vigorously for a minimum of 15 seconds, covering all surfaces of hands and fingers. Pay particular attention to fingertips, between fingers, backs of hands and base of thumbs, which are the most commonly missed areas.
   iv. Rinse well with running water.
   v. Dry thoroughly with a disposable paper towel.
   vi. Turn off taps with towel (when applicable) and discard towel in a bin.
b. When using an Alcohol-Based Hand Rub for Routine Care.
   i. Apply the product to one palm and rub both hands together for a minimum of 15 seconds, covering all surfaces of hands and fingers, until they are dry.

c. When using Anti-microbial Soap and Water for Surgical Procedures:
   ii. Remove all hand and wrist jewelry.
   iii. Wash hands and at least 2 inches above wrists thoroughly for the length of time recommended by the manufacturer, which is usually 2 to 5 minutes.
   iv. Clean under nails.
   v. A disposable manicure stick may be used, but nailbrushes are NOT recommended, as they can become contaminated and damage the skin around the nails.
   vi. Nails should be short enough to allow thorough cleaning underneath and not cause glove tears.
   vii. Rinse off soap and dry hands thoroughly before donning sterile gloves.
d. When using an Alcohol-Based Surgical Hand Rub for Surgical Procedures:
   i. Remove all hand and wrist jewelry.
   ii. Apply the product to dry hands only and follow the manufacturer's instructions.
   iii. Allow hands to dry thoroughly before donning sterile gloves.

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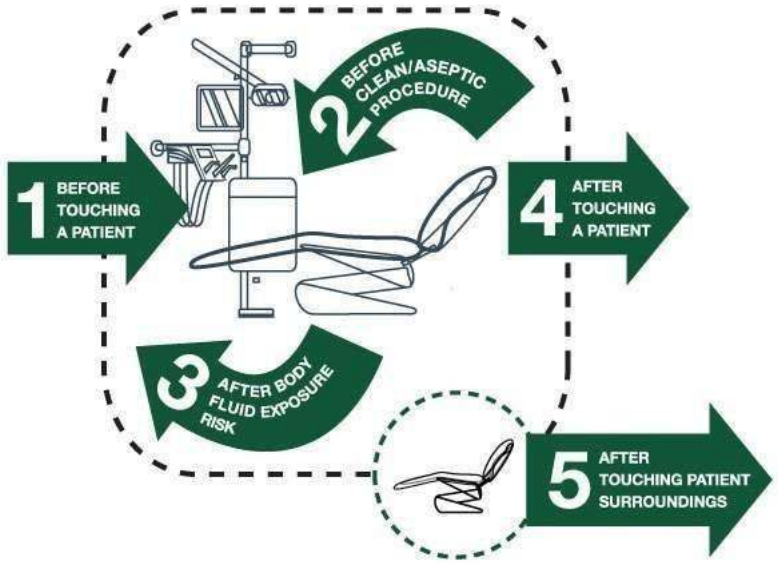
Infection Prevention and Control Department

Your 5 Moments for Hand Hygiene



1	BEFORE TOUCHING A PATIENT	WHEN?	Clean your hands before touching a patient when approaching him/her.
		WHY?	To protect the patient against harmful germs carried on your hands.
2	BEFORE CLEAN/ ASEPTIC PROCEDURE	WHEN?	Clean your hands immediately before performing a clean/aseptic procedure.
		WHY?	To protect the patient against harmful germs, including the patient's own, from entering his/her body.
3	AFTER BODY FLUID EXPOSURE RISK	WHEN?	Clean your hands immediately after an exposure risk to body fluids (and after glove removal).
		WHY?	To protect yourself and the health-care environment from harmful patient germs.
4	AFTER TOUCHING A PATIENT	WHEN?	Clean your hands after touching a patient and her/his immediate surroundings, when leaving the patient's side.
		WHY?	To protect yourself and the health-care environment from harmful patient germs.
5	AFTER TOUCHING PATIENT SURROUNDINGS	WHEN?	Clean your hands after touching any object or furniture in the patient's immediate surroundings, when leaving – even if the patient has not been touched.
		WHY?	To protect yourself and the health-care environment from harmful patient germs.

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SAVE LIVES
Clean **Your** Hands

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HOW TO HAND WASH?

WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB

Duration of the entire procedure: 60-40 seconds



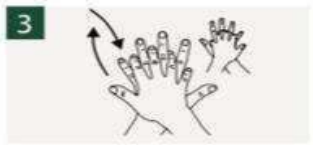
Wet hands with water.



Apply enough soap to cover all hand surfaces.



Rub hands palm to palm.



Right palm over left dorsum with interlaced fingers and vice versa.



Palm to palm with fingers interlaced.



Backs of fingers to opposing palms with fingers interlocked.



Rotational rubbing of left thumb clasped in right palm and vice versa;



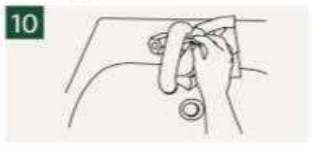
Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;



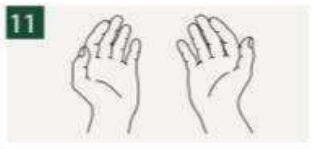
Rinse hands with water;



Dry hands thoroughly with a single use towel;



Use towel to turn off faucet.



Your hands are now safe.

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WHO acknowledges the Hôpitaux Universitaires de Genève (HUG), in particular the members of the Infection Control Programme, for their active participation in developing this material.


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Infection Prevention
and Control Department
HOW TO HAND RUB?
RUB HANDS FOR HAND HYGIENE! WASH HANDS WHEN VISIBLY SOILED
Duration of the entire procedure: 30-20 seconds
1a
1b
2
Apply a palmful of the product in a cupped hand, covering all surfaces.
Rub hands palm to palm.
3
4
5
Right palm over left dorsum with interlaced fingers and vice versa.
Palm to palm with fingers interlaced.
Backs of fingers to opposing palms with fingers interlocked.
6
7
8
Rotational rubbing of left thumb clasped in right palm and vice versa.
Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa.
Once dry, your hands are safe.
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SAVE LIVES
Clean Your Hands

C. Use of Personal Protective Equipment (PPE)

PPE Include Gloves, Protective Eyewear, Masks and Protective Clothing.

General Considerations

All DHCWs must use PPE to:

a. Shield themselves from exposure to potentially infectious material.
b. Protects patients, by preventing the transmission of micro-organisms from patient to patient.
c. Protect the skin of the hands and arms from exposure to splashing, spraying or spatter of blood, saliva, or other body fluids, and from introducing micro-organisms into deeper tissues by traumatic injuries.
d. Protects the conjunctival mucosa of the eyes, as well as the lining mucosa of the respiratory tract.

- PPE should be removed prior to leaving the operatory.
- Single-use barriers, such as gloves and masks, should be discarded immediately after use.

Gloves

Types of Gloves used:

1. Non-Sterile Gloves
    a. Latex Gloves: Used in the dental clinic only, ALL DHCWs are prohibited from leaving the operatory site or dental clinic with latex gloves on.
    b. Vinyl Gloves: May be used outside cubical to transfer instruments or materials within the clinical area BUT DHCW CANNOT TREAT PATIENT WITH IT (unless the patient has a latex allergy or the DHCW has a known latex allergy documented at IPAC office).
2. Sterile Gloves
    Used for procedures requiring a sterile field.

3. General Purpose Utility Gloves

They are used to clean instruments before sterilization in the sterilization room (CSSD) and to disinfect the cubicle. These gloves can be thoroughly washed with soap and water then decontaminated with a disinfecting solution at the end of each day.

It is important to note that:

a. Gloves must be worn when contact with mucous membranes, non-intact skin or body fluids is anticipated.
b. The same pair of gloves must not be used for more than one patient.
c. Gloves should be put on immediately before the procedure for which they are indicated.
d. Gloves must be removed and discarded immediately after the completion of the procedure for which they were used, and hand hygiene must be performed.
e. Gloves should not be worn outside any clinical area where they are required for personal protection.
f. Gloves must not be washed and re-used.
g. Gloves are not completely free from leaks and may tear; their use does not replace the need for hand hygiene.
h. Effective hand hygiene protocols should be followed before donning gloves and after removing them.
i. Latex Sensitivity and Allergies

Patients with true latex allergy should be treated in an environment where contact with latex proteins (directly or airborne) is kept as low as reasonably achievable. All latex- containing materials or devices should be removed from the operatory or adequately covered and isolated. Obtaining detailed medical history is vital and the patients should be asked questions relating to possible latex allergy including

a history of common predisposing conditions for latex allergy, such as other allergies (e.g. avocados, bananas).

Protective Eyewear

1. The conjunctival mucosa of DHCWSs should be protected from spatter and debris created during dental procedures by wearing appropriate eyewear or face shields.
2. Protective eyewear should be worn throughout the dental appointment, then cleaned, and disinfected after use and whenever becoming visibly contaminated.
3. Patients should be provided with protective eyewear to shield their eyes from spatter and debris created during dental procedures.
4. Protective eyewear should be cleaned and disinfected between patients and whenever it becomes noticeably contaminated.

Masks

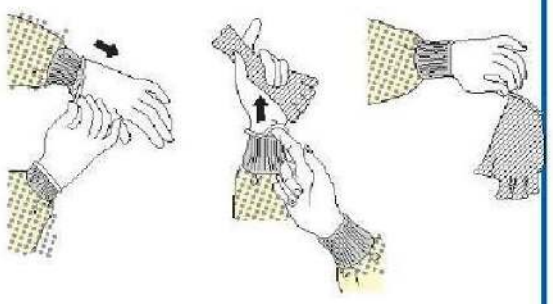
1. Appropriate masks that cover the nose and mouth should be worn during dental procedures to protect the respiratory mucosa of DHCWSs from contact with potentially contaminated droplet material.
2. Masks lose efficiency over time, as they become moist from the DHCWS's breathing. Accordingly, masks should be changed when they become contaminated, wet or as needed during longer appointments.

SEQUENCE FOR REMOVING PERSONAL PROTECTIVE EQUIPMENT (PPE)

Except for respirator, remove PPE at doorway or in anteroom. Remove respirator after leaving patient room and closing door.

1. GLOVES

- Outside of gloves is contaminated!
- Grasp outside of glove with opposite gloved hand; peel off
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist
- Peel glove off over first glovet
- Discard gloves in waste container



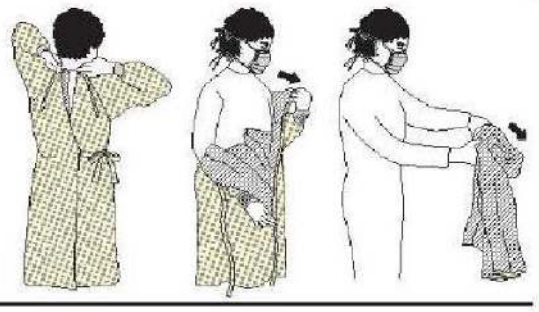
2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield is contaminated!
- To remove, handle by head band or ear pieces
- Place in designated receptacle for reprocessing or in waste container



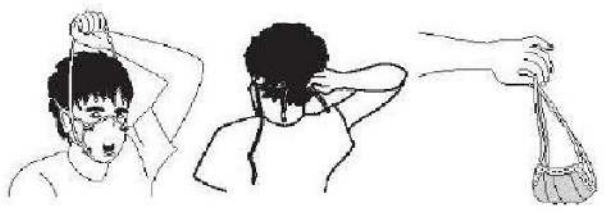
3. GOWN

- Gown front and sleeves are contaminated!
- Unfasten ties
- Pull away from neck and shoulders, touching inside of gown only
- Turn gown inside out
- Fold or roll into a bundle and discard



4. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — DO NOT TOUCH!
- Grasp bottom, then top ties or elastics and remove
- Discard in waste container



PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE

Protective Clothing

Whenever spatter or spray is anticipated during dental procedures, the forearms of DHCWSs should be protected by wearing long-sleeved protective clothing. Please refer to section 3.4 (Dress Code and Dress Code Standard
in the Patient-Care Area). Additional protective barriers and techniques should be employed, as applicable, to shield patients from potentially infectious material.

Protective Draping

Single-use bibs or drapes should be used to protect patients' clothing and reduce their exposure to spatter and debris created during dental procedures. Patient's bibs maybe secured using single-use strips maybe used to secure bibs and drapes, in place of reusable daisy chains.

Use of rubber dam and high-volume suction

A rubber dam should be used whenever feasible, and high-volume suction should be used whenever the creation of droplets, spatter, and spray, is possible.

D. Safe Handling and Disposal of Sharps

Handling and Disposal of Sharps must be stressed that in extreme care should be always taken to ensure patients are protected from injuries involving sharp objects. Sharps should be kept out of the reach of patients and safely collected in a clearly labeled puncture-resistant container.

5.1.3 Immunization

All DHCW must annually submit an updated medical proof of immunization prior to receiving clinical privileges. Completion of immunization is a mandatory requirement accessing KAUDH clinical facilities. KAUDH follows the MOH Guidelines regarding vaccination recommendations and schedules for adults engaged in the provision of health care as follows:

- Hepatitis B
- Measles/Mumps/Rubella
- Influenza
- MMR
- Varicella (chickenpox)
- Tetanus, diphtheria, pertussis
- Meningococcal
- Tuberculosis skin testing

DHCW Must Have a Completed Immunization Record of Hepatitis B Vaccination with All Confirmed Evidence of Serological Immunity.

5.1.4 KAUDH Illness and Work Restrictions

Unique circumstances may arise and warrant particular attention including:

- Dermatitis, eczema and / or when the protective skin barrier is broken, the DHCW is at increased risk of acquiring and transmitting infection through the exposed area. This area should be covered with bandages, in addition to wearing gloves.
- Immuno-compromised DHCWs who are at increased risk of becoming infected, where feasible, clinical duties and associated exposure risks should be considered.
- DHCW suffering from an upper respiratory illness (e.g. common cold) should take the necessary precautions to prevent the transmission of micro-organisms to patients and other staff.

- DHCW displaying fever, acute viral gastro- enteritis with vomiting and diarrhea, or acute conjunctivitis should be directed to the staff clinic for assessment.
- DHCWs that have oral and/or nasal herpes simplex infections (i.e. cold sores) should pay particular attention to hand hygiene and not touch the affected area.

5.1.5 Exposure Prevention

The primary method of preventing the transmission of blood-borne pathogens including HBV, HCV and HIV is avoiding occupational exposures to blood, percutaneous injuries (e.g. needle-sticks or cuts with sharp objects), and direct contact with the mucous membranes of the eyes, nose and mouth including non-intact skin. Most exposures are preventable by following routine practices, the use of PPE and safe handling and disposal of sharps.

Percutaneous injuries pose the greatest risk of transmission of blood-borne pathogens to DHCW. Best practices to prevent such injuries include:

1. Always use extreme caution when passing sharps during four-handed dentistry.
2. Needles should remain capped prior to use. Needles should not be bent, recapped, or otherwise manipulated using both hands.
3. Following use, needles should be recapped as soon as possible using a one-handed scoop technique or a recapping device.
4. When suturing, tissues should be retracted using appropriate instruments (e.g. retractor, dental mirror).
5. Removal of burs from hand pieces immediately following the procedure.
6. Removal of all sharps from trays prior to cleaning instruments.
7. Used sharps must be collected in a clearly labeled puncture-resistant container.
8. When cleaning contaminated instruments by hand, heavy-duty utility gloves, appropriate clothing and long-handled brushes should be used.

5.1.6 Exposure Management

In the event of a significant exposure, immediate first-aid measures should be initiated:

1. For percutaneous injuries, allow the wound to bleed briefly and freely. Then, gently wash the wound with soap and water, and bandage as needed.
2. For exposures involving the eyes, nose, or mouth, flush the area with copious amounts of water.
3. For exposures involving non-intact skin, wash the site with soap and water.

All occupational injuries must be documented and reported to the IPAC office.

Cases involving significant exposure (specific occupational incident involving eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other infectious materials, including saliva), assess the patient's status and risk for blood-borne illnesses by reviewing the medical history and, if necessary, asking her/him additional questions.

1. If the patient's HBV, HCV, or HIV status is unknown, or if the patient presents with known risk factors, then her/his cooperation should be sought to clarify such information.
2. Obtain the patient's informed consent to be tested for HBV, HCV, and HIV. Refer the patient to King Abdulaziz University Hospital KAUH for consultation, assessment of risk factors and any blood tests necessary.

Accidental exposure (Needle Stick/Sharp Injury) and Post-Exposure Protocol

1- Immediate first aid. Wounds and skin are washed with soap and water; mucous membranes are flushed with water and eyes irrigated with clean water or saline. Wounds are not squeezed, and no antiseptic or caustic agent such as bleach is applied.

2- Immediate reporting. The exposed person reports at once to the IPAC Office during working hours, or to the Emergency Room after hours, and identifies the source patient for risk assessment.
3- Documentation. The exposure is reported through the incident reporting system (OVR) within 24 hours for risk assessment and prophylaxis; formal notification is completed within 72 hours.
4- Employee Health Clinic. All exposed personnel attend the Employee Health Clinic, even if seen in the Emergency Room; the clinic physician determines the need for and type of follow-up.
5- Prophylaxis and follow-up, decided case by case. Hepatitis B prophylaxis, where indicated, within 48 hours and no later than 7 days; HIV prophylaxis as soon as possible and no later than 24 hours, with re-evaluation within 72 hours. For hepatitis C, for which no prophylaxis exists, anti-HCV and ALT testing at 4–6 months, with HCV RNA testing at 4–6 weeks where earlier diagnosis is desired.

Significant exposure documentation must include:

1. The name of the exposed DHCW and details regarding her/his vaccination status.
2. The date and time of the exposure.
3. The nature of the exposure, including the dental procedure being performed, the extent of the exposure and the immediate action taken.
4. The name of the patient and his/her known or suspected status related to blood-borne pathogens.
5. Follow-up, counseling, and post-exposure management.

5.1.7 Occupational Health and Safety Requirements and WHMIS

All KAUDH employees, partners, and visitors must comply with the requirements of the Occupational Health and Safety Act (OHSA), which includes Workplace Hazardous Materials Information System (WHMIS).
WHMIS is a national communication standard that deals with hazardous materials in the workplace, including materials classified as controlled products. It is crucial to insure:

a. Labeling of all controlled products.
b. Availability of material safety data sheets.
c. Education and training regarding hazardous materials in the workplace.

5.1.8 Handling Instruments

General Considerations:

- Before treating patients, the DHCW must inspect the instruments received and ensure they are properly pouched, sealed, and sterilized.
- It is PROHIBITED to leave instruments in drawers or lockers or unattended in the clinic during break time or after clinic hours. All instruments must be returned to the Central Sterilization Department CSSD
- Prior to returning instruments to the CSSD, instruments should be rinsed cleaned to remove any gross debris or blood
- Vinyl gloves ONLY should be used to return instruments to CSSD.
- During transfer to the CSSD, instruments must be covered properly.

5.2 IPAC and Clinics Cleaning, Housekeeping and Management of Waste

General and Surgical Aseptic Technique

The mouth is considered a clean-contaminated environment and the patient's own defenses (e.g. antibacterial enzymes in saliva and immune responses) play a large role in healing and preventing infection after a dental procedure. Infection is usually the result of the patient's own oral flora.

Aseptic technique is a term used to describe practices that prevent microbial contamination. These practices include: -

a. Environmental cleaning,
b. Effective hand hygiene,
c. Wearing appropriate clinical attire (e.g. gloves, protective eyewear, masks, gowns),
d. Proper handling of clean instruments,
e. Wrapping and sterilization,
f. Proper handling of sterile instruments as they are unwrapped,
g. Preventing sterile instruments from being contaminated from environ-mental sources and properly administering medicines.

Surgical aseptic technique refers to practices that render and maintain objects and the surrounding area maximally free of micro-organisms, prevent contamination of a wound, isolate the operative site from the surrounding unsterile physical environment, and create a sterile field to perform surgery as safely as possible (e.g. draping where appropriate).

For minor dental procedures, hand hygiene is performed, sterile instruments are placed at a clean chair-side area and care is taken to avoid placing unsterile equipment near sterile items.

Once the procedure begins, items are no longer sterile due to contamination with organisms from the patient's mouth, but the goal is to keep the tray and instruments as clean as possible and avoid contamination from other sources.
When hands or gloves contact certain surfaces that are frequently touched by others, micro- organisms can be transferred to instruments or other environmental surfaces, and to the eyes, nose, or mouth.
For major dental procedures (similar to other surgical procedures), the patient is prepared, hand hygiene is performed, sterile gloves are worn, and all items that go onto the sterile field are kept.
Sterile, including instruments, materials and supplies that meet the surgical site. Every item handled by the dental surgeon should be sterile or have a protective sterile covering. In addition to following routine practices, and performing appropriate disinfection and sterilization of dental instruments and devices, DHCWs reduce the risk of transferring bacteria from the environment to patients by adhering to some basic steps:

1. Prepare and organize work procedures so that all the required equipment is gathered for the task.
2. Sterile instruments and devices should be stored in an enclosed space, such as closed or covered cabinets. They should remain wrapped until ready for use.
3. Spatially separate work areas and equipment into clean versus contaminated, sterile versus unsterile.
4. Use protective covers and barriers according to approved office-specific work procedures.
5. If an item is needed for a procedure, but not on the procedure tray, it should only be retrieved using transfer forceps or by first ensuring that the DHCW's hands are clean.
6. Gloves should be applied just before initiating the procedure for the patient.

7. If you observe or suspect that gloves have become torn or perforated, remove them, perform hand hygiene, and wear a new pair of gloves where appropriate.

Maintaining aseptic technique is a cooperative responsibility of the entire dental team. Each member must develop a professional conscience for infection prevention and control, as well as a willingness to supervise and be supervised by others regarding aseptic technique.

5.2.1 Clinics and Clinical Surfaces

General Considerations

Environmental surfaces in the dental operatory do not contact the patient and do not pose a direct risk to their safety, however, the light handles, and drawer knobs can become contaminated during patient care, acting as reservoirs of micro-organisms.

Proper hand hygiene, the use of personal protective equipment (PPE) and the use of barriers or cleaning and disinfection of environmental surfaces are essential to minimizing the transfer of micro-organisms.

Environmental surfaces are divided as:

- Clinical contact surfaces
- Housekeeping surfaces.

Clinical Contact Surfaces

Clinical contact surfaces are frequently touched during patient care. They can become contaminated by direct spray or splatter generated during dental procedures, or by contact with a DHCWS's gloved hands or contaminated instruments.

Clinical contact surfaces include but are not limited to.

a. Chair controls and switches
b. Light handles and switches

c. Radiography equipment
d. Chair side computer keyboards and monitors
e. Reusable containers of dental materials
f. Drawer and faucet handles
g. Countertops
h. Pens
i. Telephones
j. Doorknobs

Clinical Contact Surfaces Should Be.

a. Well-organized and kept free of unnecessary equipment and supplies, especially on countertops.
b. Cleaned and disinfected between patients and at the end of the workday using an appropriate low-level disinfectant.
c. Staff should take appropriate precautions, including wearing gloves, while cleaning and disinfecting surfaces to prevent occupational expo-sure to infectious agents and hazardous chemicals.

Alternatively, clinical contact surfaces and equipment can be protected from contamination using barriers as shown in figure 31. Barriers are particularly effective for those surfaces that are difficult to clean and disinfect, due to their shape, surface, or material characteristics. Suitable barrier materials include.

a. Clear plastic wrap
b. Plastic tubing
c. Plastic bags
d. Plastic-backed paper
e. Plastic sheets
f. other moisture-proof materials

- Since barriers can become contaminated during dental procedures, they should be removed and discarded between patients using gloves.
- Following barrier removal, the underlying surfaces should be examined to ensure they did not inadvertently become contaminated.

- All surfaces should be cleaned, and disinfected and clean barriers should be placed prior to the next patient.



Housekeeping Surfaces

a. housekeeping surfaces including floors and walls, which have a limited risk of disease transmission.
b. These surfaces usually require only periodic cleaning with dilute detergents.
c. If a surface is suspected to have become contaminated with blood, saliva, or other bodily fluids, it should be cleaned first and then disinfected with an appropriate low-level disinfectant (e.g. household bleach diluted 1:50 or 1000 ppm).
d. DHCWs should take appropriate precautions, including wearing gloves, for this purpose.
e. The floors should be cleaned regularly, and spills should be cleaned up promptly.
f. cleaning tools, such as mop heads, should be rinsed after use and allowed to dry before they are reused.
g. Fresh cleaning solutions should be made each day, discarding any that remain and allowing the container to dry between uses. In this way, the risk of these solutions becoming reservoirs for micro-organisms can be minimized.

5.2.2 Management of Waste

Waste from dental clinics can be divided into two categories:

1. Biomedical Waste
2. General Clinics Waste.

KAUDH dictates that biomedical waste must be handled and disposed of in a manner that avoids transmission of potential infections. These types of waste, should be separated, stored, and disposed of appropriately.

1. Biomedical Waste

Biomedical waste is classified as hazardous waste and must not be disposed with regular garbage. It must be handled safely to protect human health and the environment.

Biomedical waste can be further divided into:

1. Anatomical
2. Non-anatomical waste.

Anatomical waste

The generation of anatomical waste (i.e. human tissue) is normally limited to oral surgery and periodontology procedures.

a. Anatomical waste must be separated and collected in a RED liner bag that is labeled with the universal biohazard symbol.
b. Anatomical waste must then be stored in an enclosed storage area, such as stand-alone refrigeration/freezer unit, that is marked "Biomedical Waste Storage Area" and displays the universal biohazard symbol.
c. Storage area must be separate from other supply areas, locked and maintained at a temperature at or below 4 degrees Celsius.
d. Once accumulated, anatomical waste must only be released to an approved biomedical waste carrier for disposal.

NOTE: Extracted teeth are not classified as biomedical waste and should be handled as general waste.

Non-Anatomical Waste

These include sharps and blood-soaked materials.

a. Sharps (e.g. needles, syringes with needles, scalpel blades, and clinical glass) must be separated and collected in a puncture-resistant, leak-proof container that is specifically designed for their management and labeled with the universal biohazard symbol. Once the container has reached the designated capacity, it must only be released to an approved biomedical waste carrier for disposal.
b. Non-anatomical waste includes blood-soaked materials that release liquid or semi-liquid blood if compressed. It must be separated and collected in yellow liner bag

that is labeled with the universal biohazard symbol. Once accumulated, blood-soaked materials must only be released to an approved biomedical waste carrier for disposal.

c. Items such as gauze, cotton rolls and examination gloves that have meet blood, saliva or other bodily fluids are NOT classified as biomedical waste if the item does not release liquid or semi-liquid blood if compressed and should be considered as general waste.

2. General Clinics Waste

General waste is no more infective than residential waste.

General consideration

The recommendations for all types of general clinics waste include:

a. Ensure all garbage containers are waterproof and have tight-fitting lids, preferably operated by a foot pedal. Open wastebaskets might be dangerous if children are around them.
b. Use plastic bags to line the garbage containers. The use of double-bagging is not necessary, unless the integrity of the bag is jeopardized, or the outside is visibly soiled.
c. Do not overfill garbage containers.
d. Do not place sharp, hard, or heavy objects into plastic bags that could cause them to burst biomedical waste.

3. Handling of Extracted Teeth

a. Extracted teeth may be returned to the patient without any special considerations for infection prevention and control, other than simple cleaning of visible blood and gross debris.

b. If being discarded, extracted teeth without amalgam fillings may be disposed as general clinics waste.

c. Extracted teeth with amalgam fillings should be treated as mercury-containing waste and disposed accordingly.

a. Extracted teeth without amalgam fillings If being sent to a dental laboratory for research purposes, should be cleaned of visible blood and gross debris and maintained in a hydrated state in closed container during transportation.
   - Stander precautions should be followed when handling the teeth
   - Medical history of the patient should be clear and documented
   - Ethical approval should be issued
   - Cleaned with surface disinfected with an appropriate low-level disinfectant is recommended

b. Extracted teeth without amalgam fillings If being sent to a dental laboratory for pre-clinical education training should be cleaned of visible blood and gross debris, cleaned with surface disinfected with an appropriate low-level disinfectant and maintained in a hydrated state in closed container during transportation, should be heat-sterilized before use in educational settings.
c. Extracted teeth with amalgam fillings If being sent to a dental laboratory for research purposes or pre-clinical education training, should be cleaned of visible blood and gross debris and maintained in a 10% formalin solution in closed container for 2 weeks and sealed with biohazard Bag during transportation.
   - Stander precautions should be followed when handling the teeth
   - Extracted teeth with amalgam filling should not heat sterilization

5.3 Equipment and Area Specific IPAC Guidelines

5.3.1 Dental Unit Waterlines

Dental unit waterlines are made of narrow-bore plastic tubing that carry water to handpieces, ultrasonic instruments and air/water syringes. They can become heavily colonized with waterborne micro-organisms, including bacteria, fungi, and protozoa, which form a biofilm on the interior surface of the waterline. The potential risk of infection from dental unit waterline micro-organisms can be effectively reduced to counts like those in tap water standards by following regular waterline maintenance procedures.

1) Waterline heaters should not be used, as the heat encourages the growth of micro-organisms.
2) All waterlines should be purged by the DHCWs at the beginning of each workday by flushing them thoroughly with water for at least 2 to 3 minutes. Before purging is carried out, handpieces, air/water syringe tips and ultrasonic tips should be removed from the waterlines.
3) Handpieces containing water coolant should be run for 20 to 30 seconds after patient care to purge all potentially contaminated air and water.
4) Following purging, the handpiece should then be removed and, following cleaning and disinfection of clinical contact surfaces, another sterilized handpiece may be attached for use with the next patient.
5) Sterile water or sterile saline should be used when irrigating open surgical sites and whenever bone is cut during invasive surgical procedures.
6) Appropriate devices, such as bulb syringes or single-use disposable products, should be used to deliver sterile irrigation solutions.
7) Clinic using closed or other water delivery systems, the manufacturer’s instructions related to dental units and equipment should be followed for daily and weekly maintenance.

5.3.2 Dental Handpieces and Other Intraoral Devices

Several dental devices that contact mucous membranes are attached to the air or waterlines of the dental unit, including:

a. High and low-speed handpieces
b. Prophylaxis angles
c. Ultrasonic and sonic instruments
d. Air abrasion devices
e. Air/water syringe tips.

Dental handpieces and other intraoral devices that are attached to air or water lines should be sterilized following each use. The manufacturer's instructions for cleaning, lubricating, and sterilizing these devices should be strictly followed. The instrument components that are permanently attached to dental unit waterlines including the electric hand piece motors, handles for ultrasonic devices, and attachments for saliva ejectors, high-volume suction and air/water syringes should be covered with barriers that are changed after each patient. They should be cleaned and disinfected with an appropriate low-level disinfectant before the next patient is seated in the operatory.

5.3.3 Saliva Ejectors

Backflow from a low-volume saliva ejector can occur when a patient closes his or her lips around the tip, forming a seal that creates a partial vacuum such backflow can result in micro-organisms from the suction lines entering the patient's mouth, a potential source of cross-contamination. Therefore, DHCWs should:

a) Be careful not to allow patients to close their mouths over the saliva ejector tip, specially designed saliva ejectors exist that do not allow a negative pressure to form around the tip.
b) Purge suction lines between patients by aspirating water or an appropriate cleaning solution, thereby removing loosely adherent debris and micro-organisms.

c) Flush out the suction lines with an enzymatic cleaner or appropriate cleaning solution at least once per week.

5.3.4 Single Use Devices

Single use disposable devices are designed to be used on one patient and then discarded, and not to be reprocessed or used on another patient. These include syringes, needles, prophylaxis cups, brushes, orthodontic brackets, and disposable saliva tip ejectors). Single-use devices are usually not heat-tolerant and cannot be reliably cleaned or disinfected. Therefore, they should be disposed of appropriately after use.

5.3.5 Dental Radiography Equipment

General Consideration

a. The best way to minimize contamination of environmental surfaces is to touch as few surfaces as possible.

b. Wear PPE as stated in PPE guidelines.

c. Keep your working area organized.

d. Handle image receptors with care and DO NOT THROW them away.

Procedures to be followed for making intraoral radiographs.

Before seating the patient:

1)Patients should be identified by 2 approved identifiers (Patient's name and file number).in any instance which may involve the change of the treatment provider, including during appointment scheduling, registration, and before any dental procedure.

2)Bring your patient and image receptor holders to the oral radiology clinic servicing the area of your clinic

3)Ask your patient to wait outside the clinic while you prepare it

4)Spray disinfectant on the following surfaces:

a. Door handle (inside and outside the clinic)
b. Chair (head rest and arm rests)
c. The x-ray tube (head and swivel arms)
d. Control panel
e. Exposure button
f. Work areas/countertops onto which exposed image receptors and image receptor holders are laid.

5)Wear 1st pair of gloves (latex) to wipe previous surfaces and then remove your gloves.
6)Wrap the following surfaces as shown in figure 32:

a. Door handle (inside and outside the clinic)
b. Chair (head rest and arm rests)
d. The x-ray tube (head and swivel arms)
e. Control panel
f. Exposure button

7)Lay down 2 blue napkins, one for contaminated instruments and one for clean image receptors
8)Remove gloves
9)Sanitize hands

After seating the patient:

a. Place lead apron and thyroid collar on patient
b. Lay down image receptors on one blue napkin
c. Choose the appropriate number of image receptor barriers
d. Prepare adequate but reasonable number of cotton rolls
e. Place the image receptors in the protective barriers
f. Wear 2nd pair of gloves
g. Assemble the image receptor holder(s)

After acquiring the images:

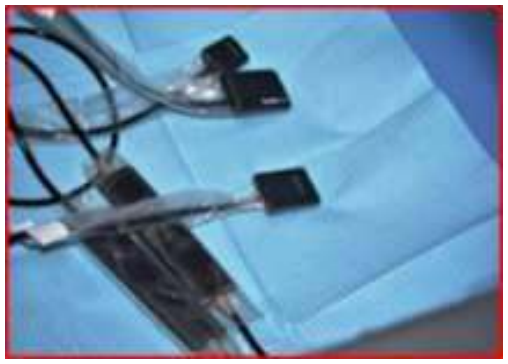
1)Remove the image receptors and holder from the patient mouth
2)Use a napkin to wipe the image receptor
3)Spray both sides of the image receptor with disinfectant and dry
4)Tear the top part of the protective barrier
5)Remove your gloves
6)Scan all the image receptors and make sure you don't need remakes
7)Remove the lead apron and thyroid collar
8)Ask your patient to leave the clinic
9)Hang the lead apron and thyroid collar
10)If lead apron and thyroid collar are visibly soiled then they must be disinfected before hanging them
11)Wear 3rdpair of gloves
12)Unwrap and clean the clinic
13)Return image receptor holders to CSSD











Procedures to be followed for making extra oral radiographs.

Follow same procedures except for wrapping the patient chin rest, head-positioning guides, and hand grips as shown.





5.3.6 Dental Laboratory Asepsis

Dental prostheses and appliances, as well as items used in their fabrication including impressions, occlusion rims and bite registrations are potential sources for cross-contamination and must be handled in a manner that prevents exposure of patients, DHCWs or the clinics environment to infectious agents. Dental prostheses and appliances, as well as items used in their fabrication (e.g. impressions, occlusion rims, and bite registrations) are not allowed outside of dental cubical / clinic without a proper disinfect and wrapping in a plastic bag until the transfer is completed to the lab and vice versa. Effective communication and coordination between the dental clinics and the KAUDH laboratories will ensure that:

a) Appropriate cleaning and disinfection procedures are performed in the dental clinics or the KAUDH dental laboratories

b) Materials are not damaged or distorted because of overexposure to disinfectants

c) Disinfection procedures are not unnecessarily duplicated.

General Consideration

a. Impressions, prostheses, or appliances should be cleaned and disinfected as soon as possible after removal from the patient's mouth, before drying of blood or other organic debris.

b. The manufacturer's instructions regarding the stability of specific materials during
disinfection should be consulted.

c. Wet impressions or appliances should be placed in an impervious bag prior to transportation to KAUDH dental laboratories.

d. Heat-tolerant items used in the mouth, such as impression trays or face bow forks, should be sterilized after each patient use.

e. other items that do not normally come in contact with the patient, but frequently become contaminated, such as articulators and case pans, should be cleaned and disinfected according to the manufacturer's instructions.

f. Finished prostheses and appliances delivered to the patient should be free of contamination. This can be accomplished with an appropriate low-level disinfectant by the KAUDH dental laboratory.

g. Items used in the typical in-office dental laboratory, such as burs, polishing points, rag wheels, laboratory knives and dental lathes, frequently become contaminated during adjustments to prostheses and appliances. These items should be sterilized, cleaned, and disinfected or discarded after use.

5.3.7 Oral Pathology and Microbiology

General Consideration

Routine practices and wearing the appropriate PPE always are a must to prevent cross-contamination by dental items entering lab.
Oral pathology laboratory provides a range of laboratory services, and certain diagnostic services include Biopsy, cytology undergoing H & E, Immunohistochemistry and Special histological stains.
The oral pathology laboratory organizes regular arrangements for KAUDH cases regarding biopsies referred by dentists as well as for second opinion services.

Handling of Oral Pathology and Microbiology Specimens

1. Ensure specimens and accompanying request forms are properly filled.
2. Take a specimen container containing formalin from your assigned clinical area when available. (Care should be taken when collecting specimens in container to avoid contamination of the outside surface.)
3. Each specimen must be placed in a sturdy, leak-proof container with a secure lid to prevent leakage during transport. The container also must be labeled with a biohazard symbol.
4. If the outside of the container is visibly contaminated, it should be cleaned and disinfected, or placed in a leak proof bag.
5. Submit your packed specimen either to your assigned clinical-area in-charge or to oral pathology laboratory.
6. The Specimen stores at 2-8°C. Do not freeze.
7. The turnaround time for diagnosing regular H and E slides is 3 to 5 business days.
8. The pathology report can be found in the progress note that corresponds with the patient's dental records.

9. To request our services for external cases please visit the website and follow the submission guidelines below:
https://dentalh.kau.edu.sa/Content-555-EN-268222








جامعة الملك عبد العزيز
كلية طب الأسنان
مستشفى الأسنان الجامعي
مختبر أمراض الفم
للاطلاع على خدماتنا و أسعارنا الرجاء زيارة الموقع
https://dentalh.kau.edu.sa/Content-555-EN-268222
1
2
3
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01
يرجى تعبئة استمارة الطلب
من قبل الطبيب
Requisition form
02
يرجى تعبئة نموذج الموافقة من
قبل المريض أو من ينوب عنه
Consent Form
03
لطلب توصيل العينات
Pickup Form
04
لطلب الفورمالين للخزعة
Biopsy Kit Form

5.4 Dress Code and Professionalism

Dress Code Standard in the Patient-Care Area

All DHCWs in KAUDH are required to uphold a set of standards that convey the level of professionalism maintained in the institute. In this document, the minimal requirements for professional image are highlighted. Such dress code (Table 1) is to be followed by all students, faculty and auxiliaries working in any Patient Care Areas at KAUDH. Such areas include clinics, nursing stations, patient rooms, and reception/waiting areas. All DHCW and KAUFD personnel must visibly always display a valid ID. The display of violent, abusive, inappropriate or aggressive behavior by visitors, students or employees should be reported using the incident report form by anyone who witnesses it, and this report is then submitted to the area in charge.

Colors

Colored garments are accepted at KAUDH if they are not flashy and bright. Black, white, cream, brown, navy blue, and pastel colors are accepted, with subtle patterns and no ornaments. Garments must be of thick (non-transparent) material, this includes tops, bottoms, head covers and footwear.

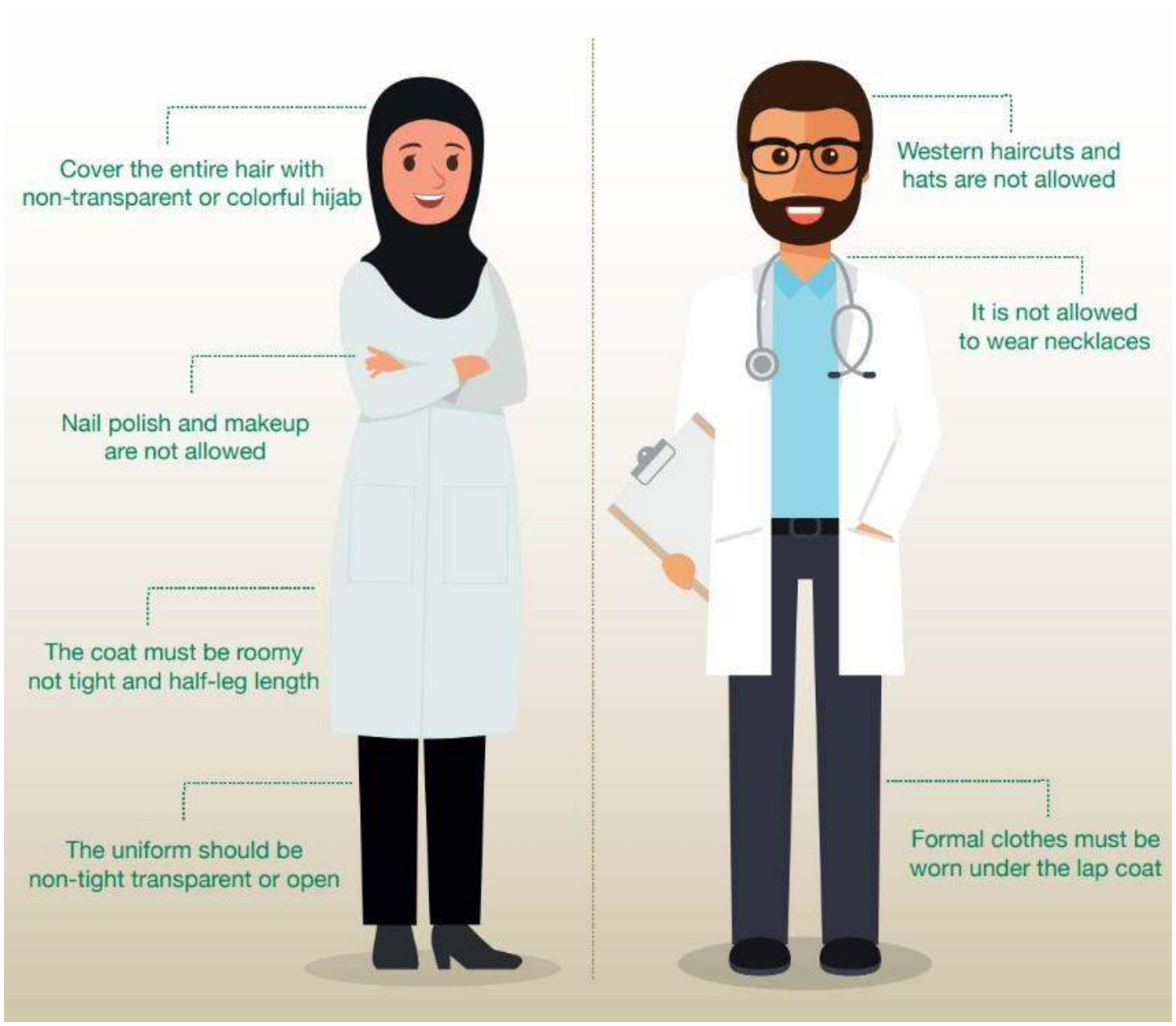
GUIDELINES			ACCEPTABLE	NOT ACCEPTABLE
	TOP	**Women**	Women are required to wear white coats at all times and these must be Below knee-length, long-sleeved not tight-fitting clean & wrinkle- free	Short-sleeved, or sleeveless, dirty, stained, frayed. Tight, see-through and below knee length.
		Men	Men may wear scrubs and/or white coats, long or short-sleeve clean & wrinkle free.	Sleeveless, dirty, stained, frayed T shirts, or any type of shirt without collar.
	BOTTOM	**Women**	Full-length trousers/skirt, an inch above the floor Clean & wrinkle free.	Tight-fitting, too short or too long, dirty, stained or frayed
		Men	Full-length trousers/scrubs, an inch above the floor. Clean & wrinkle free	Tight-fitting, too short or too long, dirty, stained or frayed. Thobes, Jeans, shorts, gym pants, training pants.
	HEAD COVER	**Women**	Must cover all of the hair. Ends of the head-cover must be kept under the coat or gown. Head-cover must be clean & wrinkle-free	Ends of head-cover above coat/gowns, very ill-fitting, dirty, stained or frayed Flashy colors, lace and beaded
		Men	No head cover required unless hair is longer than the nape of the neck. A disposable head cover is worn during all patient-contact times.	Head-cover (shumagh)
	FOOTWEAR	**Women**	Flat or moderate heel (6 cm), closed-toe, clean	Heel above 6 cm, open-toe, sandal dirty, stained or frayed
		Men	Flat, closed-toe, clean	Open-toe, sandal, dirty, stained or frayed (slippers are not allowed).

Grooming Standard

Grooming indicates how a person maintains his/her personal hygiene (Table 2) and overall look. At KAUDH, all personnel must maintain the following guidelines:

GUIDELINES		ACCEPTABLE	NOT ACCEPTABLE
HAIR	Men	Hair must be well kept and groomed,and if long, tied back, away from the face.	Long un-kept hair, lose on theshoulder covering eyes, dirty
	Women	Faculty and students are required tocover their hair.	Hair that is uncovered Head-cover requiring persistentre-adjustment.
FACIAL HAIR		All facial hair must be well kept andduring procedures be tucked underthe face mask.	Un-kept facial hair, untrimmedbeard, o hair outside the facial mask.
FINGERNAILS		Must be kept clean and filed, not morthan 3 mm long	Very long nails, artificial nails, flashy or chipped nail polish, dirtynails.
MAKE-UP		Minimal make-up	Heavy make-up or flashy colors.
JEWELRY		Simple and plain	Flashy jewelry or necklaces,heavy bangles or bracelets, nose piercings. Apparent watches, bracelets during patient procedures.
BODY ODOR		Natural odor or mild cologne orperfumes	Strong cologne or perfumes. Clothing or body smell from smoking Bad breath

Medical staff Uniforms



Section 6 : Central Sterile Service/Supplies Department CSSD

6.1 CSSD Rules and Regulations

Working Hours:

- **Session 1:**

  Receiving instruments from 8:00 A.M. – 11:45 A.M.
  Returning instruments up to *1:00 P.M.*

- **Session 2:**

  Receiving instruments from 1:00 P.M. – 4:30 P.M.
  Returning instruments up to *6:00 P.M*

- **Session 3:**

  Receiving instruments from *5:00 P.M. – 9:00 P.M.*
  Returning instruments up to *10:30 P.M.*

- **Session 4:**

  On-call

  Late Return
  in the morning session, 12:30 P.M., 4:30 P.M. in the afternoon session, and 10:30 P.M. in the evening session, will be considered late return.

  There will be a limited number of forms available daily in the Main CSU for this purpose.

Borrower's Slip

1. Write all information in clear handwriting using blue or black pen not pencil.
2. Tick only the instruments you need for your procedure.

3. Read carefully, check, and take your borrower's slip after returning all instruments.

General Policies

1. Count your instruments while receiving them.
2. Count and double check your instruments before returning.
3. Return your instruments on time. (It takes 5 Hours to sterilize an instrument)
4. Receiving instruments on behalf of others is prohibited.
5. Unauthorized personnel are not allowed inside all CSSD areas.

Care for Personal Instruments

1. Serially numbered Perforated cassettes are available in the CSSD to be borrowed by undergraduate, postgraduate students or any doctor working in the University Dental Hospital.
2. Personal instruments should be placed inside these serially numbered cassettes and return it to CSSD for sterilization.
3. Wash and clean the instruments inside the perforated cassettes thoroughly using a soft plastic brush with the appropriate cleansing solution and rinsed under running water or clean by an auto-mated process using automated washer with a cleaning solution.
4. Allow instruments to dry completely prior to pouching.
5. Use the suitable pouch size, which is available at CSSD to assure proper sealing.
6. Write all information in clear handwriting using blue or black pen not pencil including name, date, academic year, and cassette number in the personal receiving paper and sign after sterilization.

The Sealed Pouch Will Undergo Autoclaving as Received, Thus If Instruments Are Not Properly Cleaned, Rust and Damage Will Occur.

Care for Personal Burs

1. Serially number bur holders are available in the CSSD to be borrowed by undergraduate, postgraduate students, or any doctor working in the University Dental Hospital.
2. Personal burs should be placed inside the locked bur holder and return it to CSSD for sterilization.
3. Wash and clean burs thoroughly using a soft plastic brush with the appropriate cleansing solution, rinsed under running water and placed back to the bur holder or it could be placed to the related serially numbered Perforated cassettes for automated process using automated washer with a cleaning solution.
4. Allow holder/cassettes to dry completely prior to pouching.
5. Write all information in clear handwriting using blue or black pen not pencil including name, date, academic year, and holder/cassette number in the personal receiving paper and sign after sterilization.

Instrument Handling Violations and Penalties

1. Point system will be applied as shown in section 7.
2. Violations that are not listed in the table and effects the process of the CSSD will be penalized according to their severity as seen appropriate.
3. All bridging program students and interns will be treated as Predoctoral students in the point system.

6.2 Processing of Instruments

All instruments must be properly cleaned, rinsed, and dried prior to disinfection and/or sterilization. This step is essential, as residual organic debris will compromise the disinfection and sterilization process. Contaminated instruments should be always handled carefully to prevent percutaneous injuries. Patient care items are categorized as critical, semi-critical or non-critical, depending on the potential risk for infection associated with

their intended use. This classification determines their processing requirements. Critical and semi-critical instruments should be processed in a manner that will maintain sterility during storage. This includes ensuring that the integrity of the package is maintained. Most semi-critical items used in dentistry, including hand pieces, are heat-tolerant and should always be heat- sterilized between uses. Heat sensitive semi-critical items should be processed using high-level disinfection.

6.2.1 Processing of Critical and Semi-Critical Items

Appropriate and thorough inspection, sorting, cleaning and/or washing, drying, packaging and sterilization are mandated to ensure that all instruments are safe for reuse on patients. Sterilization is carried out in the CSSD with a clear physical separation of clean and dirty areas as follows:

A. Receiving, cleaning and decontamination, commonly referred to as the “dirty” area.
B. Preparation and packaging, commonly referred to as the “clean” area.
C. Sterilization
D. Storage and dispensing

A. Receiving, Cleaning and Decontamination

Contaminated instruments must be placed in a puncture resistant container then transported to the instrument processing area. Reusable instruments received, sorted, cleaned, and rinsed in the section of the processing area.
Cleaning involves the removal of debris (e.g. organic and inorganic matter). This is achieved either by scrubbing with a surfactant, detergent, and water, or by an auto-mated process (e.g. ultrasonic cleaner or washer with a cleaning solution).
After cleaning, instruments rinsed with water to remove detergent residue and visually inspected to ensure all debris had been removed.
3) The use of automated cleaning equipment is safer and more efficient than manually cleaning as it: -Increase productivity.

4) Improve cleaning effectiveness.
5) Decrease worker exposure to blood and body fluids.

Gross debris is removed from instruments prior to placement in an ultrasonic cleaner.
Cleaning solutions should be changed daily or more frequently if they become visibly soiled.
Automated washers do not require presoaking or scrubbing of most instruments.
If cleaning cannot be performed immediately, instruments should be placed in a puncture-resistant holding container and soaked with a detergent or an enzymatic cleaner to prevent drying of organic material and make subsequent cleaning easier and less time-consuming.
Liquid chemical sterilant or high-level disinfectants (e.g. glutaraldehyde, ortho-phthalaldehyde) should NOT be used as holding solutions, due to the fixative nature of these chemicals making surfaces more difficult to clean, as well as their general toxicity.

To avoid injury from sharp instruments, the following precautions should be taken:

1. Wear puncture-resistant, heavy-duty utility gloves when handling or manually cleaning contaminated instruments.
2. DO NOT reach into trays or containers holding sharp instruments that cannot be seen (e.g. sinks filled with soapy water in which sharp instruments have been). Instead, use a strainer- type basket to hold instruments, as well as forceps to remove them.
3. Wear a mask, protective eyewear or face shield, and gown or jacket to protect from splashing.

B. Preparation and Packaging

Is another section of the processing area, cleaned instruments should be inspected, assembled into sets or trays, and packaged for sterilization.

Critical and semi-critical instruments should be processed in a manner that will maintain sterility during storage.
Suitable packaging materials include wrapped perforated instrument cassettes, peel pouches of plastic or paper, and woven or nonwoven sterilization wraps.
Packaging materials should be designed for the type of sterilization process being used.
Hinged instruments should be processed open and unlocked.

C. Sterilization

The sterilization section of the processing area includes:

a. The sterilizer and related supplies,
b. Adequate space for loading, unloading and cooling down.
c. biological indicators
d. Incubators for conducting spore tests
e. Enclosed storage for sterile and single-use disposable items.

Heat-tolerant instruments are usually sterilized by steam under pressure (i.e. autoclaving), which is dependable and economical. Other means include dry heat or unsaturated chemical vapor.
All sterilization should be performed by using medical sterilization equipment.
Sterilization times, temperatures and other operating parameters recommended by the manufacturer of the equipment used, as well as instructions for correct use of containers, wraps, and chemical or biological indicators, should always be followed.
Instrument packs should be allowed to dry inside the sterilizer chamber before removing and handling, to avoid wicking of moisture and, hence, contamination with bacteria from hands.

Monitoring of Sterilization

1. The daily operation of every sterilizer must be reviewed and documented.
2. A logbook should be kept for this purpose.

3. Any malfunction must be noted, and appropriate action taken.

Conducted through a combination of Mechanical, Chemical and Biological means, which evaluate both the sterilizing conditions and the procedure's effectiveness.

1. Mechanical Indicators are the gauges or displays on the sterilizer for cycle time, temperature, and pressure. Some tabletop sterilizers have recording devices that print out these parameters. Mechanical indicators must be checked and recorded for each load.
2. Chemical indicators (i.e. internal and external). The use of heat-sensitive tape and similar indicators that are applied to the outside of a package which changes color rapidly when a given temperature is reached. This signifies that the package has undergone a sterilization cycle, although it does not ensure that sterilization has been achieved.

A sterilizing agent has more difficulty penetrating a hollow object, such as a handpiece, than it does a solid object, such as a dental mirror. Air that is trapped inside these hollow areas cannot be easily removed, thus hindering the sterilizing agent's contact with the internal surface of the instrument. When items are packaged, the sterilizing agent takes longer to penetrate to the instruments. The packaging envelops the instruments, creating a hollow area into which the sterilizing agent must be drawn or forced in. For these reasons, each package must have external chemical indicators. In addition, it is recommended that both internal and external chemical indicators be used to detect penetration into the package.

A Mechanical and chemical indicator do not ensure that sterilization has been achieved. They merely offer verification that the necessary conditions have been met. Also provide an early warning of a problem. If either mechanical or chemical indicators demonstrate inadequate processing, then none of the items in the load should be used until they are reprocessed.

3. Biological indicators BI (or spore tests) are the most accepted means for monitoring of sterilization because they directly assess the procedure's effectiveness in killing the

most resistant micro-organisms. The spores used are more resistant and present in greater numbers than the common microbial contaminants found on patient care items. Therefore,

an inactivated BI signifies that other potential pathogens in the load have been killed. Therefore, Biological indicators should be used daily. Follow the manufacturer's directions concerning the appropriate placement of the BI in the sterilizer.

In the event of a positive BI (i.e. failed spore test)

1) Remove the sterilizer from service.
2) Review all records of mechanical and chemical indicators since the last negative BI, as well as sterilization procedures to determine whether operator error could be responsible.
3) In the absence of a mechanical failure, common reasons for appositive BI include overloading, failing to provide adequate package separation, and using incorrect or excessive packaging material.
4) Repeat the spore test immediately. This should be done after addressing any procedural problems and correctly loading the sterilizer, and by using the same cycle that produced the failure. While waiting for the repeat test results, the sterilizer should remain out of service.
5) If the repeat spore test is negative, mechanical, and chemical indicators demonstrate adequate processing, then the sterilizer may be put back into service.
6) If the repeat spore test is positive, and all sterilization procedures have been performed correctly, then the sterilizer should remain out of service until it has been inspected, repaired and successful lyre-challenged with BI tests in three consecutive empty chamber sterilization cycles. In addition, all items from suspect loads dating back to the last negative BI should be recalled, to the extent possible, and reprocessed.

A. Storage

Sterile and single-use disposable items should be stored in an enclosed space, such as closed or covered cabinets. They should not be stored under sinks or in other locations where they might become wet and contaminated. Packages containing sterile instruments should be inspected before use to verify barrier integrity and dryness. If packaging is compromised, the instruments should be cleaned, packaged, and sterilized again. Storage practices for packaged sterilized instruments may be either Date or Event Related. Dating assists in the recall of instruments should concerns arise with the results of sterilization tests. Event related storage recognizes that the packaged instruments should remain sterile indefinitely unless an event causes them to become contaminated (e.g. torn or wet packaging).

6.2.2 Processing of Heat-Sensitive Items

Semi-critical items that are heat-sensitive should be cleaned and then receive high-level disinfection, which achieved by immersion in a liquid chemical germicide (e.g. 2% glutaraldehyde, 7% accelerated hydrogen peroxide, 6% hydrogen peroxide,0.2% per acetic acid and 0.55% ortho- phthalaldehyde). Liquid chemical germicides are highly toxic, and their effectiveness cannot be verified with biological indicators. Therefore, the manufacturer's instructions regarding dilution, instrument preparation, immersion time, temperature and the changing of solutions should be followed carefully. Liquid chemical germicide should not be used for applications other than those indicated in their label instructions, and they should NOT be used as an environmental surface disinfectant or instrument-holding solution.

Appropriate precautions should be taken to safeguard staff, including:

a. The use of closed containers to limit vapor release
b. Adequate ventilation
c. Chemically resistant gloves

d. Aprons
e. Goggles and face shields.

Following liquid immersion, instruments should be thoroughly rinsed with sterile water to remove toxic or irritating residues and then dried with clean towels.

6.2.3 Processing of Non-Critical Items

Non-critical items pose the least risk of transmission of infection, as they either have no contact with the patient or contact only intact skin, which serves as an effective barrier to micro-organisms. Non-critical items should be covered using disposable barriers to protect such surfaces and upon removal of the barriers these surfaces should be cleaned after use and disinfected with an appropriate low-level disinfectant (e.g. chlorine-based products, 0.5% accelerated hydrogen peroxide, 3% hydrogen peroxide, 60 to95% alcohols, iodophors, phenolics and quaternary ammonium compounds)

6.3 Equipment Use and Preventive Maintenance

Tabletop sterilizers undergo frequent use, and wear and tear. The manufacturer's recommendations should be consulted for guidance on a preventive maintenance program, including regular inspection of gaskets and seals.

Section 7: Point Violation System

Failure to observe universal precautions and not following Infection prevention and Control Rules and Regulations in all dental practice locations will result a certain Violation and Penalty procedure:

7.1 Definitions

7.1.1 Violation:

The act of doing something that is not allowed by ethical framework and regulation at KAUFD and UDH.

Penalty:

An action taken based on the Violation Point System listed in the table below.

7.1.2 Procedure:

IPAC violation system was adjusted according to:

a) Area where the violation happened

b) To point where the action taken against any violation that Categorized to point based on the level of violation

7.1.3 Areas Covered:

C: - Clinical Area

R: - Radiology Clinic

L: - Labs (Simulation "Phantom", Prosthetic, Production Labs, and female lab)

AF: - Attire Female

AM: Attire Male

CS: CSSD Violation

1. Each violation has a specific code as shown in table below.
2. Violations should be recorded by IPAC officers through violation reports.
3. IPAC violations must be reported to Infection Control department supervisor then to Infection Control head of department

4. Infection control department will document and file all these violation reports for each DHCW and all personal involved.
5. Details of the incidents and the violators information and penalty will be sent to the director of supporting medical services to be approved and the vice dean, director of KAUDH to be forwarded to the relevant vice deans and head of departments for notice and to take further action if needed.
6. Infection Prevention Control office arranges the timing of the penalty execution with the designated department where the penalty will be executed and inform the relevant department of the violator by the time and date of execution.
7. Violations that are not listed in the table below will be penalized according to their severity as seen appropriate by the Medical Support Services Directors and Head of the infection control.
8. Point system) will be applied as shown in section 7
9. Violations done by specialists and consultants will follow the point system as stated in the Schedule bellow but will have deferent Penalties procedure.
10. If the Housekeepers fails to comply with the KAUDH IPAC Rules and schedules will be penalized as seen appropriate by the medical support services directors and Head of the infection control:
    - 1st attempt: Verbal Report to supervisor
    - 2nd attempt: Written Report to supervisor
    - 3rd occurrence: referral to the Medical Support Services Director and the contractor's management for action under the service contract.
11. All bridging program students and interns will be treated as equal as the 4th/ 5th year students in the point system.
12. Failure to comply promptly with these regulations and/or defying IPAC officer will result in and immediate penalty.

13. If an IPAC Officer made a violation, he/she will get double the penalty points according to his rank.
14. Incident reports regarding infection control violation from any DHCW will be investigated and evaluated in the infection prevention and control office.
15. Penalties for Axillary staff might change as seen appropriate.
16. Points will accumulate, and upon reaching the highest point of 24 points, a suspension will be made for at least two weeks, or as determined by the Director of Supportive Medical Services and the Head of Infection Control, and according to the severity of violations.
17. Violation Codes PC1, PC3, PC6, S21, S28, S29 Require OVR submit.
18. Violation Code S2 for Faculty requires OVR Submit.

UDH
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University Dental Hospital

Domains		KAUDH						
		2nd and 3rd Year students	4th and 5th Year students	6th year, Interns , Post Grad	GP, Specialists, Consultants	DA/ DH	CSSD staff	Radiology tech
Professional conduct (PC)	Definition: When an employee/student fail to comply to the organization's rules and regulations or demonstrate failure to adhere to the ethical policies							
PC 1	Breach of patients' rights in anyway or form	Refer to Right and Responsibility Committee Require OVR submit.						
PC2	Unprofessional and / or unethical or explicit material posted on social media	Refer to Right and Responsibility Committee						
PC3	Breach of professional code of conduct	Refer to Right and Responsibility Committee Require OVR submit.						
PC4	Failure to return borrowed instruments/ equipment / devices on time	1st Warning 2nd 3 Points & Suspension for 1 session andperform assigned hospital duties						
PC5	Receive instruments/ equipment / devices on the behalf of others	1st warning 2nd 2 points						
PC6	Failure to comply to the clinic's rules and regulations including but not limited to: · Refuse to write borrowers slip · Provide wrong personal information · Using another student's clinic without permission · Using clinics, machine, or material for research without taking permission	4th, 5th, and 6th year students 1st Warning 2nd 3 Points & Suspension for 1 session and perform assigned hospital duties Require OVR submit.	Suspension for 1 session Andperform assigned hospital duties Require OVR submit.					
PC7	Failure to comply with grooming standards at the patient's care area (Tables 1&2)	Refer to related administrative unit, if repeated three times the violator will be denied access topatient's care area			Report to Dept Head			
PC8	Failure to comply with dress code at the patient'scare area (Tables 1&2 &Figure Medical Staff Uniforms)	Refer to related administrative unit, ifrepeated three times the violator will be denied access to patient's care area	Report to Dept Head					
PC9	Improper instruments transportation	1st Warning 2nd 3 Points & Suspension for 1 session and perform assigned hospital duties	6 points Report to Dept Head					
	Definition: When an employee/student conduct a behavior that threatens the safety of patients, or colleagues.							
S1	Disinfectant/clinic wrap/handsoap/paper towels is not available in working area					2 Points & Report to Dept Head		
S2	Food and Beverage in working areas	2 points & Suspension for 1 session and perform assigned hospital duties			3 points Report to department Head Faculty: requires OVR Submit			
S3	Failure to report expired materials					4 points Report to department Head		
S4	Failure to comply with guidelines of handling patient's work prior to lab submission	2 points				2 points Report to Dept Head		
S5	Mishandled cases for lab production and pathology (Specimen)		2 points			3 points Report to Dept Head		
S6	Improper Disposal or storage of Sharps	4 Points & Suspension for 1 session andperform assigned hospital duties				5 points Report to Dept Head		
S7	Fail of proper disinfection procedure	1 point & Disinfection and wrapping of a designated clinic for onesession Under supervision				3 points & Report to Dept Head		
	Failing in distinguishing cleanand dirty zones in CSSD						2 points & Report to Dept Head	

Safety (S)	S8	Failed top follow instruments' pre cleaning/ cleaning rules and regulation	2 points& Suspension for 1 session and perform assigned hospital duties	4 points& Suspension for 1 session and perform assigned hospital duties		4 points Report to depart ment Head
	S9	Failure to follow tray organization rules and regulation	1st warning 2nd 2 points 3nd 3 points &Suspension for 1 session andperform assigned hospital duties			3 points Report toDept Head
	S11	Failed PPE during actual procedure	2 points& Suspension for 1 session and perform assigned hospital duties		3 points& Suspension for 1 session andperform assigned hospital duties	3 points& Report to Dept Head
	S12	Failure to return borrowed instrument on time	1 Warning 2nd 3 Points & Suspension for 1 session andperform assigned hospital duties			4 Points & report to Dept Head
	S13	Failure to return borrowed instrument after 24 hours	3 Points & Suspension for 1 session andperform assigned hospital duties			
	S14	Mishandling of instruments during transferring between areas	1 Warning 2nd 4 Points &Suspension for 2nd 4 Points & Suspension for 1 session and hospital duties		6 points & report to Dept Head	
	S15	Un clean working areas	1st 1 point & Disinfection and wrapping of a designated clinic for one session 2nd 2 points & Suspension for 1 session and perform assigned hospital duties			
		· Leave an unsupervised wrapped clinic out of clinical working times · Un cleaned work area clinics/lab/CSSD · Un cleaned wash basin after session · Un cleaned Sink during lab hours · Un cleaned floors after using plaster during labhours · Un cleaned drawers during lab hours			4 points & report to Dept Head	
		Improper wrapping of working areas	1st 1 point & Disinfection and wrapping of a designated clinic for one session 2nd 2 points & Suspension for one session and perform assigned hospital duties			
	S16	· Dental unit (complete or partial) · Wrapping performed by unauthorized personnel · Computer unit · X-ray unit			2 points & report to Dept Head	2 points & report to Dept Head
	S17	Clean (pouched) instruments left in clinic during break time or after a session without direct supervision	1st warning 2nd 4 points & Suspension for one session and perform assigned hospital duties	1st warning 2nd 5 points Suspension for one session and perform assigned hospital duties	1st warning 2n 6 points	1st warning 2nd 6 points & report to Dept Head
	S18	PPE outside of clinical area	2 points & Suspension for 1 session and perform assigned hospital duties		Suspension for 1session and perform assigned hospital duties Report to Dept Head	
	S19	Failure to provide patient with eyewear	Warning & 3 points		Report to Dept Head	
	S20	Working unsupervised a- Supervisor left the session b- Working without permission	a- Report to department head b- 1 warning 2nd 3 points & Suspension for 1 session and perform assigned hospital duties			
	S21	Infected items left in working area or drawers during break time or after hours without direct supervision	14 points & Suspension for 2 sessions and perform assigned hospital duties Require OVR submit.		16 points Report to department head	
	S22	Issues Regarding Patient & Healthcare Workers Safety · Patient identification issue · Failure to check past medical history · Leaving x-ray room open during exposure · Needle stick · Medication Error · Adverse event (Before/During/After Procedure) · Inhalation (crown/burs) · Radiology Repeated exposure Injury (direct injury to patient) Treatment Error · Wrong tooth ext/restoration	Refer to related administrative unit		Refer to related administrative unit	

	S23	· Iatrogenic damage to adjacent tooth · Breaking the tooth and dismissing the patient without further action	Refer to related administrative unit	Refer to related administrative unit
	S24	Patient Record Error · Wrong Radiograph · Wrong Biopsy Report	Refer to related administrative unit	Refer to related administrative unit
	S25	Negligence · Failure to refer patient · Delayed referral · Treating without consent	Refer to related administrative unit	Refer to related administrative unit
	S26	Breach of patients' rights in any way or form	Refer to related administrative unit	Refer to related administrative unit
	S27	Fall (According to the cause) · Patient · Visitor · KAUDH/FD Employee Student	Refer to related administrative unit	Refer to related administrative unit
	S28	Potentially infectious materials	14 points Suspension for 2 sessions and perform assigned hospital duties Require OVR submit.	Refer to related administrative unit Require OVR submit.
	S29	Use infected items on patients · Instruments · Holders or sensors · Shared equipment and devices without disinfection	Refer to Right and Responsibility Committee 24 points and Suspension for 2 weeks perform assigned hospital duties Require OVR submit.	Refer to Right and Responsibility Committee. Report to department head Require OVR submit.
Environment & Property Preservation (EP)	Definition: when a student or an employee coduct a behaviour that poses a risk of property damage or causes actual damage			
	EP1	Clinical area decoration	Immediate removal	
	EP2	Failure of cleaning the sink or ultra -sonic bath		4 points Report to depart ment Head
	EP3	Using Damaged or improper material in the cleaning process		4 points Report to department Head
	EP4	Failure to follow manufacturer's instruction in storing solutions and materials		4 points Report to department Head
	EP5	Returning instruments/equipment/devices not working/Missing part/Broken	Refer to Right and Responsibility Committee	
	EP6	Misuse of materials and supplies	Warning & 2 points	
	EP7	Leaving a dental unit without restoring it to its upposition	Warning & 1 point	Warning & 1 point

Section 8: Radiology Department

8.1 Radiation Safety

Because radiation cannot be seen or felt, the radiation symbol is used to alert you to its presence. All rooms or areas where radiation-producing equipment is used are posted with this sign.

Dose limits and personal monitoring

There is, in general, minimal external radiation hazard to personnel from procedures involving radiation. Adherence to guidelines contained in this manual will help all x-ray equipment operators keep their exposures as low as reasonably achievable (ALARA), and for most students and staff members should reduce radiation exposures to levels allowable for individual members of public or in some cases, to levels indistinguishable from natural background.

The radiation protection program is guided by the concept of keeping radiation exposure As Low as Reasonably Achievable (ALARA). The ALARA concept assumes that any radiation dose, no matter how small, can have some adverse effect. Under the ALARA program, every reasonable means of lowering exposure is used. Radiation exposure can be minimized by utilizing three basic principles:

1) Time: Shorter exposure time means a lower dose.
2) Distance: Doubling the distance from a radiation source means one-fourth the dose rate. Tripling the distance gives one-ninth the dose rate.
3) Shielding: The use of appropriate shielding greatly reduces the dose rate. Standing in a protected area during x-ray exposures is one example. Remember that radiation cannot be seen or felt but can be detected with radiation survey meters.

Exposure limits

A radiation worker is required to be monitored if he/she is likely to receive in excess of 10% of the dose limits. Those dose limits are:

Type of limit	Occupational	Public
Effective dose:	20 mSv/year	1 mSv/year
Lens of Eye:	50 mSv/year	15 mSv
Skin:	500 mSV	50 mSv
Hands and feet:	500 mSv	

Any irregularities are reported to the concerned employee and are investigated. Furthermore, plans to modify future exposure are put into place and implemented.

Pregnant workers

The UDH has adopted a policy to protect the fetus/embryo of pregnant employees exposed to ionizing radiation in their work. Regulations limit the occupational dose to pregnant women to 500 millirems over the course of the pregnancy if the worker declares her pregnancy in writing to the employer.

If an employee decides to declare her pregnancy, she should notify her supervisor who will arrange for precautions to limit radiation exposure. Work assignments and radiation exposure history will be reviewed, and recommendation to limit work assignment may be made if necessary. A radiation monitor will be assigned, with radiation exposures to be reviewed monthly.

8.2 Radiology Clinic Protocols and Procedures

8.2.1 Prescription of Radiographs

8.2.1.1 Procedures for prescribing conventional dental imaging (periapical, bitewing, occlusal, panoramic, cephalometric radiographs)

- Complete the screening of the patient (history and examination) before prescribing any images to ensure that the diagnostic benefits outweigh the potential radiation risk.
- Follow the ADA/FDA guidelines (Table 1) and KAUDH prescription flowchart (Figure 1) for prescribing dental images.
- A code of the required images shall be added into the patient's electronic file. For students, their supervisors must verify this step.
- For standardization, please use the following format in prescribing intraoral radiographs:
  - for periapical radiographs please specify the tooth number to be imaged (e.g., Tooth #24)
  - for bitewing radiographs please use the following abbreviations: (RT-PM, RT-M, LT-PM, LT-M)
- The request must also be sent via the "Radiograph Request E-form" by scanning the codes on the leaflet that can be found in the announcement board in the clinics and in the UDH website.
- The technician will ensure completion of the radiographic request in the patient's electronic file.
- If the request is complete, the patient will be instructed to wait in the waiting area.
- An appointment will be made at a later date and time for full mouth radiographs. An appointment slip must be given to the patient indicating the appointment date and time.

- If a requisition is not complete, the patient shall be referred back to the requesting dentist for completion.
- To request retake radiograph due to diagnostic inadequacy, “Retake radiograph” code must be inserted in the patient's electronic file with a justification for the retake. For students, supervisors must authorize/approve the code.

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**
New Patient* 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.
Recall Patient* 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
Recall Patient* with no clinical caries or 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

Table 1 (con't.)

Type of Encounter	Patient Age and Dental Development 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**
Recall Patient* 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
Patient (New and Recall) 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.	
Patient 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:

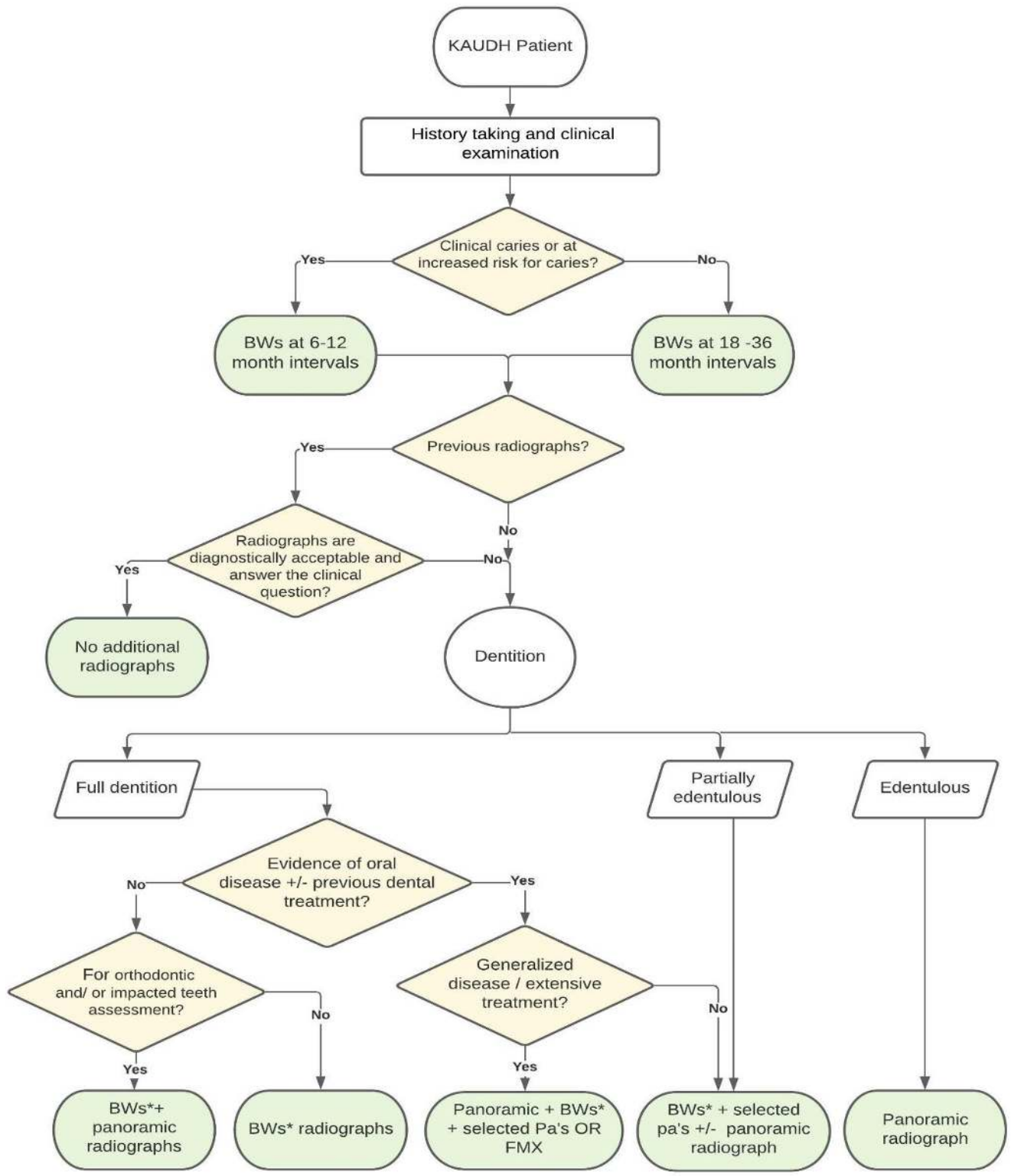
A. Positive Historical Findings

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



*** BWs: Bitewing radiographs are requested when proximal contacts cannot be visualized clinically, Pa's: periapical radiograps, FMX: full mouth radiographs**

8.2.1.2 Procedures for requesting advanced imaging (CBCT)

- Perform a thorough history and clinical examination before prescribing CBCT imaging. Requests must be personalized and justified with a risk versus benefit assessment for each individual patient.
- Follow the KAUDH guidelines for prescribing CBCT examinations.
- CBCT request must be made through R4 by filling up a CBCT request form in the electronic file. The form shall be inserted from the Insert tab >> Diagnostic>> CBCT request form. The form includes the indication or the diagnostic question and the area of interest. If the patient had previous CBCT, the reason for the new request must be justified regardless of the interval between the CBCT examinations.
- A "CBCT scan" and “CBCT report” codes shall be added shall be added into the patient's electronic file.
- Only adequately completed radiographic request will be honored. The clinical problem must be explained, and all relevant findings must be provided in the request form to justify and optimize the CBCT examination.
- CBCT examination must be ordered by a specialist or a consultant. Dental interns, general dentists and students are not eligible to order a CBCT exam. For those, the CBCT code must be approved by a faculty member/consultant.
- For computer guided surgical procedures, the imaging protocol requirement for the used software must be provided in the request form.
- An appointment will be given for CBCT examination unless the request is “STAT”. An appointment slip must be given to the patient indicating the appointment date and time.

KAUDH CBCT Prescription Guidelines

Implant Dentistry:

- CBCT can be used for preoperative evaluation of the potential implant site(s)*, to establish the morphologic characteristics and orientation of the residual alveolar ridge, to identify local anatomic or pathologic conditions restricting implant placement.
- CBCT can be used prior to augmentation procedures such as sinus lift, block or particulate bone grafting, ramus, or symphysis grafting.
- CBCT can be used for the postoperative evaluation of augmentation procedures prior to implant placement.
- CBCT can be used for postoperative evaluation of symptomatic implant(s), e.g.: implant mobility, infection or altered sensation, (immediate/follow up).
- CBCT can be used prior to implant(s) retrieval surgery.
- CBCT should not be used for periodic review of clinically asymptomatic implants.
- In the absence of clinical signs or symptoms, use intraoral periapical radiography for the postoperative assessment of implants. Panoramic radiographs may be indicated for more extensive implant therapy cases. They provide superior resolution when compared to CBCT.

*A radiographic stent is required. Please, review the attached document explaining important points regarding radiographic stents. The CBCT examination will be performed with the patient wearing the stent. Measurements will be performed at the site of the stent markers unless otherwise specified.

Periodontology:

- CBCT should not be used routinely for imaging periodontal bone support.
- CBCT can be used in selected cases of infra-bony defects and furcation lesions, where clinical and conventional radiographic examinations do not provide the information needed for management.

Endodontics:

- Intraoral radiographs should be considered the imaging modality of choice in the evaluation of the endodontic patients
- CBCT should not be used routinely for identification of periapical pathosis unless:
  - the clinical findings are nonspecific or contradictory.
  - Conventional imaging reveals intra-bony pathosis.
  - Conventional imaging is not clear due to superimpositions for example.
  - Nonhealing of previous endodontic treatment.

- CBCT should be reserved for the preoperative treatment planning of complicated cases such as: teeth with suspected complex morphology or calcified canals, teeth that are in close proximity to vital structures and teeth with external or internal resorption.
- CBCT can be used to assess intraoperative or postoperative treatment complications such as perforations, root fractures and broken instruments.
- CBCT can be used prior to surgical or nonsurgical retreatment.
- CBCT can be used when contradictory or nonspecific clinical signs and symptoms are associated with untreated or previously endodontically treated teeth.
- CBCT can be used in cases of limited dento-alveolar trauma, root fractures, luxation, and/or displacement of teeth and localized alveolar fractures, in the absence of other maxillofacial or soft tissue injury that may require other advanced imaging modalities.

N.B. The presence of metallic posts and cores and/or metallic crowns or restorations in the tooth under examination usually results in artefacts that compromises the CBCT images resolution.

Dental caries:

- CBCT should not be used as a method of caries detection. Oral and Maxillofacial Surgery:
- CBCT can be used for pre-surgical assessment of an erupted tooth in selected cases where conventional radiographs fail to provide the information required.
- CBCT can be used to determine the proximity of a tooth to be extracted to adjacent vital structures such as the mandibular canal or the maxillary sinus.
- CBCT can be used to assess the maxillary sinuses.
- CBCT can be used to plan orthognathic surgery.

TMJ:

- CBCT should be reserved for the evaluation of the bony structures (suspected osteoarthrosis or rheumatoid arthritis) and only if the obtained information will affect the patient management.
- CBCT is not the imaging modality of choice to assess the articular disc.
- CBCT in the closed mouth position is sufficient for most cases. Imaging in the open mouth position should be reserved for specific cases such as suspected dislocation or obstruction.

Pathology:

- CBCT is indicated to evaluate pathosis affecting the osseous structures.
- CBCT is not the imaging modality of choice for soft tissue pathosis.

Trauma:

- CBCT is indicated to assess and plan the management of the dentoalveolar and maxillofacial trauma cases.

Orthodontics:

- CBCT should not be used on patients to obtain data that can be provided by alternate non-ionizing modalities (e.g., to produce virtual orthodontic study models).
- Large volume CBCT should not be used routinely for orthodontic diagnosis and treatment planning particularly where there are radiation-related risks in a predominantly young patient age group.
- Large volume CBCT should not be used for the purposes of reconstructing two-dimensional panoramic and cephalometric images.
- CBCT should not be used as a routine imaging method for assessment of impacted maxillary canine.
- CBCT for impacted maxillary canines should be reserved for cases in which:
    - Clinical examination and conventional radiographs do not (or are not expected to) answer the diagnostic/treatment plan question).
    - External root resorption of adjacent teeth is anticipated from conventional radiographs.
    - Impacted canines are near vital structures.
- CBCT for impacted maxillary canines before 10 years of age is generally discouraged.
- CBCT is indicated for the treatment of cleft palate to determine the volume of bone needed for grafting and the adequacy of bone fill after surgery.
- CBCT should not be used routinely for planning the placement of temporary anchorage devices (TAD) in orthodontics.
- CBCT for planning the placement of (TAD) should be reserved for cases with:

o Complex anatomical structures at the proposed site of insertion such as root proximity.
o Compromised quality and/or quantity of bone.

- For complex cases of skeletal abnormality, particularly those requiring combined orthodontic/surgical management, large volume CBCT may be indicated in planning the definitive procedure.

Pediatric dentistry:

- CBCT can be used for the assessment of craniofacial anomalies: the recommended scanning protocol for pediatric patient is low dose protocol.
- For assessment of unerupted/impacted/supernumerary teeth, dental anomalies and trauma cases in pediatric patient please refer to general guidelines (if clinical examination and conventional radiographs do not (or are not expected to) answer the diagnostic/treatment plan question), and other specialties indications (orthodontics, endodontics, and oral surgery).
- CBCT is not indicated for airway assessment.

8.2.2 Acquisition

8.2.2.1 Procedures for acquiring dental radiographs (periapical, bitewing, occlusal, panoramic, cephalometric radiographs)

- The staff member performing the examination shall confirm the patient's identity by verifying the patient's first and last name and electronic health record number. All pediatric must be accompanied by a parent or legal guardian who is required to present the form of identification.
- No one is allowed in the room with the patient during a radiographic examination.
- Image receptor-holding devices must be used to position and hold receptors in the mouth. Nor the operators nor the patients should hold or stabilize the receptor during the exposure. If necessary, a member of the patient's family or someone not routinely employed in radiology procedures should assist, and they must wear a protective lead apron. They must follow safe radiation procedures and keep out of the direct beam. The protective equipment is stored in every x-ray room and operatory.
- Oral radiology faculty and staff must wear radiation-monitoring devices unless being exposed as a patient. The devices should be returned to the department promptly at the end of each exposure period.

- For pregnant women, the same guidelines as with other patients shall be applied, using an appropriate leaded apron, rectangular collimators, and technique.
- A lead apron with thyroid collar shall be used for all children.
- Thyroid collar is contra-indicated for panoramic radiography.
- Infection control procedures shall be followed as per the IPAC policy and procedure.
- Never hold the tube housing or support housing during any exposure.
- Stay in the control booth (station, behind the barrier, etc.) during each exposure. Always maintain visual and aural contact with the patient through the leaded glass, or mirror by providing the appropriate instructions. When operating mobile equipment, the operator should stand as far as possible (at least 6 feet) from the patient.
- Use the technique chart or manual to determine proper exposure (time, kilovoltage, etc.). Don't depend on memory for the proper technique. The technique chart should be updated as needed.
- The added codes of the prescribed radiographs in the EHR should be completed by the operator.

A. Patient Positioning Instructions for Panoramic Radiograph

1. Initial Preparation

Ensure the patient removes all metallic objects (jewelry, glasses, hairpins) from the head and neck region.

Provide and ask the patient to wear a lead apron for radiation protection.

2. Standing Position

Guide the patient to stand upright in the panoramic machine.

Adjust the machine height so that the patient is comfortable.

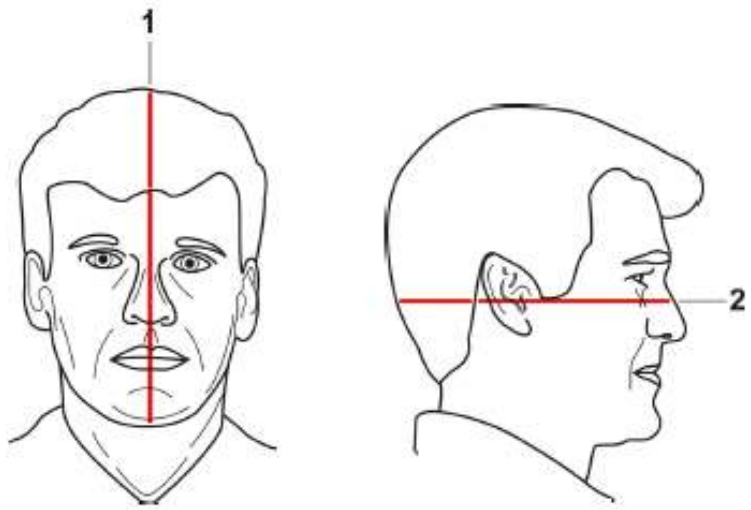
3. Head Positioning

Align the patient's mid-sagittal plane (an imaginary line that divides the body into left and right halves) perpendicular to the floor.

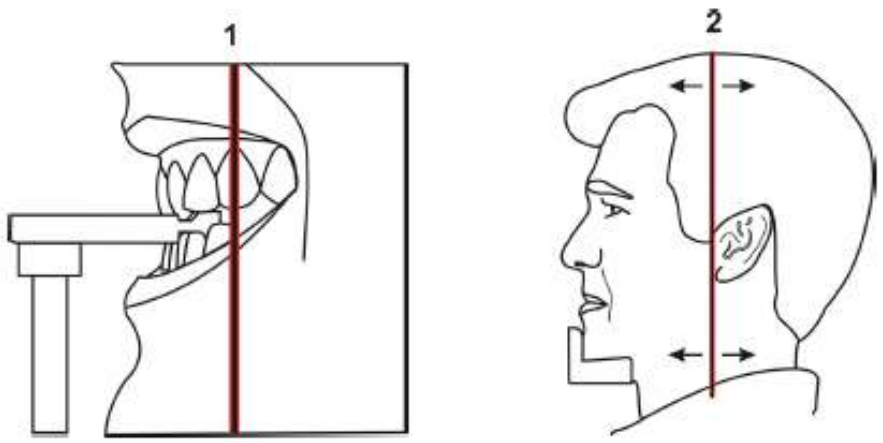
Tilt the patient's head so that the Frankfort Plane (line from the bottom of the eye socket to the top of the ear canal) is parallel to the floor.
Ensure the patient's teeth are in the focal trough area – the “bite guide” on the machine can assist with this.
4. Bite and Jaw Position
Instruct the patient to bite gently on the bite block with their front teeth.
Ensure the lips remain closed and the tongue is placed on the roof of the mouth.

5. Chin Rest Adjustment
Adjust the chin rest so that it supports the chin comfortably without excessive upward or downward tilt.
6. Hand and Arm Position
Ask the patient to hold the handles (if available) and keep their arms and shoulders relaxed.
7. Final Checks and Instructions
Double-check the head and jaw positioning.
Remind the patient to remain still and avoid movement during the imaging process.
Explain that they will hear a whirring noise as the machine operates.
8. Operator Positioning
The operator should step behind the protective barrier before activating the x-ray.

Panoramic lasers



1. Midsagittal laser
2. FH laser (Frankfort Horizontal)



1. Image layer laser
2. TMJ laser

B) Patient Positioning Instructions for Cephalometric Radiograph

1.Pre-Examination Preparation

- Ask the patient to remove any metallic objects (like earrings, necklaces, and hair accessories) from the head and neck area.
- Provide a lead apron for radiation protection and assist the patient in wearing it

2. Standing Position

- Have the patient stand inside the cephalometric imaging machine.
- Ensure the patient's feet are flat on the floor and spaced evenly

3. Head Positioning

- Align the patient's head so that the Frankfort Horizontal Plane (a line from the bottom of the eye socket to the top of the ear canal) is parallel to the floor.
- Use ear rods or similar positioning aids to stabilize the head. These rods should gently rest in the patient's ear canals.
- The mid-sagittal plane (the imaginary line dividing the head into left and right halves) should be aligned with the corresponding marker on the machine.
- Use a nasion support, which should gently touch the nasion (the bridge of the nose).
- Instruct the patient to close their lips comfortably but not to force them shut.
- The tongue should rest naturally against the palate

4. Body Position

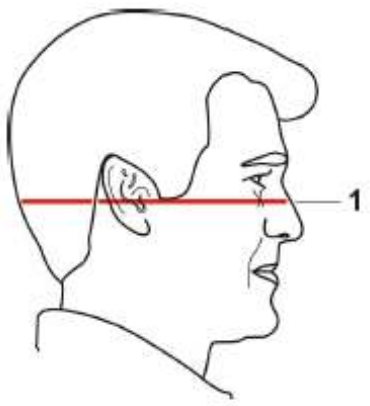
- Ask the patient to stand or sit with their spine straight.
- Arms should be relaxed at the sides.

5. Final Instructions and Checks

- Double-check the alignment and make sure the patient is comfortable.
- Remind the patient to stay as still as possible during the exposure.

- Explain briefly what will happen and the duration of the exposure.

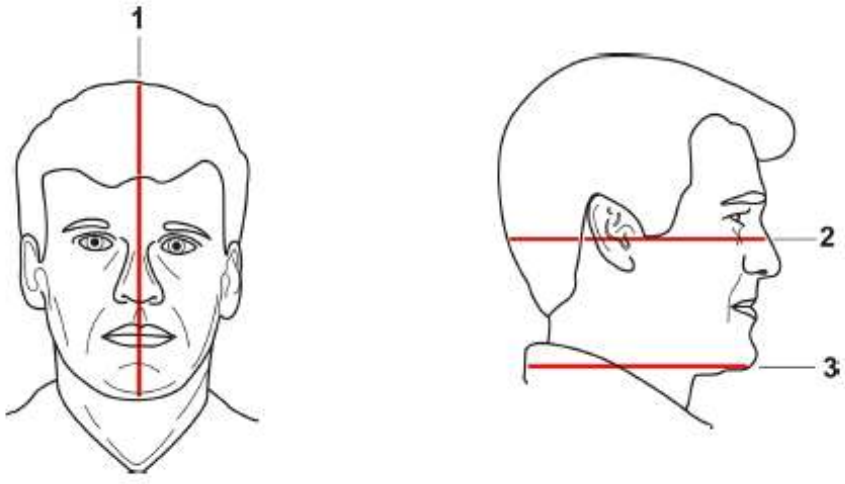
Cephalometric lasers



1. FH laser (Frakfort Horizontal)

3D lasers (optional)

NOTICE! *Appropriate* lasers *are turned automatically on based on selected FOV.*



1. Midsagittal laser
2. Horizontal (H) light, top of FOV
3. Horizontal (H) laserlight, bottom of FOV

C) Patient Positioning Instructions for Intraoral Radiograph (Figure 4)

1. Pre-Examination Preparation

- Ask the patient to remove any removable dental appliances.
- Provide and assist the patient in wearing a lead apron for radiation protection.
- Ensure the patient removes any metallic objects that might interfere with the radiograph from the head and neck area.

2. Seating Position

- Have the patient sit upright in the dental chair with their back straight.
- Position the headrest to support the patient's head comfortably.

3. Head Positioning

- Align the patient's head so that the Frankfort Plane (a line from the bottom of the eye socket to the top of the ear canal) is parallel to the floor.
- Ensure the patient's head is not tilted or turned to either side.

4. Placement of the Image Receptor

- Place the image receptor (film, phosphor plate, or digital sensor) in the mouth using a holder or the patient’s finger (while wearing a protective glove).
- Use barrier envelopes for digital sensors or phosphor plates.
- Position the image receptor as close as possible to the teeth being imaged, ensuring it's parallel to the long axis of the tooth.
- Instruct the patient to gently bite down on the bite block or holder to stabilize the receptor.

5. Beam Alignment

- Align the X-ray tube head so that the central ray is perpendicular to both the image receptor and the tooth.
- Adjust the X-ray tube head and cone to aim directly at the area of interest.

6. Instructions to Patient

- Instruct the patient to stay still and not to move during the exposure.
- Remind the patient to keep their mouth closed around the image receptor and bite block to prevent movement.
- Explain that the process will be quick, and they might hear a brief sound when the X-ray is taken.

7. Radiation Protection and Safety

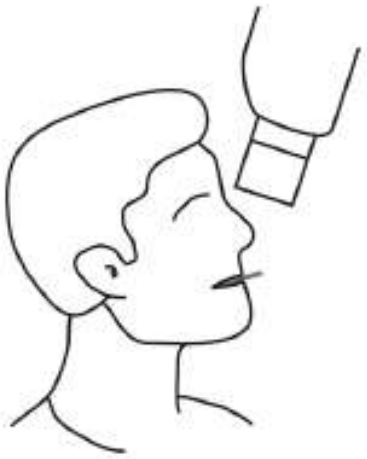
- The operator should step behind a protective barrier or maintain a safe distance during the exposure.
- Use the minimum necessary exposure settings to reduce radiation exposure.

8. post-examination

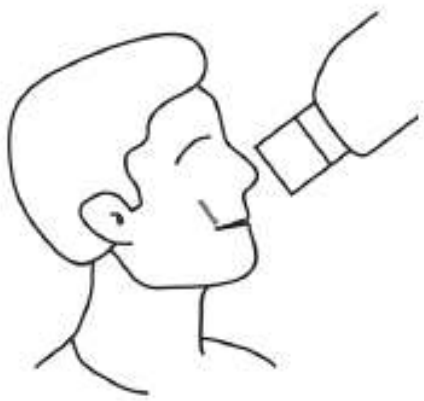
- Once the exposure is complete, assist the patient in gently removing the image receptor from their mouth.

Note: These instructions are general and may need to be adapted for specific types of intraoral radiographs (like periapical, bitewing, or occlusal) and based on the patient's comfort and mouth opening capacity. Always follow the specific guidelines provided by the X-ray equipment manufacturer for optimal results.

Maxillary occlusal



Maxillary anterior



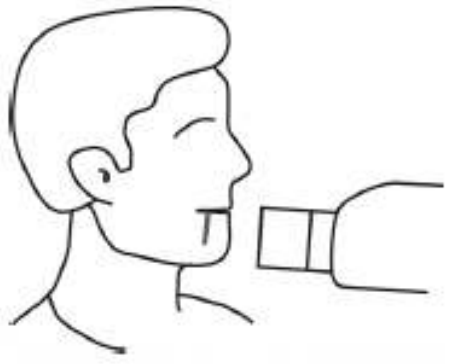
Maxillary molar



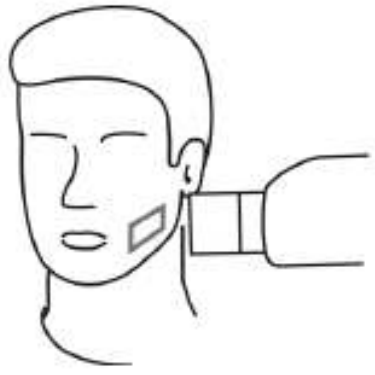
Mandibular occlusal



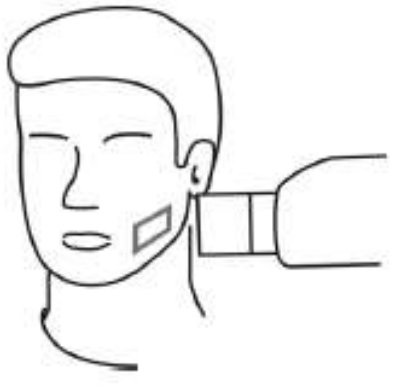
Mandibular anterior



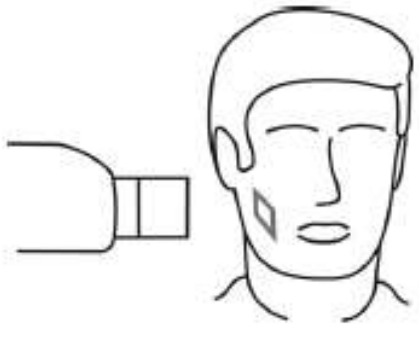
Mandibular molar



Mandibular canine



Bitewing



8.2.2.2 Procedure for acquiring CBCT examination:

A) Checklist Prior to Booking the appointment

1. Authorization of CBCT Requests

- Ensure CBCT requests are made by dental consultants/specialists.
- Ensure that "CBCT" and "CBCT report" codes are added in R4.
- Ensure CBCT requests codes from dental students, interns, and postgraduate students/residents are authorized in the R4 by a supervising consultant.

a) Checking the CBCT Request Form

- Ensure that history and clinical examination are documented in R4.
- Ensure all details in the CBCT request form are accurate and complete.

Specific Requirements for Implant Planning

- Ensure information about the provision of a radiographic stent is provided in the request.

b) Verification and Completion of Request Details

- Contact the referring dentist for any missing or unclear information on the CBCT request.

c) Scheduling and Patient Management

- Treat Stat CBCT requests (for emergency procedures) as walk-in services on the requested day.
- Schedule patients in accordance with the radiology clinic's arrangements.
- Prioritize efficient and appropriate service for the patients.

This checklist ensures that the process for booking a CBCT appointment is thorough, compliant with policy, and prioritizes patient care effectively.

B) Checklist to Determine CBCT Imaging Protocol:

1. Checking the CBCT Request Form
   - Ensure all details in the CBCT request form are accurate and complete.
2. Review Existing Radiographic Examinations
   - Check the panoramic image.
   - Check and review any prior CBCT examinations.
3. Document Imaging Protocols
   - Follow the KAUDH CBCT Imaging protocol (Table 2).
   - Use the "CBCT Technical Form" to document protocols in the patient's electronic health record.
   - Consult the attending radiologist for any missing or unclear information on the CBCT request.

C) Checklist Prior to the CBCT Imaging procedure:

1. Review CBCT Image Protocol
   - Adhere to the documented CBCT Imaging protocol.
   - If the protocol is not documented, contact the quality coordinator or attending radiologist for guidance.
   - Ensure the consulted staff document the imaging protocol in the R4.
2. Patient Identification and Procedure Verification
   - Confirm patient's identity using two identifiers.
   - Verify with the patient the type and site of the radiographic procedure.
   - For pediatric patients, ensure verification by the legal guardian.
3. Pregnancy Inquiry and Management
   - Inquire about potential pregnancy in female patients of childbearing age.
   - Postpone the examination if pregnancy status is uncertain.

- Proceed with urgent scans in confirmed pregnancies if clinically justified and sign the consent form.
- Postpone non-urgent scans at the patient's discretion

4. Patient’s Preparation:
    - Explain the procedure to the patient.
    - Ask the patient to remove any metal objects “jewelry, eyeglasses, hairpins, hearing aids, air pods, and removable dental appliances.”
    - Position the patient correctly in the CBCT scanner.
    - Use head supports.
    - Instruct the patient on when and how to hold their breath during the scan to reduce motion artifacts.
    - Provide lead aprons with or without thyroid collar as indicated.
    - Establish a means for the patient to communicate any discomfort or issues during the scan, such as a hand signal.
5. Limitation on Scout Views
    - Do not obtain more than two scout views.
    - Consult the chief technician or quality officer if positioning issues persist.
6. Review of CBCT Images
    - Check images for correct positioning and diagnostic quality before the patient is released.
    - Complete the “CBCT” code in the EHR
7. Managing Inadequate Scans
    - If the region of interest is not captured properly or artifacts are present, consult the attending radiologist.
    - Don’t remake the examination without attending radiologist’s approval.
8. Communication with the Patient
    - Disclose any retake decisions to the patient.

Remember to adhere to these steps meticulously to ensure the accuracy, effectiveness, and safety of CBCT imaging procedures.

	Indication	FOV	Voxel Size	Machine
Endodontic Evaluation	Root fracture/ Ankylosis/Resorption	KaVo	5x5	Endo
	Apical periodontitis/ apical surgery/ Root morphology assessment/ Missed canal	KaVo	5 x 5	High
Implant Evaluation*	Single implant	KaVo	5 x 5	Standard
	Multiple implants in the same quadrant	KaVo	5 x 5	Standard
	Multiple implants in the same Jaw (different quadrants)	KaVo	6 x 8	Standard
	Maxillary and mandibular implants	iCAT	8 x 8	0.3
Impaction Evaluation	Single impacted tooth (third molar or supernumerary)	KaVo	5 x 5	Standard
	Multiple impacted teeth in single arch	iCAT	16 x 4	0.3
	Multiple impacted teeth in both arches	iCAT	16 x 8	0.3
Orthodontic/ Surgical Evaluation	Impacted canines (Single or both)	KaVo	5 x 5	High
	Orthognathic surgery	iCAT	16 x 13	0.4
	Cleft palate	KaVo	6 x 8	Standard
	Craniofacial anomaly	iCAT	17 x 23	0.4
TMJ	TMJ (closed) Single or both joints	KaVo	5 x 5	High
	TMJ (open)			Standard
Pathosis	Pathosis (single arch)	KaVo or iCAT	TBD from the Panoramic	0.3 or Standard
	Pathosis (both arches)			
Trauma	Dento-alveolar trauma	KaVo	5 x 5	Endo
	Maxillofacial trauma	iCAT	16 x 13	0.2
Follow up Pediatric	Pediatric patient and follow-up patient	KaVo		LDP
In the case of computer guided implant surgical procedures, the voxel size of the scan should not be less than 0.2mm.				

8.2.3 Interpretation

Procedure for interpreting two-dimensional radiographs (periapical, bitewing, occlusal, panoramic, cephalometric radiographs)

- Every diagnostic radiograph must be viewed and reported in the patient's electronic file in a timely fashion by the requesting dentist
- Most imaging findings (such as missing teeth and caries) can be recorded in the dental chart section while other findings (such as osseous and periodontal findings) can be reported in the radiographic report in the progress notes section
- Follow the steps outlined in the "how to write a radiographic report" document (attached)

Procedure for interpreting CBCT examination:

- All CBCT examinations shall be examined by an oral and maxillofacial radiologist to ensure that no significant findings are overlooked.
- A written report shall be generated for all CBCT examinations and saved in R4 in the comment tab within five (5) business days of the date of the examination. "CBCT report" code shall be completed by the radiologist.
- Written reports will contain the following items:
  1. patient's full name (e.g., first name and last name).
  2. patient's date of birth or age.
  3. patient's electronic health record number.
  4. Referral's name and specialty
  5. date of the CBCT scan.
  6. clinical indication leading to the performance of the CT examination.
  7. a description of the imaging protocol used in the examination – this includes the acquisition field of view and voxel size, and extent of scan (e.g., Full head, both jaws, maxilla, or mandible).
  8. a findings section (body of the report).

9. an interpretation section.
10. a recommendation for follow-up of incidental findings (if applicable).
11. name and email of interpreting radiologist.
12. report date.
13. representative images of the CBCT examination

- Following any significant incidental findings, the OMFR must promptly notify the referrals. A note must be made to the HER documenting the communication with the referrals.
- A copy of the original CBCT examination will be provided to the referral or the patient directly upon their request.

8.2.4 Radiographic Consultation

This service will facilitate communications with specialists and consultants in the department of Oral and Maxillofacial Radiology and will allow students, dentists, and dental specialists at KAUDH to requests radiographic reports for their patients based on any type of available imaging.

Procedure:

- Refer the patient in the electronic health record to the Oral Radiology > fill the referral form with the following information: Diagnostic question, Type, and date of radiographic image > click OK
- A radiology report will be generated for each consultation request in the progress note section of R4 within five business days.

KaVo™ NOMAD Pro 2™

GETTING STARTED

This quick reference guide is intended to supplement the KaVo NOMAD Pro 2 Operator Manual and operator training materials located on the operator training DVD.

NOTE: The manual and training materials are also available for download at KaVo.com

1. Unwrap each component from the protective plastic and check for any noticeable signs of damage. Do not use the device if it shows signs of damage.

   The standard package system includes the following items:

   - KaVo NOMAD Pro 2 X-ray Head
   - Two (batteries) Handsets
   - Battery Charging Cradle
   - AC Power Supply
   - Certificate of Conformance
   - Warranty Card
   - KaVo NOMAD Pro 2 Operator Manual and Training DVD
   - Three Short Alignment Positioning Bars (optional use)

2. Verify that the serial number on the product registration card matches the X-ray head serial number and the device serial number on the carrying case.
3. Please complete the product registration card and mail it with proper postage to KaVo today, or go on-line at: kavo.com/en-us/product-warranty-registration

Review the Operator Manual and training material contained on the DVD shipped with this device.

KAVO Dental Excellence

BASIC OPERATION

1. Attach a fully charged handset.
2. Turn the power on by pressing the **Power** button.
3. Select **Patient Size** (Adult or Child).
4. Select **Image Receptor** type (Film, Phosphor Plate, or Sensor).
5. Select the **Tooth Group** (Anterior, Posterior, or Bitewing). For more on adjusting the time settings see the Operator Manual contained on the DVD.
6. Position the KaVo NOMAD Pro 2 relative to the receptor.
7. Pull and release the trigger once to put the KaVo NOMAD Pro 2 into the **Ready** state.
8. Pull and hold the trigger (a second time) until **X-ray Complete** is displayed and the audible tone indicates the exposure is done.
9. Turn off the power by pressing the **Power** button.



- **Use a non-acetone based disinfectant wipe to wipe the KaVo NOMAD Pro 2 and charger. Do NOT use cleaners intended for hard surfaces, since certain chemical combinations may deteriorate the plastic prematurely.**
- Do not spray disinfectant or cleaners directly on the KaVo NOMAD Pro 2, handset, or charging cradle. Damage to your device or a shock hazard may result.
- Do not operate KaVo NOMAD Pro 2 or the handset, charging cradle, or AC power supply if equipment was subjected to moisture.
- Do not open the housings.
- Locate the charging system away from the normal patient environment.
- KaVo NOMAD Pro 2 should not be operated if it has been dropped or if performance degrades; it should be returned to KaVo for a safety check.

HANDSET CARE

The following are important handset care notes:



- Handsets must be charged before initial use! Alternate handsets each week to maximize service life.
- Routinely change out a discharged handset with a fully charged one as needed.
- Remove handsets from the charging cradle once they are fully charged.
- Battery charge will diminish during extended inactivity. **Handset should be at least 2/3 charged for long term storage.** Never place low charge battery into long-term storage.
- Battery life is expected to be at least 2 years with proper care and maintenance.
- Handset operating temperature range: 50°F (+10°C) to 122°F (+40°C) Handset storage and transportation temperature range: –4°F (–20°C) to 122°F (+50°C) Relative humidity < 90% non-condensing. The optimal storage location is cool, dry, and away from direct sunlight.
- When the charging cradle senses a bad handset battery, the indicator lights will illuminate red rather than green. In this case, the batteries are inoperable and must be replaced.
- Handset communications and mechanical integrity are checked when the handset is first placed on the charging cradle: good communication exists when the first bar illuminates green for approximately two seconds. The routine charging sequence should then commence.

- Do not attempt to charge a handset with damaged batteries.
- Risk of fire or explosion exists if batteries inside the handset are replaced by unauthorized service personnel; do not use batteries from other sources.
- Properly dispose of spent or damaged handsets; return to KaVo or an authorized distributor for replacement and recycling. Do not place in municipal waste stream.

WAYS TO IMPROVE IMAGE QUALITY

Ensure you are using the correct time setting. The KaVo NOMAD Pro 2 comes with presets that give you a place to start. However, these times settings can be adjusted to achieve the desired image quality and then saved for future use.

Make sure you are as close to the patient's cheek as possible without touching. If your positioning device prohibits you from getting close enough to the cheek, you may want to use the short Alignment Positioning Bars with your device.

Check for an **Incomplete** message on the display. The **Incomplete** message indicates that the trigger was released prematurely, resulting in an incomplete exposure. To achieve complete exposures, do the following: press and release the trigger to enable the X-ray and wait for the display to read **Ready**; press and hold the trigger until the device tones and the display reads **X-ray Complete**.

KaVo COMPLETE

In order to activate your KaVo Complete (the first year is free), complete the product registration card and mail it with proper postage to KaVo today. This can also be completed on-line at: kavo.com/en-us/product-warranty-registration

For terms and conditions of the KaVo Complete, visit: http://www.kavo.com/en-us/imaging-solutions/kavo-nomad-pro-2-intraoral-x-ray

CE 0413

Device has been certified to meet the requirements of Council Directive 93/42/EEC concerning medical devices.

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U.S. patents 7,224,769 and 7,496,178
United States and International patents pending.
English is the original draft language for this manual.
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KaVo™ NOMAD Pro 2™ DIFFERENCE

KaVo NOMAD Pro 2 is safe to be used as a handheld X-ray source when used correctly. There is no need to leave the room during an exposure.

Aside from the direct beam, X-ray devices have two potential operator radiation sources: 1) leakage radiation and 2) backscatter radiation bouncing back off the subject.

1. **Leakage:** Unique internal shielding of KaVo NOMAD Pro 2 encases the X-ray tube practically eliminating leakage radiation which makes it safe to use Pro 2 as a handheld device during exposures.
2. **Backscatter :** When properly oriented, the transparent shield on the KaVo NOMAD Pro 2 collimator acts as a barrier against backscatter radiation, making it safe for the operator to stay in the room.

As a result of the internal and backscatter shielding, operator X-ray exposure is far below federal regulatory limits.



RADIATION SAFETY

- Operators must follow all applicable regulatory guidelines and in-house radiation protection programs in regard to patients and operators who are pregnant or expect to become pregnant.
- Operators must be fully acquainted with industry safety recommendations, established maximum permissible doses, and local jurisdiction requirements for use.
- Do not enable KaVo NOMAD Pro 2 until patient and operator are positioned and ready for the exposure.
- Do not attempt an exposure if anyone other than the patient is in the direct beam. If others are assisting, then they should wear protective covering as required by local jurisdictions.
- When selecting and using sensors, preference should be given to models that allow the backscatter shield to remain at the outer end of the collimator cone for maximum operator protection.
- An exposure can be terminated for any reason by prematurely releasing the depressed trigger.
- Optimal operator radiation backscatter protection exists when:

  a) the backscatter shield is positioned at the outer end of the collimator cone,

  b) the backscatter shield is close to the patient,

  c) the patient tilts their head when needed to accommodate exposures, and

  d) the operator remains within the significant zone of occupancy immediately behind the device shield.
- As shown in graphic representations, maximum protection (green area) from backscatter radiation (red area) exists when the KaVo NOMAD Pro 2 is positioned near the patient (oval), is perpendicular to the operator with the patient positioned/tilted as needed, and the backscatter shield is fully extended toward the patient.
- Operation outside the protection zone (or with a diminished protection zone) requires proper precautions such as the use of a lead apron, according to requirements of local jurisdictions.

Stay in the ZONE



Protection
Proper Position Maximum Protection
Held Back Minimized Protection
Shield Slid Back Minimized Protection
Non-perpendicular Minimized Protection

ALARMS & ALERTS

Alert	Function/Resolution
ENABLING X-RAYS No audible signal	Initiated by a single pull and release of the trigger, within one second. If no further action is taken the device will shift into the **Ready** state. Do not pull trigger again until the **Ready** state is indicated.
READY Double ascending tone	**Ready** message will display on-screen following the **Enabling X-Rays** message. The **Ready** state will last for 15 seconds, or until one of the buttons on the user interface panel is pressed, or until the exposure is initiated by a second pull of the trigger.
X-RAYS ON Single tone during exposure	At the end of the successful exposure the yellow LED turns off, and display panel briefly indicates **X-ray Complete** and the screen returns to the normal mode.
Alarm	**Function/Resolution**
COOLING DOWN [count down] Double tone at the start and end of cool down	Initiated if the operator presses the trigger to activate the **Ready** state before the duty cycle time has lapsed. Countdown timer will be displayed showing time remaining until normal operation mode resumes.
RECHARGE HANDSET 5 audible tones	Ensure the handset is locked in place. If battery voltage is lower than required for the X-ray exposure, the device will not allow the exposure. Replace the current handset with a freshly charged handset.
INCOMPLETE (PRESS ANY KEY)	Activates if trigger is released before the timed X-ray exposure finishes. This condition is cleared by pressing any button on the user interface panel or by turning the power off then on. Depress the trigger for the duration of the exposure time.

8.3 Radiology Department Emergency Plan

Purpose:

The radiology emergency plans are issued and applied during the HER system failure to ensure the continuing safe provision of radiology care to patients attending the UDH Radiology Clinics. These protocols shall be revised based on updated circumstances.

Policy:

- All efforts should be made to keep the number and frequency of radiographs as low as reasonably achievable.
- Students and clinicians must make sure that all other diagnostic/clinical examinations are not able to achieve diagnosis and/or treatment.
- Students and clinicians must postpone any radiographic examinations that do not yield information useful to the immediate intended patient management.

Procedure:

Prescription:

New patients:

Adult: Panoramic and posterior bitewing radiograph(s)

Pediatric patients: Posterior bitewing(s) if proximal surfaces cannot be visualized.

Recall patients:

Restorative treatment:

Caries documentation is completed: No radiographs.

Caries documentation is not completed: One bitewing radiograph for the visit's proposed treatment.

Endodontic treatment:

Postgraduate clinics- Three radiographs "done with tube-shift for multi-rooted teeth" (preoperative, intermediate, postoperative)

Undergrad clinics- Four radiographs (preoperative, two intermediates (working length and cone fit), and postoperative)

ER Clinics- One preoperative periapical radiograph.

- Paper-based radiographic request form that is part of the patient's file shall be filled by the students/clinicians.
- CBCT paper-based request form is available in the radiology department and shall be filled by clinicians.

Acquisition:

- Two-dimensional radiographs (periapical, bitewing, and panoramic) will be acquired and stored locally on clinics' computers using the "dental imaging" software under the patient's name and file number.
- CBCT examinations will be done for emergency cases and patients with booked appointments.

Interpretation:

- Radiographic report shall be done in the patient's paper file.

Data Archive:

Weekly image back-up and later image uploads to the EHR shall be handled by the IT department.

Section 9 Laboratory Guidelines

9.1 Production dental laboratory

9.1.1 Background:

King Abdulaziz Production Lab manufactures and customizes a wide range of dental products to support optimal oral health care. Our offerings include crowns, bridges, dental implants, dentures, and other specialty appliances, including advanced orthodontic and implant devices. Our dedicated dental lab technicians strictly follow dentists' prescriptions to create both prosthetic and therapeutic devices. By combining skilled workmanship with cutting-edge technology, we ensure each product meets stringent quality standards and enhances patient care .

9.1.2 Mission:

Our mission is to provide exceptional dental products to Dental Schools—consistently exceeding expectations—while upholding our core values of trust and prestige. By staying at the forefront of technological advancements and global best practices, we foster a work environment that empowers our employees and supports the dental team with top-quality resources.

9.1.3 Vision:

We aspire to be the most trusted and preferred dental laboratory by delivering uncompromising quality. Our focus is to:

- Elevate patient and dentist satisfaction through high-standard services that respect time and individual rights.
- Enhance the satisfaction, morale, and professional growth of our employees.
- Uphold our commitment to environmental and ethical values.

Respect, openness, honesty, and fairness are the cornerstones of our relationships, both internally and externally. These principles guide our vision, ensuring we build a culture of motivation, cooperation, and continuous improvement.

By continually raising the bar on quality control and accountability—utilizing the finest materials, excellent craftsmanship, and on-time deliveries, all backed by a satisfaction guarantee—we strive to set new industry benchmarks every year.

9.1.4 Values:

1.Clear Communication:

- Get the facts
- Cascade important messages
- Communicate to be understood
- Listen generously
- Be available
- Value new ideas

2. Team-Oriented:

- Think team first
- Keep things fun
- Develop others
- Show empathy
- Build collaborative relationships

3. Customer-Focused:

- Act in the best interest of the customer
- Deliver memorable service
- Honor commitments
- Address patient concerns
- Create a friendly tone

4. Professionalism:

- Lead by example
- Seek solutions and “find a way”
- Show respect to others
- Be approachable
- Stay obsessively organized
- Maintain a clean work environment
- Motivate others to succeed

5. Accountability for Action:

- Take pride in your work
- Be responsible
- Manage time effectively
- Engage in blameless problem-solving
- Clarify and meet expectations

6. Dedication to Excellence:

- Pursue perfection
- Work efficiently
- Invest in self-development
- Make quality personal
- Pay attention to details
- Continuously improve processes

9.1.5 Purpose:

This manual serves two main objectives:

1. To establish a comprehensive framework that ensures safety, health, and quality standards are upheld throughout the lab.
2. To create an operational environment that supports efficient, secure, and high-level dental production and training practices.

9.1.6 Policy Statement and Guidelines:

To uphold a culture of safety, professionalism, and excellence within the Dental Production Lab, all personnel are expected to:

- **Follow Established Guidelines** Strict adherence to lab rules fosters a culture of excellence and well-being.
- **Engage in Continuous Education and Training** Regular updates in skills and knowledge regarding equipment, materials, and safety protocols are essential.
- **Utilize Personal Protective Equipment (PPE)** The mandatory use of appropriate PPE always reduces the risk of exposure to hazards.
- **Conduct Routine Equipment Maintenance** Timely servicing of lab instruments as per manufacturers' guidelines ensures both safety and optimal performance.
- **Promote Accident Reporting and Investigation** Immediate reporting and thorough investigation of incidents enable ongoing improvements in lab safety and quality.

9.1.7 Roles and Responsibilities :

1. **Authorities' Responsibilities**
   - **Maintain Safe Working Conditions**

Ensure infrastructure and processes align with established safety standards.

   - **Implement Safety Protocols**

Establish and enforce comprehensive safety measures to protect all lab personnel and visitors.

2. **Lab Technician's Roles and Responsibilities**
   - **Prioritize Personal and Team Safety**

Remain vigilant about individual safety as well as the well-being of colleagues and visitors.

- **Comply with Safety Regulations**

Strictly follow all lab protocols and guidelines.

- **Use PPE as Required**

Always don the proper protective equipment to mitigate physical and chemical risks.

9.1.8 Operational Scope and Tasks:

1. Lab Readiness

- Collaborate with course coordinators to determine required supplies each semester.
- Manage inventory, place orders, and maintain thorough records of all procurements.

2. Introductory Lecture

- Provide an annual orientation session for new students, covering lab regulations and best practices.
- Obtain signed commitments from students to adhere to safety and operational rules.

3. Practical Session Management

- Prepare and distribute materials and protective gear for lab sessions.
- Monitor activities to ensure adherence to safety protocols.

4. Lab Maintenance Coordination

- Initiate and oversee maintenance requests, working with specialized contractors to ensure all lab facilities remain in optimal condition.

5. Practical Exam Preparation

- Organize lab spaces for exams (e.g., OSPE), confirming that all equipment is fully functional and stations are properly configured.

6. Reporting

- Compile quarterly and annual reports detailing lab operations, safety audits, and inventory status.

7. Annual Inventory Management

● Conduct a comprehensive review of tools and equipment to maintain accurate inventory records and identify potential shortages.

8. Workshop Hosting

● Plan and conduct workshops in various dental specialties to enhance professional development.

9.1.9 Professional Conduct:

● Treat colleagues, faculty, and support staff with respect and professionalism always.

● Recognize that the clinical simulation and production setting is designed to cultivate habits and skills that ensure confidence and competence in real-world patient care.

9.1.10 Dress Code and Safety Protocols:

● Comply with the university dress code by wearing medical scrubs within the lab.

● Observe standard infection control measures, mirroring clinical protocols.

● Utilize disposable surgical gowns, gloves, masks, and eye protection where indicated.

● Remove gowns and gloves before exiting the lab to prevent cross-contamination.

9.1.11 Materials and Instrument Management:

● The lab's dispensary provides all required materials and instruments based on course or project specifications.

● Students and staff are responsible for the careful handling and upkeep of all equipment.

● Upon completion of a course or project, materials and instruments must be returned in their original condition.

9.1.12 Laboratory Setup and Environment:

1. **Workstations**

Each station includes micro motors, suction devices, burners, and compressed air, designed ergonomically to reduce strain and enhance efficiency

2. **Specialized Areas**

- **Plaster Lab and Work Area:** Equipped for gypsum and acrylic processes.
- **Casting Area:** Dedicated to burnout, casting, sandblasting, and polishing procedures.

3. **Ventilation and Dust Control**

- **Ventilation:** A combination of natural and mechanical ventilation captures and neutralizes contaminated air at its source.
- **Dust Control:** Use of dust extraction units and personal protective masks is mandatory to minimize health risks from airborne particles.

4. **Lighting**

Proper illumination is critical for both safety and precise tasks like color matching. Equipment and bulbs must be regularly maintained and replaced when necessary.

9.1.13 Identifying and Managing Hazards:

1. Physical Hazards

- Risks include equipment malfunction, excessive noise, fire, and electrical issues.
- Proper maintenance and the use of protective gear (e.g., ear plugs, fireproof materials) are essential.

2. Chemical Hazards

- Materials like acids, acrylic resins, and cleaning agents require careful handling and storage.
- Fume extractors and specialized PPE minimize chemical exposure.

3. Biological Hazards

- Strict infection control protocols (e.g., autoclaving, use of disinfectants) are vital in preventing cross-contamination.

4. Ergonomic Hazards

- Thoughtful workstation design, use of ergonomic tools, and breaks to reduce repetitive strain protect musculoskeletal health.

9.1.14 Risk Management Procedures:

1. Hazard Identification

Ongoing monitoring and identification of potential risks within the lab environment.

2. Risk Assessment

Evaluating the severity and likelihood of identified hazards to guide prioritization.

3. Control Measures

Employing a hierarchy of controls—elimination, substitution, engineering controls, administrative changes, and PPE—to address each hazard effectively.

9.2 Multipurpose Dental Laboratories

9.2.1 Background

9.2.1.1 Mission:

Our mission of dental multipurpose simulation laboratories is to create a hands-on learning environment where dental students can develop their skills confidently and safely. We aim to provide innovative training and resources that prepare students for real-world dental practice, ensuring they are ready to deliver excellent patient care. This is achieved by providing all necessary resources for various specialties and using the latest technical and educational means to create a training environment that meets global quality standards.

9.2.1.2 Vision:

We envision our dental simulation laboratories as dynamic centers of learning that continuously evolve to meet the changing needs of dental education. By integrating the latest technologies and innovative teaching methods, we aim to create a state-of-the-art environment where students can practice and refine their skills. Our goal is to lead the way in redefining dental training, ensuring that our labs not only prepare students for today's challenges but also empower them to adapt to the future of dentistry with confidence and expertise.

9.2.1.3 Values:

- Excellence: Striving for the highest standards in education and training.
- Innovation: Embracing new technologies and ideas to enhance learning.
- Integrity: Fostering honesty and professionalism in our community.
- Collaboration: Encouraging teamwork and mutual support among students and mentors.

- Accessibility: Providing quality education for all students.
- Continuous Improvement: We are committed to evolving our programs to meet future needs.

9.2.1.3 Purpose:

This manual serves a dual purpose: firstly, to provide a comprehensive framework for maintaining safety and health within the lab; and secondly, to foster an environment conducive to efficient and secure operational practices.

9.2.2 Policy Statement and Guidelines

To maintain an environment focused on safety and health, all personnel are required to:

- Follow Established Guidelines: Adherence to lab rules creates a culture of safety and excellence.
- Engage in Continuous Education and Training: Regular training updates skills and knowledge on equipment use, material handling, and safety protocols.
- Utilize Personal Protective Equipment (PPE): Provision and use of appropriate PPE for all tasks are mandatory to prevent exposure to hazards.
- Conduct Routine Equipment Maintenance: Timely maintenance as per manufacturers' recommendations is essential to ensure the safety and effectiveness of lab instruments.
- Promote Accident Reporting and Investigation: A clear protocol for reporting and investigating any incidents ensures continuous improvement in lab safety standards.

Labs Usage:

- Pre-clinical Operative Dentistry (3rd year)
- Pre-clinical Endodontic (4th year)

- Pre-clinical Fixed Prosthodontics (4th year)
- Pre-clinical Pediatric Dentistry (5th year)
- Post Graduate Programs
- Researchers (Post-graduates and Faculty)

9.2.2.1 Roles and Responsibilities

Authorities' Responsibilities:

- Maintain Safe Working Conditions: It is the duty of the authorities to ensure the lab's infrastructure and processes align with safety standards.
- Provide Training and Supervision: Continuous education and oversight are critical for fostering a knowledgeable and cautious workforce.
- Implement Safety Protocols: Authorities must ensure that all safety measures are in place and adhered to by all personnel.

Lab Technician's Roles and Responsibilities:

- Prioritize Personal and Team Safety: Individuals must be vigilant about their own safety and that of their colleagues and safety of lab's visitors.
- Comply with Safety Regulations: Strict adherence to all safety protocols is imperative for all lab personnel.
- Use PPE as Required: Proper utilization of PPE is fundamental in protecting against physical and chemical hazards.

Lab Readiness:

- Coordinate with course coordinators to gather supplies and materials needed for each semester.

- Inventory and order necessary equipment, ensuring timely receipt and archiving of order forms.

Introductory Lecture:

- Conduct an annual lecture for new students covering lab procedures and regulations.
- Ensure students sign a commitment to adhere to these rules.

Practical Session Management:

- Prepare laboratories with required materials and protective supplies, distribute them to students, and monitor lab activities, ensuring safety protocols are followed.

Lab Maintenance Coordination:

- Request maintenance for laboratory equipment and facilities, collaborating with the relevant maintenance companies and overseeing their work.

Practical Exam Preparation:

- Organize and prepare labs for practical exams (OSPE), ensuring all equipment is functional and setting up workstations appropriately.

Reporting:

- Prepare quarterly and annual reports detailing lab workflow and activities.

Annual Inventory Management:

- Conduct an annual inventory of lab tools and equipment to track quantities and identify shortages.

Exam Preparation:

- Prepare labs for practical exams, ensuring operational equipment and setup for student assessments.

Workshop Hosting:

- Organize and host workshops across various dental specialties throughout the year to enhance student learning and professional development.

Professional Conduct:

- Interactions with colleagues, dental auxiliary staff, and supervisors must be respectful and professional.
- The professional skills and habits cultivated in this clinical simulation environment assure students of ease, confidence, and competence when transitioning to actual patient care.

Dress Code and Safety Protocols:

- Adherence to the university's dress code is mandatory, requiring students to wear medical scrubs.
- Infection control precautions like those in clinical settings must be observed.
- Protective barriers such as disposable surgical gowns, gloves, face masks, and eyewear are required during laboratory procedures.
- Facial protection is essential when there is a risk of exposure to blood or fluids contaminated with blood.
- Students are not permitted to exit the lab wearing gowns or gloves.

Materials and Instrument Management:

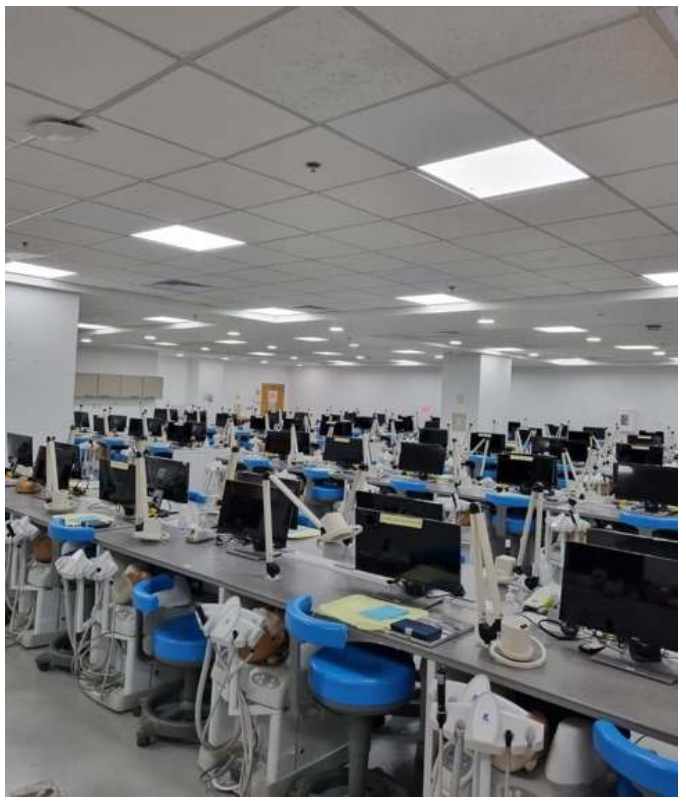
- The laboratory dispensary is responsible for providing all necessary materials and instruments, as specified by course instructors.
- Students must handle equipment with care and ensure that instruments remain in good condition during their training.
- At the completion of the course, instruments must be returned to the dispensary in the condition received.

At King Abdulaziz dental university, the student will be involved in using two types of labs:

Clinical Simulation Laboratories:

Preparing for Real-World Patient Care, these pre-clinic laboratories are essential for equipping students with the skills necessary to perform patient care procedures as outlined in the undergraduate dental curriculum. They feature phantom heads to simulate real patients, along with comprehensive equipment and materials for thorough preclinical training in areas such as:

- Periodontics
- Operative Dentistry
- Endodontics
- Prosthodontics
- Implants
- Pedodontics
- Biomaterial
- Oral surgery



Prosthetic / Higher Studies Laboratories:

The primary aim of the Students' Prosthetic Lab is to serve as both an educational platform and a training facility, enabling students to gain hands-on experience in completing laboratory cases as part of specific course requirements. By collaborating with faculty members and lab technicians, students learn how to effectively utilize a dental lab to achieve optimal results in prosthetic cases and, when applicable, explore alternative lab techniques.



9.2.3 LABORATORY SETUP AND ENVIRONMENT

Workstations:

Each station is equipped with crucial tools such as micro motors, suction devices, gas burners, and air pressure systems, essential for handling a range of dental procedures efficiently. The design prioritizes ergonomic comfort with adequate seating to minimize strain during extended use.

Specialized Areas:

- Plaster Lab and Work Area: Designated for gypsum works and acrylization processes, equipped with tools designed for precision.
- Casting area: Dedicated section for burnout, casting, sandblasting, and the finishing and polishing of dental components.

Lab Area Designation :

The laboratory is organized into two clearly designated areas:

(1) Instrument Intake and Return Area — a dedicated counter where students collect sterilized instruments at the start of each session and return used instruments at the end; this area is managed by lab staff and ensures that clean and used instruments are never mixed;

(2) Student Training Benches — individual workstations where students practise, train, and develop their pre-clinical skills under faculty supervision. Each bench is fully equipped according to the lab; selected benches also carry an X-ray machine for pre-clinical endodontic training. Students remain at their assigned bench throughout the session.

Ventilation and Dust Control:

- Ventilation: Both natural and mechanical ventilation systems are crucial, with mechanical options providing reliable air circulation. Capturing and neutralizing contaminated air at its source is essential to minimize health risks.
- Dust Control: Airborne particles, particularly those below 5 microns, pose significant health threats. It is imperative to use dust extraction units and personal facemasks to limit exposure.

Lighting:

Optimal lighting is a non-negotiable aspect of lab settings, necessary both for safety reasons and for accurate work, such as color matching in dental appliances. Regular maintenance, including cleaning and replacing bulbs, ensures the effectiveness of the lighting system.

X-Ray Machines:

Students use x-ray machines in the pre-clinical endodontic course only. X-ray units are to be handled carefully. Please follow these instructions:

- Familiarize yourself with x-ray units before your first scheduled laboratory session.
- Place the tooth to be radiographed on the sensor as instructed by your supervisor.
- Lock the machine door.
- The exposure time is fixed but you must hold the timer button down throughout the exposure.
- Shoot the radiograph then proceed to PCs to get the images.

- To minimize your waiting time, know what you want from the radiograph before getting in line.

9.2.4 Identifying and Managing Hazards

The potential risks in the dental lab are multifaceted, necessitating a comprehensive approach to identify and mitigate these dangers:

- **Physical Hazards: Potential injuries can arise from equipment operation, excessive noise, fire hazards, and electrical issues. Precise equipment maintenance and use of protective gear like ear plugs and fireproof materials are crucial.**
- **Chemical Hazards: Handling of acids, methacrylate, and other chemical agents demands strict adherence to safety practices, including the use of fume extractors and protective clothing.**
- **Biological Hazards: Infection control is critical. Autoclave sterilization and chemical disinfectants effectively minimize biological risks.**
- **Ergonomic Hazards: Proper workstation design and use of ergonomic tools help prevent musculoskeletal issues. Workflows should be structured to reduce repetitive strain and improve efficiency and comfort.**

Control measures for these hazards involve systematic risk assessment and implementation of best-practice solutions tailored to specific risks.

9.2.5 Risk Management Procedures

The management of potential risks follows a structured approach:

- **Hazard Identification: Continuous monitoring and identification of possible risks within the lab environment is essential.**
- **Risk Assessment: Evaluating the severity and likelihood of risks helps prioritize mitigation efforts.**
- **Implementing Control Measures: Applying the hierarchy of control — from eliminating hazards to using PPE — ensures that risks are managed effectively.**

9.2.6 Training and Education

It is imperative that all lab personnel undergo comprehensive training that touches on various critical aspects, including:

- **Emergency Procedures: Training in basic life support and first aid ensures readiness to handle emergencies.**
- **Cross Infection Control: Adherence to stringent infection control practices minimizes the risk of disease transmission.**
- **Handling Hazardous Substances: Educating staff on the risks associated with chemicals and other hazardous materials promotes safe handling and storage.**

Work procedures in faculty of dentistry and dental university hospital

1. Ensuring laboratory readiness before each academic semester
2. Conducting an introductory lecture for new students at the beginning of the
3. Preparing Laboratories for Practical Sessions and Monitoring Progress
4. Attendance and absence monitoring in laboratories
5. Laboratories maintenance
7. Exam preparations
8. Preparing work progress reports for laboratories
9. Conducting annual inventory of laboratories
6. Hosting workshops

9.3 Oral and Maxillofacial Pathology Laboratory

9.3.1 Introduction:

King Abdulaziz University Dental Hospital (UDH) is aiming to provide a safe environment for education, research, and practice. This handbook is designed to be a template for laboratories to ensure a safe working environment.

9.3.2 Oral Pathology Laboratory Safety Procedures

*9.3.2.1 Laboratory Safety Agreement (**General**)*

1. Work carefully and cautiously in the laboratory, always using common sense and good judgment.
2. **Prohibitions:** Eating, drinking, and smoking in the lab are not allowed.
3. Dental students, residents, staff, and faculty are required to dress according to the standards established in the policy of University Dental Hospital (UDH)
4. Familiarize yourself with emergency exits and safety equipment.
5. Report all injuries, spills, breakage of glass or other items, unsafe conditions, and accidents of any kind, no matter how minor, to the supervisor of laboratory immediately.
6. Maintain cleanliness and hygiene in the lab.
7. Wash hands and the lab tables with the appropriate cleaning agents before and after every laboratory session.
8. Use gloves when handling biological specimens and change them when contaminated.
9. **Never** store food or beverages in refrigerators or freezers containing chemicals, microorganisms, or clinical specimens.

Each new pathologist, resident, or staff must receive a copy of the Pathology Laboratory Safety Procedures at the beginning of each year, read the policy, and **sign** the Laboratory Safety Agreement.

9.3.2.2 Good Housekeeping Practices

1. Keep work areas free of chemicals, dirty glassware, and contaminated articles.
2. Clean up spills immediately and properly, following established policies.
3. Store chemicals properly according to their labels and Safety Data Sheets (SDS).
4. Do not submit worksheets that have become contaminated, transfer results and data to new worksheets before submission. Note: All recorded results must be indelible.
5. Use the always provided personal protective equipment (PPE).
6. Read all labels and instructions carefully before use.
7. Label containers of reagents and solutions with the contents and appropriate warnings.
8. Be familiar with the properties and hazards of chemicals for safe handling and disposal.
9. Exercise caution when transferring chemicals from one container to another.
10. Do not operate new or unfamiliar equipment until you have received proper training and authorization.
11. All sharps, including coverslips and glass slides, should be discarded in designated sharps containers.
12. Hazardous waste can be collected by the Office of Environmental Health and Safety (OEHS) through a request submitted via Itmam.
13. All contaminated (non-disposable) clothing, towels, etc., must be placed in cardboard containers labeled "Hazardous Infectious Waste" and lined with a red bag.

9.3.2.3 Personal Protective Equipment (PPE)

1. Use appropriate PPE, including gloves, lab coats, and masks.
2. Remove all PPE before leaving the laboratory.

9.3.3 General Principles of Infection Control

9.3.3.1 Biosafety Levels: (Biosafety Level 2 (BSL-2))

1. Laboratory access is restricted during certain operations.
2. Use biosafety cabinets for procedures that may generate aerosols.

9.3.3.2 Decontamination Procedures

- **Environmental surfaces** such as walls, floors, and other surfaces are not associated with transmission of infections to patients.
- **Work surfaces** are cleaned and disinfected with Clorox bleach (freshly prepared 10% solution), at least once a day or after any spill of viable material.
- **Equipment**: Sterilize instruments and equipment according to established protocols.
- **Instruments** All cutting instruments, after use, are left soaking in Clorox bleach (freshly prepared 10% solution).
- **Spills** should be cleaned at once using freshly prepared Clorox bleach (10%).
- **Disinfectants** - **Sodium hypochlorite** (household bleach, 10%) prepared fresh daily is an inexpensive and effective germicide.

9.3.3.3 Waste Management

- **Biohazard Waste**: Dispose of biohazardous materials in designated containers.
- **Sharps Disposal**: Use **puncture-resistant containers for sharps disposal.**
- **Disposal of Tissue and contaminated items:** All **pathology tissue/specimens** are to be discarded into cardboard containers labelled "Hazardous Infectious Waste:

9.3.3.4 Infection Monitoring

- Monitor and report any incidents of infection or exposure.

9.3.3.5 Emergency Procedures

- Follow protocols for exposure to infectious materials.

1. Intact skin that has been contaminated with body substances or microbe bearing material must be washed immediately with soap and water.
Never expose yourself to biohazard material if you have a recent cut, open sore or ulcer on your hands, arms or face.

2. Percutaneous wounds should be bled, washed, painted with antiseptic and reported.
The exposed employee should immediately report to the Infection Control Department.

3. Exposures of the mucous membranes of the eyes, nose or mouth with infectious material should be flushed thoroughly with water at an eyewash station

All accidents should be reported to the Infection control department

9.3.3.6 Spill Handling Procedures:

- **When a Chemical Spill Occurs (such as Formalin):**
  - **Stop Work**: Immediately cease all work and notify colleagues.
  - **Wear Personal Protective Equipment (PPE)**: Put on gloves, safety goggles, and a lab coat before addressing the spill.
  - **Assess Spill Size**: Evaluate the size of the spill to determine appropriate response actions.
  - **Contain the Spill**: Use barriers or absorbent materials (such as sand or specialized absorbents) to contain the spill and prevent its spread.
  - **Clean the Affected Surface**:
    - Use appropriate cleaning agents for formalin, avoiding the use of water alone.
    - Gently wipe the affected area, ensuring disposal of absorbent materials in biohazard waste containers.

- **Ventilate the Area**: Open windows or use a fan to provide good ventilation in the affected area.
- **Document the Incident**: Record the incident, including the time, location, actions taken, and any potential health impacts.
- **Notify Management**: Inform management or the occupational safety department about the spill for further assessment

9.3.3.7 Training and Education

- **Regular Training**: Conduct training sessions on infection control and update staff on new practices and regulations.

*9.3.3.8 **Handling** of Oral Pathology and Microbiology Specimens*

1. Ensure specimens and accompanying request forms are properly filled.
2. Take a specimen container containing formalin from your assigned clinical area when available. (Care should be taken when collecting specimens in container to avoid contamination of the outside surface.)
3. Each specimen must be placed in a sturdy, leak-proof container with a secure lid to prevent leakage during transport. The container also must be labeled with a biohazard symbol.
4. If the outside of the container is visibly contaminated, it should be cleaned and disinfected or placed in a leak proof bag.
5. Submit your packed specimen either to your assigned clinical-area in-charge or to oral pathology laboratory.

9.3.4 Chemical Safety

9.3.4.1 Chemical Toxicity

1. The toxic potency of a chemical is defined by the relationship between the dose (the amount) of the chemical and the response that is produced in a biological system.
2. Other Factors Affecting Toxicity are rate of entry and route of exposure.

9.3.4.2 Hazardous Chemicals & Storage

1. Read labels and Safety Data Sheets (SDS) before use and review the appropriate Standard Operating Procedure.
2. Sore chemical based on class in safety cabinet.

9.3.4.3 Hazardous Waste Containers & Labels

Regulated hazardous waste must be labelled, collected and stored in approved containers.

9.3.5 Fire Safety

9.3.5.1 Fire Prevention

Any fire may be prevented by implementing safe laboratory practices as follows:

1. Do not use refrigerators for storage of flammables unless properly modified and labelled.
2. Avoid storing flammables in direct sunlight.
3. Ventilate areas where flammables are to be used.
4. Store flammable acids and bases separately.
5. Use proper disposal methods for flammables.
6. Do not use gasoline, alcohol, or other highly flammable volatile liquids for cleaning.

9.3.6 Electrical Safety

9.3.6.1 Introduction

Electrical equipment may be a source of fire, burns, or electrical shocks. Care must be taken to minimize electrical hazards in the laboratory, especially since so much electrical equipment is used.

9.3.6.2 Causes of Electrical Hazards

1. Spilled liquids in contact with instrument circuit boards.
2. Broken or damaged instrument components.
3. Faulty cords or wires (especially ground wires).
4. Improper repairs to electrical equipment.

9.3.6.2 Precautions

1. All electrical equipment should be periodically inspected.
2. Restrict the use of extension cords to only temporary or emergency use.
3. Immediately repair faulty cords or broken connectors.
4. Never overload electrical outlets or circuits.
5. Unplug electrical equipment before servicing
6. Use electrical equipment according to the manufacturer’s instruction

9.3.7 Mechanical Safety:

9.3.7.1 Instruments and equipment

Care must be taken when handling any equipment in the laboratory. staffs are responsible for being familiar with and following correct safety practices for all instruments and equipment used in the laboratory.

Microscope Handling

1. Microscopes must be carried upright, with one hand supporting the arm of the microscope and the other hand supporting the base.
2. Microscope must be positioned safely on the table, **NOT** near the edge.
3. The coarse adjustment must **NEVER** be used to focus a specimen when the 40x or oil immersion lens is in place.
4. All prepared microscope glass slides are to be returned to their appropriate slide trays; wet mount preparations are to be disposed of properly.

Hot Plates and Water Baths

1. The instructor will regulate the temperature of hot plates and water baths with a thermometer.
2. This equipment must be placed in a safe location.

Automatic Processors

When using these machines ensure that all requirements for personal protective equipment (PPE) are observed.

Microtomes

1. Microtomes are heavy pieces of equipment that must be lifted or moved with care and strictly according to the technician's instructions. The wheel of each microtome must be in the locked position whenever it is not in use for cutting sections.
2. Dispose of used disposable blades in a designated sharps container.

9.3.7.2 Sharp objects and broken glass

1. Pointed dissection probes, scalpels, razor blades, scissors, and microtome knives must be used with great care, and placed in a safe position when not in use.
2. Containers designated for the disposal of containers designated for broken glass are present in each laboratory.
3. All labs house a first aid kit containing antiseptics, bandages, Band-Aids and gloves to care for minor cuts.
4. Do not touch broken glass with bare hands. Dispose of ALL broken glass in the specific container marked for glass.
5. When cutting with a scalpel or other sharp instrument, forceps may be used to help hold the specimen.

9.3.7.3 Histology & cytology laboratory safety procedures for residents

1. Residents are only permitted to work on the preparation of histology slides (including infiltration and embedding, sectioning, and staining) during the scheduled class time and under the guidance of the instructor.
2. Residents should wear protective gloves when handling fixatives, embedding solutions, and staining solutions.
3. Only water is to be poured down the sinks; all chemical solutions should be collected in labelled waste containers.
4. Xylene must be used under the hood.
5. Any spills should be reported immediately to the laboratory technician.

6. All lids must be secured on the copulin jars except when transferring slides from one jar to the next.
7. All sharp instruments must be handled with extreme care and disposed of in designated sharps containers.
8. All scraps of paraffin must be swept from the floor and the microtome table using a brush.
9. During staining procedures, ensure that protective gowns, gloves, and safety glasses are worn. When 'bringing sections to water' or 'dehydrating, clearing, and mounting,' always ensure that the exhaust system is turned on.

Section 10: Medical Emergencies

Although rare, medical emergencies can occur at any time in the dental setting. A medical emergency may involve a patient, student, faculty member, staff member or visitor, and requires an immediate, organized response to stabilize the affected person, as some events can be life-threatening or cause serious complications if not managed promptly and appropriately. At King Abdulaziz University Faculty of Dentistry and University Dental Hospital (KAUDH), medical emergencies are managed by the Medical Emergency Response Team (MERT) — the on-duty Emergency Medical Technicians (EMTs) of the Medical Emergency & Screening Clinics Department — under a standardized, hospital-wide protocol for early recognition, immediate response, Cardiopulmonary Resuscitation (CPR) when indicated, stabilization, transfer and documentation.

The Medical Emergency & Screening Clinics Department functions in an operational capacity only: it responds to and manages medical emergencies and maintains emergency readiness. It does not deliver clinical teaching and does not intervene in the clinical treatment provided by the treating dental practitioner.

10.1 EMERGENCY POLICY

GENERAL POLICY

1- Accepted patient assessment techniques shall be utilized by the treating practitioner to identify and properly manage patients who present as a high medical risk.

2- In the event of a serious medical emergency, the approved medical emergency protocol shall be followed.

3- The clinician encountering the emergency is the First Responder and is responsible to initiate and manage care (Basic Life Support as indicated) until MERT arrives.

4- Minor incidents such as cuts, burns and chemical exposures requiring first aid shall be managed in accordance with the safety policies at King Abdulaziz University Hospital (KAUH).

5- Every medical emergency shall be documented on the **Medical Emergency Case Report (APP-ER-01-F1)**.

MEDICAL EMERGENCIES POLICY:

Pre-Treatment Patient Medical Risk Assessment

The following risk-assessment measures are performed by the **treating dental practitioner** prior to and throughout dental treatment. The Medical Emergency & Screening Clinics Department does not perform or supervise these clinical activities.

1- All patients of the Hospital must have a complete and thorough medical history, written clearly at the first visit and renewed every year. The medical history and list of medications must be reviewed with the patient at every visit and changes documented.

2- Vital signs (blood pressure, heart rate and respiratory rate) are recorded when clinically indicated, and always before surgical or invasive procedures, for patients classified ASA II or above, and whenever the medical history changes.

3- Consultation with the patient's physician must be obtained when indicated by the patient's medical history.

4- All prospective patients should be evaluated to determine the patient's physical ability to handle the stress of the planned treatment. Use of the stress-reduction protocol to decrease stress is advisable.

5- Determination of medical risk: the American Society of Anesthesiologists (ASA) classification is used to determine risk so that dental care can be provided with greater comfort and safety.

ASA I	Treated by students directly.
ASA II (including E and P modifiers)	Treated after clearance by the attending specialist.
ASA III	Treated after specialist clearance, with treatment modification and the stress-reduction protocol; complex cases are referred.
ASA IV and above	Referred. Elective treatment is postponed until the patient improves to at least ASA III. An exception is a dental emergency in a hospitalized patient; in this case a consultation with the oral and maxillofacial team is mandatory.

1- Appropriate local anesthesia agents and dosing, compatible with the patient's medical condition, shall be selected by the treating practitioner.

2- Appropriate selection of premedication regimens and postoperative medications related to the dental procedure is performed prior to treatment.

3- Avoidance of use of any medication, product or device to which the patient has an allergy is mandatory.

PERSONNEL PREPARATION:

The Medical Emergency Response Team (MERT)

- MERT responds to acute medical emergencies requiring immediate medical attention anywhere on the KAUDH campus.
- The Medical Emergency Clinics are located within the dental hospital and are equipped with a crash cart, oxygen cylinder, defibrillator/monitor and emergency supplies. There are 2 Medical Emergency Clinics serving the facility.

- MERT consists of the on-duty **Emergency Medical Technicians (EMTs)** stationed at the 2 Medical Emergency Clinics. Each EMT is licensed by the Saudi Commission for Health Specialties (SCFHS) and is current in BLS (and ACLS where applicable). The team operates as a **single team on a continuous-coverage model under consultant-physician supervision**; the on-duty EMT allocation is recorded in the departmental duty schedule. The most senior EMT on scene acts as MERT Lead and directs the response.
- MERT is reachable directly on the dedicated emergency hotline, extension **21000**.
- Within the approved KAUDH scope of practice and standing emergency orders, MERT is authorized to triage, perform BLS/ACLS, administer oxygen, operate the AED/manual defibrillator, establish IV access, administer high-alert emergency medications, monitor vital signs, and decide disposition (continue care, transfer or release).
- MERT maintains the readiness of crash carts, AEDs, oxygen cylinders and the Medical Emergency Clinics, and completes the Medical Emergency Case Report after every activation.

MERT Contact Number:

- The Medical Emergency Clinic / MERT station is located on the ground floor of building 11, next to the general dentists' clinics.
- The MERT emergency number is **21000**. All teaching, auxiliary staff and students should become familiar with this number.
- In case of a medical emergency in any location, this number is dialed and a brief summary of the event is given.

- The clear location (building, floor, clinical area and cubicle number) must be given to the MERT EMT.
- At least one EMT is present at the Medical Emergency Clinic **at all times (continuous coverage)**.

Personnel and Student Training:

Clinical certification (BLS/ACLS) and academic training are owned by the relevant academic and training bodies. The Department's role is limited to **operational orientation** on emergency activation, equipment location and use, and participation in drills.

1- All personnel are required to obtain certification at the level of Basic Life Support (BLS). Personnel include faculty, students, all dental assistants and auxiliary staff, and employees in clinical areas (lab technicians, receptionists).

2- Exceptions from the physical component of BLS are time-limited (maximum 12 months), approved by the Cardiopulmonary Resuscitation Unit, and always carry an alternate emergency role; the knowledge component and the duty to recognize an arrest and call MERT are never waived.

3- Student orientation: undergraduate students receive the emergency orientation once a year at the beginning of the academic year.

Management of Medical Emergencies at KAU Faculty of Dentistry — University Dental Hospital. Hands-on orientation delivered by the Medical Emergency & Screening Clinics Department (operational orientation only).

Orientation Objectives

- Review the basic action plan and emergency protocol at the University Dental Hospital.
- Demonstrate the contents of the emergency / crash cart, portable monitor, oxygen delivery devices, emergency drugs and glucometer.
- Practice the proper management of a medical emergency through a simulated scenario in the dental clinic.

Prerequisite

- Participant must present an original and valid BLS certificate.

Stations

- **Station A:** Basic action plan and medical emergency protocol.
- **Station B:** Emergency drugs — uses, routes and doses; emergency/crash cart contents, AED, glucometer.
- **Station C:** Portable monitor, vital signs, oxygen and delivery devices.
- **Station D:** Hands-on simulation (mock medical emergency).

Participants & Sign-up

- Limited group size per session per Department scheduling.
- Sign-up with the Medical Emergency & Screening Clinics Department. [Update session day/time, venue and contact owner — previous flyer named a specific course director.]

Emergency Practice Drills:

- Two mock Code Blue drills are conducted each year by the Medical Emergency & Screening Clinics Department, at unannounced times, and each is debriefed and documented. The response is evaluated for:
  - Taking charge of the emergency.
  - Adherence to the KAUDH MERT protocol.
  - MERT response time.
  - Any other mishaps or inadequacies that may occur.

Code Blue

KAUDH operates a Code Blue activation for cardiopulmonary arrest or imminent arrest.

- To activate, dial **21000** and clearly state: "CODE BLUE — [exact location, building, floor, clinic number]." The MERT EMT repeats back the location and dispatches the team.
- Announcement script (overhead/PA): the operator/MERT announces three consecutive times: **"Code Blue, Code Blue, Code Blue — [Building] — [Floor] — [Clinic Number]"**, repeated after 30 seconds if MERT has not yet acknowledged on-scene arrival.
- In the event of cardiac arrest or absence of any of the ABCs, Basic Life Support is started immediately, MERT responds, and the KAUH ambulance is contacted for transfer to the KAUH emergency department.

OFFICE PREPARATION:

Emergency and Crash Carts:

Medical emergency equipment across the hospital is managed to ensure continuous availability and operational readiness. The full standardized configuration and the every-shift / after-each-use checking, securing and restocking of crash carts are governed by **DPP-ER-02 (Crash Cart Checking & Restocking Policy)** and its **Daily Crash Cart Checklist (DPP-ER-02-F1)**. All staff and students should become familiar with the location of the nearest crash cart and AED.

Advanced Crash Carts (2)

Two Advanced Crash Carts are fully equipped with emergency medications, airway management equipment, defibrillation capability, oxygen delivery and Advanced Cardiac Life Support (ACLS) supplies, and are strategically located as follows:

Cart	Base Location	Coverage Area
Advanced Crash Cart 1	Building 12 — Second Floor	Building 12 (2nd), Building 11 (2nd), Building 14 (2nd), Building 15 (2nd)
Advanced Crash Cart 2	Building 11 — Ground Floor (Emergency Clinic)	Emergency Clinic; Building 15 — Ground Floor

Each Advanced Crash Cart is inspected **twice daily** (start of the morning and evening shifts): medication availability and expiry, cart-seal integrity, oxygen cylinder pressure, defibrillator functionality, suction, airway equipment and completeness of supplies — documented on the Daily Crash Cart Checklist.

Basic Crash Carts (6)

Six Basic Crash Carts are distributed throughout the clinical areas. Each contains essential emergency equipment but **no emergency medications**, providing immediate first-line

response until MERT arrives with advanced equipment and medications. Each cart includes, at a minimum:

- Oxygen cylinder.
- Bag-Valve-Mask (Ambu Bag).
- Patient monitor.
- Airway management supplies.
- Suction equipment (where applicable).
- Basic emergency supplies.

Basic Crash Carts are inspected **twice daily** (oxygen cylinder, Ambu Bag, monitor functionality, airway equipment and completeness of supplies), documented on the Daily Crash Cart Checklist.

Paramedic Emergency Bags (2)

MERT maintains two Paramedic Emergency Bags, each containing emergency medications, intravenous fluids, airway equipment and essential supplies required for rapid patient stabilization during emergency response. The bags accompany the responding paramedics during all medical emergency activations.

- Medical Emergency Room — Ground Floor, Building 11.
- Medical Emergency Room — Second Floor, Building 12.

Both bags are inspected **twice daily** (medication availability and expiry, IV fluids, airway equipment, oxygen accessories and overall readiness), documented on the **Daily Paramedic Emergency Bag Checklist**.

Zone First Aid Bags (≈26–27)

Approximately 26–27 Zone First Aid Bags are distributed throughout **non-clinical and support-service areas** — including laboratories, Central Sterilization Services (CSSD), storage areas, workshops and other designated high-risk locations — to provide immediate first aid for minor injuries and to support initial patient care until MERT arrives. They contain **no injectable or high-alert medications**.

- **Indicative contents**: sterile gauze and dressings; adhesive bandages and tape; roller and triangular bandages; gloves; antiseptic wipes/solution; instant cold pack; eye-wash; CPR face shield / pocket mask; burn dressing.
- **Inspection:** each bag undergoes a **quarterly inspection and inventory audit** verifying availability of required supplies, expiry dates, package integrity, and replacement of used or expired items.
- **Documentation:** results are documented in the **Quarterly Zone First Aid Bag Inventory Report**; deficiencies are corrected promptly to maintain continuous readiness. All inspection records are maintained by the Medical Emergency Department per the hospital's document-control and record-retention policy.

The standardized drawer layout (identical on every cart, governed by **DPP-ER-02**) is shown below; refer to DPP-ER-02 and the KAUH Pharmacy master medication list for the authoritative, itemized contents.

Location	Contents (summary — see DPP-ER-02)
Drawer 1	Medications — sealed, tamper-evident tray supplied by KAUH Pharmacy (high-alert emergency drugs).
Drawer 2	Airway & Breathing — OPA/NPA, BVM, ET tubes, laryngoscope set, suction catheters.
Drawer 3	Circulation — IV cannulae, tourniquets, syringes, gauze, pressure dressings.
Drawer 4	IV solutions and tubing.
Drawer 5	Special Procedures — chest decompression set, pediatric supplies (Broselow tape), OB kit if applicable.
Top of cart	Defibrillator / AED with integrated multiparameter monitor (ECG, NIBP, SpO_2, $EtCO_2$ where available); multi-function pads (adult & pediatric); ECG electrodes.
Side / back	Oxygen cylinder with regulator, portable suction unit, backboard, sharps container.

Emergency Equipment:

The following medical equipment is distributed throughout the school, located with each crash cart / emergency kit:

a. Portable oxygen supply (E-cylinder) and regulator.

b. Disposable oxygen masks and tubing (adult and pediatric; non-rebreather and BVM).

c. Adult and pediatric bag-valve-mask (BVM).

d. Defibrillator / AED with integrated multiparameter monitor (ECG, NIBP, SpO_2, end-tidal CO_2 where available); multi-function pads (adult & pediatric).

e. Portable suction unit; BP cuff, SpO_2 probe (adult & pediatric), thermometer.

f. A glucometer kit with in-date strips, distributed within the clinical areas.

Emergency Drugs:

High-alert emergency medications are supplied in pre-sealed, tamper-evident trays by the KAUH Pharmacy, which maintains the master crash-cart medication list and expiry log (see DPP-ER-02). Indicative first-line medications include:

a. Adrenaline (epinephrine) 1:1000 IM.

b. Atropine, amiodarone, lidocaine (ACLS set).

c. Naloxone.

d. Dextrose 50% injectable; oral glucose (honey/sugar).

e. Aspirin; glyceryl trinitrate (GTN) sublingual.

f. Salbutamol (inhaler/nebulizer); ipratropium.

g. Hydrocortisone; antihistamine (chlorphenamine).

Charting / Records:

- Every medical emergency is documented on the **Medical Emergency Case Report (APP-ER-01-F1)**: patient/affected-person details, calling and arrival times, vital signs, interventions, medications, diagnosis and disposition. CPR team-role assignment is documented for every activation.
- Documentation of all medical emergency drills and review of outcomes is performed periodically; a copy of the mock-drill report is sent to the Department and the Quality & Development Department outlining deficiencies and areas for improvement.

TYPES OF MEDICAL EMERGENCIES

The following are examples of medical emergencies that require management by MERT until the patient is treated, stabilized or further help arrives (KAUH EMS):

- Syncope (fainting) — due to fear, exhaustion, low blood sugar or other causes.
- Dyspnea (shortness of breath) / asthma / bronchospasm.
- Chest pain / suspected acute coronary syndrome (ACS).
- Suspected stroke (FAST positive).
- Seizure / epileptic fits.
- Anaphylaxis and other allergic reactions.
- Hypoglycaemia.
- Cardiac arrest.
- Other injuries, e.g. cuts, burns or acute bleeding.

Conditions not Considered Medical Emergencies

- As a general rule, if the patient is responsive, conscious, able to talk and has stable vital signs, he/she is referred to his/her physician or the nearest emergency department.
- The Medical Emergency Clinics and MERT are not equipped to manage chronic medical conditions such as an isolated elevated blood glucose level or blood pressure, headache or abdominal pain, which are not an immediate threat to life nor likely to cause immediate complications.
- Chronic diseases that require urgent — but not emergent — care should be referred to the patient's physician or to the emergency department. In these cases, the patient is instructed to go to the nearest ED and the EMS system is not contacted.

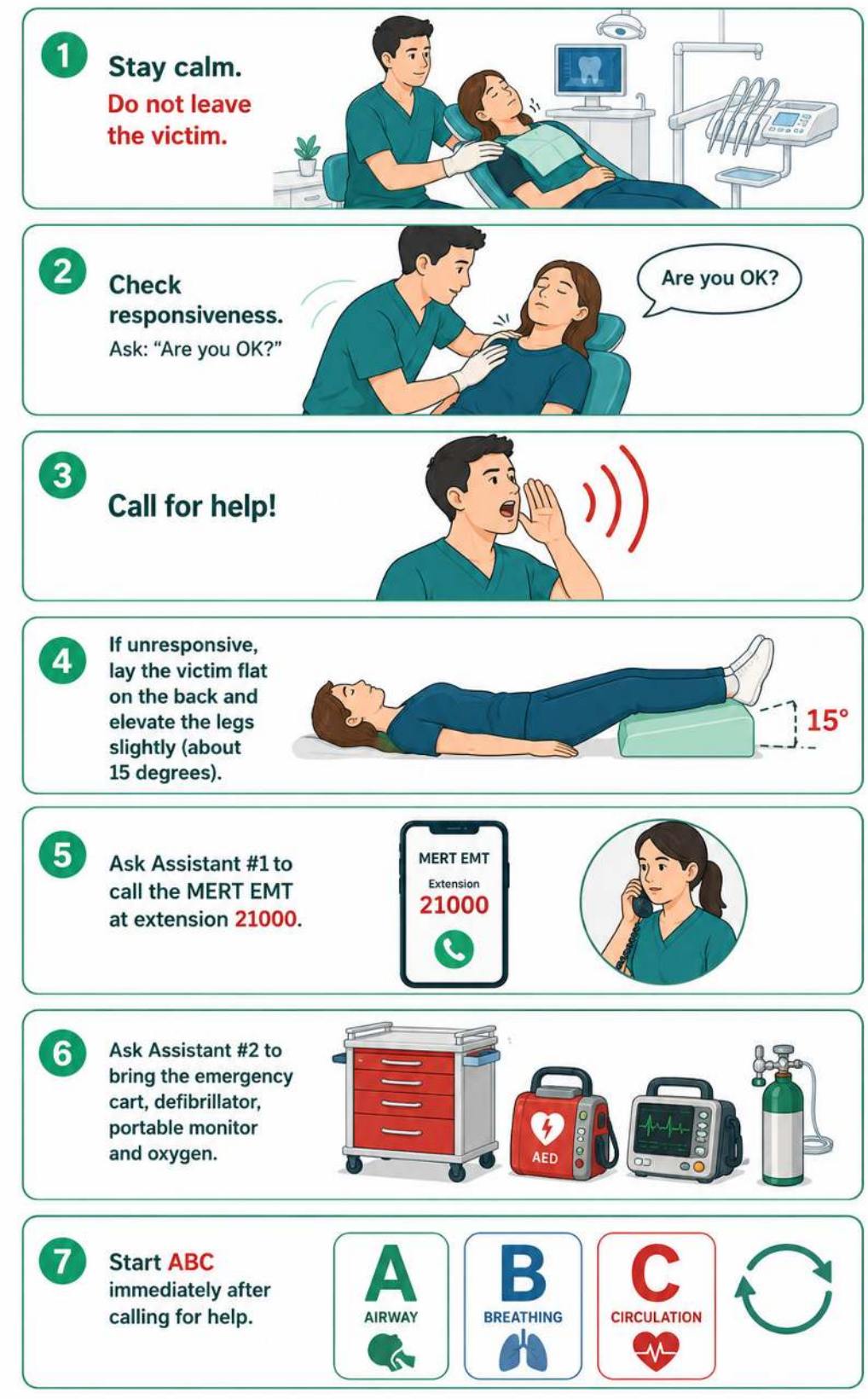
2- EMERGENCY PROTOCOL

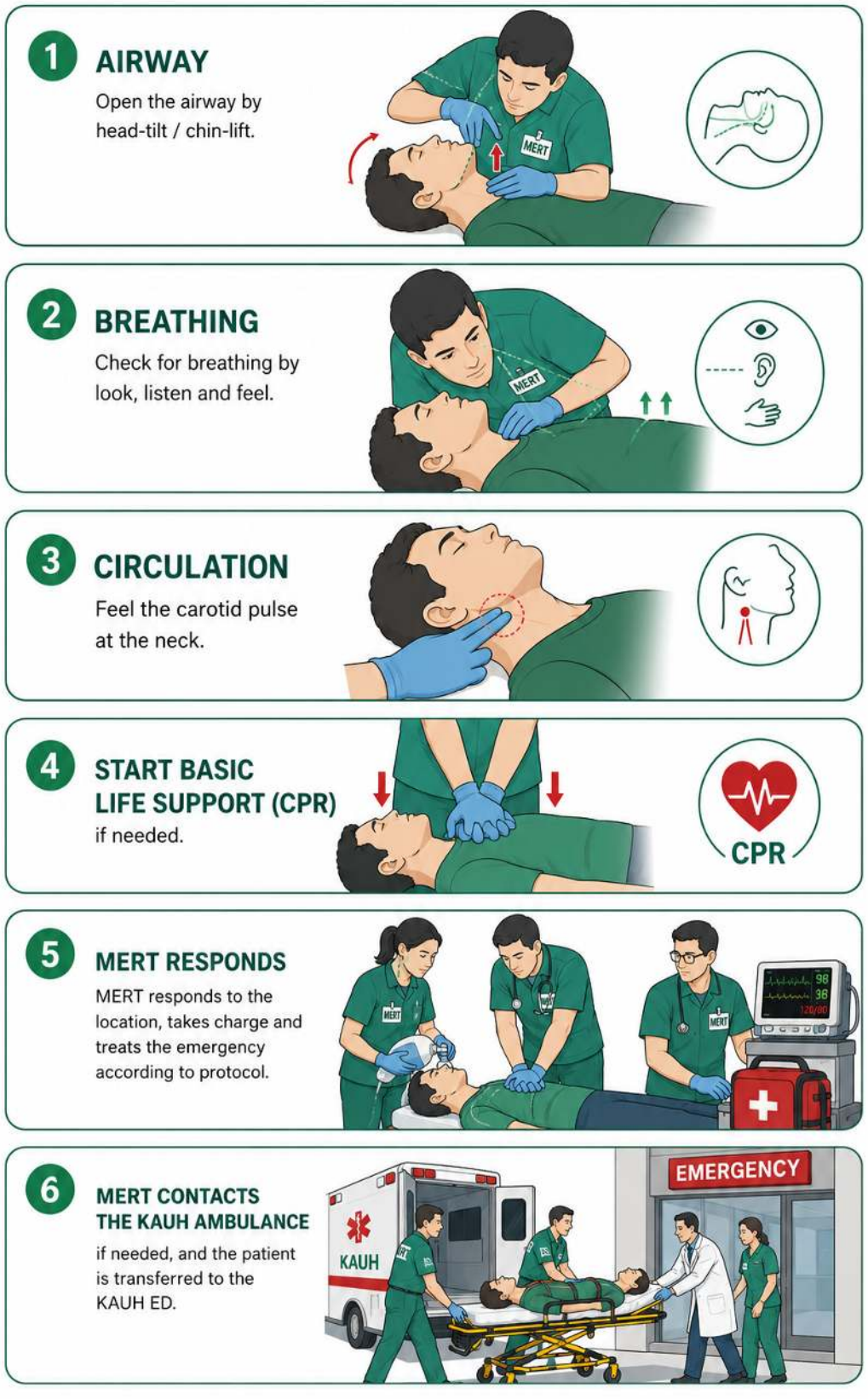
IN CASE OF AN EMERGENCY IN THE DENTAL SCHOOL:

The faculty staff member responsible for the cubicle (the site of the emergency) is the first to respond and take charge of the emergency until MERT arrives. The student and the dental assistant in the cubicle will also assist the faculty member until MERT arrives.

Medical Emergency Protocol at KAUDH Clinics

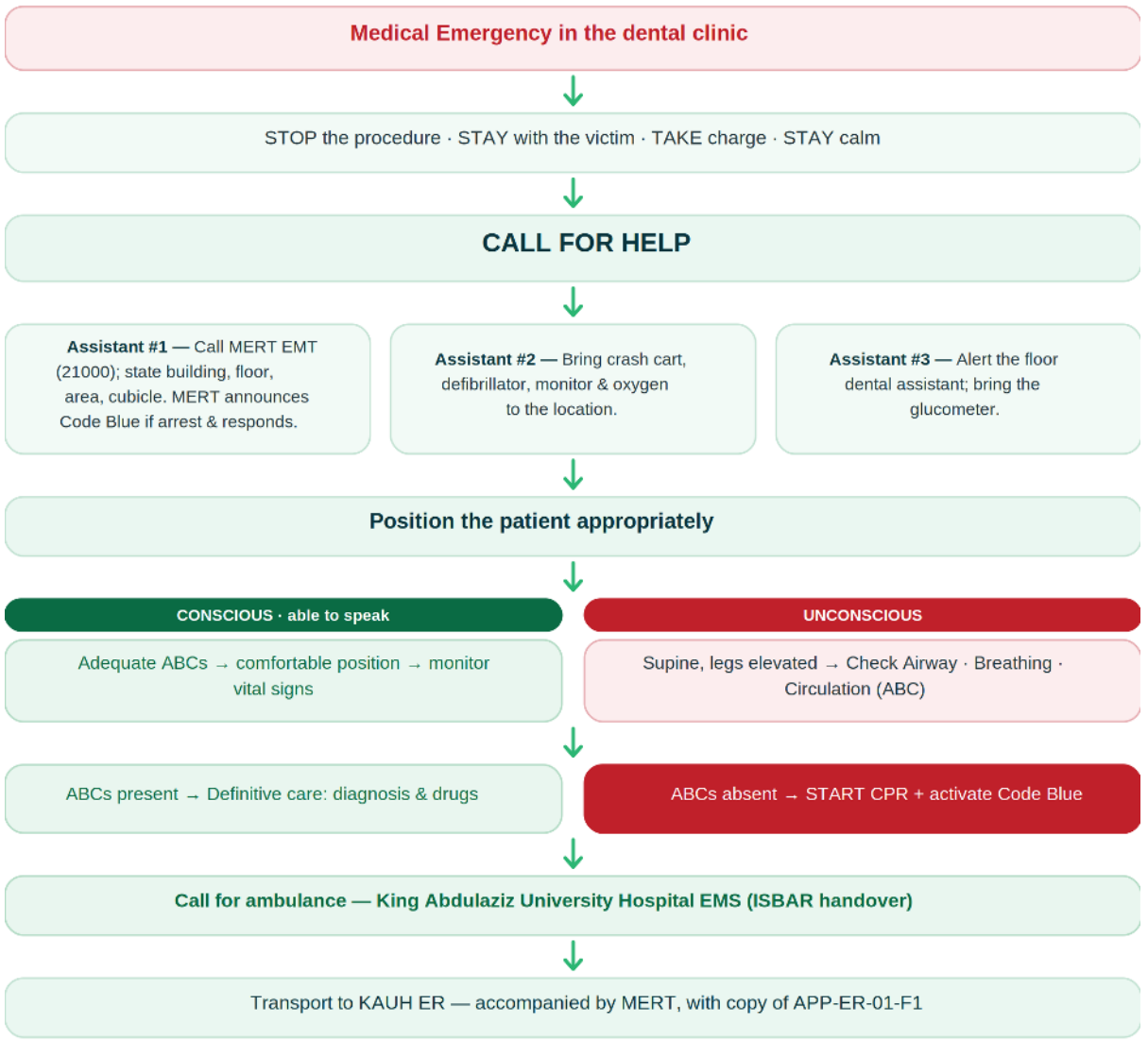
In case of a medical emergency in the dental clinic


1
Stay calm.
Do not leave the victim.
2
Check responsiveness.
Ask: "Are you OK?"
Are you OK?
3
Call for help!
4
If unresponsive, lay the victim flat on the back and elevate the legs slightly (about 15 degrees).
15°
5
Ask Assistant #1 to call the MERT EMT at extension 21000.
MERT EMT
Extension
21000
6
Ask Assistant #2 to bring the emergency cart, defibrillator, portable monitor and oxygen.
AED
7
Start ABC immediately after calling for help.
A
AIRWAY
B
BREATHING
C
CIRCULATION


1
AIRWAY
Open the airway by head-tilt / chin-lift.
MERT
2
BREATHING
Check for breathing by look, listen and feel.
MERT
3
CIRCULATION
Feel the carotid pulse at the neck.
4
START BASIC LIFE SUPPORT (CPR)
if needed.
CPR
5
MERT RESPONDS
MERT responds to the location, takes charge and treats the emergency according to protocol.
MERT
MERT
6
MERT CONTACTS THE KAUH AMBULANCE
if needed, and the patient is transferred to the KAUH ED.
KAUH
EMERGENCY

Medical Emergency Protocol for Healthcare Providers

Follow the flow from top to bottom; at each decision, take the matching branch.



WHEN THE MEDICAL EMERGENCY TEAM ARRIVES:

1. Upon receiving the call, the MERT EMT announces the emergency (Code Blue if arrest) and dispatches the team.
2. MERT EMT(s) respond immediately to the location of the medical emergency.
3. Students wait for the team at the main stairway and elevators to direct them to the emergency site.
4. One person gives MERT a quick ISBAR-style summary of the events.

5. The MERT Lead (senior on-scene EMT) assesses the emergency, reviews the signs and symptoms, vital signs and ABCs.
6. Supportive measures are applied as needed.
7. Diagnosis and definitive care are provided per standing emergency orders and ACLS/PALS algorithms.
8. The MERT Lead determines the disposition of the patient (continue care, transfer or release).
9. King Abdulaziz University Hospital ambulance (KAUH EMS) is contacted in the event the patient requires further care at the hospital.

CPR Team Roles

During an active CPR event, the following roles are assigned and announced explicitly by the MERT Lead, and documented on the Medical Emergency Case Report (APP-ER-01-F1):

Role	Held By	Specific CPR Task	Illustration
Team Leader	Senior on-scene EMT (MERT Lead)	Directs resuscitation; assigns roles; confirms arrest rhythm/condition; makes airway/drug decisions; communicates with KAUH EMS; determines patient disposition.	
Compressions	2nd MERT EMT	Performs high-quality CPR (depth ≥ 5 cm, rate 100–120/min, full recoil); rotates every 2 minutes or earlier if fatigued.	
Airway / Ventilation	3rd MERT EMT	Opens airway; provides BVM ventilation and oxygen; confirms chest rise; supports advanced airway when ordered.	
Defibrillator / Monitor + Medications / IV	4th MERT EMT	Operates AED/manual defibrillator and monitor; attaches pads; performs rhythm analysis every 2 min; delivers shocks when indicated; establishes IV/IO access; prepares/administers ACLS drugs per Team Leader orders.	
Documentation / Timer + Family / Logistics Liaison	First Responder (any DHCW / admin staff)	Records times, shocks, vitals, medications, interventions and outcomes on APP-ER-01-F1; announces 2-minute intervals; coordinates family updates and transfer logistics.	

If fewer than 5 responders are available, the MERT Lead may combine roles temporarily while maintaining high-quality compressions, airway/ventilation, defibrillation, documentation, and transfer coordination.

Response Time Targets

Stage	Target (from call received)
First MERT EMT on scene with crash cart / AED	**≤ 3 minutes**
Full MERT (≥ 2 EMTs) on scene	**≤ 5 minutes**
EMS contact for transfer	**≤ 10 minutes from decision to transfer**

HOW TO CONTACT KAUH AMBULANCE

MERT (led by the senior on-scene EMT) decides transfer based on clinical instability or need for higher-level care, contacts KAUH EMS using the **ISBAR** format, stabilizes the patient (airway secured, IV access, oxygen and continuous monitoring), informs the patient/family, and provides a verbal and written ISBAR handover with a copy of the Medical Emergency Case Report.

IN CASE OF A MEDICAL EMERGENCY

KEEP CALM AND CALL 21000

State your clinical area, floor and cubicle #

APPENDIX I

https://forms.office.com/r/TXqNgp9NbS

APPENDIX II

KING ABDULAZIZ UNIVERSITY HOSPITAL
CRASHCART ARRANGEMENT FORMAT

Attachment #2a

THREE DRAWER CRASH CART

TOP OF THE CRASHCART: MEDICATION TRAY / DEFIBRILLATOR / OXYGEN / SUCTION / AMBU BAGS (Adult, Pedia, Neonate)/ SUCTION TUBE / YANKAUER/SUCTION CATHETER #12/CLIP BOARD

FIRST DRAWER: ITEMS FOR INJECTIONS / ECG ITEMS

1 cc, 3cc syringe (6 each)	5 cc syringe (6 pieces)	10 cc syringe (6 pieces)	20 cc syringe (6 pieces)	Needles #18, 20,22, 23, 25 (6 each)
50, 60 cc syringe (2 pieces each) 2 kidney dishes (for used medications and syringes) Electrode gel (1 piece)				
Alcohol swabs (20 pairs) ECG roll (1 piece) ECG electrodes Adult, Pedia (9 each)	H_2O for injection (10 pieces)	Sterile NaCl (10 pieces)	CBC, Chem, PT, PTT, serology blood tubes (2 each) ABG kit 2 pcs	Extension tube (2 pieces) Heplock 3-way (3 pieces) Stop cock (3 pieces)

SECOND DRAWER: CANNULATION ITEMS

Adhesive Tape (1 piece)	Razors, scalpel blades (2 each)	Spinal needle #18, 20 (2 each)	Sterile gauze, cotton (1 packet each)	Gauze bandage (1 piece)
Intraosseous cannula #15 and #18 – 1 each				
Tourniquet (1 piece) Tegaderm (10 pieces) Antiseptic solution (5 pieces)	IV cannula #14, #16 (3 each)	IV cannula #18, #20 (3 each)	IV cannula #22, 24, 26 (3 each)	Butterfly needle #21, 23, 25 (2 each)

THIRD DRAWER: INTUBATION ITEMS

ET tubes (pediatric #2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 5.5) 2 pieces each Stylet pedia (2 pieces)		
Torch (1 piece), Scissor (1 piece) Magill forceps adult & pedia (1 each) Artery forceps – adult, pedia (1 each)	Face mask adult, pedia, neonate (1 each)	
Adhesive tape (1 piece) Gauze bandage (1 piece) 10 cc syringe (1 piece) Lubricant jelly (1 piece)	Airways adult, pedia OPA#00, 1, 2, 3, 4 (1 each) NPA 6 mm, 7mm (1 each) Tongue depressor (2 pcs) stethoscope adult, pedia (1 each)	ET tubes adult #6, 6.5, 7.0, 7.5, 8.0, 8.5 (2 each) Stylet adult (2 pieces)
Laryngoscope with blades For Adult Units: Adult 2,3,4 (2 sets) Pedia 00, 0, 1, 2 (1 set) For Pedia Units: Adult 2,3,4 (1 set) Pedia 00, 0, 1, 2 (2 set) Extra batteries, extra bulbs	Capnograph adult/pedia (2 each) LMA #1, 2, 3, 4 (1 each)	

BOTTOM OF CART:

Yankauer, Suction tube and Connector, Suction catheter sizes # 6, 8, 10, 12, 14 (2 each) O_2 mask adult & pedia (1 each), NG tubes #5, 8, 10, 12, 14 (1 each) Non rebreathing mask – adult, pedia (1 each)	IV set (2 pieces), burette (2 pieces), blood set (1 piece) Infusion pump sets (2 pieces) 60 cc catheter tip syringe (1 piece)
Defibrillator accessories Multi Function defib pad (TCP) adult, pedia (1 each) Clinical Sterile sheet, sterile gloves #6, 6.5, 7, 7.5, 8.0 (2 each)	

RIGHT SIDE OF THE CART

Medium size gloves (1 box)
Face mask (1 box), goggles (1 pc.)
Sharp container (1 piece)

LEFT SIDE OF THE CART

Dextrose 5% 500 ml (1 bottle)
Normal saline 500 cc (2 bottle)

Starch 500 cc (1 bottle)
Ringer Lactate 500 cc (1 bottle)

Normal saline 0.45% 500 cc (1 bottle)
Dextrose 10% 500 cc (1 bottle)

NB:
Adult Unit: Laryngoscope – 2 sets adult; 1 set pedia
ETT – 2 pieces adult; 1 piece pedia

Pedia/ Neo. Unit: Laryngoscope –1 set adult; 2 sets pedia
ETT – 1 piece adult; 2 pieces pedia

APPENDIX III

https://forms.gle/yyVY2MJud9dYCESa9

Section 11: Emergency and Disaster Management Policies & Procedures

11.1 Goals

The goal is to provide a safe and secure environment at KAUDH for students, employees, patients, and visitors to protect their lives and wellbeing.

11.2 Emergency and Disaster Committee

The Role of the Emergency and Disaster Committee is as follows:

A) Routinely

1- Approve and review the Faculty Emergency and Disaster Management Plan (EDMP) annually.
2- Supervise the EDMP.
3- Approve EDMP budget.

B) During an Emergency/Disaster

1- Call for the EDMPG urgent meeting.
2- Evaluate and decide the disaster level.
3- Report the disaster to the University Emergency and Disaster Operation Administration (EDOA).
4- Report the disaster outcome to the public in coordination with university authorities. 5- Setup the Operations' room at the faculty level in the deanship office.
6- Manage the disaster situation on continuous basis.

C) After an Emergency/Disaster

1- Announce the end of the disaster situation.
2- Submit the final report to the University EDOA.
3- Request financial support from the University.
4- Allocate budget to all KAUFD units affected by the disaster.

11.3 Roles and Responsibilities of all KAUDH Personnel (Students, and Staff)

A) Routinely

1. Familiarize yourself with the following:
    - General safety principles and procedures.
    - Emergency and disaster procedures.
    - Emergency exits and location of the nearest fire extinguishers.
    - Hazards in your department.
    - Nearest assembly points.
    - Shelter location on campus.
2. Participate in the following:
    - Training programs.
    - Drills.
    - Volunteer programs.
3. Know the emergency contact numbers.

B) During an Emergency/Disaster:

1. Do not panic, be calm and quiet.
2. Follow the general safety procedures.
3. Follow the evacuation procedures.

C) After an Emergency/Disaster:

1. Report any losses or damages.
2. Any feedback.

11.3.1 Training Program

The training program concerning emergency and disaster preparedness shall cover all personnel and include Top-table fire drill which should be conducted quarterly. Full drill should be conducted in every department and unit annually.
Internal Emergency Fire Drills - Schedules and Frequency
All departments and units should submit their simulated fire drill schedule and reports to the Faculty Health and Safety Coordinator at the beginning of the year and simulated fire drill should be held quarterly. Unscheduled full fire drill should be held at least once annually for each of the departments and units.

11.3.2 Assessment of Drills

1. All drills at KAUFD departments and units should be thoroughly documented and critiqued. Identified deficiencies should be promptly addressed by health and safety officer.
2. The simulated and the full fire drills evaluation forms should be completed by the safety officer and returned to the Health and Safety Coordinator to facilitate the compilation of statistics of the number of drills performed. These statistics should be forwarded to the Chairman of EDMPG at the end of the year.
3. A critique meeting must be held immediately after the completion of full fire drill between EDMPG Chairman, and the head of departments and units and a report will be generated.

11.4 Emergency Response Team

Each member of the response team should be available to respond immediately to the emergency site. The response team including the following:

A. Medical Emergency Response Team (MERT, section 8)
B. Health and Safety Officer

- Monitor fire and medical emergency drills using forms provided in next Section (forms A-D).
- Report to Health and Safety Coordinator.
- Consider questions, suggestions, and recommendations concerning fire prevention, potential hazards, etc. from any supervisor conducting critique meetings because of a fire drill.
- Ensures to train all employees regarding internal emergency preparedness is done. The training should be conducted during new hire orientation, and annual refresher training, and drills.
- Prepare incidents reports to forward it to the Health and Safety Coordinator.
- Each safety officer will be provided with personal pager for easy accessibility.

C. Security

- Control traffic and crowdedness during any emergency.
- Communicate with the University safety and security administration for mutual aid such as extra security staff.

D. Switchboard

- Receive emergency calls from staff and student.
- Inform the Emergency Team Response and announce the proper code using the faculty overhead paging system (codes used by KAUFD are illustrated in the next section).
- Call Emergency and Disaster Administration at production when necessary.

11.5 TYPES OF HAZARDS

The critical incidents that could occur on the KAUDH are:

A. Isolated critical incidents.
B. Major critical incidents.
C. Disaster.

11.5.1 Isolated Critical Incidents

An Isolated Critical Incident is defined as an occurrence impacting only a small part of KAUDH community or physical property, which does not affect the overall functioning capacity of the faculty. Examples would include:

- Death or illness of a university community member.
- Small, localized fire.
- Small, localized hazardous material spill.
- Isolated power outage.

Even though an isolated incident may be considered small or insignificant, it is by no means to be taken carelessly. Immediate attention must be given to mitigate the situation as quickly as possible. Upon the occurrence of an isolated critical incident, the priority is the safety of all individuals involved. This includes the safety of individuals directly affected by the incident and the safety of individuals within the area.

11.5.2 Major critical incidents

A Major Critical Incident is defined as a serious emergency, which completely disrupts one or more operations. Examples include the following:

- Major fire
- Civil disturbance
- Widespread power outage
- Public Health and Safety issues (i.e., water outage).

Outside emergency services, as well as major efforts from various university departments, will be required. Major policy and procedural considerations and decisions will usually be required.

11.5.3 Disaster

A Disaster is defined as a university or Citywide, or more extensive, emergency which seriously impairs or halts the operations of university.

11.6 Emergency Procedures - General Guidelines

1. Remain calm.
2. Never use an elevator in a fire emergency.
3. Treat every alarm as an actual emergency.
4. In a fire emergency, the first choice is evacuation.
5. Leave all material in room/class to avoid wasting time.
6. Follow signs to exits.
7. Be prepared to abandon electric chair, if applicable.
8. Avoid smoke filled stairwells.
9. If volunteers would not be able to assist safely, opt to wait in a safe location for emergency personnel.
10. For fire emergencies, never re-enter a building until permitted by emergency personnel.

11.7 Fire or explosion Small Fires

1. Activate the nearest fire alarm and take appropriate precautions to assure personal safety.
2. Extinguish the fire if it is small.
3. If incident occurred during working hours, call 20011 from a safe area.
4. If incident occurred during off-working hours, call **50999** from a safe area or 69**50999**.
5. Be sure to stay on the phone until released by the emergency operator, if possible.

11.8 Big Fires / Explosion

1. Take appropriate precautions to assure personal safety such as securing working area or closing the door, etc.
2. Activate the nearest fire alarm.
3. Call (**29500**) from a safe area.
4. Be sure to stay on the phone until released by the emergency operator, if possible.
5. Evacuate the building using the nearest exit (do not use elevators. do not panic). If persons with disabilities cannot safely evacuate the building, assist them to the nearest stairwell. Assembly area for buildings 10, 11, 12, 14 and 15 is illustrated as per attached floor plan.
6. Once outside, move to a clear area and follow instructions (keep streets and walkways clear for emergency cars and members).
7. Do not return or enter an evacuated building unless authorized.

11.9 Natural Disaster

Severe windstorm or severe weather

Employees and students are expected to take the following action when receive notification warning from the University:

1. Move to the lowest level in an interior entry of the building as quickly as possible.
2. Stay away from windows and areas with a large area of glass.
3. Avoid auditoriums, and other large rooms.
4. If persons with disabilities cannot safely move to the lowest level, assist them to an interior entry away from windows and areas with a large area of glass.
5. Protect head and face. Get under a table or other structure.
6. Take a battery-powered radio with you to monitor news about the situation, if possible.
7. Stay in a safe area of the building until the warning is officially over.
8. Informed EDOA, if weather causes significant property damage, injury, and/or loss of life.

11.10 Heavy Rains and Runoffs/Flood.

Warnings will be initiated by EDOA. During heavy rains, do the following:

1. Pay attention to the warnings.
2. Follow directions carefully.
3. Evacuate to higher ground.
4. Do not walk or drive through flood waters.

11.12 During runoff/flood:

1. Evacuate when rainfall is heavy enough to cause runoff.
2. Turn off utilities if the area is likely to be flooded and prepare to evacuate when flooding is occurring or will occur soon.
3. Evacuate immediately to higher ground when flash flooding is occurring or imminent.
4. Stay away from storm drains while driving.

11.13 EMERGENCY CLOSING

To minimize confusion about appropriate authority to close components of KAUDH for emergency reasons (i.e. weather-related events), all students, and trainee should be aware of the following policy and procedures:

1. The emergency closing decision be made only by the Dean, Vice Deans for Academic Affairs, and the Vice Dean for Clinical Affairs
2. General announcements from any other office do not constitute authorization for any unit to close or any employee to leave work.
3. KAUDH's Vice President or designee in consultation with the Dean will decide when circumstances are such that all units of KAUDH will remain open and all students and employees will maintain usual schedules or that only essential services will be conducted.
4. Emergency closings will be announced and communicated to all units by members of the administration.

KAUDH Code of Emergency and Disaster

الرمز الأزرق CODE BLUE	توقف التنفس والقلب CARDIORESPIRATORY ARREST
الرمز الأحمر CODE RED	حريق FIRE
الرمز الوردي CODE PINK	اختطاف الرضع والأطفال INFANT/CHILED ABDUCTION
الرمز البني CODE BROWN	عطل طارئ في المرافق الحيوية EMERGENCY UTILITY FAILURE
الرمز الأسود CODE BLACK	التهديد بالقنابل BOMB THREAT
الرمز الأبيض CODE WHITE	السلوك العدواني COMBATIVE ABUSE
الرمز الرمادي CODE GREY	التقلبات المناخية SEVERE WEATHER
الرمز الفضي CODE SILVER	هجوم مسلح ACTIVE SHOOTER-KNIFE ATTACKER
الرمز البرتقالي CODE ORANGE	تسرب كيميائي /بيولوجي/إشعاعي RADIOLOGICAL/BIOLOGICAL CHEMICAL SPILL
الإخـــــلاء HOSPITAL EVACUATION	وحدة أو قسم في المستشفى HOSPITAL UNIT OR DEPARTMENT
الرمز الأصفر CODE YELLOW	كارثة خارجية EXTERNAL DISASTER
انتهاء الحدث ALL CLEAR	انتهاء الكارثة END OF DISASTER

Emergency number: 50999

UDH
مستشفى الأسنان الجامعي
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