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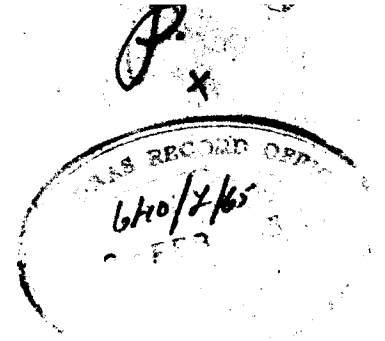
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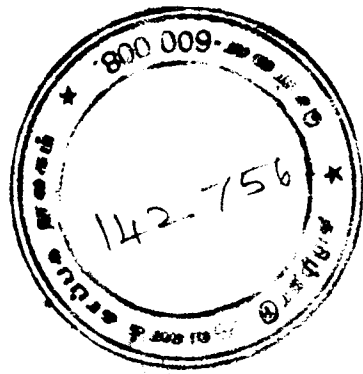
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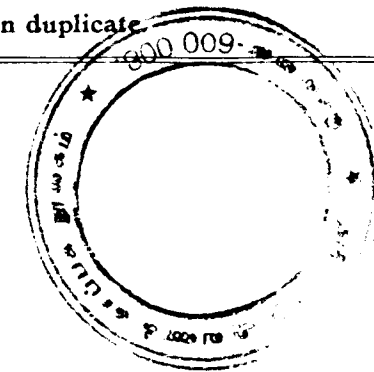
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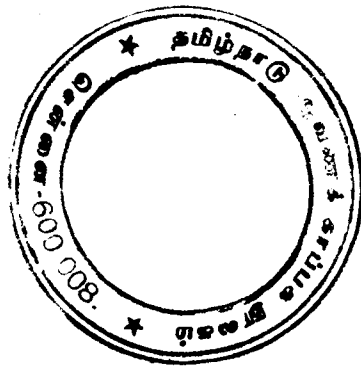
IMPORTANT NOTICE

is imperative that these quarterly Medical Bulletins are published regularly as they are in great demand by the Medical Profession all round, even outside this State. For this purpose sufficient number of articles of scientific interest are absolutely necessary. You are requested to kindly co-operate by regularly contributing any articles of scientific interest. Such articles may kindly be sent in duplicate.



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FUNCTIONING OF A DENTAL CLINIC.

Introduction.—Dentistry is a profession which combines art with science and aims at the upkeep of health and integrity of teeth and jaws. Healthy teeth and jaws are essential for (i) proper functioning of the masticatory apparatus which in turn contribute to the general health of the individual, (ii) perfect phonation which though necessary for all is of prime importance to vocalists and orators and lastly (iii) a pleasing facial contour which is important from a cosmetic point of view.

Fields of work.—The work of a Dental Surgeon can be divided into three fields, viz: (i) Diagnostic, (ii) preventive and (iii) curative—

(1) *Diagnosis.*—Proper diagnosis is essential before institution of proper preventive or curative measures. Successful diagnosis requires perfect examination of the condition using exact knowledge, intuition, logical reasoning and an impartial judgment.

In order to perform an oral examination properly one must be familiar with the appearance of normal tissues. Once this has been mastered, little difficulty should be encountered in recognising the abnormal. To note obscure lesions, the technique of oral and facial examination must be careful and exacting and must include more than an examination of the teeth. This method of complete examination should be developed into a habit. It is a good routine to start the oral examination with the non-dental structures and to examine the teeth and gingiva last. A proper oral examination both extra oral and intra oral should proceed in a systematic sequence in order to assure completeness.

(A) *extra oral examination*—

- (1) Face.
- (2) Parotid and sub-maxillary glands.
- (3) Submaxillary and submental lymph nodes.
- (4) Jaws and temporo-mandibular joint.
- (5) Neck and cervical lymph nodes.
- (6) Lips and corners of mouth.

(B) *Intra oral examination—*

- (1) Mucous memberane of lips, cheeks and papillae of parotid ducts.
- (2) Floor of mouth sublingual gland and sub-maxillary duct.
- (3) Tongue (all surfaces).
- (4) Palate (hard and soft).
- (5) Tonsils and tonsillar pillars.
- (6) Posterior pharyngeal wall.
- (7) Retromolar area.
- (8) Gingiva and alveolar bone (periodontal pockets interdental areas).
- (9) Teeth.

(C) *Special examination—*

The following special examinations are an aid in diagnosis :—

(i) *Blood tests.*—Complete blood count, differential cell count, hæmoglobin, bleeding time, clotting time, prothrombin times, Serological-Wasserman and Kahn-agglutinations.

(ii) *Rontgenograms.*—Intra-oral periapical bite-wing and occlusal, extra-oral, lateral view head-plates, antero-posterior view head plates, nasal sinuses, temporo-mandibular joint, zygoma, skull long bones, pelvis, lamonigram, sialogram,

- (iii) biopsy,
- (iv) study casts,
- (v) photographs,
- (vi) bacteriologic tests and
- (vii) urinalysis.

Both the patient and the dentist benefit from the logical efficient and effective treatment planning that comprehensive diagnostic procedures permit. Routine and thorough diagnostic procedures well charted (Appendix I and II) not only minimize the undesirable, unpleasant and at times serious reactions to some types of dental treatment but also help to

detect oral malignancies in the very early stage, after making the diagnosis, the treatment must be planned. The treatment may be medical or surgical or a combination of medical and surgical methods. Careful diagnosis and thorough understanding of disease will lead the dentist to proper selection of the treatment to be carried out. In many instances consultations with other members of the dental profession, with the family physician or with a specialist may be indicated.

The responsibility of the dentist does not end with diagnosis and treatment planning. He should see that the patient carries through with proper treatment and after treatment he should schedule a careful follow-up of the patient who has become his responsibility.

Preventive.—Before attempting to discuss this important aspect of preventive dentistry it is proper to have a complete understanding of the common dental diseases.

J. Allen in a survey conducted to find the causes of the loss of teeth listed the following :—

	PER CENT.
1. Caries	48.8
2. Periodontal diseases	40.7
3. Impaction	4.4
4. Prosthetic reasons	2.8
5. Orthodontic reasons	1.8
6. Supernumerary teeth	0.5
7. Traumatic reasons	0.4
8. Surgical reasons	0.3

He further concluded that three times more teeth were lost per individual because of periodontal disease than because of caries. A similar survey conducted in this country support the above findings and indicates that : (i) periodontal disease accounts for the largest number of extraction in Indian individuals; and (ii) next important cause is dental caries. The other causes of tooth loss are of minor importance.

It is clear from the above that periodontal disease and dental caries and probably now malocclusion also are the most common dental disorders for which effective preventive measures should be instituted. The epidemiological data

collected by various workers about these two diseases (dental caries and periodontal disease) in India is shown in Tables X and XI.

Preventive measures will certainly be incomplete without the education of the Lay public about such dental disorders.

(a) *Caries control measures.*—The theoretically possible ways to prevent dental caries are listed in Table I (a) and (b) and some suggestion for caries control in Table II. There are two methods of approach to caries control: One is true prevention. Its aim is to inhibit the etiologic forces so that no carious lesion develops. The other is remedial treatment which detects the disease early and eliminates it by good operative procedures. True prevention of dental caries is accomplished by several tried methods: (i) Diet is the most effective means. Caries could be reduced to an insignificant amount if the necessary restriction on refined carbohydrates in the diet could be generally obtained, (ii) Water fluoridation or application of sodium fluoride on children's teeth seems to be the most practical and simple method of securing a significant reduction (Appendix III), (iii) Proper oral hygiene can effect some reduction, but that, effect is dependent upon conscientious and continuous use.

Remedial prevention may be secured in several ways. Prophylactic odontotomy has been practiced for years and has undoubtedly saved many dental pulps and many teeth. Methods are being tried that have evolved from previous investigations and impregnation with silver nitrate or zinc chloride and potassium ferrocyanate. The rationale is to charge the tooth surface on the very early lesions of caries with a material that has antibacterial and antienzyme properties and that will be retained in the tooth tissue for long periods. Another procedure that is still experimental but that holds promise of practical usefulness is polymerized materials that will bend themselves to the tooth tissue so that when placed in pits, fissures or early lesions, they permanently seal off those areas from the external environment.

Prevention of periodontal disease.—Periodontal disease which is a major cause of teeth is usually the result of local irritational factors. Systemic factors do play a role but such a role is not fully understood [Table III (a)].

So far there are no known effective measures which can be adopted for large population groups to prevent or control the prevalence and incidence of periodontal disease. The dentist can render a useful service in the interest of health of the community and the prevention of periodontal disease by stimulating educational programme which will: (a) make the public aware of the damage brought by periodontal disease, (b) dispel the notion that "pyorrhoea is incurable", and that people naturally lose their teeth when they grow old, (c) inform the public that effective treatment procedures are available, (d) stress the preventive value of good oral hygiene and regular dental care, (e) emphasize the fact that unlike tooth decay, periodontal disease is usually painless and careful check-up is required for its early detection; and (f) make it clear that early treatment is the simplest and most economical treatment.

At present the prevention or control of these diseases can be instituted through—

- (i) regular oral examination to ascertain the presence of disease or predisposing factors,
- (ii) correction of defects, if any,
- (iii) proper diet,
- (iv) good oral hygiene and home care; and
- (v) periodical check-up.

Prevention of orthodontic deformities or malocclusion.—Orthodontic deformities or malocclusion range from relatively insignificant deviations to severe and disfiguring malrelationships of teeth, jaws and face. The impact of severe malocclusion on personality development has not been carefully identified. However it seems reasonable to assume that the individual with an 'Andy Gump' chin or with protruding front teeth is less likely to make an adjustment to his surroundings than is the individual not so deformed. These irregularities can be prevented by:

- (i) *Care of general health.*—By recommending a diet with good nutritional value and of a consistency that gives proper exercise to masticatory apparatus and by attending to child's nasal passages.

(ii) *Care of deciduous dentition.*—The deciduous molars play an important part in guiding the permanent posterior teeth into occlusion. The care of deciduous teeth can be effected through—

- (a) Proper oral hygiene.
- (b) Space maintainers (when these teeth are lost early).
- (c) Removing over-retained teeth (when they interfere with normal eruption of permanent teeth).
- (d) Elimination of cuspal interference by careful grinding.
- (e) Conservative dentistry.
- (f) Serial extraction of supernumerary and deciduous teeth.

(iii) *Care of permanent teeth.*—Once again through proper oral hygiene and regular care of teeth and gums.

(iv) *Prevention of abnormal habits.*—Certain habits such as mouth breathing, tongue thrusting, thumb or lip sucking, pencil or nail biting and other postural habits which affect the occlusion can be prevented by the use of appliances, exercises and through education of the child and the parent.

(v) *Curative or treatment service.*—The treatment service of dentistry can be broadly classified under the following heads :—

(a) *For children*—

- (1) Relief of pain and treatment of acute infections.
- (2) Elimination of pathosis and extraction of unsavable teeth.
- (3) Treatment of permanent teeth with exposed vital pulp.
- (4) Treatment of bone and soft tissue diseases and anomalies.
- (5) Repair of injured or carious permanent teeth.
- (6) Repair of injured or carious primary teeth.
- (7) Prosthodontia and orthodontic services.

(b) *For adults*—

- (1) Relief of pain and treatment of acute infections.
- (2) Elimination of pathosis and extraction of unsavable teeth.
- (3) Removal of irritating conditions which may lead to malignancies.
- (4) Treatment of bone and soft tissue diseases.
- (5) Repair of injured or carious teeth.
- (6) Replacement of lost teeth and restoration of functions.

I. RELIEF OF PAIN AND TREATMENT OF ACUTE INFECTIONS.

One of the most difficult subjective symptoms to interpret is pain, since this sensation may exist under circumstances when it is not related to diseases, while the nature and intensity of the pain stimulus may be the same in two circumstances, the reaction of the patient often varies markedly. Both physical and Psychological factors are important; some of these are :—

- (1) continuity of the pain,
- (2) the total pain load,
- (3) training of the patient,
- (4) previous experience of the patient with pain,
- (5) knowledge and understanding of pain by the patient,
- (6) attention or distraction and
- (7) fatigue and hysterical state.

The differential diagnosis of pain and treatment of dental and facial region is given in Table IV-VI and the common analgesics, sedatives and narcotics used for the relief of pain are given in Table VII.

In the management of acute infections both in children and adults the following should be observed—

- (i) the bacteria causing the disease,
- (ii) the tissue in which the bacteria are growing and immediate treatment instituted by—

(a) combating the bacteria with a chemotherapeutic agent of choice, and

(b) Treating the tissue—

(i) by incision and drainage,

(ii) removal of diseased teeth and dead bone, and

(c) Bolstering the resistance by—

(i) rest,

(ii) fluids,

(iii) nourishment,

(iv) blood transfusions,

(v) analgesics, and

(vi) physio-therapy.

The control of infection in the oral cavity and its adjacent structures has been greatly facilitated by the introduction of sulphonamide drugs and the antibiotics. The proper use of these chemotherapeutic agents requires an understanding of their mode of action and appreciation of their limitations and their possible danger to the patient.

The therapeutic effectiveness of all of these drugs depends upon their ability to kill or inhibit the multiplication of certain species of bacteria. Fortunately most of the bacteria which produce infections for which the dentist is responsible are susceptible to the action of Penicillin, Aureomycin, Chloramphenicol (Chloromycetin) and the Sulphonamides. All of these drugs can be given by mouth but Penicillin is economically administered by intramuscular injection.

One very important use of the anti-bacterial drugs in dentistry is in the prevention of bacterial endocarditis. Proper use of these antibacterial agents requires: (a) correct bacteriological diagnosis of infection, (b) the selection of most effective drug for its control and (c) consideration of the possible hazards involved in such medication. All of these drugs may cause sensitization of the patient with resultant development of urticaria or other manifestations of hypersensitivity. The sulphonamides may cause a variety of toxic effects such as hæmaturia or even anuria. This can be avoided if the urine is kept alkaline.

The long continued administration of these drugs should be discouraged because—

(1) of the possibility of producing a state of hypersensitivity in the patient;

(2) it may result in the development of resistant strains of bacteria; and

(3) it may adversely disturb the normal bacterial flora of the mouth.

II. ELIMINATION OF PATHOSIS AND EXTRACTION OF UNSAVABLE TEETH.

When the teeth become infected because of advanced carious lesion and Periodontal involvement and cannot be saved by proper root canal or Periodontal Therapy they have to be marked for extraction to completely eradicate the focal infection.

To perform exodontic procedures properly, a fundamental scientific approach and sound surgical judgment are necessary. A thorough knowledge of anatomy, both of the teeth and its contiguous structures is essential. Important considerations are pre-operative technics, careful evaluation of general health of the patient when to extract and when not to extract and how many and which teeth should be removed first. More important still one must recognize that while immediate serious difficulties following the removal of teeth are not common grave delayed post-operative complications are not too unusual (Appendix VI).

Most of the untowards effects can be avoided if one observes the following simple rules:—

(1) Consider the patient;

(2) be sure to get a pre-extraction history of the patient's systemic condition;

(3) consult a properly taken roentgenogram before starting any extraction;

(4) be as nontraumatic as possible.

(5) use positive gentle pressure in the removal of teeth. Brute force is not necessary;

(6) reduce the orifice of the alveolus by finger pressure immediately after extraction;

(7) keep saliva out of the socket so as to permit a normal blood clot to form;

(8) avoid extracting too many teeth at one sitting; and

(9) give the patient proper and adequate post-extraction instructions.

REPAIR OF CARIOUS AND INJURED DECIDUOUS OR PERMANENT TEETH.

(A) *Repair of carious deciduous or permanent teeth.*—

There are five classes into which the classification of caries falls. If caries occurs on any surface, the prime consideration is the removal of carious portion of the tooth. In other words cavity preparation is done. In doing so, the maximum extension for prevention or cutting for immunity is kept in mind. Operative Dentistry for children involves much more than the mere replacement of a filling into a tooth. Even the simplest operation for the child demands serious consideration and intelligent appreciation of his ever changing physical structure and his delicately balanced emotional state and mental attitude. All procedures for children should include a consideration of the legal (chronological) age and the dental (physiological) age, the occlusion and position of the teeth, the size of the arches, the degree of development of the primary and/or permanent teeth, the relative resorption of deciduous teeth and the general health of the child and any pathology of the oral cavity.

All cavity preparations as well as the insertion of the restorative material must be accomplished in a dry field. While gold castings are employed in the large restorations for primary teeth, silver amalgam generally is the choice for the average sized cavity. A local anæsthetic need not be employed in the average cavity preparation.

In classes III and V in anterior teeth either silicate or plastic fillings are given. In class V, silicate is the material of choice. Pulp capping has not been generally recommended. However, in selected cases wherein there is a small, non-carious exposure, such therapy should be considered. Vital

pulpotomy especially in children's teeth is generally recommended when there is an exposure of the vital pulp. The objective is to remove the bulbous portion of the pulp and to maintain the vitality of the pulp tissue within the root canals. This should be done under Local Anæsthesia. In some cases only pulpectomy may be the treatment of choice. If none of these procedures are indicated, extraction of the tooth is the only remaining course.

(B) *Repair of injured teeth (permanent or deciduous).*—

There is perhaps no single dental disturbance that has a greater psychological impact on both the parent and the child than the loss of or fracture of child's anterior teeth especially of permanent series. If these teeth are not saved, the disfigurement may develop into psychological hazard and result in deep-seated emotional disturbances. Extraction of injured and carious teeth without consideration of the possibilities of saving them has no place in good dental practice.

Before proceeding to the actual treatment of the case a good history and clinical examination including X-ray is done. In the injuries of teeth, the following may occur:—

(1) Concussions—with or without pulpitis.

(2) Coronal fracture—

(i) Enamel;

(ii) Enamel and Dentine;

(iii) Enamel, Dentine and Pulp; and

(iv) Complete Crown.

(3) Root fracture at the cervical, middle and apical third.

(4) Displacement.

Management of these injuries.—Injuries to the teeth are frequently accompanied by injuries to the adjacent soft tissues. It is important to control hæmorrhage at once. If the general condition of the patient is satisfactory and the local condition of the tissues is such that early closure can be obtained, it should be done. In this way better approximation of the tissues and healing will result. In some cases

complete primary repair is not possible and secondary repair may have to be done later. For injuries to the teeth the following should be done :—

(1) *Concussion* :—

- (i) Give rest to the tooth;
- (ii) apply counter-irritants; and
- (iii) watch for pulp pathology and alter the course of treatment accordingly.

(2) *Injury to enamel*.—When enamel alone is chipped, only thing to do is to round the margin with a diamond stone.

(3) *Enamel and dentine*.—In this case the pulp is protected with calcium hydroxide and thus secondary dentine formation is stimulated. Later various types of restorations are available to conserve the tooth.

(4) When the pulp is involved, either one of the following is done and every effort to retain the vitality of the pulp is made by :—

- (i) pulp capping,
- (ii) pulpotomy,
- (iii) pulpectomy,
- (iv) extraction.

The choice of treatment lies with the extent of exposure, condition of pulp and development of apical pathology and the general health of the patient.

(5) *Root fracture*.—The tooth which suffers from a fracture of the root should be immobilized immediately. Prognosis of cervical third cases is not favourable.

(6) *Displacements*.—In cases of partial displacement immobilization of teeth and bite adjustments helps solve the problem, however in completely extruded teeth the pulp is usually non-vital, it is better to do root canal treatment and re-implant the tooth.

Follow up in these cases is very important and watch for any (a) pulp death and Periapical infection, (b) Ankylosis and (c) migration is essential.

EMERGENCIES PROBLEMS IN DENTAL PRACTICE.

Problems of emergencies in Dental Practice are great many (Appendix VI). Most of these emergencies can be avoided by (i) a few minutes of casual questioning of the patient before instituting the treatment and always dismissing the patient with proper and preferably written instructions; and (ii) by developing good working habits. An aimless hit and misapproach to the problems becomes laborious, time-consuming and uncertain of result.

However in spite of all the care on the part of the Dentist, certain emergencies crop up and when they do, it is obligatory on the part of the Dental Surgeon to deal with these without much loss of time, always bearing in mind that the individual's safety comes first. Once the life-saving measures have been instituted then alone the investigation followed by desired treatment should be instituted. The equipment and drugs that are necessary for emergencies in the Dental office are given in Appendix VII. These equipments and drugs ideally every dentist should have available to cope with emergencies and special problems that may occur in a dentist's office.

EMERGENCY TREATMENT OF CIRCULATORY AND RESPIRATORY FAILURE.

Circulatory depression and failure.

1. *Psychogenic fainting (habitual)*.—This phenomenon is more transient than physiologic syncope.

Treatment—Reassurance of the patient, and Horizontal position of the dental chair may be a helpful preventive.

Therapy—Preoperative administration of phenobarbital grs. 0.5 or seconal, grs. 0.75 may be indicated to overcome anxiety-fear syndrome. If fainting develops, the therapy is the same as for syncope.

2. *Physiologic syncope*.—

Treatment—Posture of the patient in dental chair Head forward to a position between the knees, and press downward on the head against the patient's effort to sit up, or Horizontal

position of dental chair with head lowered posture of patient during recovery. Horizontal supine posture with head lowered and legs elevated.

Therapy—Inhalation of aromatic spirits of ammonia vaporole, Sensory stimulation by splashing forcibly water, administration by mouth Aromatic spirits of ammonia 15 mm. to an ounce of water.

3. Shock and circulatory failure—Patient appears ashen-gray, is cold and sweaty, and has a weak, slow pulse with a low blood pressure. Accurate diagnosis of cause is necessary in differentiating between cardiac and cerebral symptoms, which may appear similar at the outset, but the treatment would be entirely different.

Posture and care of patient.—Horizontal supine posture with head lowered and legs elevated.

Maintenance of body heat (blankets).

Maintenance of adequate airway.

Therapy.—Oxygen administered by nasal catheter, mouth tube or face inhaler, Caffeine-Sodium-Benzozate grs. 7·5 1 to 2 cc, intramuscularly or Neo-syneprine (1 per cent) 0·5 to 1 cc. intramuscularly Metrazole (10 per cent) grs. 1·5, 1 cc intramuscularly if respiration is also depressed.

4. Circulatory Collapse and Cardiac arrest—

Posture and care of patient—

Horizontal supine posture with head lowered and legs elevated (shock position).

Maintenance of free airway, using metal airway, and use of suction if necessary.

Maintenance of body heat (blankets).

Therapy—Administration of oxygen, and Artificial respiration if breathing has ceased (*see Respiratory Failure*) Ephedrine 25 to 50 mgm, 1 cc intramuscularly or Neo syneprine (1 per cent) 0·5, 1 cc intramuscularly if respiration has ceased, Adrenalin (epinephrine HCL) 1-1,00 0·5 to 1 cc.

Intracardiac injection in intercostal space midway between left nipple and left border of sternum External cardiac massage by upward pressure under diaphragm, or pounding with the fist over the precordial area may be helpful.

5. Angina pectoris—Posture of patient: Patient is more comfortable in sitting, Fowler's position (Head up).

Therapy—Administration of oxygen.

Inhalation of amyl nitrite vaporole.

Administration by mouth.

Nitroglycerine, Grs. 1/150, placed under the tongue.

Dose may be repeated two or three times.

Demerol 50 to 100 mgm, intramuscularly for the relief of severe substernal pain.

6. Coronary insufficiency—

Coronary disease due to coronary occlusion or coronary thrombosis.

Treatment—Same as for an acute anginal attack.

7. Left Ventricular failure and pulmonary Oedema—

Symptoms of dyspnea, apnea, hypoxia or asphyxia.

Treatment—Maintenance of airway.

Administration of Oxygen.

8. Cerebral hæmorrhage—

Maintenance of airway, and use of suction if necessary. Administration of Oxygen without Carbon-dioxide.

B. Respiratory depression and failure.

Due to Hypoxia, obstruction or asphyxia.

Treatment—Open the mouth: If in spasm use mouth-opener and mouth gag.

Clear airway of obstruction, i.e., foreign body: tongue (pull forward); fluid or vomitus. (Use metal connell-type airway.)

Administration of oxygen or oxygen and carbon-dioxide (10 per cent) manual artificial respiration if respiration has ceased.

Tracheotomy—

Therapy.—Metragole (10 per cent) 1·5 grs. 1 cc. intramuscularly supportive treatment for circulatory failure.

C. Acute sensitization reaction (Allergy).

1. *Local anaesthetic solutions.*—Syncope with weak small pulse may develop following injection of local anaesthetic solutions. The following preventive measures will reduce the incidence of unfavourable reactions (a) reduction in the concentration of the local anaesthetic solution, (b) reduction in the amount of solution injected, (c) reduction or elimination of the vaso-constrictor agent, (d) slow injection, (e) horizontal posture of patient, and (f) stage operations rather than extensive one stage procedure.

Treatment.—Same as for physiologic syncope. If syncope is not relieved in a few minutes and the pulse remains weak and slow the treatment is the same as for shock and circulatory failure.

If generalized muscular spasm and convulsions develop, accompanied by marked cyanosis, the following emergency treatment may be indicated :—

Oxygen, without carbondioxide, administered in sufficient volume and under adequate pressure to be effective. Seconal, 50 mgm. every two or three minutes intramuscularly or intravenously if possible, or pentothal, 2 or 2.5 per cent 1 cc. intravenously every 15 seconds until the convulsions cease.

2. *Penicillin reaction.*—Delayed or acute allergic manifestations may occur following intramuscular injection of penicillin :—

Treatment.—The antihistamine drugs. Pyribenzamine, 50 mgm. by mouth, q. 6 h. for a delayed mild reaction or 25 mgm. per cc. by intramuscular injection. Benedryl, 25 to 50 mgm. by mouth q. 6 h. or 10 mgm. per cc. by intramuscular injection. Chlortrimeton, 4 mgm. by mouth, q. 6 h. or 2 mgm. per cc. by intramuscular injection.

3. Acute angioneurotic oedema—

Treatment.—Antihistamine therapy or adrenalin, 1-1,000, 0.5 to 1 cc. intramuscularly but only if not contraindicated by cardio-vascular disease.

FACIAL BONE FRACTURE.

In the management of facial bone fracture, the most important thing is the safety of the individual and demands the institution of all the life saving measures necessary for the case. After all this and the medical evaluation of the case has been done, then only the care or management of fractures of jaw and facial bones should follow. It lies in proper reduction and immobilization. This should be done at the earliest and without any loss of time. As a general rule, any tooth in the line of fracture should be extracted.

Any one of the following means should be employed to achieve immobilization :—

- (a) Direct Dental,
- (b) Indirect Dental,
- (c) Direct Skeletal,
- (d) Indirect Skeletal,

which could be done through :

- (i) Wiring—
 - (a) Gilmer,
 - (b) Ivy loop technic,
 - (c) stout army or continuous Ivy loop technic
 - (d) Risdon,
- (ii) Arch bars—
 - Traction type,
 - Non-traction type,
- (iii) Orthodontic means,
- (iv) Splints, e.g.—
 - Cap splints,
 - Gunning splints,
 - Sectional splints,
 - Resinous splints,
 - Vulcanite splints,
 - Metal splints,
 - Cast splints,
 - Swaged splints,

- (v) Open reduction or intro-osseous wiring,
- (vi) Circumferential wiring, and
- (vii) Extra oral pin fixation (Roger Anderson's) technic.

Combinations of the various methods are frequently used. The patients requirement for analgesics, hypnotics, antibiotics, fluids, special nourishment and vitamins should be anticipated before the need becomes urgent.

TREATMENT OF DISEASES OF THE SOFT TISSUES AND BONES.

A general account of the frequently encountered diseases and also the broad principles in the treatment of some of them such as acute infections has already been given. Other common diseases such as Gingivitis and Periodontitis have also been discussed. Diseases of the temperomandibular joint and tumors and cysts are also met with in dental practice.

Temperomandibular joint diseases can be divided as—

- (i) arthritis due to infections such as tuberculosis, syphilis and gonococcus,
- (ii) arthritis due to fevers,
- (iii) rheumatoid arthritis, which results in a fibrous or bone ankylosis, and
- (iv) traumatic arthritis—which may be—
 - (a) acute traumatic arthritis resulting from direct or indirect trauma, or
 - (b) chronic traumatic arthritis which in turn may be due to minor and frequent traumas due to anomalies in dentition, traumatic occlusion or abnormal chewing habits.

Treatment of the diseases of the temperomandibular joint consists of—

- (i) physiotherapy, such as application of heat, massage, etc.,
- (ii) chemotherapy in case of specific infections,
- (iii) psychotherapy breaking of habits,
- (iv) occlusal equilibration or rehabilitation to relieve traumatic occlusion, and

(v) surgical treatment in the case of osteo arthritis.

An injection of a sclerosing solution such as sodium psylliate 5 per cent helps in case of laxation or sub-laxation or hypermobility of the joint. There is no specific treatment for rheumatoid arthritis. Cortisone gives some help and also the salicylates may be administered.

(i) The cysts occurring in the oral cavity whether they are of dental or non-dental origin are usually treated in one of the two ways, viz., enucleation and marsupilisation (partsch operation). Enucleation is performed preferably in small cysts which consists of a complete removal of the epithelial lining of the cyst and allowing for healing to take place by granulation.

(ii) Larger cysts are treated by marsupulisation. The cyst wall is cut and the cysts contents let out, the flap that was raised is cut flush with the cystic cavity and the mucosa stitched with the remaining cyst lining so that the cyst lining becomes part of the oral mucosa. The cavity is first filled with iodoform or vaseline gauze till healing starts, afterwards an obturator is made, the size of which is reduced from time to time as the healing progresses towards the surface. Bone chips are used, but with questionable effects.

Tumours of the oral cavity could be either benign or malignant. The diagnosis of the condition be confirmed by biopsy and this helps in an early detection of malignancy which assures a better prognosis. These tumors can be treated with surgery or radiation therapy or a combination of both surgery and radiation therapy. Chemotherapy up to to-day has only a palliative value.

A Cancer team like a Cleft Palate team is never complete without a dental surgeon. Apart from an early detection of oral cancer or treatment of the condition a Dental Surgeon helps in improving the deplorable oral hygiene of the cancer patient and also prepares him for radiation therapy by extraction of the teeth that lie within the field of irradiation and constructs radium moulds or stents.

To effect a cure in the case of malignancy, the surgery performed is usually radical which results in revolting deformities accompanied by a physical handicap due to loss of aesthetics, a functional handicap due to affection of speech and masticatory functions and also a psychological handicap

of the patient. Prosthetic repair of the tissues lost by surgical treatment becomes essential to overcome the said effects and so a Dental Surgeon helps in rehabilitation of such psychological and physical cripples.

The minimum requirement of equipment medicines and staff, etc., of a modern dental clinic is given in Appendix IV (a) and IV (b) respectively. The average office (such as District Dental Clinic) used for the general practice of dentistry should consist of—

Reception or waiting room,

Office,

Treatment or operating room or rooms,

Rest room,

Laboratory,

X-ray developing room, and

Supply closets;

and the minimum area required should be 24 feet by 27 feet [Appendix V (a) and V (b)].

SUMMARY.

MODERN DENTAL CLINIC AND DENTAL PRACTICE.

As pointed out that a dental office is concerned with the management of oral, facial and speech defects and with the oral structures and tissues as they relate to the total health of the individual. Good Dentistry calls on the Dental Surgeon not only to prevent the occurrence and progression of dental diseases, but to search as well for oral pathologic changes that provide early indications of systematic diseases. Dentistry bears the responsibility of maintaining or restoring the ability of the individual to communicate with those around him through socially acceptable speech and expression and thus help control emotional disturbance and social maladjustment. Dentistry can intercept or correct the malocclusion. These deformities, like decayed or broken teeth make the individual unhappy and may contribute to psychological problems. There was a time that main objective of cleft palate surgery was to close the cleft as soon as possible. Studies of growth and development over a period

of years have revealed that premature operations frequently led to grotesque facial deformities and impeded speech and psychological problems. To-day, such results can be avoided by handling cleft palate cases through a team of which a Dental Surgeon is an important member. Dentistry with the advent of newer and modern antibiotics has revolutionized and dreaded painful stubborn infections are no longer a problem. It is now possible to extract teeth of patients having bacterial endocarditis without the risk of dental bacteremia.

Oral examination is more searching to-day, than ever before. Biopsy of suspicious lesions is routine and fewer lives are lost through failure to make early diagnosis of oral cancer. It is now better understood that oral symptoms may be the first manifestation of systemic pathology and that the observations of the dentist can lead to life saving early diagnosis and treatment.

Although more remains to be learned than is known about the prevention of oral diseases, research and clinical observations have established the value of certain preventive measures and have justified widespread use of fluoridation in the reduction of Dental Caries. Community water fluoridation reduces the incidence of caries in children by as much as 60 per cent. In communities that do not have fluoridated water, dentists can apply fluorides topically to children's teeth and reduce the initiation of carious lesion by an average of about 40 per cent.

To-day the dentist is better off than his predecessor to give his patients advice concerning diet that will contribute to the development of sound teeth and to the health of the teeth and their supporting tissues. He devotes more time in educating his patients in correct oral hygiene. He insists on the importance of bringing the child to the dentist early in life for examination and for initiation of preventive measures as well as for treatment of oral diseases.

The modern dentist is able to eliminate much of the discomfort patients formerly endured and to reduce the time they spend in the Dental Chair. He prepares cavities for the restoration of teeth with improved equipment that not only saves time for both the patient and the dentist, but lessens the patient's apprehension by utilizing the safe and effective local anaesthetics developed within recent years.

The dentist uses engineering principles to design and fabricate replacements for lost teeth, and tissue that must withstand total stresses of over 150 pounds. He also employs his artistic ability in maintaining or restoring the harmonious arrangement and contour of teeth, oral and facial structures. These prostheses especially Facial Prosthesis help to regain the confidence of those crippled in society and helps to overcome the distressing embarrassments.

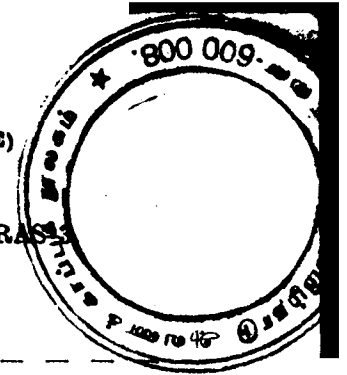
CASE HISTORY CHART
(FOR USE IN A DENTAL COLLEGE)

APPENDIX I.

MADRAS MEDICAL COLLEGE, MADRAS

DENTAL DEPARTMENT.

Registration.



Name : Age : Sex :

Address :

Occupation :

Admission History.

Directions to student : Date : Initial :

Record the chief

Dental complaint.

Medical History.

(Circle one.)

Under comments give details for all questions answered "Yes"	1 Are you under the care of a Physician ?	Yes.	No.
	2 Do you take any medicines now ?	Yes.	No.
	3 Has a doctor ever said that you had heart trouble ?	Yes.	No.
	4 Have you ever been told that you had rheumatic fever ?	Yes.	No.
	5 Has a doctor ever said that your blood pressure was too high or too low ?	Yes.	No.
	6 Do you ever have fainting or dizzy spells ?	Yes.	No.
	7 Have you ever had diabetes ?	Yes.	No.
	8 Have you ever had abnormal bleeding from a wound ?	Yes.	No.
	9 Have you ever experienced sensitivity to Narcotics ?	Yes.	No.
	10 Have you ever experienced sensitivity to penicillin ?	Yes.	No.
	11 Have you ever had pains in the face or head ?	Yes.	No.
	12 Have you had any dental work done lately ?	Yes.	No.
	13 Have you had irradiation lately ?	Yes.	No.
Additional comments :			

ORAL EXAMINATION.

Examine—

Lips

Tongue

Gingiva.....

Buccal Parieties

Palate.....

Floor and mouth.....

Enamel.....

Saliva and Breath.....

Record any history or any
related information per-
taining to findings of oral
examinations.

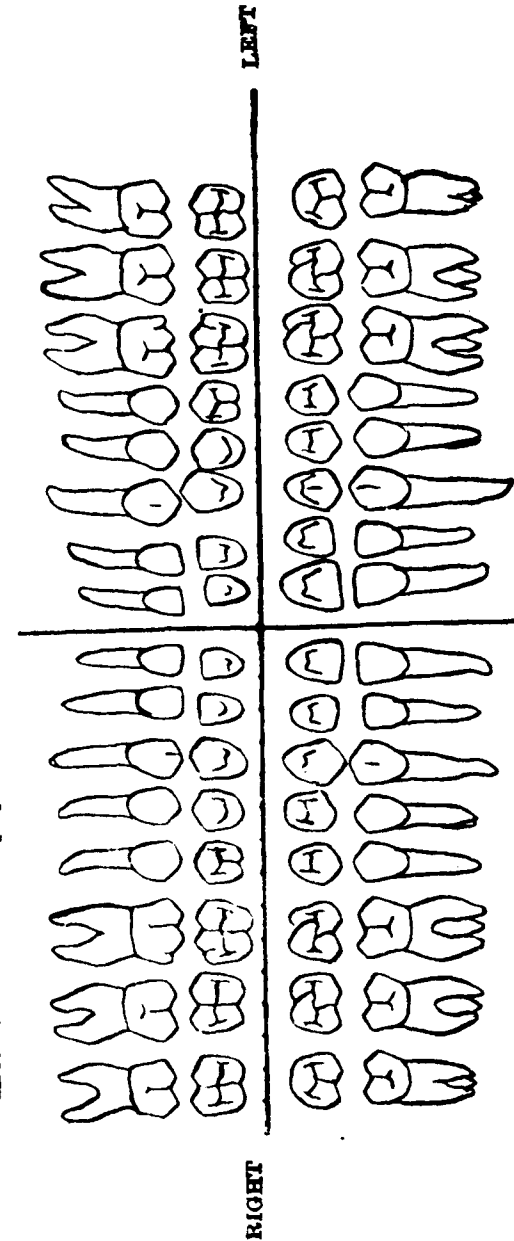
Date.

Student examiner.

Instructor.

CLINICAL AND RADIOGRAPHIC EXAMINATION.

Directions.—Draw on the chart below in outline carious lesions occurring on the labial, lingual, occlusal and incisal surfaces. Indicate all radiolucent and radiopaque areas deviating from normal in maxillary and mandibular bone.



RIGHT

LEFT

Additional findings—

1 Vitality Tests.

2 Periapical or Periodontal Pathology.

3 Anomalies.

4 Others.

Initial.

Date.

Record all advice or opinions given to patient concerning treatment.

Referral Schedule—

Indicate by numerals the sequence in which the following divisions should receive the case.

Oral pathology	()	Periodontology	()	Endodontia	()	Instructor.
Surgery	()	Operative	()	Orthodontia	()	
Prosthesis	()	Crown and Bridge	()	Periapical	()	
Special Refer.						

CONSULTATION REQUEST

Dated.....

Signed.....

CONSULTATION REPORT.

Dated.....

Signed.....

LABORATORY CHART.

1 Urine Examination.

Date

Hours

Amount

Residual

S. P. Gravity

Reaction

Albumin

Sugar

Acetone

Diacetic Acid

Casts

R.B.C.

W.B.C.

3 Motion Examination.

Date

Colour

Mucous

Blood

Parasites

Ova

4 Gastric Analysis.

Date

Time

Quantity

Total acid

Free Acid

2 Blood Examination.

Date

Haemoglobin

Erythrocytes

Leukocytes

Neutrophils

Lymphocytes

Monocytes

Eosinophils

Basophils

Coagulation time

Bleeding time

5 B.M.R.

Date

Result

6 Bacteriology.

Test Result

VDRL

Wasserman

Miscellaneous Reports.

Date

Examination

ORAL SURGERY.

Permanent teeth to be removed.

(Place initials and date beneath tooth numbers).

Upper Right.

Upper Left.

8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Lower Right.

Lower Left.

8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Temporary teeth to be removed.

Upper Right.

Upper Left.

E	D	C	B	A	A	B	C	D	E
---	---	---	---	---	---	---	---	---	---

Lower Right.

Lower Left.

E	D	C	B	A	A	B	C	D	E
---	---	---	---	---	---	---	---	---	---

Other Oral Surgery to be done :

Preparation notes by Oral Surgery Staff :

Date.	Description of Operation.	Student.	Staff.
-------	---------------------------	----------	--------

Date.	Progress Notes—Post-operative Treatment.	Student.	Staff.
-------	--	----------	--------

MADRAS MEDICAL COLLEGE, MADRAS-3.

DENTAL DEPARTMENT.

DIVISION OF ORAL PATHOLOGY.

Name.

Age.

Sex.

Address.

Occupation.

Date.

Present complaint.

History.

Clinical Findings.

Biopsy report.

Diagnosis.

MADRAS MEDICAL COLLEGE, MADRAS-3.

DENTAL DEPARTMENT.

Periodontia Record.

Name: Age: Sex:

Address:

Occupation:

Student Operator:

Previous Periodontia treatment: Yes/No. Date:

Date of last prophylaxis: Number of teeth present:

Debris: 0 1 2 3 4. Stains: 0 1 2 3 4. Calculus: Supragingival: 0 1 2 3 4.

Sub-gingival: 0 1 2 3 4

Frequency of brushing:

Kind of dentifrice used:

Method of brushing:

Type of brush:

Signs of tooth brush trauma:

Mouth wash:

Clinical Findings (State specific degree, location and type of variation).

Gingiva: Colour: Consistency:

Contour:

Texture:

Occlusion: Normal Malocclusion Mutilated. Physiologic. Traumatic.

Teeth in trauma: Etiology:

Habits:

Conditions of restorations:

Remarks:

RIGHT

Upper Buccal

LEFT

Upper Lingual

Lower Buccal

Lower Lingual

RIGHT

LEFT

TREATMENT PROCEDURE :

Photo :	Initial cleansing.	Instrumentation.	Exodontia.
Models :	Home care instruction.	Medication.	Operative.
Dietary :	Occlusal equilibration.	Surgical.	Prosthetics.
	Analysis.		STUDENT.....

Make a notation upon each visit.—Concerning general condition of oral tissues, including colour, contour, texture changes, tendency to haemorrhage, mobility and other data applicable to the case, including record of mouth hygiene.

Date

Progress notes

MADRAS MEDICAL COLLEGE, MADRAS-3.

DENTAL DEPARTMENT.

Division of Operative Dentistry.

Name :	Age :	Sex :
Address :		
Occupation :		
Student Operator :		
Date.	Operation.	Student Instructor.

Explanatory Remarks Relevant to Operative Dentistry :

Operative Dentistry has been completed.

Student Operator:
Instructor.

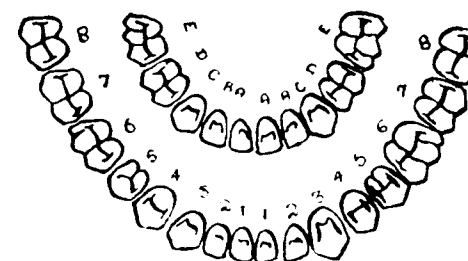
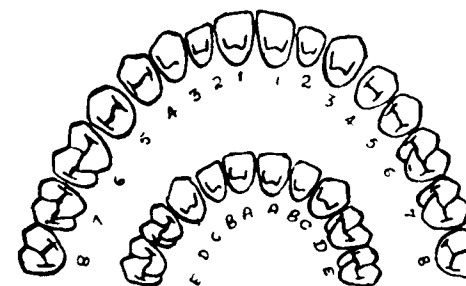
ADMISSIONS CLINIC CROSS INDEX.

It is the responsibility of the admissions clinic instructor to see that the initial indexing of each unusual case is accomplished during the first or second vision.

- R 1 Abrasion, attrition, erosion, other decalcification.
- R 2 Abscess, periapical, parietal, other.
- R 3 Antrum, abnormal, involved.
- R 4 Arthritis.
- R 5 Blood dyscrasia.
- R 6 Calculus (a) excessive gingival (b) Salivary, gland, duct.
- R 7 Caries (a) rampant (b) absent, insusceptibility.
- R 8 Cellulitis, severe, include Ludwig's angina, other.
- R 9 Clefts, developmental of palate, lip, cheek, etc.
- R10 Cysts (a) undetermined (b) periapical (c) dentigerous.
- R11 Dentition, general (a) delayed (d) complete, in situ.
- R12 Denture injury, inflammatory, hyperplasia.
- R13 Developmental abnormalities (a) teeth-Gemination, fusion hypoplasia, etc. (b) jaws and other. See R 9 (c) anodontia.
- R14 Dietary deficiencies.
- R15 Endocrine imbalance, diabetes, acromegaly etc.
- R16 Eye, ear, nose and throat abnormality.
- R17 Fordyce's disease, marked.
- R18 Foreign bodies.
- R19 Fractures (a) bone (b) teeth.
- R20 Frenum, abnormal, lingual, labial.
- R21 Gland involvement, lymph, salivary, mumps, xerostomia, calculus; See also R6.
- R22 Granuloma, periapical, pyogenic, other.
- R23 Herpes, oral facial, other.
- R24 Hypercementosis. See also R48 a.
- R25 Hypersensitivity, allergy, idiosyncrasy.
- R26 Hypertension. See also R51.
- R27 Impacted, unerupted, supernumerary teeth.
- R28 Lichen planus.
- R29 Lips, cheilitis, cheilosis, perleche, macrocheilia, etc.
- R30 Malocclusion, extreme, See also R13.
- R31 Mottled enamel, or other intrinsic stains. See also R37.
- R32 Neuralgia, paralysis, tic.
- R33 Odontalgia.
- R34 Osteomyelitis. See also R8, R38.
- R35 Pericoronitis, most distal molar.
- R36 Periodontal disease, unclassified.
- R37 Pigmentation and stains (a) soft tissues (b) teeth. See also R21.

- R38** Postoperative complications, dry socket, paresthesia. See also R34.
- R39** Radiolucency, jaw, tooth undetermined. See also R2, R10, R22, R48.
- R40** Radiopacity, jaw, tooth. See also R24 and R50.
- R41** Resorption (a) tooth, internal, root, etc. (b) bone, under denture other.
- R42** Retained teeth and roots, deciduous, permanent.
- R43** Stomatitis, undetermined, catarrhal, other generalized. See also R25.
- R44** Thrush (Moniliasis).
- R45** T.M.J. involvement, pain, trismus. See also R4.
- R46** Tongue, black, hairy fissured, varicosities, etc.
- R47** Torus, mandibularies, Palatinus. See also R18 c.
- R48** Tumor, benign, (a) odontogenic-adamantinoma, cementoma, etc. (b) epithelial papilloma, leukoplakia (c) bone osteoma, fibrous dysplasia, etc. (d) other connective tissue-fibroma, vascular, nervous, fat, etc.
- R49** Tumor, malignant (a) Carcinoma-squamous, basal cell, other (b) sarcoma-osteogenic, lymphatic, other.
- R50** Tumor, other, or undetermined.
- R51** Visceral disease, heart lung, liver, etc.
- R52** Unclassified conditions of interest. Especially any related systemic ailment not categorized above. Rheumatic fever, pemphigus, epilepsy lupus erythematosus; syphilis, tuberculosis, etc. -

CLINICAL FINDINGS AND TREATMENT ADVISED.



F = Filling
 RT = Root Canal treatment
 RT & F = Root Canal treatment and filling
 X = Extraction
 O = Tooth missing
 PC = Pivot Crown
 SC = Shell Crown
 Sc = Scaling
 G = Gingivectomy
 GT = Gum treatment

Treatment given—

Date of commencement of treatment.	Nature of treatment.	Date of completion.	Remarks and signature of Dental Surgeon.
------------------------------------	----------------------	---------------------	--

CASE HISTORY CHART.

(For use in a District Dental Clinic).

APPENDIX II.

Name.....
 Age..... Sex.....
 Address.....

Health history.

What is the general condition of teeth?.....
 What is the general condition of soft tissues?..... Colour.....
 Inflammation present?..... Moderate?..... Severe?.....
Condition of saliva.....
 Is there any recession?..... Is there any pain in
 the region of the ear.....
 Calculus deposits?..... Slight?..... Moderate?..... Excessive?
 How is the occlusion?..... Attitude

How long since you have been to a dentist?..... What was
 done then?.....
 Did you have X-rays?..... Did you make regular
 visits to the dentists before then?.....
 Have you lost many teeth?..... Why?.....
 Were there any complications with the extraction?.....
 Have they ever been replaced by: A fixed bridge?..... A
 removable partial?..... A Denture?
 If patient says no, Have you ever been told that might happen if
 lost teeth are not replaced?.....
 How often do you brush your teeth?..... When?.....
 Do the gums bleed when you brush your teeth?..... Do they
 bleed at other times?.....
 Does food collect between your teeth?..... Do you have
 bad breath?.....
 Do you eat between meals?..... Sweets?.....
 Raw vegetables?.....
 Do you have excessive bleeding from a cut?.....
 Date of birth.....
 Are your teeth sensitive to heat?..... To cold?.....
 To sweets?.....
 How long since you have had a complete physical examination?

 Are you under the care of a Physician now?.....
 for what reason?.....
 Are you receiving any medication?..... What?.....
 Have you ever had X-ray therapy?.....
 Anemia?..... Diabetes?.....
 Do you have any allergies?..... Penicillin?.....
 Novocaine?..... Arthritis?.....
 Rheumatic fever?.....
 Blood Pressure..... Heart trouble.....

APPENDIX III.

SODIUM FLUORIDE SOLUTIONS, TECHNIC FOR
APPLICATION TO THE TEETH.

Cleanse the teeth.—The first step in the topical application of sodium fluoride described here consists of a thorough cleaning of the coronal surfaces of the teeth. A motor-driven rubber cup and fine pumice paste may be used to accomplish this part. Only the first in the series of four applications is preceded by dental cleansing. Isolate with cotton rolls: The cleansed teeth are blocked off or isolated with No. 2 cotton rolls. Half the teeth those in an upper quadrant and in the opposing lower quadrant may be isolated at one time. Cutting the ends of the cotton rolls at 30–45 degree angles facilitates their proper placement. Rolls used in the lower part of the mouth are held in position with cotton roll holders. When the cotton rolls are positioned properly they are clear of the teeth so they do not absorb the applied solution. Dry with compressed air: After the teeth have been isolated with cotton rolls they are dried with compressed air. From 15 to 20 pounds of pressure is used to facilitate adequate drying of the interproximal tooth surfaces.

Wet crown surfaces with sodium fluoride.—The fourth step in the procedure consists of applying a 2 per cent solution of sodium fluoride (C.P. sodium fluoride in distilled water) to the dried enamel surfaces of the teeth. A cotton applicator or light spray may be used. When the solution is applied properly it visibly wets all surfaces including the interproximal surfaces. The applied solution is permitted to dry in air for approximately three minutes. On completion of the procedure the mouth may be rinsed with water. However, rinsing with water is not an essential or important part of procedure and may be dispensed with if desired.

Duration of prophylactic effect.—The duration of the caries-inhibiting effect of topically applied fluorides is not fully known. The results of clinical studies continued for three to five years indicate that there is no appreciable loss in prophylactic value with the passage of time.

In order to provide a practical basis for rendering topical applications of fluoride to the teeth of children, it is suggested that a series of applications be given at the ages of 3, 7, 10 and 13 years. These ages should be varied in accordance with the tooth eruption pattern of the individual child. Applications

teeth during the period of changing dentition the incisors and first molars at age 7 the bicuspid and cuspids at age 10 and the second molars at age 13.

APPENDIX IV-a

REQUIREMENTS OF DISTRICT DENTAL CLINICS

<i>Item and Equipment.</i>	<i>quantity.</i>
1 Chair, double cylinder, pump	1
2 Unit, with electric engine, shadow less light with Handpiece Doriot with attachment for contra angle.	1
3 X-ray Unit model mobile or Pedestal model ..	1
4 Dental Cabinet	1
5 Waste Receiver with lid and foot control ..	1
6 Instrument Cabinet, Surgical, steel with glass shelves.	1
7 Stool, operating	1

HAND INSTRUMENTS AND APPLIANCES.

All instruments in Stainless Steel.

8 Sterilizer electrical	1
9 Mirrors, mouth plain complete	4
10 Tweezers, college pattern	4
11 Syringe, dental cartridge	3
12 Syringe Hunts, water	1
13 Syringe Chip, Ash's pattern No. 9	1
14 Probes, Ash's pattern No. 9 and 12	3 each.
15 Scalars, Ash's pattern No. 61, 65, 66, 67, 149A, 150A.	3 each.
16 Chisel, straight, Ash's pattern No. 85	1
17 Chisel Biangle Ash's pattern No. 85	1
18 Excavators, double ended, Ash's pattern Nos. 125/126, 127/128, 210/211 and 245.	1 each
19 Instruments, plastic filling Ash's pattern No. 13, 21, 2.	1 each
20 Spatula, stainless steel, Ash's pattern 3	1
21 Spatula, stainless steel Agate	1
22 Carrier, Amalgam	1
23 Carver Leoron	1
24 Slab, cement mixing, glass	1
25 Scissors crown	1
26 Matrix retainer, Ivory	1
27 Glass Dappens	4
28 Cotton wool Holder, metal	1
29 Lamp, spirit, metal	1
30 Pestle and Mortar, glass	1
31 Bur Block complete with assorted 1 gross burs	1
32 Brush, wire, Hand bur cleaning	1
33 Screw Driver, pocket	1
34 Oil Can	1
35 Bottles medicament	12

HAND INSTRUMENTS AND APPLIANCES—cont.

All instruments in Stainless Steel—cont.

<i>Item and Equipment.</i>	<i>quantity.</i>
36 Forceps, Cheatles	1
37 Hand piece for engine, Straight	1
38 Contra angle Handpiece	2
39 Broach holder St. Steel, Ash's pattern No. 4 ..	1
40 Mandrels, Ash's pattern No. 228, St. H. P. ..	6
41 Mandrel, Ash's pattern No. 228 Rt. A.H.P. ..	6
42 Napkin holders	1
43 Pliers, Ash's pattern No. 42	1
44 Pliers, Ash's pattern No. 12	1
45 Pliers, Ash's pattern No. 49 Cutting	1
46 Files 6" smooth	1
47 Files Bastard	1
48 Bottle Mercury or dispenser	1
49 Oil Stone	1
50 Impression trays assorted Dentulous edentulous and Perforated.	18
51 Articulator	1
52 Flask with Press	2
53 Wax Knife	1
54 Plaster Knife	1
55 Wax Spatula No. 7	1
56 Rubber Bowl	2

SURGICAL INSTRUMENTS

57 Forceps extraction Ash No. 73, 74, 1, 76, 101A, 84, 95.	2 each
58 Forceps artery straight and curved	4
59 Elevators Ash 19, Winters 12R and L	2 each
60 Outfit Bord Gardner: 1 Austin Retractor, 1 Surgical Mallet, 1 Pin Holder, 2 Osseous Chisels, 1 Austin Knife, 1 straight shank Elevator, 2 Le Clause Elevators complete in a case.	1
61 Bone Chisel	2
62 Scalpel (B. P.) handle for detachable blades ..	2
63 Scissors, Ash's pattern No. 19	1
64 Tray instrument S.S.	2
65 .. Kidney, E.I.	2
66 Mouth Gag	1
67 Mouth Prop	1
68 Mouth Prop Hewitts—set of three	1
69 Sponge Holder	1
70 Kirkland Knife No. 15 and 16	1 each.
71 Buck Knife No. 5 and 6	1 each.
72 Iris Scissors	1

EXPENDIBLE STORES.

73 Brush, Alpine, polishing, Cup and Wheel ..	2 doz.
74 Cups, wheels, rubber, Burlaw	2 boxes.
75 Points abrasive, assorted	1 box.

EXPENDIBLE STORES—cont.

76 Points finishing, assorted	1 box.
77 Discs, Sandpaper, assorted	2 boxes.
78 Discs, separating carb	1 box.
79 Strips, polishing assorted	2 boxes.
80 Strips, Celluloid	2 boxes.
81 Broaches, barbed	2 pkts.
82 Broaches, Plain	2 "
83 Reamers Root assorted	2 "
84 Syringe needles, Cartridge pattern long 1 5/8" ..	6 tubes.
85 Matrix retainer, Bands No. 1	2 pkts.
86 Blades for detachable scalpel handle assorted ..	As required.
87 Local Anaesthetic Cartridges (box of 50)	Do.
88 Ethyl Chloride spray, 100 grams	Do.
89 Xylotox Ointment	Do.
90 Alloy, tin silver	2 x 1 oz.
91 Copper amalgam	2 x 1 oz.
92 Mercury, chemically pure	4 oz.
93 Cement Zinc, S.S.W.	2 pkts.
94 Synthetic Porcelain, Shade 3, 5 and 7	1 each.
95 Eugenol	1 lb.
96 Gutta Percha, Temp. stopping	2 pkts.
97 Articulating paper, thick and thin	6 each.
98 Oil Engine	1 Can.
99 Wicks for spirit lamp	12
100 Belts, Seamless for Electric engine	3
101 Napkins 12" x 12" (cloth)	24
102 Cotton rolls	4 boxes.
103 Floss silk	3 reals.
104 Medicines, various	As required.
105 Wax Modelling	2 pkts.
106 Teeth Artificial	As required.
107 Base Plate	2 pkts.
108 Plaster of Paris: Calspar	4 x 7 lbs.
Indian	8 x 7 lbs.
109 Denture materials (Stellon)	2 pkts.
110 Self Curing Acrylic	1 pkts.
111 Kallodentine Tooth Making Powder—assorted shade.	6 Bottles.
112 Zalgin 75	1 Tin.
113 Stent's composition	4 boxes.
114 Vulcanite Trimmers assorted	1 Box.
115 Pumice Powder	2 lbs.

X-RAY-EXPENDABLE.

1 Films, dental—Kodak or Ilford Intra Oral and occlusal.	As required.
2 Chemicals and dark-room accessories	Do.

GENERAL ANAESTHESIA REQUIREMENTS.

1 Gas apparatus, Waltons, for general Anaesthesia, complete with Cylinders.	1
2 Cylinders, spare	2

APPENDIX IV (b).

USEFUL PRESCRIPTIONS FOR A DENTAL OFFICE.

I. RELIEF OF PAIN.

In the majority of cases, the dentist can administer effective local treatment to eliminate dental pain. However, a number of cases require, in addition to this treatment, the relief of pain available in the analgesic drugs.

Barbiturate drugs may be prescribed with analgesic drugs for relief of pain accompanied by anxiety and apprehension.

(i) Analgesics.

(a) Prescriptions for the relief of mild pain—

1. Acetylsalicylic acid	5 grains.
Sig: One or two tablets every 3 or 4 hours as needed for pain.	
2. Pentobarbital Sodium	1/2 grain.
Acetylsalicylic acid	5 grains.
Sig: Take one capsule very 4 to 6 hours as often as necessary for pain.	
3. Acetophenetidin	2 1/2 grains.
Acetylsalicylic acid	3 1/2 "
Caffeine	1/2 "
Sig: One or two tablets every 4 hours when needed for pain.	

(b) Prescriptions for the relief of moderate Pain—

1. Acetophenetidin	2 1/2 grains.
Acetylsalicylic acid	3 1/2 "
Caffeine	1/2 grain.
Codeine phosphate	1/2 "
Sig: One (1) tablet every 4 to 6 hours as needed for pain.	
2. Codeine phosphate (or sulfate).	1/2 grain.
Sig: One (1) tablet every 4 to 9 hours as needed for pain.	

NOTE.—Codeine phosphate (or sulfate) is available in 1/2 grain, 1/4 grain or one grain tablets.

3. Acetylsalicylic acid	5 grains.
Codeine phosphate	1/2 grain.
Sig: One capsule every 4 to 6 hours as needed for pain.	

(c) Prescriptions for the relief of severe pain—

1. Meperidine H.C.L.	50 mg.
Sig: One tablet every 4 to 6 hours as needed for pain.	

(ii) *Sedation and hypnosis—*

Many people who need dental treatment are restless, apprehensive and fearful before, during and even after dental operations. These people are entitled to the relaxation and tranquility afforded by the sedative and hypnotic drugs.

These drugs may be prescribed as sedatives to allay apprehension and restlessness pre-operatively and post-operatively, or as hypnotics to insure restful sleep the night before or nights following dental procedures. The strength of dosage largely determines whether the drug will provide sedation or hypnosis.

(a) Prescription for short acting pre-operative sedation—

Pentobarbital Sodium ½ grs.

Sig: One (1) capsule ½ hour before dental appointment.

(b) Prescription for intermediate acting pre-operative sedation—

Butabarbital Sodium ½ grs.

Sig: One (1) tablet ½ hour before dental appointment.

(c) Prescription for long acting pre-operative sedation—

Phenobarbital 1 grain.

Sig: One (1) tablet 1 hour before dental appointment.

(d) Prescription to insure restful sleep—

Secobarbital sodium 1½ grains.

Sig: One (1) Capsule at bed time as needed for sleep.

II. TREATMENT AND PREVENTION OF INFECTION.

During the past fifteen years many antibiotic drugs have been produced which are extremely beneficial and efficient in the treatment and prevention of infection. In dentistry, these drugs are used systematically and in some cases locally for the treatment of acute dental infections such as abscesses, cellulitis, Vincent's stomatitis, pericoronitis, wound infection, local osteitis, and osteomyelitis.

They are useful as a measure to prevent infection in patients with fractures of the jaws and in those patients who are undergoing extensive oral surgery.

Some of these drugs are used prophylactically in patients requiring oral surgical or periodontal treatment and presenting a history of rheumatic fever, rheumatic heart disease, or congenital cardiac defects in an effort to reduce the possibility of a postoperative bacteremia which may cause a very serious often fatal disease—subacute bacterial endocarditis.

DRUGS USED FOR SYSTEMIC EFFECT.

A. *Penicillin*.—In general, penicillin is still one of the best anti-biotic drugs for use in dental infections. It has the advantage of being effective in the control of most organisms which commonly infect the oral cavity. Its rapidity of absorption, low toxicity, and relatively few side effects make it a highly desirable drug for producing an anti-bacterial action systemically.

1 Penicillin tablets 200,000 units

Sig: One tablet every four hours while awake.
Take between meals on an empty stomach.

2 Penicillin Crystalline 500,000 IM B.D.

3 Penicillin Procain 400,000 IM.

B. *Broad Spectrum Antibiotics*.—These drugs are potent antibiotics against a wide range of Gram-negative and Gram-positive organisms and cause relatively few side effects of consequence. They possess the advantage of being very effective by oral administration.

1 Chlorotetracycline HCL (Aureomycin) 250 mg.

Sig: One capsule every six hours with milk.

Pharyngeals (troches) 15 mg. each.

Ointment 3 per cent in ½ and 1 ounce tubes.

2 Oxytetracycline HCL (Terramycin) 250 mg.

Sig: One capsule every six hours with milk.

3 Erythromycin 100 mg.

Sig: One tablet four times a day.

4 Tetracycline HCL (Achromycin) 250 mg.

Sig: One tablet four times a day with meals or milk.

C. *Sulfonamides*.—The availability of the more soluble single sulfonamides and the increased solubility of the triple sulfonamide combinations makes these drugs valuable in the treatment of infections. They are useful for those dental infections resistant to the antibiotic drugs and for those patients who exhibit intolerance or allergies to the antibiotics.

1 Sulfadiazine 0.5 gm.

Sig: Four (4) tablets first dose; then one (1) tablet four times a day.

Commonly used triple sulfas combination:

Sulfadiazine	0.167 Gm.	} 0.5 Gm. total.
Sulfamerazine	0.167 Gm.	
Sulfamesathine	0.167 Gm.	

Dosage—

Adults :—1.0 gm. initial dose : then 0.5 gm. every four to six hours.

Children :—0.5 gm. two times a day according to body weight.

NOTE—The above triple sulphas are available in combination with 100,000 units, 200,000 units, 250,000 units, 300,000 units, of either crystalline penicillin G, potassium or penicillin G, procaine.

3 Sulfisoxazole tablets 0.5 gm.

Sig : Four (4) tablets first dose : then two tablets four times a day.

Dosage—

Adults :—8 to 12 gms. daily in divided doses.

Children :—0.06 gm. to 0.1 gm. per pound of body weight.

NOTE—Sulfisoxazole is a more soluble single sulfonamide.

4 Sulfisomidine tablets (Elkasin) 0.5 gm.

Sig :—Four (4) tablets first dose: then two (2) tablets four times a day.

NOTE—Sulfisomidine is a more soluble single sulfonamide.

5 Sulfamethylthiadiazole tablets 0.25 gm.

Sig : Two tablets four (4) times a day.

NOTE—Sulfamethylthiadiazole is a more soluble single sulfonamide.

DRUGS USED FOR LOCAL EFFECT.

These drugs may be used locally for treatment of oral infections such as pericoronitis, Vincent's Gingivitis, herpetic Stomatitis, and herpes simplex.

A. Vincent's gingivitis and pericoronitis.

1. Crystalline penicillin G. Potassium troches 20,000 units.

Sig : Dissolve one (1) troche in mouth every two hours.

Troches : 5,000 units penicillin and 15 mg. benzocaine.

Troches : 20,000 units penicillin; 50 units beclitracin.

B. Herpetic Stomatitis, pericoronitis, and Vincent's Gingivitis.

1. Chlortetracycline troches.

Sig : Dissolve one (1) troche in mouth every three hours.

2. Oxytetracycline troches.

Sig : Dissolve one (1) troche in mouth every three hours.

C. Herpes Simplex.

1. Chlortetracycline ointment 1½ ounces.

Sig : Apply to area several times daily.

2. Oxytetracycline ointment ½ ounce.

Sig : Apply to area several times daily.

3. Tetracycline ointment ½ ounce.

Sig : Apply to area several times daily.

ANTIHISTAMINE THERAPY.

The antihistamines are valuable as drugs which may be prescribed to combat the undesirable manifestations associated with allergic reactions to drugs such as penicillin and local anaesthetics, and to certain dental materials. A few of these manifestations are itching, appearance of rashes, sweating, edema, and head-ache.

Some studies indicate that these agents are useful to reduce the incidence of severity of pain, trismus, edema and haemorrhage following oral surgical operations. This Therapy is rationalized on the theory that the histamine released following tissue injury is at least partially responsible for these postoperative sequelae.

A. Antihistamines for Control of Allergic Reactions.

1 Tripelenamine HCl 50 mg.

Sig :—One (1) tablet four times a day until reaction subsides.

Speciality preparations :

Pyribenzamine.

Tablets :—25 mg. and 50 mg. plain and 50 mg. delayed action.

Elixir :—30 mg. per teaspoon full.

2 Diphenhydramine HCl 50 mg.

Such capsules No. 24.

Sig :—One (1) Capsule three or four times a day for two days.

3 Promethazine HCl 125 mg.

Sig : One (1) tablet morning and night for two days.

NOTE—This preparation is useful for prolonged effect.

B. Antihistamines to reduce the incidence and severity of postoperative reactions to oral surgery.

Chlorpheniramine maleate 8 mg.

Sig :—One (tablet) after each meal and at bedtime the day before and the day of surgery.

VITAMIN THERAPY.

Additional vitamins may be beneficial for patients with jaw fractures, and for those patients undergoing extensive oral surgery in which case a proper well-balanced diet may not be taken.

Oral signs of vitamin deficiency such as riboflavin and ascorbic acid have been reported but most authorities agree that a multiple vitamin deficiency exists before symptoms occur. Thus if a dentist believes that oral manifestations of avitaminosis are present, it is recommended that multivitamins be prescribed.

An exception to this recommendation would be the value of prescribing the single vitamin K. for those patients who may have a deficiency of this vitamin due to a disease process.

A. Vitamins used as maintenance and prophylaxis.

The multiple vitamin combination should contain the following approximate potencies:—

Vitamin A	..	..	..	10,000 U.S.P. Units.
Vitamin D	..	..	..	1,000 U.S.P. Units.
Vitamin B1	..	..	..	3 mg.
Vitamin B2	..	..	..	3 mg.
Vitamin B6	..	..	..	1.5 mg.
Nicotinamide	..	..	..	25 mg.
Vitamin C	..	..	..	75 mg.

1 Multiple vitamin capsules such capsules No. 50.

Sig: One (1) Capsule per day.

B. Vitamins for therapeutic use.

The therapeutic multiple vitamin combinations should contain the following appropriate potencies:—

Vitamin A	..	..	..	25,000 U.S.P. Units.
Vitamin D	..	..	..	1,000 U.S.P. Units.
Vitamin B1	..	..	..	10 mg.
Vitamin B2	..	..	..	5 mg.
Nicotinamide	..	..	..	150 mg.
Vitamin C	..	..	..	150 mg.

Therapeutic multiple vitamin capsules.

Sig: One (1) capsule twice daily for two weeks then one (1) daily.

C. Vitamin intended to aid in the control of hæmorrhage.

Menadione (vitamin K) tablets 2 mg.

NOTE.—Vitamin K, a fat soluble vitamin, is present in food and synthesized in the gastro-intestinal tract. Bile salts are needed for its absorption. This vitamin is necessary for the formation of prothrombin, an essential factor in the Coagulation of blood.

Its use, therapeutically, would be beneficial for these patients having conditions such as:—

1. Liver damage which decreases the available bile salts.
2. Intestinal disorders such as ulcerative colitis resulting in decreases in intestinal absorption.
3. Rheumatic fever and arthritis being treated with large quantities of salicylates which reduces the prothrombin level, chronic aspirin users may also have a hypo-prothrombinemia.
4. Extreme malnutrition although deficiencies of the vitamin in the human diet are rare.

Although some studies indicate that hypo-prothrombinemia exists in many patients to a degree that post-surgical hæmorrhage is possible, it is highly questionable whether indiscriminate use of drugs containing vitamin K is justified.

PREPARATIONS FOR USE IN THE DENTAL OFFICE.

A. Relief of pain—

1 Acetylsalicylic acid U.S.P.	..	..	..	..	300 mg. (5 grains).
Such tablets No. 100.					
2 Acetylsalicylic acid	..	..	..	..	150 mg. (2½ grains).
Acetyphenetidin	..	..	..	..	210 mg. (3½ grains).
Caffeine	..	..	..	..	30 mg. (½ grain).
Codeine	..	..	..	..	30 mg. (½ grain).
Such tablets No. 100					
Sig: For office use.					

B. Pre-operative sedation—

1 Pentobarbital sodium	..	..	..	..	90 mg. (1½ grains).
Such capsules No. 20.					
Sig: For office use.					

C. Topical anesthesia—

1 Tetracaine hydrochloride	0.60 gm.
Benzalkonium chloride	0.06 "
Paste base	30.00 "

Sig: For office use.

NOTE.—Slow acting, long duration.

2 Benzocaine	7.5 gm.
Tetracaine hydrochloride	1.0 "
Organic vehicle (qs.)	50.0 cc.

Sig: For office use.

3 Lidocaine	1.5 gm.
Carbowax (qs.)	30.0 "

Sig: For office use.

NOTE.—For Pre-injection.

D. Prevention and treatment of infection—

1 Solutions for sterilizing instruments.—

(a) Sodium Nitrate	7.50 cc.
Sodium Carbonate	18.75 "
Benzalkonium chloride solution	12.8 per cent.
(Zephiran)	30.00 cc.
Distilled water (qs)	4,000.00 "

Sig: For office use.

(b) Medicated ethyl alcohol 70 per cent.. ..	500 cc.
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Sig: For office use.

(c) Isopropyl alcohol 50 per cent.. ..	506 cc.
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Sig: For office use.

2 Tissue antiseptics—

(1) Tincture of Iodine 2 per cent	30 cc.
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Sig: For office use.

Iodine	5 gm.
Potassium iodide	10 "
Distilled water (qs)	100 cc.

Sig: For office use.

NOTE.—Lugol's solution.

(b) Iodine	4 gm.
Menthol	4 "
Benzol	32 cc.

Sig: For office use.

NOTE.—Bithamuller's solution.

(c) Iodine	16.5 gm.
Potassium iodide	35 "
Distilled water	25 cc.
Alcohol (qs)	100 "

Sig: For office use.

NOTE.—Churchill's iodine.

3 Root canal antiseptics—

(a) Beechwood Cresosote	30 cc.
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Sig: For office use.

(b) Eugenol	30 cc.
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Sig: For office use.

(c) Parachlorophenol	35 gm.
Camphor	65 "

Sig: For office use.

(d) Formalin	7.5 cc.
Beechwood creosote	17.5 "
Glycerin (qs)	70.0 "

Sig: For office use.

(e) Oil of Cinnamon (oil of cassia)	10 cc.
Phenol 88 per cent	20 "
Methyl Salicylate	20 "

Sig: For office use.

4 Antibiotics.—

(a) Drugs used for local effect—

(1) Oxytetracycline—

Speciality preparation:

Terramycin (Chas. Pfizer and Co. Inc.)

Terramycin dental cones 5 mg.

Such cones No. 25

Sig: For office use.

(b) Terramycin soluble tablets	50 mg.
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Such tablets No. 24.

Sig: For office use.

NOTE.—May be crushed or incorporated into pack or paste or prepared as solution for topical application or irrigation.

(c) Terramycin dental paste 3 per cent	5 gm.
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Sig: For office use.

NOTE.—For application to gingival tissues in the treatment of infection.

(d) Terramycin ointment 3 per cent	½ ounce.
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Sig: For office use.

NOTE.—For application to gingival tissues in the treatment of infection.

(2) Chlorotetracycline—

Speciality preparation

Aureomycin.

(a) Aureomycin dental cones	5 mg.
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Such cones No. 12.

Sig: For office use.

NOTE.—May be used whole or crushed for topical application to dental wounds.

4 Antibiotics—cont.

- (b) Aureomycin dental ointment 3 per cent ounce

Sig: For office use.

NOTE.—For topical application in the treatment of oral infections.

- (c) Aureomycin dental paste 3 per cent 5 gm.

Sig: For office use.

NOTE.—For topical application in the treatment of oral infections.

- (d) Aureomycin soluble tablets 50 mg.

Such tablets No. 25.

Sig: For office use.

NOTE.—May be used whole or crushed for topical application to dental wounds.

5 Tetracycline—

Specialty preparations

Achromycin (Lederle Laboratories)

Tetracycl (Chas Pfizer and Co. (Inc.))

Achromycin ointment 3 per cent

or

Tetracycl ointment 3 per cent 1 ounce.

Sig: For office use.

NOTE: For topical application in the treatment of oral infections.

6 Penicillin—

- (a) Soluble penicillin tablets 50,000 units.
-
- 100,000 units.
-
- 200,000 units.
-
- 250,000 units.

Such tablets No. 25.

Sig: For office use.

NOTE.—May be crushed or incorporated into pack or paste, or prepared as solution for topical application or irrigation.

- (b) Penicillin dental cones 15,000 units.

Such cones No. 24

Sig: For office use.

Specialty preparation

Penicillin Dental Cones (Proco-Sol-Chemical company).

NOTE.—May be used whole or crushed for topical application in surgical wounds.

- (c) Penicillin-sulfanilimide cones 15,000 units.

Such cones No. 24

Sig: For office use.

6 Penicillin—cont.

(d) Drugs used for systemic effect—

- (1) Penicillin G. Procaine 10 c.c.

Such vials No. 1

Sig: For office use.

NOTE.—300,000 units per cc. for aqueous injection. This drug can be obtained in a 1 cc. disposable syringe.

- (2) Penicillin G. Procaine 300,000 units.
-
- Crystalline penicillin G. Potassium 100,000 units. 1 do 2 vials.

Such vials No. 10.

Sig: For office use.

NOTE.—0.9 cc. of diluent (sterile distilled water or sterile physiologic saline) needed for solution.

E. Drugs used for cleansing cavities—

- 1 Hydrogen peroxide 3 per cent 120 c.c.

Sig: For office use.

- 2 Liquefied phenol U.S.P. 30 cc.

Sig: For office use.

NOTE.—A highly caustic drug. Should not contact soft tissues.

- 3 Liquefied phenol U.S.P. 12 cc.

Alcohol 18 "

Sig: For office use.

NOTE.—The caustic action of phenol is considerably reduced by the addition of alcohol. However, care must be taken to avoid contacting the oral mucosa.

- 4 Chloroform 30 cc.

Sig: For office use.

NOTE.—Care should be taken to avoid contacting the Oral mucosa. with chloroform or its fumes.

F. Cavity liners for pulp protection—

- 1 Calcium hydroxide 5 gm.

Zinc oxide 5 "

Polystyrene 2 c.c.

Chloroform 88 "

Sig: For office use.

- 2 Gum copal 5 gm.

Chloroform 88 c.c.

Sig: For office use.

G. Preparations for the desensitization of exposed dentin—

- 1 Sodium fluoride powder (reagent) 30 gm.

Sig: For office use.

NOTE.—Mix with distilled water to form a paste.

2 Sodium fluoride powder (reagent)	10 gm.
Kaolin powder	10 "
Glycerin	10 cc.
Sig: For office use.	
NOTE: Stir before using.	

H. Pulp capping agents—

1 Calcium hydroxide	30 gm.
Sig: For office use.	

NOTE: Mix with distilled water to form paste.

2 Powder—

Zinc oxide	15 gm.
Powdered white rosin	7.5 "
Calcium hydroxide	15 "
Thymol iodide	1 "

Liquid:—

Eugenol	15 cc.
Liquified phenol U.S.P.	5 "
Sig: For office use.	

I. Surgical dressings—

1 Benzocaine	14.40 gm.
Chlorobutanol	28.80 "
Acridine, neutral	36 "
Eugenol	7.20 cc.
Petrolatum	260.00 gm.
Sig: For office use	

NOTE.—Apply analgesic antiseptic ointment to iodoform gauze (5 per cent) for surgical dressing.

2 Powder—

Zinc oxide	60 gm.
Zinc acetate	2 "
Powdered white rosin	25 "
Talc	8 "
Asbestos fiber	5 "

Liquid—

Isopropyl alcohol	10 cc.
Eugenol	70 "
Olive oil	15 "
Camphor	5 gm.
Sig: For office use	

NOTE.—For treatment of dry socket, mix with vaseline and cotton.

J. Root canal sealers—

1 Powder—

Zinc oxide	69 gm.
Powdered white rosin	28 "
Barium sulphate	2 "
Zinc acetate	1 "

Liquid—

Beechwood creosote or eugenol	85 cc.
Olive oil	15 "
Sig: For office use	

2 Powder—

Zinc oxide	41.2 gm.
Precipitated silver	30 "
Powdered white rosin	16 "
Thymol iodide	12.8 "

Liquid—

Oil of cloves	78 cc.
Canada balsam	22 "
Sig: For office use	

NOTE.—Rickert's cement.

3 Zinc oxide	30 gm.
Iodoform	30 "
Thymol iodide	1 "
Glycerin or petrolatum	qs to stiff paste
Sig: For office use	

NOTE.—Iodoform paste.

Hemostatics—

1 Control of gingival haemorrhage during operative procedures—

(a) Epinephrine solution 1:100	5 cc.
Sig: For office use	

Speciality preparation—

Epinephrine solution	5 cc. or 30 cc.
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(b) Epinephrine solution 1:1000	15 cc.
Sig: For office use	

(c) Tannic acid	12 gm.
Distilled water (qa)	600.0 cc.

2 Absorbable gelatin sponge USP.—

Gelfoam dental pack	1 Jss.
Sig: For office use.	

3 Oxidized Cellulose—

- (a) Hemo Pak hemostatic absorbable gauze packing strip. $\frac{1}{2}'' \times 2\frac{1}{2}$ yds.
Such tubes No. 1.
Sig: For office use.
- (b) Oxycel cotton tape $2\frac{1}{2} 1'' \times 1'$
Such vials No. 10
Sig: For office use.
- (c) Novocell pellets with phenyl mercuric nitrate Vial of 35
Such vials No. 1.
Sig: For office use.

NOTE.—May be applied to wound dry or dissolved in saline and added to absorbable gelatin sponge or fibrin foam.

- 4 Zinc chloride 7 per cent 30 cc.
Sig: For office use.

L. Resuscitants—

Resuscitant drugs should be used with discretion and should not be relied on per se. for reviving patients who exhibit syncope and other symptoms of respiratory and circulatory depression. These drugs should be considered as adjunctive aids to more reliable emergency measure such as lowering the head, establishing a free airway, applying artificial respiration, and giving direct oxygen.

1 Mild stimulants—

- (a) Spirits of ammonia.. .. . 1 cc. ampule.
Such ampules No. 12
Sig: For office use.
- (b) Coramine 25 per cent 1.5 cc. vials.
Such vials No. 5.
Sig: For office use.
Ampules: 1.5 cc. in cartons of 5 and 20.
Ampules: 5 cc. in cartons of 3 and 12.
Oral solution: Bottles of $\frac{1}{4}$, $1\frac{1}{2}$ and 3 fluid ounces.

NOTE.—Used for mild respiratory depression as in syncope dose 1.5 to 5 cc. injected subcutaneously, intramuscularly or intravenously.

- (c) Caffeine Sodium benzoate $7\frac{1}{2}$ grains in 2 cc. vials.
Such vials No. 6.
Sig: For office use.

NOTE.—Used for mild respiratory depression and psychic shock. Dose, $7\frac{1}{2}$ grain injected subcutaneously intramuscularly, or intravenously. Tablets ($7\frac{1}{2}$ grains) may be given orally.

2 Cardiac and circulatory stimulants.

- (a) Epinephrine sterile 1 : 1000 1 cc. ampules.

Such ampules No. 6.

Sig: For office use.

NOTE.—Used for cardiovascular depression or failure. Inject 0.2 cc. to 0.5 cc. (0.2 to 0.5 mg.) subcutaneously or 25 cc. (25 mg.) intravenously.

Caution: Potent drug—

- (b) Amyl nitrate 3 minimum ampule.

Such ampules No. 6

Sig: For office use.

Amyl Nitrate Aspirols.

NOTE.—Used to relieve symptoms of angina pectoris. Break ampule and have patient inhale. Most patients with angina pectoris have amyl nitrite or nitrate or nitroglycerin with them.

- (c) Nitroglycerin hypo tablets 1/150 gr.
Such tablets No. 6

Sig: For office use.

NOTE.—Used to relieve symptoms of angina pectoris place under tongue. Most patients with angina pectoris have amyl nitrate or nitroglycerin with them at all times.

Miscellaneous preparations—**1 Cement for temporary seating of crowns and bridges.—****Powder—**

Zinc oxide	80 gm.
Powdered white rosin	10 "
Zinc stearate	8 "
Benzoic acid	2 "

Liquid—

Eugenol	42 cc.
Olive oil	8 cc.

Sig: For office use.

2 Disclosing solution—

- (a) Iodine crystals 5 gm.
Zinc Iodide 1.5 "
Potassium Iodide 1.5 "
Glycerin 35.0 cc.
Distilled water (qa) 35.0 cc.

Sig: For office use.

3 Desensitizing solution for use when scaling sensitive areas—

- (a) Benzocaine 15.0 gm.
Camphor3 "
Menthol 1.6 "
Clove oil 1.6 cc.
Cinnamon oil6 "
Alcohol 100.0 "

Sig: For office use.

4 Chemical Cautery of Gum tissue—

(a) Potassium hydroxide	9 gm.
Thymol	0.3 gm.
Magnesium carbonate	0.3 gm.
Oil of Peppermint	0.3 cc.
Glycerin (qa)	15 cc. to make paste.

Sig : For office use.

Notes.—1. Apply topical anaesthetic. 2. Apply paste to tissue with pointed instrument (tissue will turn black, patients will notice heat, drug is self limiting). 3. Rinse with water.

5 Periodontal packs used following Gum resection—

(a) Powder—

Zinc oxide	40 gm.
Powdered white rosin	45 "
Tannic Acid	10 "
Kaolin	2.5 "

Liquid—

Thymol	2 gm.
Eugenol	98 cc.

Sig : For office use.

NOTE.—Mix 12-15 drops of liquid and 50 mg. Terramycin with sufficient powder to make a putty-like consistency. One such mix for each quadrant. May be left on gingival tissues for as long as two weeks.

(b) To reduce Periodontal pocket without Surgery—

Powder—

Zinc oxide	70 gm.
Zinc acetate	1 "
Zinc stearate	1 "
Powdered white rosin	28 "
Paraformaldehyde	5 "

Liquid—

Eugenol	85 cc.
Cotton seed oil,	15 "

Sig : For office use.

6 Impression Pastes—

(a) Powder—

Zinc oxide	85 gm.
Powdered white rosin	15 "

Liquid—

Balsam peru	60 cc.
Canada Balsam	40 cc.

Sig : For office use.

(b) Powder—

Zinc oxide	80 gm.
Powdered white rosin	10 "
Zinc stearate	1 "

Liquid—

Eugenol	28 cc.
Olive oil	5 "
Linseed oil	3 "
Light mineral oil	3 "
Powdered white rosin	5 gm.

Sig : For office use.

7 Denture Adhesive—

(a) Powdered tragacanth	22.5 gm.
Powdered Karaya gum	7.5 "
Sassafras oil	.5 cc.

8 Denture Cleaner—

(a) Tri-sodium phosphate	120 gm.
Cinnamon oil	.3 cc.
Amaranth solution	2 "

Sig : For office use.

NOTE.—Dissolve 1 tsp. in half a glass of water and use with brush. Cellulose acetate type denture is decomposed by alkaline substances. Phenol formaldehyde and acrylic types withstand more chemical agents.

9 Dental ointment—

(a) Butyn dental ointment	30 cc.
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Sig : For office use.

(b) Tincture of iodoine	15 cc.
Tincture of aconite	15 "

Sig : For office use.

10 Anti-gagging Medications—

(a) Benzocaine troches	..
Such troches No. 24.	..

Sig : For office use.

(b) Nupercaine troches	..
Such troches No. 24	..

Sig : For office use.

11 Fluoride solutions for Topical Application—

(a) Sodium silico-Fluoride	0.9 gm.
Distilled water	100 cc.

Sig : For office use.

(b) Sodium fluoride	2 gm.
Distilled water	100 cc.

12 Root Canal Culture Media—

- (a) **Brewer sodium thioglycollate with methylene blue added.** 454 gm.
Sig: For office use.
Speciality preparation:
Brewer sodium Thioglycollate medium (Difco).

NOTE.—Mix 40.5 gm. powder with 1,000 cc. cold distilled water: Heat to boiling to dissolve. Distribute in test tubes. Autoclave 5 minutes at 15 lb. and 121–123°C.

13 Sandarac—

- (a) **Sandarac** 12.5 gm.
Alcohol 100 cc.

Sig: For office use.

ANTISIALOGOGUE DRUGS.**A. Reduction of salivary flow.**

The antisialogogues are used to decrease salivary flow. Their use is indicated in patients with **ptyalism** for whom extensive dental procedures are planned.

1. Atropine **sulphate** —1/150 grain.

Sig: One (1) tablet one hour before dental appointment.

MOUTH WASHES.

It is highly questionable whether "mouth washes", as they are commonly used, provide any efficient germicidal effect. Although these solutions may afford comfort to the patient having oral surgical operations and oral diseases, they must be considered primarily as adjuncts in the toilet of the oral cavity.

If desired, the following mouth washes may be prescribed for patients or ordered for use in the dental office:—

1. (i) Hydrogen Peroxide.
(ii) Normal saline.
(iii) Potassium permanganate.

2. Antiseptic solution (N.F.).

Dispense 8 fluid ounces.

Sig: Use full strength as mouth wash

DENTIFRICES.

The main purpose of a dentifrice is to assist the tooth-brush in cleaning the teeth. While most of the commercially prepared dentifrices satisfy this purpose, the dentist may wish to have the pharmacist make a dental cleaning compound as a prescription for a patient or to dispense to his patients.

A. Tooth powder:—

Tartaric acid, powdered	...	...	90.00 Gm.
Gelatin, powdered	...	...	1.00 Gm.
Calcium carbonate, precipitated	...	...	32.00 Gm.
Calcium phosphate, precipitated	...	...	32.00 Gm.
Magnesium carbonate	...	...	32.00 Gm.
Sodium chloride, powdered	...	...	32.00 Gm.
Sodium bicarbonate	...	...	113.00 Gm.
Saccharin	...	...	0.5 Gm.
Oil of peppermint	...	...	2.00 cc.

APPENDIX-IV c.*Sanctioned Staff for a Dental Clinic.*

1. One Dental Assistant Surgeon.
2. One Nurse.
3. One Lower Division Clerk.
4. One Sweeper.
5. One Peon.

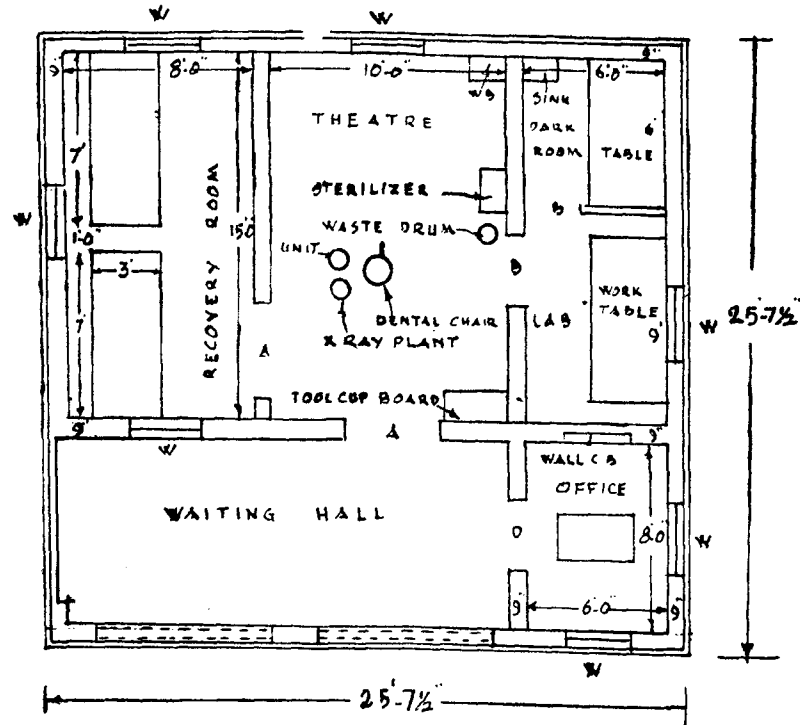
Requirements of a Dental Clinic

1. One Dental Assistant Surgeon.
2. One Dental Hygienist.
3. One Dental Mechanic.
4. One Lower Division Clerk.
5. One Nurse.
6. One Sweeper.
7. One Peon.

APPENDIX V a.

TYPE DESIGN FOR A DENTAL HOSPITAL IN RURAL AREA.

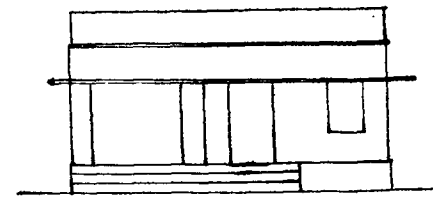
Scale: 1" = 8';



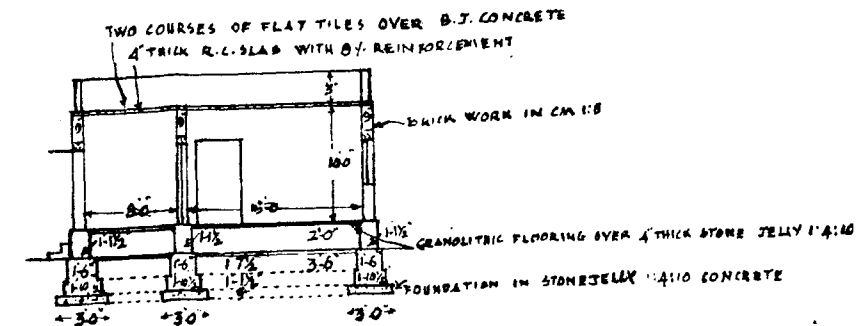
APPENDIX V-b.

TYPE DESIGN FOR A DENTAL HOSPITAL IN RURAL AREA.

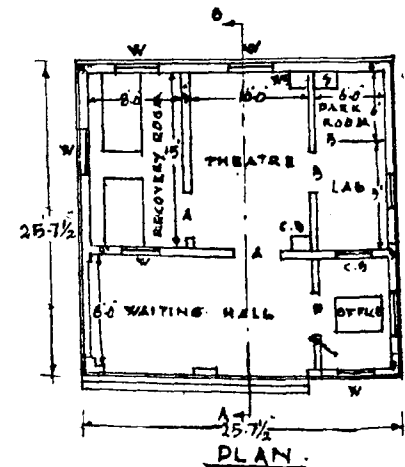
SCALE: 1"=16'-0"



FRONT ELEVATION



SECTION AT AB



PLAN.

REFERENCE

A	TEAKWOOD DOOR FULLY PANELLLED	4'-0" x 7'-0"
B	-do-	3'-0" x 7'-0"
S	WALL SINK	2'-0" x 1'-6" x 10"
W.B.	WASHHAND BASIN	1'-10 1/2" x 1'-6"
W	TEAKWOOD WINDOW PANELLLED	3'-0" x 6'-0"

- o. tongue
- (e) Burns (Chemical and thermal).
- (f) Eye injuries
- (g) Difficulty in removing restoration or plaster impression.
- (h) Perforation of root—
1. Crown Construction
 2. Endodontia

D. Inflammatory conditions.

- 1 Jaws—
 - (a) Localized Osteitis
 - (b) Osteomyelitis
- 2 Face.
- 3 Lymph nodes.
- 4 Salivary glands.

APPENDIX VI.

Emergency Problems in Dental Practice.

COMMON DENTAL PROBLEMS.

A. Admitting Emergencies.

- 1 Pain—
 - (a) Tooth ache
 - (b) Painful gingivæ
 - (c) Aphthous Stomatitis
 - (d) Teething
 - (e) Foreign object between teeth.
- 2 Bleeding—
 - (a) External—
 1. Gingival
 2. Mucosal
 - (b) Internal
- 3 Edema—
 - (a) Traumatic
 - (b) Angioneurotic
- 4 Esthetics (broken or defective restorations)—
 - (a) Self criticism
 - (b) Criticism by others
- 5 Acutely Traumatized and Dislocated teeth—
- 6 Neuroses (including Cancer-phobia).

B. Office Emergencies.

- 1 In General Practice—
 - (a) Choking
 - (b) Nausea or Gagging
 - (c) Swallowing of toxic drugs, teeth or other foreign bodies.
 - (d) Bruises or lacerations of soft tissues—
 1. Gingiva
 2. Lip
 3. Cheek
 4. Floor of mouth
 5. Tongue
 - (e) Burns (Chemical and thermal).
 - (f) Eye injuries
 - (g) Difficulty in removing restoration or plaster impression.
 - (h) Perforation of root—
 1. Crown Construction
 2. Endodontia

2 Related—

- (a) Electrical shock from dental equipment
- (b) Chemicals spilled on skin or clothing.
- (c) Falling in office

EXODONTIC PROBLEMS.

A. Fracture—

1. Root
2. Alveolar process
3. Adjacent tooth
- (b) Loosening of Adjacent tooth
- (c) Avulsion of adjacent tooth
- (d) Extraction of wrong tooth
- (e) Maxillary sinus—
 1. Lost root
 2. Exposure of floor
- (f) Lost Tooth
- (g) Excessive bleeding (including shock)—
 1. At time of surgery
 2. Post-extraction
- (h) Swelling
 1. Pre-extraction
 2. Post-extraction
- (i) Pain—
 1. Pre-extraction
 2. Post-extraction
- (j) Prolonged post-extraction Anaesthesia or paresthesia

ORAL SURGICAL PROBLEM.

- A. Dislocations
- B. Fractures
- C. Facial laceration
- D. Inflammatory conditions.

1 Jaws—

- (a) Localized Osteitis
- (b) Osteomyelitis

2 Face.

3 Lymph nodes.

4 Salivary glands.

APPENDIX VI—cont.

*Emergency Problems in Dental Practice—cont.**E. Tumors and Cysts.**F. Salivary glands and duct obstructions.*

ANESTHETIC AND ANALGESIC PROBLEMS.

A. Local.

- 1 Reaction of normal individual—
 - (a) Systemic—
 1. Central Nervous system
 2. Respiratory system.
 3. Others
 - (b) Local—
 1. Broken needle
 2. Paralysis
 3. Infection
 4. Hematoma
- 2 Reaction of abnormal individual—
 - (a) Allergy
 - (b) Idiosyncrasy
 - (c) Hypersensitivity
- 3 Reaction to injection not related to local anaesthetic agent—
 - (a) Psychogenic
 - (b) Epinephrine
 - (c) Wrong drug

B. General.

- 1 Vascular insufficiency (shock)—
 - (a) Incipient
 - (b) Frank
- 2 Respiratory insufficiency—
 - (a) Depression
 - (b) Obstruction (blood-mucous, tooth, restoration, pack, instrument or other foreign body)
- 3 Combined (1 and 2)

C. Principles of resuscitation.

- 1 Maintenance of circulation—
 - (a) Fluids
 - (b) Vasopressors
 - (c) Analoptics
- 2 Maintenance of respiration—
 - (a) Oxygen

(b) Artificial respiration

3 Specific measures—

- (a) Antidotes
- (b) Neutralizing agents
- (c) Analoptics, etc.

MEDICAL PROBLEMS.

A. Idiosyncrasies of patient made evident by dental procedure.

- 1 Excessive bleeding secondary to coagulation defect
- 2 Drug sensitivity—
 - (a) Local reaction
 - (b) Generalized reaction
- 3 Acute hysterical or Psychotic reaction

B. Emergencies precipitated by anxiety of patient or occurring by chance in the dental office.

- 1 Conclusions—
 - (a) Hysteria
 - (b) Epilepsy
 - (c) Intracranial tumors
 - (d) Drugs, etc.
- 2 Comatose States—
 - (a) Intoxications
 - (b) Fainting
 - (c) Hysteria
 - (d) Heat exhaustion
 - (e) Cerebral injuries
 - (f) Carotid sinus syndrome
 - (g) Cardiac Arrhythmias
 - (h) Cerebro-vascular accident
 - (i) Shock
 - (j) Insulin hypoglycemic reaction
 - (k) Diabetic acidosis
 - (l) Uremia
- 3 Circulatory problems—
 - (a) Supra-ventricular tachycardia
 - (b) Other Arrhythmias
 - (c) Neurocirculatoryasthenia
 - (d) Angina pectoris
 - (e) Acute Coronary thrombosis
 - (f) Cardiac decompensation
 - (g) Dissecting aneurysm

APPENDIX VI—cont.

*Emergency Problems in Dental Practice—cont.**B. Emergencies precipitated by anxiety of patient or occurring by chance in the dental office—cont.*

CONDITIONS AFFECTING DENTIST.

4 Acute respiratory emergencies—

- (a) Branchial asthma
- (b) Pulmonary embolus
- (c) Hemoptysis
- (d) Spontaneous pneumothorax

5 Acute abdominal attacks—

- (a) Appendicitis
- (b) Ruptured peptic ulcer
- (c) Ruptured ectopic pregnancy
- (d) Hematemesis
- (e) Acute gastric enteritis
- (f) Dysmenorrhea
- (g) Gallstone colic
- (h) Renal colic

6 Paralysis—

- (a) Hysteria
- (b) Bell's palsy
- (c) Myasthenia gravis
- (d) Familial periodic paralysis
- (e) Cerebro-vascular accident

7 Sudden death.

A. Traumatic—

- 1 Bites.
- 2 Burns—
 - (a) Thermal
 - (b) Acid
 - (c) Friction
 - (d) Radiation
- 3 Lacerations.
- 4 Back Strain.
- 5 Robbery.

*B. Inflammatory—**C. Allergic.**D. Foreign bodies.**E. General Health.**F. Fires and explosions.**G. Medical legal problems in dental practice.**H. Mass disaster.*

APPENDIX VII.

Equipment and Drugs for Emergencies in Dentist's Office.

- 1 Stethoscope.
- 2 Sphygmomanometer.
- 3 Oxygen Cylinder with regulator valve.
- 4 Plastic disposable Oxygen mask.
- 5 Isotonic Saline solution.
- 6 Venoclysis set.
- 7 Glucose solution.
- 8 Caffeine and Sodium Benzoate Injection.
- 9 Epinephrine Injection 1:1,000.
- 10 Nitro Glycerine tab. 1/100 gr. and amp.
- 11 Aromatic Spirit Ammonia.
- 12 Aminophylline Injection.
- 13 Aromatic Ammonia inhalants.
- 14 Coramine (Nikethamide) Injection.
- 15 Vitamin K.
- 16 Claudin/Coagulin/Gelfoam packs and other Styptics and Coagulants.
- 17 Phenegan Inj. 25 mg./cc.
- 18 Barbiturates (Thiopental Sodium and Morphine).
- 19 Lever Syringe and ordinary glass syringe.
- 20 Hypodermic Needles.

TABLE 1 (a)—*Dental caries.*

Possible Factors in Etiology or Prevention.

Predisposing Factors.		Local (Environmental).				Exciting Factors— caries.	
General Systemic.		Food.	Tooth.	Saliva.	Plaque.		
1 Age.	1 Adhesiveness.	2 Chemical Composition. 3 Detergent power. 4 Particle size. 5 Water supply (Fluorine). (a) Acid base balance. (b) Deficiencies. (c) Excesses. (d) Refinement.	1 Colour.	1 Alkali reserve. 2 Amount. 3 Ammonia. 4 Antibiotics. 5 Bacteriophage. 6 Calcium. 7 Carbo-hydrates. 8 Chlorides. 9 Enzymes. 10 Lysozyme. 11 Mucin. 12 PH. 13 Phosphorus. 14 Potassium. 15 Total acidity. 16 Total solids. 17 Urea. 18 Viscosity.	1 Bacteriologic composition. 2 Chemical composition. 3 Physical composition. 4 Quantity (Oral Hygiene).	1 Bacteria on tooth surface capable of destroying tooth substance by products of their metabolism. 2 Material on tooth surface capable of being converted on to substances harmful to teeth.	
2 Body type.	2 Chemical Composition.		2 Cuticle.				
3 Climate.	3 Detergent power.		3 Form.				
4 Emotions.	4 Particle size.		4 Position.				
5 Endocrines.	5 Water supply (Fluorine).		5 Structure— (a) Density. (b) Hardness.				
6 Health.	6 Nutrition— (a) Acid base balance. (b) Deficiencies. (c) Excesses. (d) Refinement.		6 Substances— (a) Inorganic. (b) Organic.				7 Surface defects.
7 Heredity.							
8 Nutrition— (a) Acid base balance. (b) Deficiencies. (c) Excesses. (d) Refinement.							
9 Seasons.							

TABLE I (b)—*Theoretically possible ways to prevent dental caries.*

Increase rate of neutralization or destruction of acid.		Decrease acid formation on the tooth surface.		Increase resistance of tooth to acid.	
1. Diet. Make more alkaline saliva. *	Oral hygiene. Neutralize acids with alkaline dentifrice, ammonium dentifrice. *†	Good Dentistry. *	Eliminate or reduce the substrate.	Eliminate or reduce enzyme activity.	Fluorides in drinking water. ‡ Topical application of fluoride. §
	Diet. Reduce or eliminate carbohydrate (particularly sugar) from the diet. ‡				
	Oral hygiene. Free the mouth of carbohydrate and sugar immediately after eating or ‡ before acid forms. ‡				
Tubo Feeding. (Animals). ‡		Enzyme Inhibitors In sugar * In dentifrice ‡ In mouth wash. *		Diet. Vitamin B ‡ deficient. ¶ Oral Hygiene. Cleanse mouth immediately after eating. ††	

‡ Has been tested on humans experimentally and found to be effective.

* Has not been adequately investigated.

† In order to be effective the inhibitor must be present on the tooth surface or in the dental plaque.

‡ Oral hygiene removes substrate, enzymes and neutralises or dilutes, substrate enzymes and acids.

¶ Not desirable or practical.

†† Not effective in adults.

TABLE III (b)—*Etiology of Periodontal Disease.*

Local—

A. Dysfunctional.

1. Over function—
 - (a) Excessive stress on teeth.
 - (b) Insufficient periodontal support.
 - (c) Too powerful masticatory musculature.
2. Under function—
 - (a) Premature wear.
 - (b) Non-occlusion.
 - (c) Indolent mastication.
3. Abnormal Habits—
 - (a) Unilateral mastication.
 - (b) Abnormal biting habits.
 - (c) Clenching
 - (d) Brauxism and brauxomania

B. Irritational

1. Abnormal anatomy—
 - (a) Tooth form
 - (b) Bulbous Contour
 - (c) Proximal contact
 - (d) Tooth position
2. Deposit on Teeth—
 - (a) Calculus (Supra or subgingival)
 - (b) Materia Alba
 - (c) Mucinous Plaques
 - (d) Protein Pellicle
3. Non detergent diet.
4. Food Impaction.
5. Mechanical Irritants—
 - (a) Cavity Margins
 - (b) Improper inlay or filling margins
 - (c) Orthodontic appliances
 - (d) Bridges, clasps or dentures
6. Chemical irritants.
7. Atmospheric irritants (Mouth breathing).
8. Improper tooth brushing.
9. Improper orthodontic procedure.

TABLE III (b)—*Etiology of Periodontal Disease—cont.*

Systemic—

1. Faulty Nutrition—
 - (a) Acid base disbalance
 - (b) Vitamin deficiency
 - (c) Mineral deficiency
2. Debilitating diseases
3. Blood dyscrasias.
4. Endocrine dysfunction.
5. Pregnancy.
6. Allergies and drugs idiosyncrasies.
7. Metallic poisoning.
8. Roentgen, radium and Atomic radiation
9. Psychosomatic factors.

TABLE III (c)—*Differential diagnostic chart.*

Clinical Symptoms and Histologic Findings of Periodontal Disease.

Disease. (1)	Clinical symptoms. (2)	Histopathologic Findings. (3)
1 Gingivitis ..	A. 1 Inflammation localized to papillary or marginal gingiva; stippling of attached gingiva not affected. 2 Pockets Shallow 3 Supramarginal and submarginal dental deposit. 4 Haemorrhage B. Roentgenographic: No bone changes .. C. No loosening of teeth A. 1 Change of gingival color to red magenta. 2 Glossy surface, loss of stippling 3 Deep pockets with suppuration .. 4 Loss of firmness of gingiva 5 Submarginal deposits B. Roentgenographic: rarefaction of bone at alveolar crest (cup-shaped); bone resorption of the horizontal type. C. Loosening and migration of teeth a late symptom. 	A. Acute and chronic inflammation 'localized to gingiva (Histopathologic picture will vary according to type of gingivitis—hyperplastic, pregnancy, vitamin C deficiency, necrotizing ulcerative gingivitis). B. No bone resorption. .. A. Acute and chronic inflammation. B. Apical proliferation of epithelial attachment; ulceration of pocket epithelium; progress of inflammation along blood vessels to alveolar bone. C. Resorption of bone of the alveolar crest in a cup shaped form. D. Late phase: Extensive loss of alveolar bone; replacement of periodontal ligament by inflammatory tissue.

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3 Periodontosis ..	A. 1 Formation of distems, migration of teeth; no inflammation. 2 Roentgenographic: Vertical type of bone resorption; irregular, not following anatomic landmarks. B. Development of deep pockets, (generalized, single teeth or involving groups of teeth), with secondary inflammation in areas of deep pockets. A. Sensitivity to percussion B. Roentgenographic: Widening of periodontal space at apex followed by widening of res of periodontal space. C. Loosening of teeth: Depending on the direction of overstress if in one direction tooth moves out of occlusal stress, if jiggling tooth becomes loose.	A. First stage: Degeneration of principal fibers of periodontal fibers of periodontal ligament; vertical resorption of alveolar bone; replacement of periodontal fibers by degenerative tissue. B. Second stage: Proliferation of epithelial attachment from tooth; development of deep pockets with purulent exudate. A. Side of pressure: Necrosis of Periodontal ligament, undermining resorption of bone. B. Side of tension: Damage to Periodontal ligament by over stress thrombosis; widening of periodontal space, new bone formation. C. In constant jiggling widening of periodontal space.
4 Traumatism ..		

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TABLE III (d) *Prognosis of Periodontal Disease.*

Depends upon—

1. Clinical Findings.
2. Roentgenographic findings.
3. Systemic and Medical History.
4. Age of the patient and advancement of Disease.
5. Patient's Co-operation and Home care.

TABLE III (e) *Treatment of Periodontal Disease.*

1. Instrumentation—
 - (a) Sealing
 - (b) Curettage
2. Surgical
 - (a) Gingivectomy
 - (b) Flap operation
 - (c) Gingivoplasty
3. Ocularal Equilibration
4. Splinting of teeth—
 - (a) Temporary
 - (b) Permanent
5. Systemic Therapy
6. Home care (Physiotherapy)

TABLE III (f) *Causes of failure in Periodontal Therapy.*

1. Insufficient Treatment.
2. Incorrect Treatment.
3. Treatment of cases that are too advanced.
4. Inadequate Home care.
5. Failure of the Patient to return at Regular intervals.
6. Systemic factors.

TABLE IV.—*Clinical differential Diagnosis of Pulpal conditions which may give rise to pain.*

Subjective symptoms	Physiological ..	Pathological ..	Inflammation (Regressive).			Necrotic.
			Early stage ..	Last stage ..	..	
Character of pain	Hyperemia (vascular response). Reparative ..	Sharp, shooting on stimulation. Ceases with seconds after removal of causative factors.	Sharp pain lingers seconds or minutes more severe than Hyperemia.	Intense (Intermittent to constant).	Throbbing to infection ensues.	Ncne unless secondary
Temperature changes	..	Very sensitive to extremes in heat and cold.	As condition progresses, cold relieves and heat aggravates.	..	..	Variable response.
Percussion of teeth	..	Normal ..	Not tender ..	..	May become tender	Tender in varying degrees.
Response to Electric Pulp tester.	..	Hypersensitive ..	Hypersensitive ..	..	Usually hypersensitive.	Variable to no response.
Objective findings—	..	..	..	..	..	..
X-ray ..	..	Negative ..	Negative ..	..	May have periapical radiolucency.	May have periapical radiolucency.
Exploratory—	..	..	..	..	..	..
1. Teeth	..	Evidence of Dental caries trauma or Chemical irritant.	..	..	..	Extent and proximity of lesion to the pulp.
2. Supporting tissues	..	Normal. Where involved, the tissue has been traumatized.	..	..	..	Involved varying degrees.

TABLE IV.—*Clinical differential Diagnosis of Pulpal conditions which may give rise to pain—cont.*

Treatment	(1) Remove etiology.. Same as in early stages, which if unsuccessful.	The- (1) Root canal rapy.	Pulpal pressure, and congestion by opening into the pulp.	(1) Root Canal The- rapy.
	(2) excavate lesion and place anodyne dressing (zinc).			
	(3) Protect teeth ..	(2) or extraction ..	(2) Place obtundent..	(2) Pain relieved by opiates but not by sedatives.
	(4) Sedatives ..	(3) Sedatives may relieve.	(3) Pulp Therapy Pulpotomy or Pulpectomy.	

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TABLE V.—*Differential diagnosis between pulpal and periodontal pain.*

	Acute Pulpitis.	Peri-toental condition.	
		Periodontitis. (3)	Lateral or Interdental Abscess. (4)
(1) Character of Pain	(2) 1 Sharp, shooting lancinating or Throbbing. 2 Tends to be intermittent in nature. 3 Often more severe in reclining position. Some times difficult ..	Dull, continuous pulsating, position of body has no influence. Easy ..	Dull, continuous Pulsating Position of body has no influence. Unusually easy.
Localization			

TABLE V.—*Differential diagnosis between pulpal and periodontal pain—cont.*

Thermal response and Electric pulp test.	Hypersensitive or Hyposensitive.	No response (Pulp nonvital) ..	Normal response (vital pulp).
Response to percussion ..	Not tender ..	Very tender ..	Not tender or slightly tender.
Extrusion of teeth ..	None ..	Extruded (except in earliest stage).	Usually not extruded.
Discolouration and loss of Translucency.	None ..	Discolouration and loss of translucency.	None.
Lymph nodes ..	Negative ..	Usually enlarged and tender.	May or may not be involved.
X-ray ..	Essentially negative ..	Periapical radiolucency if tooth is extruded or if there was a pre-existing granuloma.	Evidence of periodontal pocket.
Treatment ..	1 Remove cause 2 Anodyne dressing over pulp.	1 Heat .. 2 Localize .. 3 Root canal Therapy	1 Heat. 2 Localize. 3 Open and Drain.

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TABLE VI.—*Differential diagnosis and treatment of Periostitis and Alveolar Osteitis.*

	Periostitis ..	Alveolar Osteitis (Dry socket).
Etiology	Usually traumatic may become secondarily infected.	Usually bacterial—Trauma can be a predisposing cause.
Onset	Immediately Postoperatively.	3-5 days post operatively.
Signs and Symptoms:—	Lancinating, may become later, gnawing	Dull Throbbing ache.
A. Character of pain.	Absent.	Frequently to ear.
B. Referred Pain ..	Normal.	Necrotic or absent.
C. Bloodclot ..	Inflamed, very tender and swollen, may be elevated.	Normal. Usually normal.
D. Adjacent Mucosa.	Absent.	Foetid.
E. Temperature ..	Absent.	
F. Odour	..	
Duration	2-4 days	7-14 days.
Treatment	1. Cold compresses for first 24 hours hot compresses thereafter. 2. Analgesic drugs.	(1) Warm saline rinses. (2) Hot moist compresses (3) Local application of obtundent or Topical anaesthetics. (4) Analgesic Drugs.

TABLE VII.—*Differentiation of typical and atypical neuralgia.*

Characteristics.	Typical Neuralgia.			Atypical Neuralgia.		
	Major (Primary) In field of one of the Cranial Nerve.	Minor (Secondary) In field of Cranial nerves—more than one may be affected.		Does not follow nerve distribution.		
Distribution of Pain ..	..	..		..	..	
Character of Pain ..	Paroxysmal sharp	well	Sharp or dull	..	Diffuse—poorly localized deep seated.	
Trigger Zone ..	..	..	Absent	..	Absent.	
Age ..	Older age group	..	Any age	..	Younger Age group.	
Precipitation of attacks by external stimuli.	Yes ..	..	No	..	No.	
Secondary changes ..	None ..	..	Usually present	..	Usually non-.	
Effect of chemical or surgical interruption of cranial nerve.	Relief ..	..	Relief	..	No Relief.	
Effect of Vaso constrictor drugs.	No relief ..	..	No relief	..	Frequent relief.	

TABLE VIII.—*Drugs for Control of Dental Pain.*

Drug.	Dose.	Frequency.
		HOURS.
Mild to Moderately severe pain—		
Acetyl-salicylic acid	0.3 gm. (5 gr.)	1
Acetophenetidin	0.3 gm. (5 gr.)	3
Severe pain—		
Codeine Sulphate	0.03 gm. ($\frac{1}{4}$ gr.)	3
Morphine Sulphate	8–10 gm. ($\frac{1}{4}$ – $\frac{1}{6}$ gr.)	4–6

Onset time and duration of some common Barbiturates—

Drug.	Dose.	Onset time. MIN.	Duration. HOURS.
Pentobarbital Sodium..	0.1–0.2 gm. .. ($1\frac{1}{4}$ –3 gr.)	15–30	Short 3–5
Seconal Sodium..	0.1–0.2 gm. .. ($1\frac{1}{4}$ –3 gr.)	15–30	Short 3–5
Hexobarbital	0.13–0.39 gm. (2–6 gr.)	15–30	Very short 1–3
Phenobarbital Sodium ..	0.1–0.2 gm. .. ($1\frac{1}{4}$ –3 gr.)	30–60	Long 12–24
Barbital Sodium ..	0.3 gm. .. (5 gr.)	30–60	Long 12–24
Amobarbital Sodium (Amytal).	0.1–0.2 gm. .. ($1\frac{1}{4}$ –3 gr.)	20–45	Medium 6–24
Butethal (Neonal) ..	0.1–0.4 gm. .. ($1\frac{1}{4}$ –4 gr.)	20–45	Medium 6–24

TABLE IX.—*Evaluation of Antibiotics in Treatment of Oral Diseases.*

Oral conditions or indication.	Pentellin.	Aureomycin.	Terramycin.	Streptomycin.	Pentellin and Sulphadiazine.
Ulceronecrotic Gingivitis	.. Valuable	.. Valuable	.. Possibly Valuable.	..	..
Herpetic Stomatitis	..	..	..	..	..
Erythema Multiforme	.. Value Questionable	.. Value Questionable	.. Value Questionable	..	..
Oral Tuberculosis Lesions	..	..	..	Valuable	..
Actinomycosis (Oral)	..	.. Possibly Valuable.	.. Possibly Valuable	..	Valuable.
Oral Syphilis	..	..	..	..	..
Prophylaxis Bacteremias.	..	..	..	..	..
Lichen Planus Leukoplakia	..	..	..	No data	No data.

TABLE X.—Dental Caries.

Serial number and name of author and year.	City and State.	Total Number of subjects.	Age Range.	Average incidence per cent.	Number.	Age Range.	Caries incidence per cent.	Number.	Age Range.	Caries incidence per cent.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1 Day C.D.M. (1940).	Lahore (Punjab).	756	5-18	94.05	756	5-18	94.05	..	..	..
2 Shourie K.L. (1941).	Delhi ..	1,074	5-17	60.3	..	..	..	..	..	..
3 Shourie K.L. (1942).	Madras ..	1,886	7-20	39.8	1,112	7-20	42.2	474	7-20	37.4
4 Bhatt and Shetty (1946).	Bombay ..	1,988	3-24	73.65	1,366	3-24	71.80	622	3-24	77.88
5 Shourie K.L. (1947).	Ajmer (Marwar).	387	6-18	33.7	387	6-18	33.7	..	..	..
6 Shourie K.L. (1950).	Bombay ..	2,195	3-20	70.2	2,195	3-20	70.2	..	..	..
7 Kikila Jai (1951).	Gujarat (Bombay).	1,063	3-15	68.8	581	3-15	68.4	482	4-14	69.3
8 Vacher B.R. (1952).	Amritsar (Punjab).	400	8-13	51.5	200	8-13	58.5	200	8-13	44.5
9 Thapar S.L. (1953).	Moga (Punjab).	727	6-20	59.11	727	6-20	59.11	..	..	..
10 Chowdry Chawla Bhargava Nanda (1957).	Lucknow (Uttar Pradesh).	2,991	5-16	44.5	2,281	5-16	44.5	709	5-16	44.4
11 Usha Shagal (1960).	Bombay ..	1,468	4-20	88.53	686	4-20	90.23	782	4-20	86.83

TABLE XI.
Periodontal Disease.

Name of Author.	Year.	Number examined.	Sex and age group.	Percentage.
(1)	(2)	(3)	(4)	(5)
(c) Incidence amongst children—				
1 Day and Shourie ..	1947	1,054 (Boys)	9-17	99
2 Day and Shourie ..	1947	179 (Girls)	9-17	74
3 Day	1944	200	13	81
4 Day and Trandon ..	1940	756	13	68
5 Day and Shourie ..	1944	613	5-15	80
6 Jai	1952	1,045	5-14	82 to 37
7 Shourie and Sori ..	1953	390 (Boys)	3-16	88
8 Shourie and Sori ..	1953	133 (Girls)	4-16	77
(b) Incidence amongst adults—				
1 Methaetel	1952	2,219	18-55	

