Prepared by

Dr. Sulieman Al-Johany  
*Director of Clinics, DUC*

Dr. Naif Bin Dayel  
*Assistant Director, DUC*

Mr. Nestor Santiago  
*Chief, DASD*

Mr. Alex Tapec  
*Chief, RARD*

Mr. Mohammed Saeed  
*Head, Radiology Division*

Mr. Edgardo del Rio  
*Head, CSSD*

Dr. Altaf Shah  
*Lecturer, Al-Kharj Dental College  
(Medical Emergencies Chapter)*

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KING SAUD UNIVERSITY COLLEGE OF DENTISTRY (KSUCD)

As the first university-based dental training institution in the Arabian Gulf, the College of Dentistry of King Saud University is committed to providing high quality, comprehensive oral health care and succeeded tremendously in the advanced training of male and female dentists who are now providing optimal dental care and general health to the society of Kingdom of Saudi Arabia through commitment to the highest standards of academics, educational, research, patient care and service program.

Vision

To be a College of regional leadership and international excellence in the production and use of the dental knowledge.

Mission

To develop competent dental professionals and active contributors to scientific research and community service, through acquisition, dissemination and use of oral health knowledge, appropriate applications of technology, and building domestic and international partnerships.
Core Values

1. Professionalism - set of internal values that drive towards the excellence in commitment to high quality service, precision, ingenuity and mastery of work.
2. Team Work - obligation of working with the soul of an integrated team for achieving a common vision.
3. Honesty - openness, integrity, credibility, and transparency along with the exclusion of lying, cheating and stealing.
4. Responsibility - accountability for all decisions before officials and beneficiaries.
5. Lifelong learning - never stop learning through continuous efforts, building own skills and knowledge regardless of age.
6. Justice and fairness - giving people what they deserve, enforcing the rights of individuals and equality.
7. Discipline - commitment of adherence to rules and regulations and to the respect of others.

Strategic Objectives

1. Strengthening the research ranking of the College
2. Best faculty and employees
3. Competitive graduates locally and globally
4. Excellence in patient and community services
5. Building bridges; local, regional and global communications
6. Strengthening and diversifying financial resources
7. Optimal infrastructures using smart technologies in both divisions of the College
DIRECTORATE OF CLINICS VISION AND MISSION

Vision

To be a leading academic dental clinic that meets the best institutional and professional standards in student’s education, training and patient care.

Mission

- To provide state of the art equipments and materials required for efficient and effective students' clinical training.
- To provide the university staff and community with high quality dental care.
- To support and facilitate performing dental research within the clinics.

TERMINOLOGY

KSUCD King Saud University College of Dentistry
DUC Darriyah University Campus
MUC Malaz University Campus
KKUH King Khalid University Hospital
KAUH King Abdulaziz University Hospital
USC University Staff Clinics in the College
Patient Any individual who comes to the KSUCD seeking dental treatment
Faculty Teachers with different ranks in the KSUCD involved in clinical teaching and/ or patient treatment
Students Undergraduate, postgraduate and residents who provide dental treatment in the College
Staff All the auxiliary workers in the clinic who are involved in providing the dental services in the college.
Dentist/Clinician Student, postgraduate, residents, clinicians and faculty member who provide dental treatment to patients in the college

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TREATMENT SUPERVISION

Consistent with its mission and goals, the College of Dentistry is committed to providing high quality, comprehensive oral health care.

All treatment rendered in the student clinics is performed under the direct supervision of experienced faculty who ensures that every aspect of patient treatment meets professional standards of care. This close supervision provides patient with the best opportunity for quality care.

A faculty preceptor’s permission is required to initiate a clinical procedure on a patient. A faculty preceptor must be present in the clinic until all work is completed and the patient has been dismissed from the clinic.

Students must comply with regular clinic hours at all times to allow for proper faculty preceptor supervision.

PATIENT INFORMATION AND TREATMENT POLICY

A patient information packet, explaining College of Dentistry clinic policies regarding patient rights and responsibilities as well as the treatment policies of the College, will be provided to each patient at their initial screening appointment. The information is also available on the College website. Faculty and student providers should be familiar with the information provided and ensure that their patients have read and understand the information.
**DENTAL ETHICS IN CLINICAL PRACTICE**

**Introduction**

The King Saud University College of Dentistry (KSUCD) calls upon all students, faculty members, and staff to follow high ethical standards which have the benefits of the patient as their primary goal. The privilege of being a dentist comes with a responsibility to society and to fellow members of the profession to conduct one's professional activities in a highly ethical manner. The dentist–patient relationship is the cornerstone of dental ethics. Faculty, students and staff are expected to adhere closely to dental ethics published in the College’s Dental Ethics Manual and the Student Code of Conduct.

**Respect and Equal Treatment**

The dental treatment in KSUCD is provided without discrimination based on patient’s gender, sexual, racial, religious, or ethnic characteristic. Service to the public includes the delivery of quality, component, and timely care within the bounds of the clinical circumstances presented by the patient.

**Professional Esteem**

While serving the public, students, faculty, and staff have the obligation to act in a manner that maintains or elevate the esteem of the profession. It is unethical for a dentist to render, or cause to be rendered, substandard.

**Informed Consent**

Fully informed consent is essential to the ethical practice of dentistry and reflects the patient’s right of self-decision. A clinician (student or faculty) must get valid consent before starting treatment or physical investigation, or providing personal care, for a patient. Clinician must provide all the information patients need to make their decisions. This involve explaining complex dental diagnosis, prognoses and treatment regimes in simple language, confirming or correcting information that the patients may have obtained elsewhere (e.g., from another health practitioner, magazines or the internet), ensuring that patients understand the treatment options (including the option of no treatment) advantages and disadvantages of each, answering any questions they may have, and understanding whatever decision the patient has reached and, if possible, the reasons for it.
Any competent mature adult person may fully consent to treatment. A person is considered competent if he/she has sufficient understanding and capacity to make and communicate reasonable decisions. A legally appointed guardian may consent to the treatment for an incompetent adult.

A parent or legally appointed guardian must consent to the treatment for young children and mentally disabled adults. Parents or legal guardians have a right to an explanation regarding the options for behavioral management of children, and are responsible to ask for additional information if they do not understand explanations. Siblings, friends, or any person other than a parent or legal guardian cannot provide consent.

No patient will be treated in KSUCD clinics without signing the Patient Consent and Agreement form.

Confidentiality

Dentists are obliged to safeguard the confidentiality of patient records. Dentists shall maintain patient records in a manner consistent with the protection of the welfare of the patient. Upon request of a patient or another dental practitioner, dentists shall provide any information in accordance with applicable law that will be beneficial for the future treatment of that patient.

Refuse of Patient Treatment

The dentist may, in non-emergency cases, refuse to treat a patient for personal or professional reasons which might infringe the quality of the service rendered to the patient. Provided that such refusal should not cause harm to the patient's health, and that there is another dentist who could perform the treatment.

Patient Referral

The dentist should refer the patient in any situation he/she can’t provide good quality type of treatment or when he/she feels that another dentist can provide a better service.

Patient should be referred to another dentist specialized in the treatment of the patient condition or to the dentist who has more advanced and effective means if the condition of the patient so requires. The dentist should not delay the referral, whenever such referral is in the best interest of the patient.
- When referring the patient to another dentist, the information which he/she believes necessary for the treatment should be provided.
- When a patient wishes to consult another dentist (in respect of the condition of his disease), the dentist should not refuse fulfilling such wish, but should rather facilitate furnishing the patient with the necessary dental reports and information for such consultation.
- To realize the fact that the patient is entitled for the right of consulting another dentist, and also for the right of obtaining the recorded information in his medical record or the necessary medical report describing the condition of his disease.

**Clinical Research**

- All clinical research projects and studies must have ethical approval from the Dental Research Ethical Review Committee of the College of Dentistry Research Center (CDRC).
- Patients’ approval should be obtained before the study in a form of informed consent. It is the responsibility of the researcher(s) to explain to the patients the nature of the study and get their signed approval which is kept in the patient’s file.
- The study procedure which will be performed on the patients should be documented on the patient’s file clinical notes.
- Author(s) should write a letter to the director of clinics explaining their study with the approval letter from CDRC. The needed help from the Directorate of Clinic should be explained in the letter for proper actions to be made.
- If Director of the Clinics or the Assistant Director of Clinics is/are involved in the clinical study, the letter should be directed to the Vice Dean for Administrative Affairs for approval.
- Checklist of the needed documents for clinical studies to be presented to the Directorate of Clinics:
  a. CDRC approval letter
  b. Letter from author(s) to the Director of Clinics, explaining the type of the clinical study and the needed help from Directorate of Clinics
- If approved, the Director of Clinics will send an approval letter to the researcher(s), with a copy to the clinical area Head/Supervisor, where the study will be rendered for facilitation.
• No patient’s record should be taken out of the main booking area or the local reception area under any circumstances.
• Copying of any patient’s documents is not allowed
• Any person who will be exposed to patient’s information must sign the King Saud University College of Dentistry Confidentiality Agreement Form.
• All documents related to the application for clinical research projects and studies will be kept in a special folder in the Directorate of Clinics office for future references

References for the Dental Ethics in Clinical Practice

2. Ethics of the Medical Profession, the Saudi Council for Health Specialties.
PATIENT RIGHTS AND RESPONSIBILITIES

Rights of Dental Care

1. To be treated respectfully and courteously by students, faculty and staff.
2. To receive comprehensive care given without discrimination by competent personnel that reflects consideration of your personal values beliefs with effective use of time and as per Ministry of Health Laws and Regulations.
3. To expect that emergency treatment be carried out without delay and available at working hours. Treatment on an emergency basis will usually consist of providing relief of pain or swelling only.
4. To receive a continuous and complete dental treatment that meets the standards of care in the profession and have appropriate assessment and management of pain.
5. To be able to discontinue treatment at any time and be informed of the medical and dental consequences of the actions.

Rights of Information

1. To know the mission and vision of the dental college.
2. To obtain, from members of the dental care team, complete current information concerning the patient’s diagnosis, treatment and prognosis in terms that they can understand.
3. To receive the information necessary to give informed consent prior to the start of any procedure and/or treatment so that the patient will understand the purpose, probable results, alternatives, and risks involved, and to participate actively (with family members when appropriate) in decisions regarding their dental care.
4. To be able to discuss any questions with the assigned student, a patient service representative, or a member of the faculty or staff.

Rights of Confidentiality and Privacy

1. To protect the patients privacy while receiving the dental services.
2. To expect that all communications and records pertaining to the patient care will be treated as confidential within the dental care team.
3. To have the patient’s dental and medical records confidential and protected from loss or misuse, read only by individuals involved in their dental care or by individual authorized by law or regulations.
Rights of Safety and Security

1. To be provided with safe care within the established dental environment.
2. To expect that all appropriate infection control (including universal precautions) and hazardous chemical protection standards will be followed at all times during the provision of care.
3. To be protected from physical, verbal or psychological insult.

Each Patient has the Responsibility

1. To deal with dental college staff and other patients in a decent manner and respect their privacy.
2. To report changes in health status and to give accurate and complete dental and medical information.
3. To be respectful of clinic personnel and other patients as well as clinic property.
4. To attend scheduled appointments promptly, or call or come to the booking office to make necessary changes in appointments as early as possible (at least 24 hours ahead).
5. To follow post-operative instructions, take medications as prescribed and assist with the care being provided during appointments.
6. To comply with the university rules and regulations, as informed by university personnel.
7. To understand that the College of Dentistry is an educational institution and that dental treatment provided may proceed at a pace slower than anticipated.
PATIENT CONFIDENTIALITY AGREEMENT

King Saud University College of Dentistry (KSUCD) values, respects, and places a high priority on maintaining the confidentiality of its records, documents, agreements, and all other sensitive information, whether spoken, written, or electronic. The intent of this agreement is to ensure that all patient information remains confidential and will be utilized in strict conformance with applicable laws and the College of Dentistry’s policies and regulations.

The performance of your educational and employment activities may require retrieval of confidential information which includes patients’ dental records.

The College’s Confidentiality Agreement entails significant responsibilities, which will impact upon every faculty member, student, and staff as they provide patient care, conduct research, learn or perform assigned duties or functions. To comply with this policy and to safeguard privacy, information security, and confidentiality, it is essential that I, as a faculty member, student, or staff acknowledge that:

1. I understand and use only the information I need to care for my patients or do my job as required in the performance of my duties and responsibilities.
2. I understand that patient information is not to be shared or discussed with anyone who does not have an official need to know.
3. I understand that patient information must not be a topic of social conversation among College of Dentistry personnel or with outside persons.
4. I understand that I must not leave patient information in a place where the public or those not having a need to know can view it.
5. I understand that I am not permitted to remove patient’s confidential information from the facilities of the College of Dentistry or copy dental records, unless specifically directed by authorized College of Dentistry personnel.
6. I understand that if I am involved in research, I will utilize identifiable patient information in accordance with law and College of Dentistry policies and regulations.
7. I understand once patient’s confidential information has been retrieved in the performance of my duties, it then becomes my responsibility to properly allocate the information, distributing documents to the appropriate people (per the appropriate authorizations as outlined in law and College of Dentistry policies and regulations), filing securely, or otherwise destroying the document.
8. I understand that if my employment or access to patient’s confidential information is terminated for any reason, I will immediately return to the College of Dentistry all copies of such confidential information in my possession or under my control.

9. I understand that any patient information concerning a KSUCD student, staff or faculty member who is being seen as a KSUCD patient is subject to the same principles and policies as outlined above.

10. I understand that violation of this Agreement may result in disciplinary action, up to and including termination of employment and/or suspension and loss of privileges, in accordance with KSUCD Disciplinary Policy, as well as legal liability.

“I certify that I have read and understand the Confidentiality Statement printed above and hereby agree to be bound by it.”

________________________________________
Print Name

________________________________________
Signature

________________________________________
Date
PATIENT CONSENT AND AGREEMENT

It is important that you carefully read the following information. Your signature on this document means that you understand and consent to the terms of this agreement, and that you are fully satisfied with the statements written hereunder. For your reference, a copy of this agreement will be provided.

As an adult, I hereby consent and give permission to the faculty, staff, students and residents of King Saud University College of Dentistry (KSUCD) to provide me, my child or legal ward the appropriate dental examination, diagnosis and treatment including local anesthesia.

As a patient of KSUCD, I understand that:

1. all treatment provided by students or residents will be supervised directly by a faculty available in the clinic.
2. receiving dental hygiene care does not guarantee that other treatment will be provided in KSUCD.
3. patients will be provided emergency treatment only to relieve severe discomfort during the normal business hours in the Primary Care Clinics and does not mean the College of Dentistry will continue to provide further non-emergency care.
4. dental care at the College of Dentistry takes longer than when treated in a private dental clinic. I also understand that multiple visits may be requested in order to complete my dental care needs as well as that of my child or legal ward, and scheduling appointments may be long.
5. for any appropriate reasons such as excessive appointment cancellations, KSUCD sustains the right to discontinue treatment. The patient or his/her parent/guardian will be officially informed if the treatment is being discontinued and agrees to accept full responsibility for pursuing alternate professional dental care.
6. all records pertaining to the diagnosis and treatment of patients are the property of KSUCD. Likewise, a copy of the x-rays and records can be obtained upon a written request made by the patient or his/her parent/guardian.
7. answers to any query concerning the risks involved with specific procedures will be provided by the available faculty of the KSUCD.
8. all dental care procedures are made to benefit the patient but certain risks may be involved including possible side effects from using some medicines and these are not limited to the risks of:
   a. Sensitive teeth
   b. Allergic reactions
   c. Abrasions and/or cuts
   d. Bruising and/or tenderness from injections
   e. Inhaling or swallowing dental materials/prosthesis
   f. Infections or serious complications or conditions

9. I agree to present myself, my child or legal ward if recall appointments may be required in the future for the purpose of assessing the quality and longevity of the dental treatment KSUCD provided.

10. (FOR WOMEN ONLY) I declare the assurance that I am NOT PREGNANT and I give my consent to the radiological examination needed knowing the deleterious effects of radiation on pregnancy.

I hereby authorize the King Saud University College of Dentistry to use any treatment records, photographs or x-rays for research or teaching purposes, including their use in the publication of scientific journals. The names of the patients will not be disclosed in connection with such use.

SIGNATURE ____________________________________________

PRINTED NAME _________________________________________

RELATIONSHIP TO PATIENT ________________________________

ADDRESS ______________________________________________

_________________________________________________________

TELEPHONE ______________________________________________

DATE _____________________________________________________
ORGANIZATIONAL STRUCTURE OF THE DIRECTORATE OF CLINIC

DIRECTOR OF CLINIC

Assistant Director of Clinic

Dental Auxiliary Services Department
Registration, Appointments and Records Department
Central Supplies and Sterilization Division
Dental Radiology Division
Directorate of Clinics Secretaries
Patient Relation Officers
University Staff Clinic Supervisor

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CLINICAL SERVICES

This includes the clinics of KSUCD in both campuses, the male building in Darraiyah University Campus (DUC) and the female building in Malaz University Campus (MUC).

The Darraiyah University Campus (DUC) is the main building of KSUCD and its clinical floor is divided into the following sections:

**Students Clinic**

The Students Clinic is the teaching clinic for the undergraduate students. It has modern dental facilities dedicated to patient oral healthcare. Dental students provide care under the supervision of experienced faculty members and perform both general dentistry and specialty care. Dental students here often work at a slower pace than in the Specialists Clinic. At each step, a faculty member will check on the progress of the student. For many patients, spending extra time in receiving quality healthcare is worth the wait especially when it is free of charge.

**Interns Clinic**

Interns spend one-year training program after graduation. A special clinic section in the clinical hall is reserved for them. They provide primary and specialized dental care to the patients as part of their training. They treat patients with dental emergency as well as patients with regular appointments.

**Specialist Clinic**

Staff (faculty members), graduate students, and Saudi board residents work in these clinics.

**Oral and Maxillofacial Surgery & Diagnostic Sciences (MDS) Clinic**

These clinics provide curative services in the treatment of oral diseases and various types of face and jaw surgery, including major surgeries. Surgeries are also performed in King Khalid University (KKUH) and King Abdul-Aziz University Hospitals (KAUH). The Oral and Maxillofacial Surgeons cover the hospitals emergencies 24 hours throughout the year.
Prosthodontic (SDS) Clinic

All types of teeth replacement takes place in these clinics. Replacements include removable and fixed prostheses on natural teeth or implants. These clinics also provide the graduate students with the required training in prosthodontics.

Restorative Dentistry (RDS) Clinic

These clinics are equipped with digital radiology, in which specialists in conservative dental treatment and endodontics work. Graduate program students in operative and endodontics are trained in these clinics.

Pedodontic Clinic

These clinics have an appropriate atmosphere to deal with children. The clinics also provide special management for children with special needs. Some treatments are carried out under general anesthesia in King Abdulaziz University hospital (KAUH). The clinics are equipped with all tools needed to perform sedation.

Periodontic Clinic

These clinics provide periodontal treatment for patients with periodontal disease. Plastic gingival and corrective bone surgery is also performed by professionals. Postgraduate students training takes place in these clinics under the supervision of the College Staff.

Orthodontic Clinic

These clinics provide orthodontic treatment for arrangement of badly aligned teeth. Some congenital malformations such as cleft lip and palate and surgical correction of skeletal deformities are carried out with the help of the Oral and Maxillofacial Surgery team.

University Staff Clinic (USC) (DUC only)

Dental care for faculty members at the King Saud University is carried out in special clinics designed to fulfill the needs for the university staff and their families. These clinics have been equipped with all modern tools. Qualified dentists in all dental specialties of treatment work in these clinics.
Isolation Clinic (Controlled Rooms)

These clinics are designed to treat patients with contagious diseases using advanced techniques to prevent disease transmission. It is designed for extra precaution to treat such patients, though a standard universal infection control measures are applied in all the other clinics when treating any patient.

Hygienist Clinic

This is a special section in the clinics where oral hygiene is carried out by hygienists.

Implant Operating Room Clinic (DUC only)

Special clinic allocated for the implant surgery where the missing teeth are replaced by artificial ones. Different specialties participate in the implant surgeries namely, the oral and maxillofacial Surgeons, prosthodontists and periodontists. Different implant systems are used in the clinics. The prosthetic phase will be completed after healing period by a prosthodontist faculty or post graduate students.

Support Services

Registration, Appointments and Records Division (RARD)

This department is responsible for receiving and registering patients and keeping patients files and records. The department also organizes patient’s appointments for students and staff who are working in the clinics. Employees at this department also follow-up patient’s referrals to different specialties and regulate transfer patients from outside the college.

Central Supplies and Sterilization Division (CSSD)

In these centers, sterilization and disinfection of all instruments, headpieces and other equipments used in the treatment of patients is carried out. Three centers are available in the clinical hall operated by qualified professionals.

Dental Radiology Division

There are special clinics belonging to the Division of Radiology for performing diagnostic imaging. Special diagnostic procedures such as CT scan images and the sialography are being performed. A number of specialists in the field of radiology in addition to a number of technicians work in this division.
STANDARDS OF CARE

General Treatment Guidelines/Standards

• Preparatory communication is utilized during each stage of data collection in order to inform the patient of impending procedures and to minimize anxiety.
• A complete case presentation is provided to the patient (or guardian) that thoroughly explains the ideal and alternative treatment plans in non-technical and non-threatening language.
• Strategies to maximize oral health and the patient’s partnership in maintaining this state of health will be stressed.
• Each comprehensive treatment plan will include preventive components and a maintenance program pursued in parallel with other definitive care.
• Informed consent must be obtained from the patient (or guardian) prior to initiation of treatment.
• Faculty approval/signatures are obtained prior to initiating dental care for patients.
• All treatment will be delivered under the supervision of KSUCD faculty member.
• Treatment will be provided as conservatively as possible.
• Medications will be prescribed as appropriate for the needs and presentation of each individual patient to address prophylactic, symptomatic, or treatment indications.
• At each appointment all treatment provided will be recorded in the patient’s record according to the KSUCD patient record protocol and will be signed by the student and countersigned by the faculty supervisor.
• Upon completion of comprehensive care, the patient will be placed on a follow-up schedule in the hygienist clinics developed to maintain his/her oral health.

General Guidelines and Standards for the Pre-doctoral Disciplines

A. Operative Dentistry

• Defective teeth shall be restored to correct anatomical form and effective function, ensuring the protection of the pulpal and periodontal tissues, and meeting the patient's requirements for comfort and esthetics.
• Patients shall be educated regarding the need for proper home maintenance of restorations and prosthetic appliances, and the need to return for future services.
• Patients shall not be dismissed from their appointments without the placement of final or an appropriate provisional restoration that meets the patients’ esthetic and functional needs.
• All appropriate steps in the preparation and fabrication of any type of restorative procedure shall be evaluated by a faculty and must meet the criteria for a passing grade. Any procedure that falls below this level must be corrected by the student or faculty member.

B. **Endodontics**

• Endodontic treatment will be initiated only after the restorability of the tooth has been determined.
• Rubber dam isolation will be routinely used for endodontic therapy.
• Defective restorations and caries will be removed in teeth undergoing endodontic therapy.
• A well-designed and placed access opening will advance proper instrumentation.
• A properly configured root canal preparation will promote gutta percha obturation.
• A post-treatment radiograph will show the root canals well filled and 0.5 to 1 mm from the apices.
• The treated tooth is restored within a reasonable length of time following endodontic treatment.

C. **Prosthodontics**

• Fixed partial dentures shall establish proper occlusion, ensure the protection of the pulpal and periodontal tissues, and restore form and function to satisfy the patient's health and psychosocial needs.
• Replacement of missing dentition with removable complete and partial dentures shall include proper selection and design of prosthesis and abutments to ensure protection of the surrounding tissues.
• Patients shall be educated regarding the need for proper home maintenance of restorations and prosthetic appliances, and the need to return for future services.
• Patients shall not be dismissed from their appointments without the placement of final or an appropriate provisional restoration that meets the patients’ esthetic and functional needs.
• All appropriate steps in the preparation and fabrication of any type of restorative procedure shall be evaluated by faculty and must meet the criteria for a passing grade. Any procedure that falls below this level must be corrected by the student or faculty member.

D. **Oral and Maxillofacial Surgery**

• The pre-operative work-up includes a thorough assessment of the patient’s presenting complaint, past medical history, and clinical examination findings.
• The diagnosis and treatment are discussed by the student and faculty prior to initiating treatment.
• Non-restorable, non-functional or diseased teeth will be removed with minimal trauma.
• The preservation of form and function will be promoted in pre-prosthetic surgical procedures.
• Adequate tissue will be excised during biopsy procedures and handled in a manner to preserve the pathologic specimen for microscopic examination.
• Post-operative instructions will be provided to the patient including home care directions, prescription(s), and follow-up protocols for management of complications.

E. **Oral Medicine and Oral Pathology**

• When a pathologic condition is detected, a differential diagnosis will be developed.
• Treatment for oral pathoses will be determined on the basis of the differential diagnosis.
• Definitive treatment will be based, to as great a degree as possible, on definitive diagnoses.
• Oral cytology, microbiologic testing, biopsy and other adjunctive procedures will be performed when appropriate for definitive diagnosis.
• Oral Pathology laboratory reports will be prepared and available within two working days of specimen receipt except for specimens requiring special processing (i.e., decalcification).
• All patients will be notified in a timely manner of their biopsy results.
F. Pediatric Dentistry

- Treatment planning will emphasize preservation and/or replacement of the primary and permanent teeth through restorative procedures, space maintenance, and interceptive guidance where necessary.
- Treatment will be optimized for function, esthetics, and the prevention of disease of the primary and permanent dentition.
- Treatment will include the application of comprehensive preventive procedures and regular monitoring of their effectiveness for the patient and his/her family/guardian.
- A recall plan that considers the oral disease risk of the patient will be developed.
- Treatment will be provided utilizing non-pharmacological as well as pharmacological behavior management modalities when appropriate.
- Specific Standards of Care can be found in the Pediatric Dentistry Standards of Care document.

G. Orthodontics

- Diagnosis includes skeletal, dental, and facial criteria as well as functional and long-term stability considerations.
- Treatment plan includes appropriate consideration and sequencing of multidisciplinary care.
- Treatment plan is approved by the faculty and so noted in the chart.
- All appropriate restorative needs should be completed prior to, and are maintained during treatment by, a general dentist or proper specialist.
- All stages of treatment are directly supervised by the faculty and so noted in the chart.
- Emphasis is placed on the maintenance of excellent oral hygiene.
- Final records are taken and completion of treatment is certified.
- Provision for regular periodic recalls is made including reevaluation of any periodontal and restorative needs.
H. Periodontology

- A periodontal examination will be performed for every comprehensive care patient.
- Diagnosis will be based on patient history, radiographs, and periodontal diagnostic instrumentation.
- All findings will be noted in the patient record.
- Emphasis will be placed on oral hygiene instructions and preventive counseling customized to meet the presenting condition of the patient.
- Treatment planning, by appointment, will be thought out and sequenced, and will take into consideration restorative and prosthetic conditions, particularly if trauma from occlusion, overhanging restorations, or restorations that interfere with proper plaque removal. Appropriate referrals will be made to the Advanced Periodontal Clinic.
- A recall schedule will be established that considers the patient’s unique periodontal needs.
GENERAL CLINICAL OPERATIONS

DENTAL AUXILLARY SERVICES DEPARTMENT (DASD)

The Clinical Area of the College of Dentistry operates largely through the services of the Dental Auxiliary Services Department (DASD). This department provides the biggest share of clinic manpower and carries the greatest bulk of responsibilities and support services in attaining the major objectives of the clinical procedures.

Planning, preparation and control of clinical schedules of students, interns, general practitioners, teaching staff and all the clinic auxiliary staff is the major responsibilities of which are fully delegated by the Director of Clinics to the Chief of the Dental Auxiliary Services Department.

The Chief of the Department, the Clinical Area Supervisors, and Section Heads of the DASD are all committed for: (a) the total management and control of all the clinical activities, (b) the full implementation of the standard policies and procedures in the clinics and (c) the efficient and effective management of the educational program in the clinical area.

Main Functions of the Department

1. To provide an organized supportive services for the students/clinicians working in the clinics.
2. To help dental students to achieve an excellent clinical experience.
3. To provide assistance to the Director of Clinics in the organization, implementation, supervision and coordination of the different programs in the clinics to ensure maximum efficiency within the department.
4. Facilitates an efficient scheduling system for students, clinical staff, clinicians and patients.
5. Implements and maintains clinical professional discipline among students, clinical staff, patients and the public as outlines and imposed by the College’s authorities. These are concerning acceptable conduct and behavior in the clinics.
OFFICIAL CLINICAL WORKING HOURS

- Clinical Staff
  - Saturday - Wednesday:
    - Morning Session: 8:00 AM - 12:00 Noon
    - Afternoon Session: 1:00 PM - 5:00 PM
  - Thursday:
    - Morning Session: 8:00 AM - 12:00 Noon

- Postgraduate and Undergraduate Students
  - Saturday - Wednesday:
    - Morning Session: 9:00 AM - 12:00 Noon
    - Afternoon Session: 2:00 PM - 5:00 PM

- Clinician [Interns, Saudi Board Residents]
  - Saturday - Wednesday:
    - Morning Session: 8:00 AM - 12:00 Noon
    - Afternoon Session: 1:00 PM - 5:00 PM
  - Thursday [Interns]:
    - Morning Session: 9:00 AM - 12:00 Noon

- Specialist, General Practitioner (USC Clinicians)
  - Morning Session: 8:30 AM – 12:00 Noon
  - Afternoon Session: 1:00 PM – 4:30 PM

- Faculty
  - Saturday - Wednesday:
    - Morning Session: 9:00 AM - 12:00 Noon
    - Afternoon Session: 1:00 PM - 4:00 PM
1. All clinicians must start and finish their work on due time.
   
   a. A clinician’s carelessness or failure to start the work on time with the 1st patient will certainly cause delay of treatments of the succeeding patients, thus bringing chain inconvenient reactions from all the patients assigned to this particular clinician.

   b. Further, under no circumstances should a clinician extend his / her working periods after the specified official time. This is to provide the auxiliary workers enough time to clean and tidy the clinic for the next session in the afternoon or for the next day.

2. Under unavoidable occasion that a clinician is late, he / she must call immediately to notify the Section Head or Area Supervisor. This is to assure the staff and to inform the patient, thus upholding patient’s trust and confidence to the college staff.

3. Any change in the schedule of clinicians, like adjustment of time or cancellation of clinical session, should be only honored through official communication from the Director of Clinics or his/her Deputy. Arrangements should be done at least 1 to 2 days prior to due date, to provide enough time to call patients for any changes in their appointments.

4. If a clinician leaves the clinic during a clinic period for any reason, he / she should let the receptionist or dental assistant know his / her location to be easily reached whenever he / she is needed.
CLINICAL ATTIRE

1. **Scrub Suits**: All Faculty [Professors, Associate Professors, Assistant Professors, Lecturers, Demonstrators, Senior Registrars] and Clinicians [Consultants, Specialists, and General Practitioners] are required to be in their prescribed scrub suits, should be light green and white coats at all times when they are in the clinic.
   - Postgraduate, Saudi Board, and Interns should wear scrubs under their disposable gowns. Scrubs must be dark green.
   - Female Interns are required to wear long, baggy dresses with white coat [long and completely buttoned] or scrubs under white coat. The hair should be completely covered with scarf that is not decorated or transparent and please refrain from using perfumes, heavy cosmetics, nail polish and high-heeled shoes.
   - Undergraduate students must wear scrubs under their disposable gowns. Scrubs must be blue with no lettering and maintained in a clean and presentable manner. Scrubs must be worn as a unit; it is not acceptable to wear a scrub top with a regular pant or to wear scrub pants with a t-shirt or other shirt.
   - Under no justifiable reason should a clinician be allowed to work with patients when they are not in their official clinic attire.

2. **Uniforms**: Some departments may require employee to wear uniforms instead of street clothes in the clinic. Employees must follow the dress code guidelines set by the administrators in these areas.

3. **Identification cards** must be worn on the left breast pocket at all times when within the college.
PROFESSIONAL ATTITUDE OF THE WORKERS IN THE CLINIC

Towards the Public

- Always make the patient feel that he/she is welcomed. A sincere greeting coupled with smile can establish immediate good relationship with the patient.
- The patient’s need is important and cannot be ignored. Let the patient know of your interest to serve him/her through your kind and cordial words. Courtesy means a lot.
- Maintain respect and confidence of patients through sincere and honest service.
- Respect patient’s cultural practices and individual differences. Provide special concern to human dignity.
- Be patient in giving instructions. Do not let the patient leave the area without an assurance that he clearly understood your instructions.
- Even in the most difficult and trying times, never lose self-control. Patient should never leave the area unhappy.
- A good accomplishment done to a patient is a good accomplishment done for the college. Always work towards the fulfillment of common goals for the college.

Towards Co-Worker

- Courtesy, cooperation and harmonious interpersonal relationship must be highly observed among all clinic staff to promote a wholesome working atmosphere in the clinic.
- Respect one’s position, whether in authority or not. Every position is just too important to be taken for granted.
- Errors or mistakes in the performance of certain tasks can be corrected. Mean words, criticisms and negative remarks against a fellow worker are unfair. Build your co-worker’s confidence and help in his improvement.

Towards Work

- Love your work. Do your best to do extremely well in your present position.
- Always think that whatever work you have accomplished will speak of you and of the institution you are working.
- Always beat the deadline. Submit your outputs on time.
Aim for improvement in your job. Experiences vary each day. Use these to improve your work capabilities.

- Find enjoyment in your work. You can work and be happy at the same time.
- Be ready and willing to accept additional responsibilities when exigency of the service demands.

**Others**

- Under no circumstances, should anyone be exempted from bringing in and taking any drinks or foods in any form in the clinic. No smoking is enforced at all times while in the college premises.
- Honesty and respect for the college property is mandatory. Share in the practice of economy through proper handling of machine, apparatus, other equipments and disposable materials.
- Observe cleanliness and orderliness at all times within college premises.
- Do your share in preserving and maintaining college properties through the proper handling and usage of machine and equipments.
- All staff in the college must play a role model in the professional ethics and conduct for students and the public, this college being a great teaching institution.
INFECTION CONTROL

Policy

All students, faculty and staff must read the KSUCD Infection Control Manual and Environmental Health and Safety Guidelines and attest to and adhere to the published policies and procedures of infection control.

Purpose

To ensure all patients are treated with “Standard Precautions” in an appropriate manner to prevent cross contamination and maintain asepsis.

Procedure

1. Students, faculty and staff who continually are found to be non-compliant will be suspended from clinical activity.
2. The policies are to be monitored by faculty and staff who report such violations to the Committee on Infection Control.

Infection Control

1. Patients will receive care consistent with the policies and procedures in the KSUCD Infection Control Manual. Infection Control Manual is available as hard copy in the clinical area or on the College’s web site.
2. Universal precautions for infection control will be utilized for all patients’ care including use of protective barriers.
3. Students, faculty, and staff found to be non-compliant are required to attend a remedial class on infection control.
4. Monitoring of the application at the infection control procedures is the responsibility of all the workers in the clinics, reports of violation of such policies will be directed to the head or supervisor at the clinical area, Chief DASD or the Director of Clinics.
5. Verbal or written warning will be forwarded to any personnel who violate the infection control policies in the clinics by the Director of Clinics. Repeated violation of infection control policies by the clinical staff may lead to termination of contract by the Director of Clinics. Repeated violation of infection control policies by faculty or student will be reported to infection control committee in the college for proper action which may lead to suspension from clinical activity.
6. Potentially hazardous chemicals will be labeled, stored and dispensed properly.
Infection Control Guidelines

Operator

- Treat all patients as if they are having infectious diseases.
- Wear clean clinic gown for all procedures. Gowns must not be worn outside clinical area
- Keep hair short or restrained. Loose hair or garments must not come near or contact patient or instruments. Disposable hair covers are available.
- Wear mask, gloves, and protective eyewear, with solid side shields, for all clinical procedures. Remember, gloves go on last.
- Before putting on gloves, wash hands with soap and cool water for ten seconds, rinse and repeat. Wash hands again immediately after gloves are removed. If no visible soil evident on hands, one may wash hands with an alcohol based hand product that does not require water.
- Use over-gloves or remove gloves when leaving the immediate treatment area, or when touching non-sterile or non-disinfected items (e.g. amalgamator, writing in a chart, etc...).

Dental Assistant

Before Patient Treatment

1. Disinfect the following items by applying liberal amounts of approved surface disinfectant, wiping to remove debris, and reapplying the disinfectant, leaving wet for five minutes.
   - operating light (avoid using disinfectant on the back of the reflector surface) handle
   - control and hose of air-water syringe
   - saliva ejector and high-volume evacuator
   - handpiece hoses
   - holders for above items
   - dental chair, dental unit surfaces, counter tops, sink faucets and any other items that may be touched during treatment
   When possible, spray into a towel rather than onto surfaces to reduce airborne disinfectant. Never spray into electrical connections or controls.

2. Run water at full volume through air-water syringe for at least one minute.
3. Place disposable cover over headrest.
4. Place disposable plastic wrap over operating light handles and switch, dental chair controls, and operator chair adjustment lever.
5. Affix clinic tan waste bag for easy access, place paper barriers on counter surfaces, cover bracket tray with barrier provided. Place required items for patient treatment on surface. Only anticipated quantities should be visible.

6. Sterile instruments must be checked and instruments should be opened in front of patient.

**During Treatment**

1. Rinse impressions under gently running water immediately after removal from patient's mouth, spray with disinfectant, and place in zip-lock bag.
2. Use one-handed scoop technique for recapping needles, or use a self-sheathing needle.
3. If leaving the immediate treatment area is necessary, gloves must be removed or over gloves must be worn.

**After Treatment**

1. Discard blades, needles, wires, emptied plastic syringes with needles attached and endodontic files in sharps container. Broken glass from a test tube or beaker should be placed in the sharp container as well. foil wrapping from the blades should not be disposed of in the sharp container.
2. Place all pharmacy waste (e.g., local anesthetic cartridges/carpules) into the pharmacy waste container that has a “For Incineration Only” label affixed to it.
3. Place contaminated disposable items (e.g., saliva ejector, high-volume evacuator tip, headrest cover, patient bib) in waste bag. Unused supplies exposed to aerosols must be disposed of or sterilized for reuse.
4. Prepare instruments, handpieces, bur block, etc. for sterilization. Remove gross debris, arrange instruments in proper order in cassette, and return to sterilization area window.
5. Remove and dispose plastic barriers.
6. Dispose contaminated tan waste bag in large, red biohazardous waste container.
7. Disposable gowns, unless visibly soiled with blood, should be disposed in a regular trash receptacle.
8. Any item that has visible blood on it or had blood in it needs to be disposed in the red biohazardous waste container. Suction canisters need to be emptied into a sink and disposed into the biohazardous trash waste container.
9. Disinfect treatment area as outlined above.
10. Remove personal protective equipment, dispose gloves in the biohazardous waste container, and wash hands.
VACCINATION POLICY FOR WORKERS IN THE CLINIC

Students

All students are required to have Hepatitis-B vaccination before starting their clinical courses [3rd year students]. They are provided with a College form for vaccination to be accomplished in KKUH.

Clinic Staff

All staff is required to have Hepatitis-B vaccination.

NOTE

- No one is allowed to work in the clinic without receiving the first dose of hepatitis – B vaccine.
- Succeeding doses to be completed as per advice of KKUH.

- During epidemic periods, required vaccination is given to the staff and students [e.g., H1N1, flu] influenza vaccine.
- During Hajj time, clinical workers are required to have meningitis vaccination every two years.
BASIC LIFE SUPPORT TRAINING

1. **Basic life support** (BLS) is a level of medical care which is used for patients with life-threatening illness or injury until the patient can be given full medical care.

2. Basic life support for the faculty, specialists, Saudi Board, postgraduates and clinical staff is mandatory. It is part of the requirement to acquire when applying for the Saudi Commission for Health Specialties license.

3. Undergraduate students in their third year and fifth year of study are taking the BLS as part of their training requirement.

Basic life support consists of a number of life-saving techniques focused on the medicine "ABC"s of pre-hospital emergency care:

- **Airway**: the protection and maintenance of a clear passageway for gases [principally oxygen and carbon dioxide] to pass between the lungs and the outside of the body.

- **Breathing**: inflation and deflation of the lungs [respiration] via the airway.

- **Circulation**: providing an adequate blood supply to the body, especially critical organs, so as to deliver oxygen to all cells and remove carbon dioxide, via the perfusion of blood throughout the body.
NEEDLESTICK AND SHARP OBJECT INJURY

Following incidence of

- percutaneous [needlestick injury, laceration, cuts, non-intact skin, mucous membrane exposure, or permucosal [e.g. ocular, mouth]
- exposure of a health care worker to blood or any other body fluids, the exposed individual is requested to do, obtain the history of the source patient including diagnosis, age, sex, history of transfusions, drug use, sexual partners, and if they have had a HIV test.

1. Immediate care of the site:
   a. Let the site bleed freely.
   b. Wash wound or skin exposure site with soap and water and flush mucous membranes with water as soon as possible but do not scrub.
   c. Cover with a waterproof dressing.
   d. Flush clean water at permucosal area [ocular, mouth].


3. Report the incidence to the Head/Supervisor of the clinical area or the Chief DASD. The Chief DASD then should report this to the Director of Clinics for further documentation and management.

4. a. Contact the person in charge at KKUH for DUC:
   - Employee Clinic – PCC II [ ext. 91284]
   - Adult Emergency [ext. 91296] or
   - Primary Care Clinic [ext. – Male 91306, Female 91288] to determine the need for prophylaxis against Hepatitis B infection or other infectious diseases.
   b. Contact the person in charge at KAUH for MUC:
   - Emergency – 4786100 ext. 1110
# NEEDLESTICK AND SHARP OBJECT INJURY REPORT

**NAME OF EXPOSED PERSON:**

**POSITION:**

**AGE:**

**GENDER:**

**ID NUMBER:**

<table>
<thead>
<tr>
<th>START OF INJURY</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE:</td>
</tr>
<tr>
<td>TIME:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LOCATION:</th>
<th>CUBICLE NO.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>The SHARP ITEM was:</td>
</tr>
</tbody>
</table>

- [ ] Contaminated (known exposure to patient or contaminated equipment)
  - Was there blood on the device?  
    - [ ] Yes
    - [x] No

- [ ] Uncontaminated (no known exposure to patient or contaminated equipment)
- [ ] Unknown

**If contaminated (known exposure to a patient)**

Name of Patient:

File Number:  
Age:  
Gender:  
Medical History:

<table>
<thead>
<tr>
<th>What type of device caused the injury:</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] Disposable needles (cartridge syringes or hypodermic syringes, etc.)</td>
</tr>
<tr>
<td>[ ] Suture needle</td>
</tr>
<tr>
<td>[ ] Scalpel blade</td>
</tr>
<tr>
<td>[ ] Lancet</td>
</tr>
<tr>
<td>[ ] Burs</td>
</tr>
<tr>
<td>[ ] Scissors</td>
</tr>
<tr>
<td>[ ] Electro-cautery device tip</td>
</tr>
<tr>
<td>[ ] Endodontic files, reamers, etc.</td>
</tr>
<tr>
<td>[ ] Surgical burs, etc.</td>
</tr>
<tr>
<td>[ ] Surgical instrument</td>
</tr>
</tbody>
</table>
| [ ] Other, describe________________________________________________________

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Did the injury occur:

- Before use of item (item broke / slipped, assembling device).
- During use of item (item slipped, patient jarred item).
- Restraining patient
- Between steps of a multi-step procedure (between incremental injections, passing instruments).
- Disassembling device or equipment.
- In preparation for reuse of reusable instrument (sorting, disinfecting, sterilizing).
- While recapping used needle.
- Withdrawing a needle from rubber or other resistant material (rubber stopper).
- Device left on the floor, table or other inappropriate place.
- Other after use-before disposal (in transit to trash, cleaning, or sorting).
- From item left on or near disposal container.
- While putting item into disposable container.
- After disposal, stuck by item protruding from opening of disposal container.
- Item pierced side of disposal container.
- After disposal, item protruded from trash bag or inappropriate waste container.
- Other, description of incident:

Was exposed person sent for medical evaluation?
- Yes  ☐  No  ☐

Describe:

Mark the location of the injury

FOLLOW UP:

Was the exposed person informed by evaluating physician of the result of the medical evaluation?
- Yes  ☐  No  ☐

Did the exposed person present the physician’s written opinion?
- Yes  ☐  No  ☐
REGISTRATION, APPOINTMENTS, AND RECORDS DEPARTMENT (RARD)

The Registration, Appointment and Records Department (RARD) is the department of the clinics which is responsible of registering the patients, making appointments and maintaining the patient’s records. It is the first area in the clinics where the patient is initially received. Opening of patient file takes place in this department. It is composed of three (3) sections:

1. Registration and Admission section
2. Appointment section
3. Records section

The **Registration and Admission Section** is responsible for preparing patients for screening and the documentation of all patients. It is in charge with the issuance of new files to patients who are found to be eligible for treatment. As a rule, patients cannot avail of any dental treatment without going through the registration and admission procedures.

The **Appointment Section** is responsible for the over-all scheduling of appointments of patients for a dental treatment with students and clinicians. Appointments are based on the schedules of students and clinicians. The smooth operation of the clinic depends largely on the effective appointment system which is the primary goal of this section. Also, this area takes charge of evaluating and assigning clinical cases to suit the students’ clinical courses. Patient assigning is done after the patient has been screened and initial treatment plan (patient’s needs) has been prepared by the screening clinician/student.

The **Records Section** is in charge with the transferring, custody and safekeeping of patients’ records and files. Pertinent information relative to the diagnosis and treatment of patients can be easily retrieved from this section. All transaction related to registration of records for patients’ appointments and for researches is done in this area.

The Hospital Information System (HIS) is used for patient records following the same database in King Khalid University Hospital (KKUH)
Objectives

To facilitate patient registration, recording and scheduling, to keep and store patients’ files and documents securely, and to facilitate clinical researches and studies. To help in providing quality health care services to the public.

Location

The main Booking Area in DUC is located on the first floor wherein all the transaction related to registration, securing of appointments and records are done. A satellite reception office with small file storage areas is also allocated to serve the different specialty clinics in their locations.

Facilities

The registration section is located in an area where a counter to receive all transactions on registration are made. The appointment section has a counter where clinicians, students, patients, dental staff and other personal transact businesses regarding appointment. The records section is provided with filing shelves, Kardex machines and cabinets to manage and keep all files for custody and safekeeping of patient records and other important pertinent papers and documents.

Patient Category

<table>
<thead>
<tr>
<th>CODE</th>
<th>DESCRIPTIONS</th>
<th>ELIGIBILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>DU1</td>
<td>Saudi Faculty Staff of KSU and their dependents</td>
<td>Eligible in all areas including USC and Ortho Clinic</td>
</tr>
<tr>
<td>DU2</td>
<td>Non-Saudi Faculty Staff of KSU and their dependents</td>
<td>Eligible in all areas including USC and Ortho Clinic</td>
</tr>
<tr>
<td>D1</td>
<td>Saudi national KSU employees (non-faculty) and their dependents</td>
<td>Eligible in all areas except USC and Ortho Clinic</td>
</tr>
<tr>
<td>D2</td>
<td>Non-Saudi national, KSU employee (non-faculty and their dependents)</td>
<td>Eligible in all areas except USC and Ortho Clinic</td>
</tr>
<tr>
<td>D3</td>
<td>Saudi national, non-KSU employee</td>
<td>Eligible in all areas except USC and Ortho Clinic</td>
</tr>
<tr>
<td>D4</td>
<td>Non-Saudi national, non-KSU employee</td>
<td>Eligible for student courses (postgraduate, undergraduate) and emergency treatment only</td>
</tr>
</tbody>
</table>
Policy

No new patients at KSUCD shall be booked for any dental treatment without going through the routine standard procedures on admission, registration and screening.

No further appointment is given to a newly screened patient other than with hygienist, unless indicated in the treatment plan.

Procedures (How to become a KSUCD patient)

- Patients are required to arrive early 30-60 minutes prior to the beginning of a clinical session to the main RARD area:
  - Morning Session starts at 8:00 AM
  - Afternoon Session starts at 1:00 PM
- There is separate reception counters for male and female.
- Patient will be registered on a first come first served basis in the primary care clinic (PCC). Then the following appointments if future treatment is needed will be given by phone.
- Patient should bring a photo identification card, names and dosages of medications taking if any, and any records important for his/her medical/dental condition.
- The initial screening examination may take about forty five (45) minutes.
- **Patient Consent**
  - Before proceeding for any treatment, expected outcomes must be fully explained and understood by the patient. Thus, a Consent Form shall be filled up by the patient (parent/guardian) in accordance with the policy of the college.
- Take into consideration that the College do not provide facilities and staff for supervision of children while undergoing treatment.
- The College will not provide any type of care which is not in the best interest of the patient.
FUNCTIONS OF PRIMARY CARE CLINIC (PCC)

1. To treat patients with dental emergency
2. To treat urgent dental condition that may get worse if not treated on time
3. To treat certain conditions that requires minimal time of treatment
4. To prepare and refer educational cases needed by the students or course
5. To enable the clinicians (intern) to perform general practice
6. To minimize the number of patients in the waiting list

- At the time of registration the patient must complete the following:
  a. Basic information
  b. Health history questionnaire
  c. Chief complaint
  d. General consent
  e. Privacy statement
  f. Copy of the ID

- A primary care file is issued to all new patients who seek immediate and limited treatment regardless of what categories the patient belong to.

- The time allowed for each patient in primary care clinic shouldn’t exceed 45 minutes. For major procedures, time could be extended.

- A primary care patient can be referred only to student upon request of the booking area if the case is needed by the course.

- Patient will be seen first in the screening clinic and depending on the clinical condition/findings will be referred to:
  a. PCC for performing needed treatment
  b. Undergraduate courses
  c. Postgraduate/Saudi Board clinics
  d. Specialist clinic

- Eligibility regulations are applied when referring patients to the Orthodontic clinic and USC, which cover DU1 and DU2 category only.

- Regular file is issued for screened patient or file requested by the clinician/student for continuation of treatment and it should be approve by the course director or faculty clinical supervisor.
Regular patients file is examined for completeness. This includes appropriate patient signatures and chart entries.

- Patient personal data
- Patient medical and dental history
- Sequential treatment plan
- Patients dental chart
- Progress and treatment record
- Patient classification card
- Screening form tracer card

Patient Inquiry

In the case of unresolved concerns, the patient can see the Patient Relation Officer (PRO) or call 4677429 in DUC and 4786803 in MUC.
FAMILIARIZATION OF RARD FORMS AND THEIR PURPOSES

File Request Form

Used in requesting to open a Primary Care File and Regular Files for a patient to be signed by the requesting clinician or Director of Clinics. For students, the form should be countersigned by the Course Director or supervising faculty member.

Appointment Request Form

This form will be filled by clinicians or students if the patient needs another appointment.

Patient Transfer Request Form

Needed by the students or clinicians to transfer the patient to another clinician for any reasons e.g. (a) the case is beyond his treatment capacity (b) needs another area of specialization. For the students and interns, the request must be countersigned by the Course Director/Contributors or supervising faculty.

Borrowers Slip

Used by clinicians and dental assistants in borrowing files from the booking area. For students, it should be countersigned by their Course Director or supervising faculty member.

New Patient Request Form

Used by the students in requesting new patient or additional cases needed for the course and signed by the Course Director/Contributors to be submitted to the designated appointment secretary.

Finished Case Form

Used by the students/clinicians when a treatment for a patient is completed. It includes the procedures done and if the patient need referral to any other area in the clinics for further needed treatment.
MANAGEMENT OF PATIENTS

A. New Patients

- No new patient should be booked for any dental treatment without going through the routine standard procedures on admission, registration and screening.
- All new patients should have a copy of their ID (Saudi) or Hafiza or Iqama (non-saudi) for opening of new files, whether primary care or regular file.
- Types of files
  a. **Primary Care Files** – issued to all new patient who seek immediate and limited treatment regardless of patient’s category.
  b. **Regular File** – issued for screened patient and requested by the clinician or student for continuing the treatment. If requested by student, the form should be countersigned by the Course Director or supervising faculty member. It applies preferably to the patient with DU1, DU2, D1, D2 and D3 categories. The D4 category can only be issued a regular file if the case is suitable for student courses.
- No further appointment should be given to all newly-screened patients other than Oral Hygiene Instruction (OHI) unless the case is needed for student course.

B. Screened Patients

Before booking the patient for his appointment after screening, the following forms should be completed and included in the patient regular file:

- Patient’s Personal Data
- Health Questionnaire
- Patient’s History and Examination
- Initial Treatment Plan
- Patient’s Dental Chart
- Patient Classification Card
- Screening Form
- Tracer Card

- In the screening form, sequential treatment and corresponding department/course must be included.
• Red sticker is attached to medical alert on the upper right side of the file as a precautionary sign if the patient suffers from any communicable disease.
• Clinician should accomplish appointment request form for first time patient and also succeeding appointments. Original copy will be taken by the appointment secretary and the other copy will be attached to the patient’s appointment card.
• The patient must be briefed of his/her scheduled appointment explaining that, he/she should come to his scheduled appointment. Failure to come for three (3) consecutive times would lead to removal of his/her name from the patient’s list.
• The patient must be instructed to report directly to the reception area.
• The patient must be reminded that if he/she needs subsequent appointment at the end of each session as advised by the attending student/clinician, he should go back the appointment secretary to register the needed appointment.

C. Waiting List Patients

• The appointment secretary books patient coming from the waiting list lined-up on a first come-first served basis for every vacant slot of the clinician’s appointment book.
PATIENT TRANSFER

- Transferring of patient from one student or clinicians to another is not acceptable unless a duly-signed and well accomplished Patient Transfer Request Form is presented.
- Request made by the students must be countersigned by the Course Director.
- The student/clinicians requests that the patient be transferred to other clinicians because the case is beyond his/her treatment capacity and not within his/her area of specialization. Request must be countersign by the faculty for student’s cases.
- If the treating clinician is no longer working in the College, the unfinished procedures of the patients can be completed by other student/clinicians. This will be facilitated by Course Director for students, Program Directors for postgraduate students, and by the Director of Clinics through RARD for other clinicians.

LATE PATIENT

- Patient who came late for 15 minutes with their appointment time can be seen upon the discretion of the attending clinician.
- Patient with one hour or more appointment who arrived late for 30 minutes or more may be given another appointment by the appointment secretary without asking an approval from the attending student/clinician.
- Patient who arrived late for three consecutive times during his appointments must be given a warning before subsequent appointment must be given. The patient must be informed that further negligence of his appointment time may deprive him of any future appointment.

FAILURE TO COME

- Upon opening of a Regular File, all patients must signed an “Agreement Form” regarding failure to come for his/her appointment.
- Patients who failed to attend his/her appointment in the clinic for three times, successive or non-successive, without prior notification (at least 24 hours before the appointment) either on the telephone or personally presenting himself/herself in the booking area, the file will be subjected for cancellation and the right to avail treatment in the College will be terminated.
• Justified patient excuse can be discussed with patient relation officer or the Directorate of the Clinics.

**Fees**

Treatment in the college is **free of charge**, except in the case where crown(s), dental implants and/or orthodontic treatment is needed. The patient is responsible of providing the materials for such types of treatment which includes:

• Gold (metal, alloy) for crown and bridges work
• Implant’s fixture and abutment for dental implant treatment for replacing missing teeth
• Orthodontic braces for orthodontic treatment

The patient will be informed of the procedure of providing these materials by the officer in charge of each of the these areas before treatment started.
SPECIAL BOOKING for STUDENTS and FACULTY MEMBERS

Policy

All the patients should be treated in the clinic according to an approved clinical schedule.

Purpose

To control patient treatment services in the clinic.

Procedures

1. Undergraduate Students

Students are required to fill-up a special booking request form with complete name, file number of the patient and procedure to be made, signed by the Course Director or faculty in-charge of the said courses, and approved by the Director of Clinics.

2. Postgraduate Students

Students are required to fill-up a special booking form with complete name, file number of the patient and procedure to be made, signed by the Program Director or supervisors, and approved by the Director of Clinics.

3. Interns

Interns are required to fill-up a special booking form with complete name, file number of the patient and procedure to be made, signed and approved by the Director of Clinics.

4. Faculty Members

Faculty members are required to fill-up a special booking form with complete name, file number of the patient, and procedure to be made, with the approval of the Director of Clinics.
NOTE

- All special booking assistant will be arranged by the Chief DASD, with the approval of the Director of Clinics.
- Special booking should be arranged at least (preferred more) 24 hrs. prior.
- Special booking is preferably scheduled on Thursday, Saturday morning or on Wednesday afternoon.
- Clinic Supervisors, Head Sections on the area should provide him / her with clinic and dental assistant depending on the availability.

CONTACT INFORMATION

Darraiyah University Campus (DUC)

<table>
<thead>
<tr>
<th>Role</th>
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<tbody>
<tr>
<td>Director of Clinics, DUC</td>
<td>4677430</td>
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<tr>
<td>Assistant Director of Clinics</td>
<td>4677431</td>
</tr>
<tr>
<td>Chief RARD</td>
<td>4675308</td>
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<tr>
<td>Patient Assigning Officer</td>
<td>4677312</td>
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<tr>
<td>Male Reception</td>
<td>4675037 / 4676887</td>
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<tr>
<td>Female Reception</td>
<td>4676736</td>
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<tr>
<td>Patient Relation Officer</td>
<td>4677429</td>
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<tr>
<td>Dental Auxiliary Staff Dept.</td>
<td>4675321</td>
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<tr>
<td>Dental Radiology Division</td>
<td>4676649</td>
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<tr>
<td>Sterilization Center</td>
<td>4675315</td>
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Malaz University Campus (MUC)

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<th>Role</th>
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<tr>
<td>Director of Clinics, MUC</td>
<td>4784524 ext. 374</td>
</tr>
<tr>
<td>Assistant Director of Clinics</td>
<td>4784524 ext. 354</td>
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<tr>
<td>Chief RARD</td>
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<td>Patient Assigning Officer</td>
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<td>Female Reception</td>
<td>4784524 ext. 398 / 332</td>
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<td>Patient Relation Officer</td>
<td>4784524 ext. 375 / 4786803</td>
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<tr>
<td>Dental Auxiliary Staff Dept.</td>
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<td>Dental Radiology Division</td>
<td>4784524 ext. 327</td>
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<tr>
<td>Sterilization Center</td>
<td>4784524 ext. 382</td>
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CENTRAL STERILIZATION AND SUPPLY DIVISION (CSSD)

The Central Sterilization and Supply Division (CSSD) plays a major role in the control of infection and disease transmission through the proper handling, sterilization and disinfection of instruments used in the clinics. It does not only issue and provide sterile instruments and supplies but also dispenses equipment, apparatus, materials and other related supplies for use in dental treatment.

While it is true that it is totally impossible to create a completely sterile field and environment in a dental clinic, yet the necessity to use properly sterilized instruments is a must if the possibility of cross infection has to be eliminated. It is but worthwhile mentioning that this goal of preventing infection and disease transmission could be achieved only through the cooperative efforts of the CSSD staff, clinicians and dental assistants in the practice and maintenance of basic asepsis.

GENERAL OBJECTIVE

The general objective is to provide sterilized instruments, equipment, apparatus, materials and other supplies for use in the treatment of dental patients.

Functions of the Area

Functions of the area are to help guard against the dangers of cross infection through the proper handling, sterilization and disinfection of instruments used in dental treatment. To sterilize and disinfect instruments and supplies needed in the clinics. To provide equipment, apparatus, materials and other supplies for use in the treatment of dental patients and to ensure control and proper utilization of supplies and materials.

Location

The CSSD - Daraiyah Campus is located in two areas of the College:

1. The Receiving Section of soiled instruments which is for decontamination, cleaning, inspection and packing which is situated between the Registration, Appointment and Record Division (RARD) and General Clinics Division – Clinic A, in front of Radiology Division.
2. The storage area of sterile items and sterilization area is situated between the Pedodontic Clinic Division and General Clinics Division B and at the right side of the Radiology Division.

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DRESS CODE FOR INSTRUMENTS PROCESSING

Policy

All staff, visitors must comply with the Departmental Dress Code.

Purpose

To ensure that staff are properly attired according to the requirements of their work area.

Procedures

1. On entering the Steri-Center Department, all staff will change into departmental uniform provided in the changing area.
2. Staff moving into the wash area, who will be engaged in the handling and processing of incoming equipment, will put on an extra protection gown, gloves and protective goggles in addition to the departmental uniform.
3. When leaving the wash area, working personnel should remove and discard the gown and gloves, and wash their hands.
4. Prior to entering the preparation area, all staff and visitors will wash and dry their hands. Staff coming from other areas will wear the departmental uniform and must comply with the dress code when moving to other areas of the department.
INSTRUMENT REQUESTS AND RETURNS

Policy

All instrument requests and returns must be documented.

Purpose

To insure the security of clinical instruments.

Procedures

Instruments Request

1. The CSSD technician receives from the dental assistant the Borrower’s Slip or Requisition Slip for disposable and non-disposable items.
2. It should indicate the borrower’s name, date, instruments/materials needed, quantity required and cubicle to be occupied by the dental assistant. The slip should be signed.
3. The requested items are prepared and issued by the CSSD technician. He/she fills out the column “Quantity Issued” accordingly and signs in the column “Issued by.”
4. The dental assistant checks the contents of the packs while at the counter to make sure all the needed requested instruments/materials are there.

Instruments Return

1. After each clinical session, dental assistants will return the used instrument to the CSSD.
2. The CSSD technician counts the instruments returned by the Dental Assistant and countercheck them with the Borrower’s Slip.
3. Each item is crossed out to indicate that the instrument is returned.
4. If all items are returned, the original Borrower’s Slips is given to Dental Assistant. If there is any lacking or missing instruments, the CSSD Technician provides a new Borrower’s Slip to the Dental assistant.
5. The Dental Assistant transfers all the missing or lacking Instruments to the new Borrower’s Slip but returns the original Slip to the Dental Assistant.
6. The CSSD Technician puts the date the instruments are returned signs in the column “Received and Checked By”.
INSTRUMENT PROCESSING

Policy

All instruments and handpiece used in intra-oral care must be sterilized and maintained sterile until used.

Purpose

To insure that all instruments used are sterile.

Procedures

1. At the end of each procedure all instruments and handpiece used shall be removed from the patient care area.
2. Instruments that can be ultrasonically or wash in washer disinfecter shall be packaged in trays and returned for processing.
3. Instruments that cannot be ultrasonically cleaned shall be cleaned by hand using heavy duty gloves with an enzymatic cleaner.
4. Instruments that are cleaned must then be packaged for sterilization.
5. Trays and packaged instruments must be returned to CSSD for processing in the decontamination area.
6. Once returned, the instruments are cleaned via ultrasonic or thermal disinfecter means.
7. Cassettes and pack of instruments are packaged, sealed and dated with the date of sterilization.
RECEIPT, CLEANING, DECONTAMINATION, DISINFECTION OF REUSABLE ITEMS

Policy

All used instrument and equipments must be processed following the standard operating procedure in cleaning and decontamination of instruments.

Purpose

To ensure that all used/soiled instruments and equipment returned to the CSSD is cleaned and disinfected to an acceptable standard.

Procedures

1. Receiving area – used/soiled instruments and devices are processed. Pre-sterilization disinfection takes place wherein the used/soiled instruments are directly soak in a soaking pan with disinfecting solution for a minimum of 15 minutes.
2. Staff working in this area will wear protective clothing at all times in compliance with the standard precautions dress. PPE in additional to the uniform code for the specific working environment and may include:
   a. gloves
   b. aprons, gowns, overalls (single-use, fluid-repellent, disposable)
   c. masks
   d. face and eye protection
3. Identify the correct process for the items to be decontaminated.
4. Pre-soak instruments are loaded in a tray ready for cleaning in the washer/disinfector or ultrasonic machine. When washing instruments manually, standard universal precaution must be applied at all times.
ASSEMBLY, WRAPPING AND INSTRUMENT STERILIZATION

Policy

All instruments should be assembled, wrapped and sterilized according to the guidelines.

Purpose

To insure all sets of instruments are correctly packed and ready for use.

Procedures

1. CSSD Staff will ensure that the order of the production meets the appropriate demand of the clinics.
2. After decontamination, all processed items are received into the preparation room.
3. Upon inspection any item that is rejected due to evidence of debris and some bioburden are placed in a plastic bag and identified before being returned for the washroom staff to take action.
4. Dull and broken instruments must be replaced or repaired. All hinged or articulated instruments are placed inside the pouch in an open position (e.g. extraction forceps, haemostatic forceps, scissors, etc.). Carbon steel items that will corrode during steam sterilization will be treated with a rust inhibitor.
5. Clean instruments are packed and seal using heat seal or self-seal pouch. If S.S. cassettes are being used, the items must be double wrapped. Packaging materials should be compatible and designed for the type of sterilization being used.
6. Packed instruments, cassettes and container are arranged in S.S. autoclave trays in such a way that there will be a free flow of steam during the cycle. Packs of instruments should be dry before unloading inside the chamber of the autoclave.
7. Sterile packages should be stored in a manner that preserves the integrity of the package.
AUTOCLAVE LOADING AND UNLOADING OF INSTRUMENTS

Policy

All packs of instruments must be loaded in a manner that it is not over packed to permit a good steam penetration and for drying effectively.

Purpose

To ensure that items are correctly loaded and unloaded from the autoclaves in order to maintain sterility.

Procedures

1. Items and cassettes/container must be loaded according to manufacturers’ instructions.
2. Protective clothing and barriers must be worn.
3. Instruments sets and individual should be loaded flat in a single layer.
4. The packs of the instruments should not touch to the top, bottom or sides of the chamber walls, not to become wet.
5. Packs of instruments should not be compressed or overloaded in the autoclave.
6. After completion, the cycle should be recorded according to policy. The packs should be allowed to cool before handling.
7. The hot racks should not be touched without heat resistant gloves.
8. The wet or tear packs, and indicator changes will be checked once the autoclave cooled down.
9. The instrument’s packs will be stored according to normal procedure.

**STERILE PACK STORAGE**

**Policy**

The sterility of all packs must be maintained in the CSSD, and that product integrity is not compromised.

**Purpose**

To ensure the safe storage of all sterile packs.

**Procedures**

1. The storing area will be kept clean and tidy at all times.
2. The staff will ensure that stock is rotated and will monitor stock levels.
3. Wrapped packages of sterilized items are examined before use to ensure that the barrier wrap has not been compromised during handling and storage.
4. Any compromised instrument package (e.g. dropped, torn, or wet) will be re-cleaned, re-packed and re-sterilized.
5. Pack of sterile items should not be stored under sink or in other location where they might become wet or compromised.
6. All finished products produced by CSSD will have a shelf life of 1 month, depending on packaging, handling and storage conditions.
7. Commercially produced (manufactured) sterile packs will have a shelf life as described by the manufacturer.
MONITORING STEAM AUTOCLAVES

Policy

All sterilized instrument must undergo monitoring before any instruments can be issued in the clinic.

Purpose

To monitor that all autoclaves are functioning effectively and efficiently.

Procedures

Physical Monitors

Monitor all autoclave component track and record time, temperature and pressure during each cycle, printouts, gauges, round charts, etc.

Bowie-Dick Test

1. The first cycle will be a warm up of the machine. Bowie-Dick test will be put inside the empty chamber on a pre-vacuum cycle. Complete the test and record Bowie-Dick Test according to the procedure number.

2. A complete uniform color change in Bowie-Dick Test – **PASS**
   - The sterilization process was effective since it indicates no air was present.

3. Incomplete color change - **FAIL**
   - Indicates air was present and sterilization was not achieved.
   - Repeat the test. If results still show a **FAIL**, do not use autoclave.

Chemical Indicators (C I)

1. Test Result  Color change according to manufacturer’s reference (**PASS**)  
2. Test Result  Color change uneven and/or not according to the Manufacturer’s reference (**FAIL**)
Biological Indicators (B I)

1. This biological test is performed once a week. It is performed in the first load of the day as well as any loading containing implant devices.

2. Sterilizer number, load and date on the indicator. Place (test) indicator into a package and put in the area of the autoclave that is most difficult to sterilize, (over the drain or in the center of a full load). Run the cycle.

3. Check the chemical indicator on the Attest indicator for a color change from rose to brown. Close RRBI cap by pressing down. Crush the glass ampule in designated crushing well built into the incubator. Tap b bottom of the vial on a tabletop until media wets spore strip at bottom of vial. Place the RRBI into an incubation/reader well. Cover it and wait for either the red or green indicator light so signal the result. Activate the processed indicator by inserting into the incubator activator at the center.

4. Incubate an activated but not sterilized biological indicator to verify that the test microorganism is alive and ready for use in testing.

5. Interpretations

- A negative ( - ) Test
  Spores were eliminated. The sterilization process was successful.

- A positive ( + ) Test
  Sterilization process failure. Recall all loads since last negative test.

Do not process any other loads until biological indicators test negative in 3 successive cycles.
CLEANING PROCEDURES FOR STERILIZERS (AUTOCLAVES)

Policy

Weekly cleaning of the autoclave is necessary to keep the apparatus clean and free from scales and rust and lint.

Purpose

To maintain the Autoclave in a good working order and, to prevent the contamination of items due to deposits from walls of the sterilizer, leaking gasket or plugged drain.

Procedures

1. Staff must follow the manufacturer’s guidelines in cleaning of all autoclaves.
2. On a daily basis, inspect the door gaskets for cracks and clean with a lint-free cloth, according to manufacturer’s recommendations.
3. The drain screen must be removed and clean out any debris that may be trapped.
4. The outside stainless steel paneling must be wiped out with lint-free cloth.
5. Damp dust the loading trolley carriages, racks, baskets or trays that hold items in the sterilizer.
6. The autoclave must be turned off and allowed to cool.
7. Thoroughly clean the entire inside surface including the walls, rear panel, floor and inside the door, according to manufacturer’s recommendations.
8. A non-abrasive cleaning product should be used to clean stubborn stains or marks on stainless steel.
9. Finally, rinse thoroughly using tap water or wipe with clean lint-free cloth moistened with tap water.
STERILIZER FAILURE RECALL

Policy

The CSSD staff must make sure that all sterile items leaving the CSSD are sterile.

Purpose

To ensure that any packages/items suspected in the event of a positive biological test on a sterilizer, indicating sterilizer failure is identified, quarantined, collected, investigated and the findings recorded.

Procedures

The trays/pack of instruments will be recalled in the event of failed quality management test (i.e. Biological Test).

1. Traceability
   - The trays/pack of instruments must be recorded for easy traceability.
   - The details of batch number, date and washer cycle numbers must be recorded for the trays/pack of instruments that has been decontaminated.
   - When trays are unloaded after processing, a record is kept of the batch number in the relevant washer log book.
   - Traceability of batches can therefore be achieved by referral to records.

2. Recall
   - A recall is authorized by the CSSD supervisor.
   - Affected departments will be advised verbally, with confirmation advisory notices in writing, that a particular tray from a batch should not be used.
   - The following details must be indicated:
     a. The name of the sets to be recalled
     b. The sterilization date
     c. Details of the action to be taken
     d. Reasons for the recommended actions and any likely associated hazards
     e. The departments are requested to check their stock for any tray in recall bath
RECALL OF STERILIZED INSTRUMENTS

Policy

All instruments are dated prior to sterilization with the date of sterilization to facilitate calling the sterilized items.

Purpose

To insure that in the event of an autoclave malfunction, a recall of all instruments sterilized between the last good spore test and the failed spore test can be reprocessed.

Procedures

1. All instruments packaged for sterilization shall be dated with the date of sterilization.
2. Spore testing is done on a weekly basis. Bowie Dick Tests are run daily.
3. In the event of a positive spores test all instruments sterilized from the date of the last negative spore test through the last cycle shall be recalled.
4. All the instruments that fit into the above category shall be re-sterilized in another autoclave or once two successive spore tests are negative.
DISPOSAL OF MEDICAL WASTE IN DENTAL CLINICS
AND OFFICES

Biohazard Waste

- Human surgery specimens or tissues removed during surgery may be contagious to human due to contamination by infectious agent such as extracted human teeth must be disinfected. Blood soaked waste which at the point of transport from the generator’s site, at the point of disposal, or thereafter, contains recognizable blood fluid, fluid blood products, containers or equipment containing blood that is fluid known to be infected with diseases that is highly communicable to humans. This includes items that drip blood when compressed (dressing, gauze or cotton rolls and containers containing blood fluid) must be placed in a “biohazard bag” with the international biohazard symbol. The bag must be placed for storage, handling or transport in a rigid leak-proof container with tightly fitting lid. The container must also be in good condition and labeled with “BIOHAZARD”.
- Excess amalgam in the clinics is placed in a dark bottle container, containing x-ray fixer solution. It is labeled and available in all the clinics.

Sharps

- Used needles, scalpel and hypodermic needles with syringes, blades, needles, and root canals files are placed in the disposable container for contaminated sharp to be incinerated.
- They are collected in the clinic and stored in a cold room in the basement, then transported by a registered hazardous waste company for proper disposal.

Waste that are not categorized as medical waste are placed in a trash can:

1. All non-bloody or merely blood-tainted waste (as distinguished from blood soaked)
2. Disposable gloves
3. Disposable facemask
4. Plastic barriers
5. Paper towels
6. Paper products and packaging
7. Garbage (anything potentially recyclable should not be disposed)
DENTAL RADIOLOGY DIVISION

Introduction

The radiology division functions as diagnostic service as well as a teaching unit for dental students in the clinic. It is considered as one of the most important area because dental treatment of patients will not be completed without going through the required radiographic examination.

The radiologist who is the head of the division and his staff teaches both theoretical and practical aspect of radiography.

Practical laboratory works are being done so that students will be able to acquire the needed knowledge and skills on the techniques and procedure on radiographic examination, processing and mounting of films and scientific way of interpreting radiographs.

Radiology division, although considered as independent unit as far as technical management is concerned, carries out collaborative functions with the other area of the clinic.

General Objective

1. To render quality diagnostic service to patients by means of intraoral, extraoral and special radiographic procedures.
2. Provide extensive education and practical training to students in the field of radiology.
SAFETY OPERATING POLICY AND PROCEDURES

Policy

Operators of X-ray units shall pay special attention to ensure that the right radiological equipment and techniques are used when performing radiological procedures.

Purpose

To ensure all patients are treated with “recommended safety standards and protocols” in an appropriate manner to minimizing radiation exposure to the patient, self, and other members of the healthcare team.

Procedures

1. Each X-ray worker should wear a personal dosimeter (TLD) during work near an X-ray source.
2. The radiation must be kept according to ALARA principle (AS Low As Reasonably Achievable).
3. When operating an X-ray machine for diagnosis, students or persons in training shall work under the direct supervision of an experienced operator authorized by the person in charge of the division.
4. They shall not be allowed to irradiate patients until they have received sufficient instruction in the precautions necessary for the safe operation of the equipment.
5. The X-ray exposure should be controlled only from a lead shielded control booth where the patient can be observed through a viewing window having lead-equivalent thickness conforming to the rest of the shielding.
6. Control knobs for adjusting kilo voltage, milliamperage, power-on, or X-ray-on switches shall have their functions clearly and durably labeled.
7. All pilot lights, which indicate that the control panel is ready to be energized, shall be functioning properly at all times.
8. It is not allowed to energize more than one tube at a time and an indicating light will show which tube is connected and ready to be energized.
9. The X-ray tube shall be rigidly fixed and correctly aligned within its tube housing.
10. The tube head shall maintain its exposure position without drift or vibration during the examination.
11. Lead-lined localizing collimators or cones shall be used with all dental equipment. Such collimators or cones shall provide the maximum practical field size.

12. Open-ended cones shall be used for intraoral examinations.

13. The equipment is provided with an automatic timer, which will terminate the exposure after a preset time or earlier at the discretion of the operator.

14. The X-ray tube housing or cone shall not be held by hand during exposure.

15. No person other than the intended patient may place any part of his or her body within the direct beam.

16. Dental films shall be placed in a fixed position. If the patient is a child or in a weak condition, the film can be held by an accompanying adult who is suitably protected.

17. Under no circumstances may the film be held by a person occupationally exposed to X-ray radiation.

18. Gonadal lead shielding and, when appropriate, thyroid lead shielding shall be provided for all X-ray exposures on children and persons of reproductive age.

19. Radiographers should only accept requests for examinations which are properly authorized in accordance with established or recognized criteria.

PREGNANT X-RAY WORKERS

A specific dose limit has been set for female X-ray workers. As soon as a pregnancy is confirmed, the pregnant X-ray worker must be limited to an external radiation exposure dose for the balance of the pregnancy of 5 milliseverts (5mSv) received through external exposure, measured at the surface of the abdomen. A personal dosimeter provided by the division must be worn in order to monitor the dose to the abdomen every two weeks if possible. Dosimeter or TLD should be worn at the waist level as close as possible to the surface of the abdomen. This limit, 5 mSv doses to the abdomen, is intended to prevent developmental defects incurred by X-ray exposure of the embryo or fetus, and to reduce the potential risk of childhood cancer.

A female X-ray worker must notify in writing her immediate supervisor as soon as she knows she is pregnant so that necessary recommendations can be made and precautions taken to provide the appropriate degree of radiation protection to the fetus during the term of pregnancy.
INFECTION CONTROL WHEN MAKING DENTAL RADIOGRAPHS

Infection control procedures for dental radiography can be divided into segments or components.

During all the radiographic procedures the dental radiographic technician should be aware not to touch any surfaces that can be cross contaminated.

A. Preparing to Take Dental Radiographs

Surfaces to be covered include:

1. Chair headrest
2. control adjustments
3. exposure buttons
4. control panels
5. X-ray tube heads
6. After the patient has been seated, hands can be washed or disinfected, dried, and gloves placed.

B. Taking Dental Radiographs

1. Place the sterilized film into disposable film holder.
2. Place the film holder which contains the film into patients mouth.

Gloves should always be worn when taking radiographs and handling film packets. Other personal protecting equipment should be used when the spattering of patient body fluids is likely.

C. After Taking Dental Radiographs

1. A sterilized paper cup or paper towel should be ready.
2. Take off the film holder with the film from patients mouth.
3. Uncover the plastic wrap of the film and place it in the paper cup or the paper towel.
4. Remove all the used plastics that covers chair headrest, control adjustments, exposure buttons, control panels, and x-ray tube heads.
5. Remove the gloves.
D. 

**Developing Dental Radiographs**

1. A new glove can be used for more protection.
2. Assure films are dried.
3. Open the film packets only in the designated area.
4. Place the films in the processor.
5. Throw packets cover and content into appropriate waste containers.
6. Clean the area and then remove the gloves.

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**PROCEDURE OF MAKING DENTAL RADIOGRAPHS FOR PATIENTS IN THE CLINICS**

1. The requesting student/clinician should fill out the Patient X-ray Request Form.
2. The radiology receptionists accept and register the request after checking it has been correctly filled and signed by requesting clinician and for student to be countersigned by the supervising faculty member.
3. Requisition that has a color coded sign for a controlled disease should have a special care.
4. The patients should be advised to go to the correct area to take the radiographs.
5. Patients are not allowed to take their radiographs. The assistants or students or clinician are allowed to get the radiographs after it is processed and labeled in a mounting frame.
6. All radiographs can be taken in the same day except request that has many procedures that might affect the workload. This can be given appointments such as:
   a. Cone Beam Computerized Tomography (CBCT)
   b. Complete Mouth X-ray (20 CMS)
   c. Sialography

* The Cone Beam CT (CBCT) and the Sialography should be approved by a radiology faculty member and signed in the request form.
* Radiographs that remains in the Radiology Division are endorsed by log file to the booking area.
* CMS duplicates can be kept in the division to avoid retakes.
* Radiology Reception can be reached at 4676649 (DUC) and 4784524 ext. 327 (MUC).
CONE BEAM COMPUTERIZED TOMOGRAPHY (CBCT)

1. Request for CBCT must be approved by a faculty in the radiology clinic before booking the patients.
2. CBCT examinations must not be carried out unless a history and clinical examination have been performed.
3. CBCT examinations must be justified for each patient to demonstrate that the benefits outweigh the risks.
4. CBCT should not be repeated ‘routinely’ on a patient without a new risk/benefit assessment having been performed.
5. CBCT should only be used when the question for which imaging is required cannot be answered adequately by lower dose conventional (traditional) radiography.
6. A thorough clinical evaluation must be carried out if a soft tissue examination is required so can be referred to conventional medical CT or MRI, rather than CBCT.
7. CBCT equipment offered a 2 different volume sizes which examinations must use the smallest that is compatible with the clinical situation to provide less radiation dose to the patient.
8. A quality assurance program is implemented for CBCT unit, including equipment, techniques and quality control procedures.
9. Aids to accurate positioning (light or laser beam markers) must always be used.
10. For staff protection from CBCT equipment, all those involved with CBCT must have received adequate theoretical and practical training for the purpose of radiological practices and relevant competence in radiation protection.
SIALOGRAPHY

Sialography a specialized radiographic technique in which a contrast medium is introduced in a retrograde fashion into the duct of salivary gland.

Procedures

1. Prepare sterilized examination kit, canula, contrast media, dilating duct device and lemon.
2. Follow the cubical infection control guidelines.
3. A thorough explanation of examination to the patient must be made.
4. Consent must be signed by the patient.
5. Any removable dental material, jewelry and other artifacts causing opaque items must be removed.
6. The radiologists should check the history of an allergic reaction, history of contrast sensitivity and any acute infection.
7. Avoid over filling of contrast medium into the injection area.
EQUIPMENT PERIODIC CHECKUPS

- Regular maintenance and associated checks should be performed in accordance with the recommendation of the manufacturer.
- Periodic calibrations of X-ray tube output.
- Date and actions to correct any fluctuations of the X-ray equipment output.
- Visual evaluation of tube head, movements or oil leakage.
- Measurement of beam size to ensure that it does not exceed the regulatory requirements.
- Accuracy of kVp is within plus or minus 10% of the selected kVp.
- Accuracy of timer within plus or minus 10% of a pre selected time.
- Radiation output should be consistent.
- Strict quality assurance is followed for the processors and darkroom.
- Each machine has a file to record all the problems encountered and records are maintained and filed in the Radiology Department.

Darkroom Periodic Checkups

The following processor maintenance should be followed:

Daily

1. Run roller transport cleanup films.
2. Check developer and fixer rollers.
3. Check chemistry.
4. Turn processor on and check water temperature.
5. When processors are ready, perform step-wedge test.

Weekly

- Clean the wash rollers.

Monthly

- Perform Penny test to check for darkroom light leakage.
MANAGEMENT OF MEDICAL EMERGENCIES IN DENTAL CLINICS

Medical Emergency is an injury or illness that is acute and poses an immediate risk to a person's life or long term health.

All dental practitioners and dental care professionals may have to deal with medical emergencies. Although these are rare and in spite of the fact that such events happen infrequently, yet the dental team needs to keep in mind that

- Medical emergencies can occur at any time.
- All members of staff need to know their role in the event of a medical emergency.
- Members of staff need to be trained in dealing with such an emergency.
- Dental teams should practice together regularly in simulated emergency situations.

The management of such a condition, if and when such condition does come across and a prompt action taken, can be life saving to the patient.

Various types of emergencies can arise in a dental practice. These can be grouped into

- Airway Obstruction
  - Choking and aspiration
- Breathing Problems
  - Asthma
  - Hyperventilation
- Cardiac Emergencies
  - Angina
  - Myocardial Infraction
- Drug Reactions
  - Allergy
  - Anaphylaxis
- Endocrine Problems
  - Hypoglycaemia
  - Acute Adrenal Insufficiency
- Fits
  - Epileptic seizure
- Syncope
  - Vasovagal attack
- Vascular Events
  - Hypotension
  - Hypertensive Crisis
Frequency of Medical Emergencies in Dental Practice

The commonest problems range in the order of vasovagal syncope (faints), hypoglycaemia, angina, seizures, choking, asthma and anaphylaxis. These have been reported to occur at rates between 0.7 cases per dentist per year (Girdler, 1999) or on average once every 3 to 4 years (Atherton, 1999). Myocardial infarction and cardiopulmonary arrest are even more uncommon.

RISK ASSESSMENT OF A MEDICAL EMERGENCY

Prevention is the most important phase of treating medical emergencies. It must be remembered however, that despite all efforts at prevention EMERGENCIES will happen. The following should be considered for most of the patients:

- Any patient can have a medical emergency during dental treatment.

- A comprehensive medical and drug history will enable the Dental Practitioner to identify patients at particular risk and take measures to reduce the chance of a problem arising.

- History taking should not be delegated to another member of the dental team and patient completed health questionnaires are only acceptable if augmented by a verbal history taken by the dental practitioner.

- Modifying the planned treatment or referral to a hospital may be appropriate for some dental procedures in selected patients.

- Dental practitioners should routinely assess patients using a risk stratification scoring system, e.g., the American Society of Anaesthesiologists (ASA) classification. This may help identify patients with a higher risk of medical emergencies occurring during treatment. Such systems can be incorporated into a specifically designed medical history questionnaire so that the risk scoring becomes part of the routine medical history.

- As patients’ medical problems and medication can change frequently, dental practitioners must demonstrate that medical and drug histories are formally updated at least annually and interim changes noted at treatment visits. Liaison with the patient’s general practitioner may be necessary.
DRUGS NEEDED TO MANAGE MEDICAL EMERGENCIES

To manage the most common medical emergencies encountered in general dental practice the following drugs should be available as essential drugs:

- Glyceryl trinitrate (GTN) spray (400 micrograms / dose)
- Salbutamol aerosol inhaler (100 micrograms / actuation)
- Adrenaline injection (1:1000, 1mg/ml)
- Aspirin dispersible (300mg)
- Glucagon injection 1mg/ml
- Oral glucose solution / tablets / gel / powder - (Hypostop Gel)
- Midazolam 10mg/ml (buccal or intranasal)
- Oxygen 10-15 L/min

Drugs like I/V Dextrose, Hydrocortisone and Chlorphenramine can be kept additionally provided there is an experienced and qualified operator.

- Wherever possible, drugs in solution should be stored in a pre-filled syringe.
- Quick use of drugs for medical emergencies in general dental practice is to be encouraged. It might be difficult to administer drugs through intra venous route in an emergency. In such circumstances, intramuscular, inhalational, sublingual, buccal and intranasal routes are all good to administer drugs.
- All drugs should be stored together in a purposely-designed ‘Emergency Drug’ storage container.
- Oxygen cylinders should be of sufficient size to be easily portable but also allow for adequate flow rates, e.g., 10-15 litres per minute, until the arrival of an medical assistance or the patient fully recovers. A full ‘D’ size cylinder contains 340 litres of oxygen and should allow a flow rate of 10-15 litres per minute for between 20 and 30 minutes. Two such cylinders may be necessary to ensure the supply of oxygen does not fail when it is used in a medical emergency.
- Drugs should be checked frequently for expiry date, ideally, weekly.
- A planned replacement programme should be in place for drugs that are used or reach their expiry date.
EQUIPMENT NEEDED TO DEAL WITH A MEDICAL EMERGENCY

- Portable oxygen cylinder (D size) with pressure reduction valve and flowmeter
- Oxygen face mask with tubing
- Basic set of Oro-pharyngeal airways (sizes 1, 2, 3 and 4)
- Pocket mask with oxygen port
- Self-inflating bag and mask apparatus with oxygen reservoir and tubing (1 L size bag)
- Variety of well fitting adult and child face masks for attaching to self-inflating bag
- Portable suction with appropriate suction catheters and tubing e.g., the Yankauer sucker
- Sterile syringes and needles
- ‘Spacer’ device for inhaled bronchodilators
- Automated blood glucose measurement device
- Pulse Oximeter
- Sphygmomanometer
- Automated External Defibrillator (AED)

- Medical Emergency equipment should have good infection control with most of the things ‘single use’ and latex free.
- Staff should learn the modifications to adult Cardio-Pulmonary Resuscitation (CPR) for use in children.
- Staff should update their skills at least annually.
- All new members of staff should have resuscitation training as part of their induction programme.
- Training can be undertaken locally within the dental practice or within local and regional training centers (CPR Training).
- There should be stress reduction protocol especially for the anxious patients.
MANAGEMENT OF MEDICAL EMERGENCIES
IN DENTAL PRACTICE

When a medical emergency arises in the dental office, the following protocol should be followed:

✓ Early identification of the ‘sick’ patient is to be encouraged.

✓ Pre-empting any medical emergency by recognising an abnormal breathing pattern, an abnormal patient colour or abnormal pulse rate, allows appropriate help to be summoned, e.g., medical assistance, prior to any patient collapsing.

✓ A systematic approach to recognising the acutely ill patient based on the ‘ABCDE’ principles is recommended.

The 'ABCDE' approach or principle involves systematic evaluation of:

Airway - Airway obstruction should be assessed and eliminated first.

Breathing - Immediate life threatening breathing should be assessed and treated.

Circulation - Circulation should be effective, this might include change in posture.

Disability - Includes assessment of any external injury or cerebral hypoxia.

Exposure - Includes loosening of patient's clothes, useful for assessment of rashes in an allergic condition.

✓ Accurate documentation of the patient’s medical history should further allow those ‘at risk’ of certain medical emergencies to be identified in advance of any proposed treatment.

✓ In the event of any significant medical emergency a medical assistance should be summoned at the earliest opportunity.

✓ Immediately after any medical emergency, many patients may be clinically unstable and may require admission to hospital.
Written documentation containing details of the dental procedure (if any), medical emergency, any treatment given and the name of the dental practitioner should accompany the patient to the hospital.

If a patient recovers completely and hospital admission is not deemed necessary, safe medical practice dictates that they should not leave the dental premises unaccompanied nor drive a motor vehicle. Elective treatment can be deferred to the next visit.

**AIRWAY OBSTRUCTION**

**Choking and Aspiration**

Dental patients are susceptible to choking with the potential risk of aspiration. They may have blood and secretions in their mouths for prolonged periods. Local anaesthesia may diminish the normal protective pharyngeal reflexes and ‘impression material’ or dental equipment is often within their oral cavity and poses additional risks.

**Causes of Airway Obstruction**

- Hypo-pharyngeal obstruction (Foreign body)
- Blood, vomitus, water, or saliva in mouth
- Bronchoconstriction
- Laryngospasm
- Tongue (This is the most common)

<table>
<thead>
<tr>
<th>Partial Obstruction</th>
<th>Total Obstruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Snoring</td>
<td>No noise</td>
</tr>
<tr>
<td>Gurgling</td>
<td></td>
</tr>
<tr>
<td>Wheezing</td>
<td></td>
</tr>
<tr>
<td>Crowing</td>
<td></td>
</tr>
</tbody>
</table>
General Signs and Symptoms

- Gasping for breath
- Patient grabs at throat
- Panic
- Suprasternal or supraclavicular retraction

A. Conscious Patient

- The patient may cough and splutter.
- They may complain of difficulty breathing.
- Breathing may become noisy with wheeze (usually aspiration) or stridor (usually upper airway obstruction).
- They may develop ‘paradoxical’ chest or abdominal movements.
- They may become cyanosed and lose consciousness.

✓ In cases of aspiration, allow the patient to cough vigorously.

✓ Symptomatic treatment of wheeze with a salbutamol inhaler may help (as for asthma).

✓ If any large pieces of foreign material have been aspirated, e.g., teeth or dental amalgam, the patient should be referred to hospital as an emergency for a chest x-ray and possible removal.

✓ The treatment of the choking patient involves removing any visible foreign bodies from the mouth and pharynx. High volume suction or a haemostat is preferred over using fingers.

✓ Encourage the patient to cough if conscious. If they are unable to cough but remain conscious then sharp back blows should be delivered. These can be followed by abdominal thrusts if the foreign body has not been dislodged.
B. **Unconscious Patient**

- Place patient supine on the floor or 15-30 degrees back in the dental chair
- Head tilt/chin lift
- Check airway and breathing, assess cause of obstruction
- If obstruction caused by fluids use suction (Yankhauer suction)
- Consider Jaw Thrust
- Open mouth with thumbs
- Reassess airway and breathing
- If not breathing attempt artificial ventilation and CPR This will not only provide circulatory support but the pressure generated within the chest by performing chest compressions may help to dislodge the foreign body
BREATHING PROBLEMS

A. Asthma

Patients with asthma (both adults and children) may have an attack while at the dental surgery.

Signs and Symptoms

<table>
<thead>
<tr>
<th>Acute Severe Asthma</th>
<th>Life Threatening Asthma</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Inability to complete sentences in one breath</td>
<td>• Cyanosis or respiratory rate &lt; 8 per minute</td>
</tr>
<tr>
<td>• Respiratory rate &gt; 25 per minute</td>
<td>• Bradycardia (heart rate &lt; 50 per minute)</td>
</tr>
<tr>
<td>• Tachycardia (heart rate &gt; 110 per minute)</td>
<td>• Exhaustion, confusion, decreased conscious level</td>
</tr>
</tbody>
</table>

Treatment

✓ Most attacks will respond to a few ‘activations’ of the patient’s own short-acting beta2-adrenoceptor stimulant inhaler such as salbutamol (100 micrograms/actuation). Repeat doses may be necessary.

✓ If the patient does not respond rapidly, or any features of severe asthma are present, a medical assistance should be summoned. Patients requiring additional doses of bronchodilator should be referred for medical assessment after emergency treatment. If the patient is unable to use the inhaler effectively, additional doses should be given through a large-volume spacer device.

✓ If the response remains unsatisfactory or if the patient develops tachycardia, becomes distressed or cyanosed (blueness around the lips or extremities), arrangements must be made to transfer the patient urgently to hospital.

✓ Whilst awaiting medical assistance transfer, oxygen (10-15 litres per minute) should be given. 4–6 activations from the salbutamol inhaler should be given.
using a large-volume spacer device and repeated every 10 minutes if necessary until a medical assistance arrives.

✔ If asthma is part of a more generalised anaphylactic reaction or if signs of life threatening asthma are present, an intramuscular injection of adrenaline 1:1000 can be used as 0.5 ml.

B. Hyperventilation

Hyperventilation (Over-breathing) is the state of breathing faster and/or deeper than normal. It can result from a psychological state such as a panic attack, from a physiological condition such as metabolic acidosis or self induced.

Signs and Symptoms

- Dizziness
- Hard to breathe
- Shaking and trembling
- Cold clammy hands (Diaphoresis)
- Tight feeling in chest, chest pain, and palpitations
- Lightheaded, giddy, impaired consciousness
- Uncontrolled over-breathing. Respiration rate increases to 25-30/minute
- Globus hystericus: feeling of lump in throat and suffocating
- Tingling in hands, feet, and peri-oral areas
- Increase in blood pressure and increase heart rate

Management

✔ Discontinue treatment and remove any foreign objects from the patient’s mouth.
✔ Position patient upright.
✔ Assess airway.
✔ Reassure patient and try to calm them.
✔ Have patient breath slowly and shallowly into a paper bag or mask 6-10 time/minute.
✔ Patient can be asked to breathe his own exhaled air by asking to close his/her hands in front of his/her mouth and breathe slowly.
✔ Monitor vital signs.
✔ Determine what precipitated attack.
✔ Dismiss patient only after vital signs return to a normal range.
CARDIAC EMERGENCIES

The signs and symptoms of cardiac emergencies include chest pain, shortness of breath, fast and slow heart rates, increased respiratory rate, low blood pressure, poor peripheral perfusion (indicated by prolonged capillary refill time) and altered mental state. Providing oxygen during treatment or treatment under Nitrous oxide may be helpful for such patients.

A. Angina Pectoris

Signs and Symptoms

- Angina pain manifests typically as a central crushing pain in the chest which may radiate to the left arm or even sometimes to the jaw.
- Patient can have stable angina which is brought about exertion or stress and is relieved by the Glyceryl Trinitrate (GTN) spray.
- Some patients have unstable angina which can manifest in the absence of exertion or stress. Such patients are more vulnerable and a medical consultation should be sought before any proposed dental treatment.

Management

✓ The patient will probably carry Glyceryl Trinitrate (GTN) spray or tablets (or Isosorbide dinitrate tablets) and they should be allowed to use them. If not, prophylactic GTN spray or tablets can be used from the emergency drug kit to reduce chances of angina during the treatment.

✓ Where symptoms are mild and resolve rapidly with the patient’s own medication, hospital admission is not normally necessary.

✓ Dental treatment may or may not be continued at the discretion of the dental practitioner.

✓ More severe attacks of chest pain always warrant postponement of treatment and a medical assistance should be summoned.

✓ Sudden alterations in the patient’s heart rate (very fast or very slow) may lead to a sudden reduction in cardiac output with loss of consciousness. Medical assistance should be summoned.
B. Myocardial Infarction

The pain of myocardial infarction is similar to that of angina but generally more severe and prolonged. There may only be a partial or no response to GTN. In a person with a recent history of myocardial infarction, it is sensible to defer elective dental treatment for six months since the attack.

Signs and Symptoms

- Skin becomes pale and clammy.
- Nausea and vomiting are common.
- Pulse may be weak and blood pressure may fall.
- Shortness of breath

Management

✔ Immediately seek for a medical assistance.

✔ Allow the patient to rest in the position that feels most comfortable. In the presence of breathlessness, this is likely to be the sitting position. Patients who faint or feel faint should be laid flat; often an intermediate position (dictated by the patient) will be most appropriate.

✔ Give high flow oxygen (10-15 litres per minute). Nitrous oxide may also be helpful to relieve anxiety.

✔ Give sublingual GTN spray if this has not already been given.

✔ Reassure the patient as far as possible to relieve further anxiety.

✔ Give aspirin in a single dose of 300 mg orally, crushed or chewed. Medical assistance staff should be made aware that aspirin has already been given as should be the hospital.

✔ Many medical assistance services will administer thrombolytic therapy before hospital admission. Any dental treatment carried out that might contraindicate this must be brought to the attention of the medical assistance crew.

✔ If the patient becomes unresponsive, always check for ‘signs of life’ (breathing and circulation) and start CPR in the absence of signs of life or normal breathing.
DRUG REACTIONS

A. Allergic Drug Reaction

Usage of various applications including dental materials and drugs may predispose a vulnerable individual to an allergic reaction in a dental setting. Those individuals who have had already experienced such events are more vulnerable as compared to a person who has never experienced such an event.

Signs and Symptoms

- Cutaneous reactions are the most common occurrence and include urticarial, exanthematous, and eczemoid reactions. Itching is common and exfoliative dermatitis may be present.
- Angioedema (Swelling) varies from localized slight swelling of the lips, eyelids, and face to more uncomfortable swelling of the mouth, throat, and extremities.
- Respiratory symptoms like tightness in the chest or repeated sneezing.
- Bronchospasm is a generalized contraction of bronchial smooth muscles resulting in the restriction of airflow. This may also be accompanied by oedema of the bronchiolar mucosa. Bronchospasm is more common with pre-existing pulmonary disease such as asthma or infection but can also be caused by the inhalation of a foreign substance.
- Ocular reactions include conjunctivitis and watering of eyes.
- Hypotension can occur with any allergic reaction.

Treatment

- ABCDE approach
- Maintain airway, administer oxygen, and monitor vital signs.
- Identify and remove allergen.
- If in shock, put patient in a horizontal or slight Trendelenburg position.
- Antihistamines are usually effective for mild reactions.
- Follow up medications in 4-6 hours.
B. Anaphylaxis

Anaphylaxis is a severe, life-threatening, generalised or systemic hypersensitivity reaction. It is characterised by rapidly developing life-threatening airway and/or breathing and/or circulation problems usually associated with skin and mucosal changes.

Anaphylactic reactions in dentistry may follow the administration of a drug or contact with substances such as latex in surgical gloves. In general, the more rapid the onset of the reaction, the more serious it will be. Symptoms can develop within minutes and early, effective treatment may be life saving.

Anaphylactic reactions may also be associated with additives and excipients in medicines. It is wise therefore to check the full formulation of preparations which may contain allergenic fats or oils (including those for topical application, particularly if they are intended for use in the mouth).

Signs and Symptoms

The lack of any consistent clinical manifestation and a wide range of possible presentations can cause diagnostic difficulty. Clinical assessment helps make the diagnosis. Possible signs are:

- Urticaria, erythema, rhinitis, conjunctivitis.
- Abdominal pain, vomiting, diarrhoea and a sense of impending doom.
- Flushing is common, but pallor may also occur.
- Marked upper airway (laryngeal) oedema and bronchospasm may develop, causing stridor, wheezing and/or a hoarse voice.
- Vasodilation causes relative hypovolaemia leading to low blood pressure and collapse. This can cause cardiac arrest.
- Respiratory arrest leading to cardiac arrest.
Treatment

✔ Use an ABCDE approach to recognise and treat any suspected anaphylactic reaction. First-line treatment includes managing the airway, breathing, restoration of blood pressure (laying the patient flat, raising the feet) and the administration of oxygen (10-15 litres per minute).

✔ For severe reactions where there are life-threatening airway and/or breathing and/or circulation problems, i.e., hoarseness, stridor, severe wheeze, cyanosis, pale, clammy, drowsy, confusion or coma, immediate use of adrenaline may be life saving.

✔ Adrenaline should be given intramuscularly (Antero-lateral aspect of the middle third of the thigh) in a dose of 500 micrograms (0.5 ml adrenaline injection of 1:1000). An auto-injector preparation delivering a dose of 300 micrograms (0.3 ml adrenaline injection 1:1000 known as Epipen) is available for immediate self-administration by those patients known to have severe reactions. This is an acceptable alternative if immediately available.

✔ The dose is repeated if necessary at 5 minute intervals according to blood pressure, pulse and respiratory function.

✔ The paediatric dose for adrenaline is based on the child’s approximate age or weight. Usually 0.3 ml for less than 12 years of age.

✔ In any unconscious patient always check for ‘signs of life’ (breathing and circulation) and start CPR in the absence of signs of life or normal breathing, ignoring occasional ‘gasps’.

✔ In less severe cases any wheeze or difficulty in breathing can be treated with a salbutamol inhaler.

✔ All patients treated for an anaphylactic reaction should be sent to hospital or assessed by medical assistance for further assessment, irrespective of any initial recovery.
ENDOCRINE DISORDERS

A. Hypoglycaemia

Patients with diabetes should eat normally and take their usual dose of insulin or oral hypoglycaemic agent before any planned dental treatment. If food is omitted after having insulin, the blood glucose will fall to a low level (hypoglycaemia). This is usually defined as blood glucose < 3.0 mmol per litre, but some patients may show symptoms at higher blood sugar levels. Patients may recognise the symptoms themselves and will usually respond quickly to glucose. Children may not have such obvious features but may appear lethargic.

Signs and Symptoms

- Shaking and trembling
- Sweating
- Headache
- Difficulty in concentration / vagueness
- Slurring of speech
- Aggression and confusion
- Fitting or seizure
- Unconsciousness

Treatment

✓ ABCDE approach and confirm the diagnosis by measuring the blood glucose. In case of emergency and a doubt about hypoglycaemia, it might be advisable to give some form of glucose as it will not cause any short term problem even in diabetics.

✓ Early stages - where the patient is co-operative and conscious with an intact gag reflex, give oral glucose, milk with added sugar, glucose tablets or gel. Hypostop, which is a concentrated Glucose Gel, can be used and is effective as it is absorbed through the buccal mucosa quickly. If necessary, this may be repeated in 10–15 minutes.
In more severe cases - where the patient has impaired consciousness, is uncooperative or is unable to swallow safely, buccal glucose gel (Hypostop) and/or glucagon should be given.

Glucagon should be given via the IM route (1 mg in adults and children > 8 years old or > 25 kg, 0.5 mg if < 8 years old or < 25 kg).

It may take 5-10 minutes for glucagon to work and it requires the patient to have adequate glucose stores. Thus, it may be ineffective in anorexic patients, alcoholics or some non-diabetic patients and those who are fasting or starving.

Re-check blood glucose after 10 minutes to ensure that it has risen to a level of 5.0 mmol per litre or more, in conjunction with an improvement in the patient’s mental status.

If any patient becomes unconscious, always check for ‘signs of life’ (breathing and circulation) and start CPR in the absence of signs of life or normal breathing ignoring occasional ‘gasps’.

It is important, especially in patients who have been given glucagon, that once they are alert and able to swallow, they are given a drink containing glucose and if possible some food high in carbohydrate. The patient may go home if fully recovered and if they are accompanied. They should be advised not to drive.

B. Adrenal Insufficiency

Adrenal insufficiency may follow long term administration of oral corticosteroids and can persist for years after stopping therapy. A patient with adrenal insufficiency may become hypotensive when under physiological stress. The nature of dental treatment makes this a rare possibility. However, if a patient collapses during dental treatment other causes should be considered first and managed before diagnosing adrenal insufficiency. Routine enquiry about the current or recent use of corticosteroids as part of the medical history prior to dental treatment should alert the dental practitioner to the patient at risk of this condition. Some patients carry a steroid warning card.
Acute adrenal insufficiency can often be prevented by administration of an increased dose of corticosteroid prior to treatment. Dental treatment that requires an increased steroid dose is that which may cause significant physiological stress. Usually simple dental extractions and restorative procedures, including endodontics, are not a cause for concern, but surgical extractions or implant placement should be considered as a risk. Patients who are systemically unwell from a dentally related infection are also recommended to have a prophylactic increase in steroid dose in addition to any surgical and antimicrobial treatment indicated.

Steroid therapy suppresses the function of the adrenal cortex reducing the production of natural cortisol. Because of this suppression, patients who have been on long term steroid therapy lose their ability to respond to stress. If these patients are stressed, symptoms of acute adrenal insufficiency may result.

Nicholson et al. in 2004 have recommend doubling the patient's steroid dose before significant dental treatment under local anaesthesia for patients who are taking steroids like prednisolone in the range of 10 mg to 50 mg for last six months. Lesser dose is not considered to affect the cortisol negative feedback in the body while a dose more than 50 mg is considered to have enough exogenic steroid present in the body and does not warrant supplementation during dental treatment.

**Signs and Symptoms**

- Mental confusion
- Muscle weakness
- Fatigue
- Nausea and vomiting
- Hypotension
- Intense pains in abdomen, lower back, and/or legs

**Management**

- Discontinue all treatment and remove foreign objects from the patient's mouth
- Summon medical assistance as quickly as possible
- Place patient supine
- Monitor and record vital signs
- Oxygen at 10-15 L/minute
- Hydrocortisone 100mg IV (Dexamethasone 4mg) over 30 seconds or IM if IV not available
FITS OR EPILEPTIC SEIZURES

Patients with epilepsy must continue their normal dosage of anticonvulsant drugs before attending for dental treatment. Epileptic patients may not volunteer the information that they are epileptic, but there should be little difficulty in recognizing a tonic-clonic (grand mal) seizure.

Signs and Symptoms

- There may be a brief warning or ‘aura’.
- Sudden loss of consciousness, the patient becomes rigid, falls, may give a cry, and becomes cyanosed (Tonic phase).
- After a few seconds, there are jerking movements of the limbs; the tongue may be bitten (Clonic phase).
- There may be frothing from the mouth and urinary incontinence.
- The seizure typically lasts a few minutes; the patient may then become floppy but remain unconscious.
- After a variable time the patient regains consciousness but may remain confused.

Fitting may be a presenting sign of Hypoglycaemia and should be considered in all patients, especially known diabetics and children. An early blood glucose measurement is essential in all actively fitting patients (including known epileptics)

Check for the presence of a very slow heart rate (< 40 per minute) which may drop the blood pressure. This is usually caused by a vasovagal episode. The drop in blood pressure may cause transient cerebral hypoxia and give rise to a brief fit.

Treatment

- During a convulsion try to ensure that the patient is not at risk from injury but make no attempt to put anything in the mouth or between the teeth (in the mistaken belief that this will protect the tongue). Do not attempt to insert an oropharyngeal airway or other airway adjunct while the patient is actively fitting.

- Give high flow oxygen (10-15 litres per minute) and do not attempt to restrain convulsive movements.
After convulsive movements have subsided, place the patient in the recovery position and reassess.

If the patient remains unresponsive always check for ‘signs of life’ (breathing and circulation) and start CPR in the absence of signs of life or normal breathing.

Check blood glucose level to exclude hypoglycaemia. If blood glucose < 3.0 mmol per litre or hypoglycaemia is clinically suspected, give oral/buccal glucose, or glucagon.

After the convulsion, the patient may be confused (‘Post-ictal confusion’) and may need reassurance and sympathy. The patient should not be sent home until fully recovered and they should be accompanied. It may not always be necessary to seek medical attention or transfer to hospital unless the convulsion was atypical, prolonged (or repeated), or if injury occurred.

The National Institute for Clinical Excellence (NICE) UK guidelines suggest the indications for sending to hospital are:

- Status epilepticus
- High risk of recurrence
- First episode
- Difficulty monitoring the individual’s condition

Medication should only be given if seizures are prolonged (convulsive movements lasting 5 minutes or longer) or recur in quick succession. In this situation, a medical assistance should be summoned urgently.

With prolonged or recurrent seizures, medical assistance personnel will often administer IV diazepam which is usually rapidly effective in stopping any seizure. An alternative, although less effective treatment, is midazolam given via the buccal or intranasal route in a single dose of 10 mg for adults. For children the dose can be simplified as follows: child 1-5 years 5 mg, child 5-10 years 7.5 mg, above 10 years 10 mg.
SYNCOPE

Inadequate cerebral perfusion (and oxygenation) results in loss of consciousness. This most commonly occurs with low blood pressure caused by vagal over-activity (a vaso-vagal attack, simple faint, or syncope). This in turn may follow emotional stress or pain. Some patients are more prone to this and have a history of repeated faints. This is by far the most common event that occurs in the dental setting as compared to other medical emergencies.

Postural hypotension can be a consequence of rising abruptly or of standing upright for too long. Several medical conditions predispose patients to hypotension with the risk of syncope. The most common culprits are drugs used in the treatment of high blood pressure, especially the ACE inhibitors and angiotensin antagonists. When rising, patients should take their time. Treatment is the same as for a vasovagal attack.

Signs and Symptoms

Syncope can be broken into three categories or phases:

Post-Syncope

• Variable period on mental confusion
• Heart rate increases (Strong rate and rhythm)
• Blood pressure back to normal levels

Syncope

• Patient loses consciousness
• Generalized muscle relaxation
• Bradycardia (Weak thready pulse)
• Seizure (Twitching of hands, legs, and face)
• Eyes open (Out and up gaze)
Pre-Syncope

- Warm feeling in face and neck
- Pale or ashen coloration
- Sweating
- Feels cold
- Abdominal discomfort
- Lightheaded or dizziness
- Mydriasis (Pupillary dilatation)
- Yawning
- Increased heart rate
- Steady or slight decrease in blood pressure

Prevention

✓ Stress is the major cause of syncope in the dental practice. Prevention is the key to management of syncope. This includes taking a complete medical history and thorough evaluation of the patient.

✓ Use stress management protocols, morning appointments, consider sedation.

✓ Ensure that patients do not miss meals prior to treatment.

✓ Under stressful circumstances, many anxious patients hyperventilate. This may give rise to feelings of light headedness or faintness but does not usually result in syncope. It may result in spasm of muscles around the face and of the hands. In most cases reassurance is all that is necessary.

Treatment

✓ Stop all dental treatment.

✓ Remove all objects from the patient’s mouth.

✓ Place patient in supine position with legs and arms elevated and head at or below the level of heart, this will improve venous return.

✓ If patient is pregnant roll onto left side.

✓ ABCDE Protocol to ensure that the airway is open.
✓ Loosen any tight clothing, especially around the neck
✓ Oxygen 10-15 L/min by mask.
✓ Reassess airway.
✓ If unconscious for more than 1 minute, activate emergency service.
✓ Augment ventilation if respiratory effort is poor (Use bag and mask.)
✓ Reassess airway every 30 seconds.
✓ Respiratory stimulants like ammonia are not necessary if the preceding steps are followed.
✓ If any patient becomes unresponsive, always check for ‘signs of life’ (breathing, circulation) and start CPR in the absence of signs of life or normal breathing.

**After Recovery**

✓ Determine the cause of the Syncopal episode prior to completing further treatment.
✓ Delay further elective dental treatment especially if the patient lost consciousness.
✓ If the patient lost consciousness they must not be permitted to leave unescorted or drive a motor vehicle.
VASCULAR EVENTS

A. Hypertensive Crisis

Signs and Symptoms

A rise in the systolic blood pressure to 200 mm HG or greater and a corresponding rise in the diastolic pressure to 120 mm HG or greater.

Management

✓ Activate the EMERGENCY MEDICAL SERVICE and a prompt referral to the hospital

✓ In the dental office a hypertensive crisis will most likely be seen in four types of patients. Those with primary hypertension, those on MAO inhibitors or other drugs that deplete catecholamine storage in adrenergic nerve endings, those with undiagnosed pheochromocytoma and those with uncontrolled thyroid crisis.

B. Hypotension

Signs and Symptoms

• Weakness
• Diaphoresis
• Decreased level of consciousness
• Possible nausea and vomiting
Management

The treatment of hypotension is based on treating the aetiology. Possible aetiologies include psychological factors (stress), overdose of medication, postural changes, coexisting disease, hypovolemia, anaesthetic overdose, reflex (pain), hypoxemia, and hypercarbia.

- Stop dental treatment and remove all foreign objects from the patient’s mouth and administer oxygen.
- Place patient in semi-recumbent position with legs elevated above the level of the heart.
- Monitor and record vital signs, check pulse for rate, rhythm, and character.
- Check level of consciousness.
- If patient does not respond to the above treatment a major systemic complication should be considered. Activate EMERGENCY MEDICAL SERVICE at this point. Consider possible pulmonary embolism, cerebral vascular accident (stroke), myocardial infarction, and congestive heart failure.
REFERENCES AND RECOMMENDED READING

- Standards for clinical practice and training for dental practitioners and dental care professionals in general dental practice; a statement from the resuscitation council (UK)-2010
- National Institute of Health and Clinical Excellence (NICE) United Kingdom.
- Pocket Guide to Medical Emergencies in the Dental Office by Lapointe, DC, USN
- Faculty of General Dental Practice (FGDP) Royal College of Surgeons, England; Key Skills in General Dental Practice; Medical Emergencies in Dental Practice
- MEDICAL EMERGENCIES IN DENTAL PRACTICE Office Preparation and Managing the Unconscious Patient; Morton Rosenberg, DMD & John Yagiela, DDS, PhD
- Management of Medical Emergencies in the Dental Office: Conditions in Each country, the Extent of Treatment by the Dentist; Daniel A Haas
Medical Emergency Procedures in the Dental Clinics

1. The first dental assistant should position the patient in a supine position. Then call for help and stay with the patient. Assist as directed.

2. The second dental assistant will page for the Oral surgeon at telephone no. 78543 for "Code blue" 3x stating the location clearly and slowly. Inform the OMFS secretary at telephone no. 77423, calling the ambulance depending on the evaluation of the oral surgeon. Assist as directed.

3. The third dental assistant will take the emergency “crash cart” with the oxygen cylinder, sphygmomanometer, thermometer and glucometer to the area. Check the blood pressure, pulse, respiratory rate and temperature. Assist as directed.

4. The Clinic Supervisor directs the entire procedure until the Oral Surgeon arrives. Write down the time the emergency occurred, the paging done and when the Oral Surgeon arrives at the area. Records all the treatment and measures undertaken by the team to be filed in the patient’s file. Assist as directed.

KKUH Emergency Tel. no. 71445 / 71997 / 91296
Ambulance Tel. no. 71669 / 72200 / 71435
KAUH Emergency Tel. No. 478-6100 ext. 1110
# MEDICAL EMERGENCY IN DENTAL CLINICS REPORT

- **KSU-CD Staff**
- **Patient**
- **Patient Accompany**
- **Others**

**PATIENT IDENTIFICATION:**

- **AGE:**
- **GENDER:**
- **FILE NUMBER:**

<table>
<thead>
<tr>
<th>START OF MEDICAL EMERGENCY</th>
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<tbody>
<tr>
<td><strong>DATE</strong></td>
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<td><strong>TIME</strong></td>
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<tr>
<td><strong>CLINIC LOCATION</strong></td>
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<tr>
<td><strong>CUBICLE NO.</strong></td>
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<tr>
<td><strong>CLINICIAN’S NAME</strong></td>
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<td><strong>PATIENTS CONDITION</strong></td>
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<tr>
<td><strong>BLOOD PRESSURE</strong></td>
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<td><strong>RESPIRATORY RATE</strong></td>
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<tr>
<td><strong>BLOOD GLUCOSE LEVEL</strong></td>
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<tr>
<td><strong>TREATMENT</strong></td>
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- **ORAL SURGEON Time called**
- **ORAL SURGEON Time of Arrival**
- **Name of ORAL SURGEON**
- **INITIAL DIAGNOSIS**
- **AMBULANCE Time Called**
- **AMBULANCE Time of Arrival**
- **DOCUMENTED BY**
  - Clinic Supervisor/Head Section
  - 1<sup>st</sup> Dental Assistant
  - 2<sup>nd</sup> Dental Assistant
  - 3<sup>rd</sup> Dental Assistant