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PUBLIC HEALTH DENTISTRY IN UNDERGRADUATE DENTAL EDUCATION

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I N T R O D U C T I O N

This paper emphasises the study of the teaching of public health dentistry for undergraduate students, based on the educational need of the dental students concerning public health dentistry.

Before discussing the topic, dentistry and public health the teaching pattern in dental education will be briefly reviewed.

The study of the teaching of public health dentistry followed by a study of some curricula of dental schools will guide the putting together of ideas for course structure and content for greater emphasis on public health dentistry in curricula of dental schools in Indonesia.

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CONTENTS

PART ONE : DENTISTRY AND PUBLIC HEALTH

Chapter I : DENTISTRY AS A PART OF PUBLIC HEALTH

Chapter II : THE ROLE OF THE PUBLIC HEALTH DENTIST

Chapter III : THE ROLE OF DENTIST IN THE COMMUNITY

PART TWO : THE CHANGING PATTERN IN DENTAL EDUCATION

Chapter IV : BASIC SCIENCES

Chapter V : CHANGING PRACTICE OF DENTISTRY

Chapter VI : CONCEPTS OF TEACHING

Chapter VII : UNIVERSITY ROLE IN COMMUNITY

PART THREE : THE TEACHING OF PUBLIC HEALTH DENTISTRY

Chapter VIII : AREAS OR FIELDS COVERED

Chapter IX : RELATIONSHIP TO OTHER SUBJECTS

PART FOUR : SOME CURRICULA OF DENTAL SCHOOLS

Chapter X : THE COLLEGE OF DENTISTRY OF UNIVERSITY OF KENTUCKY
THE FACULTY OF DENTISTRY OF UNIVERSITY OF SYDNEY
THE FACULTY OF DENTISTRY OF UNIVERSITY OF ALBERTA

PART FIVE : PUBLIC HEALTH DENTISTRY CURRICULA FOR INDONESIA

Chapter XI : RELATIONSHIP TO OTHER SUBJECTS
Chapter XII : NEED AND CONTENT

PART ONE : DENTISTRY AND PUBLIC HEALTH

Chapter I : DENTISTRY AS A PART OF PUBLIC HEALTH

Chapter II : THE ROLE OF THE PUBLIC HEALTH DENTIST

Chapter III : THE ROLE OF DENTIST IN THE COMMUNITY

PART ONE: DENTISTRY AND PUBLIC HEALTH

It is better to understand the definition of dentistry and public health before going further to discuss this chapter.

Dentistry is, as the Federation Dentaire International defined it, the science and art of preventing, diagnosing and treating diseases and malfunctions of, and injuries to, the teeth, jaws and mouth and of replacing lost teeth and associated tissues.

Public Health is, as Winslow defined it, the science and art of preventing diseases, prolonging life and promoting physical health and efficiency through organised community efforts.

Both dentistry and public health are only a way to achieves the goal. The goal of dentistry is dental health which can be defined as a state of complete normality and functional efficiency of the teeth, supporting structures and the surrounding parts of the mouth and of the various structures related to mastication and to the maxillo facial complex(1).
The goal of public health is optimal health which is defined by World Health Organisation as a state of complete physical, mental and social well being and not merely the obsence of disease infirmity.

Chapter I : DENTISTRY AS A PART OF PUBLIC HEALTH

In attempting to improve the health of the population, dentistry also has the responsibility of preventing diseases of the oral cavity as well as treating them. These can be done only by a joint effort in which the dental profession, government (and other organization) work together.

According to Dunning[2], dental health in terms of organized community efforts, is a development of the past hundred years, although records of dental treatment can be found in Egypt more than 1500 years before the birth of Christ and efforts toward the prevention of dental diseases date back to the time of Hippocrates.

Many years ago dentistry consisted mainly of restorative procedures carried out by private practitioners and dentists were essentially craftsmen.
The patients were only those who could afford the exorbitant fees. There were a few efforts to aid the indigent.

Over the years, there was a growing awareness of the dental health. There was an effort to make people know about dental anatomy. No prophylactic measures are mentioned.

Another effort towards prevention of dental diseases was taken by M.L. Rhein[3].

He introduced the term "oral hygiene" which proved to be popular. And he was the first dentist to teach his patients the proper methods of tooth brushing. And then tooth brushing was emphasised on the basic, now discredited, slogan "a clean tooth never decays".

Programmes of dental care for children were established. Chief emphasises at the time was upon restorative dentistry, but oral hygdene instruction was an important part of the programme. Establishment of dental clinics not only for treatment but also for research into the problem of child dental hygiene. Dental health education for public through the newspaper and lectures was started.

The provision of dental services by using dental auxiliaries, was introduced in the early part part of the twentieth century. The dentist could delegate to "dental hygienist" or "dental nurse" some of their simple duties in the care of the mouth.

The effects of the efforts put in by the dental health were not felt until later as there was no drastic reduction of the dental diseases. But it was the beginning of something that started the ball rolling towards preventive dentistry which is contributing factor to the creation of dental public health.

The efforts through investigations, through research and clinical observations towards preventing oral diseases were continued.

In the early part of the twentieth century, Frederick McKay gave attention to the "mottled enamel" he found on the teeth of many of his patients and later it was discovered that it was caused by excessive fluoride.

A series of epidemiological studies, for public health purposes, were carried out by T. Dean. He stated that a certain amount of fluoride in the water might inhibit dental caries. After thorough examination relating to safety, effectiveness, practicability of fluoridation of public water supply, fluoridation was endorsed in many countries, as a public health measure.

The next step lay in an attempt to benefit mankind through the prevention of dental caries, Since the discovery of the anticariogenic properties of fluoride, one of the most significant advances has been development of various means of applying fluorides to the erupted dentition to partially prevent the subsequent development of dental caries[4].

Prevention or control of dental caries of any degree of severity is best achieved by eliminating the cause and establishing or re-establishing normal control mechanisms.

It is generally accepted that acidogenic organisms, fermentably substrate (food or food debris) and tooth structure susceptible to dissolution by acids must be present in a mouth before teeth will decay[5]. Dental plaque and saliva also play essential roles[5].

So, prevention or control of dental caries can be achieved through dietary control and by increasing the caries resistance of tooth enamel[6].
However, because dental plaque also plays an essential role in the formation of dental caries, proper oral hygiene practices, by tooth brushing, dental floss, etc[6] are needed for a caries control programme.

Good oral hygiene for a long period has been considered an important factor in the prevention of periodental disease and the activity of dental caries. These can be achieved by co-operation between the dental professional and the patient. Instructing the patient in proper oral hygiene procedure is not enough. The patient must understand why he is being taught to clean his teeth properly.

The patient must be motivated sufficiently for home care and dental surgery preventive dentistry practices to become a habit[6].

Chapter II : THE ROLE OF THE PUBLIC HEALTH DENTIST.

The public health dentist who attempts to reduce oral disease in the population, faces many problems which can not be accomplished as soon as those seen by the dentist in the clinical practice.

He has various activities and functions included in the dental public health work to reduce oral disease in the population :

A. Programme Administration.

In operating the dental health programme, the public health dentist's function as the dental administrator, is working in dental health matters with other units within the health agency. He also works with officials and voluntary agencies outside the health department. All these efforts will contribute to realizing dental health goals.

He must possess a thorough understanding of the organization and operation of his own agency and others with which he works.

He must maintain an effective working knowledge in matters of budget and financing, compiling adequate dental statistics for records, legislative purposes, planning and evaluating and also determining and publicizing private practice opportunities in areas with a shortage of dentist.

He maintains public and professional relations, keeps well informed about current development in dentistry and his own special area of public health dentistry.

The public health dentist is competent in the administration of services programmes, makes possible use of auxilliary personnel and stresses incremental care to achieve and to maintain optimal dental health.

B. Preventive, Diagnostic and Corrective Services.

Many years ago dentistry was concerned with the restoration, removal and replacement of teeth and the care of their supporting tissue. No practical preventive measures were used.

To day in improving oral health of the community, the public health dentist employs many newly developed measures for the prevention and control of dental disease and handicapping dental conditions. Some of these are:

Topical application of fluoride for the school children and if any possibility, fluoridation of public water supply.

Provision of dental inspection and parent consultation for pre-school and school children or dental referral programmes to assure that they are seen by dentist.

Provision of laboratory fascilities for testing caries

susceptibility, fluoride analysis water, lactobacillus account, cancer biopsy.

Provision of treatment and rehabilitation of the handicapped including children with cleft lip and palate and other dento-facial deformities.

Provision of dental treatment of the indigent.

C. Programme Promotion and Consultative Services.

The public health dentist must understand the advances of science and knowledge in dentistry in order to plan, conduct and evaluate better dental public health programmes based on the community needs.

He establishes and maintains liasion and consultation with other dental health programmes conducted by health agencies, voluntary organizations and welfare agencies and boards of education.

D. Public Health Training.

The public health dentist develops and maintains programmes of in-service training for the dental and other staff of the health agency.

He also may participate in lectures, conferences, and work-shop in public health.

E. Dental Health Education.

In providing dental health education, the public health dentist as an educator must understand the factors which influence the attitudes and the behaviour of the learner.

Dental health education is not a simple process of transmitting information from the teacher to the learner(7). It has a variety of difficulties to achieve dental health education. The main of these difficulties are apathy and lack of knowledge of dentistry in general of the learner.

In achieving dental health education, the public health dentist must :

Utilize the media : newspaper, radio, television.

Promote the use of films, filmstrip, exhibits.

Prepare and distribute dental health education materials to school, health personnel and the public.

F. Delivery of Dental Health Services.

Today the health of children is recognised as a public responsibility and this includes their dental health.

The efforts or reducing the incidence of oral diseases have been emphasised on the oral health of children. Additional research has been shown that the teeth of unborn child can be protected if the mother is given fluorides in her diet during the first, second and third trimesters of pregnancy.

This means that providing an adequate source of fluoride ingestion, especially during tooth development is very important[8].

The dental health of children is a problem of services, instruction and treatment. In providing dental health services, the public health dentist could delegate to dental hygienist (with expanded duties), dental nurse (New Zealand) or dental therapist (South Australia) some of his simple duties in the care of children's teeth.

In New Zealand[9], the oral health of children has significantly improved because they received regular care from dental nurse. More than 60% of pre-school children and 95% of school children between 2½ - 13 years of age received routine care in field clinics located on school ground.

Parental consent is mandatory for the care of school children who come from the classroom for treatment. Pre schoolers are brought to the school dental clinics by parents and regularly scheduled appointments.

Dental care of adolescents who are in-eligible for the school dental services, has been provided by private dental practitioners under the National Government's Adolescent Dental Services at no cost to the patients.
Thus, free dental care is available for children up to age of 16.

The functions of the New Zealand[9] dental nurse are :

Oral examination
Prophylaxis
Topical fluoride application and prescription of dietary luoride tablets.
Cavity preparation and placement of copper amalgam restorations in deciduous teeth.
Cavity preparation and placement of silver amalgam or silicat cement restorations in permanent teeth and polishing of silver amalgam restorations.
Pulp capping
Extraction of deciduous teeth
Individual patient instructions in toothbrushing and oral hygiene.
Classroom dental health education
Parent-teacher health education activities.
Referral of patients to private dentists for more complex services such as extraction of permanent teeth, restoration of fracture permanent incisors, and orthodentic treatment.

Because all children (in New Zealand) from kindergarten onwards, receive prophylaxes and screening semi-annually, dental care becomes an accepted part of their lives[10].

In South Australia[10], therapist are now being placed where they have responsibility for approximately 500 eligible school children. The scope of activity of dental therapist is similar to that of dental nurses in New Zealand, except that they are trained to tube

radiographs and ordinarily will have X-ray machines and developing facilities to permit clinical use.

For details, Roder[11] gives the procedures delegated to the therapist :

Oral prophylaxis and the topical applications of acidulated phosphate-fluoride solution (1.2% sodium fluoride).

Dental health education at the chairside to small groups of children and to children in classroom.

The exposure and processing of bite wing and periapical radiographs.

Performing of local infiltration and inferior dental nerve block anaesthesia.

Preparation of cavities in primary and permanent teeth and their restoration with silver amalgam or silicat cement.

The treatment of primary teeth, having carious exposures of vital pulps, by a coronal pulpotomy and mummification of the remaining pulpal tissue with formocresol.

Alginate impressions and the preparation of study model.

Other dental services have been provided by hospitals.

Traditionally, dental services provided by hospitals were limited to oral surgery[12].

The future development of community health resources will center around hospitals and physicians and dentists should be united in making both the inpatient and outpatient hospital services complete[13]. No comprehensive health programme can exist without inclusion of the many services that dentistry can provide : consulting services, oral surgery, participation in treatment of oral cancer , traumatic injuries, cleft palate and dental cases of a debilating nature[13].

G. Research - Epidemiological.

The public health dentist should be active in research which includes not only the planned, systematic discovery of new facts but also the application of new knowledge in practical settings.

He discover and defines the dental problems of the population through epidemiological investigation. He chooses devices for the control of oral disease at the community level which have been tested and proved in people and conduct his own epidemiological evalu - ation to make certain that they are useful and effective under the specific circumstances.

Chapter III : THE ROLE OF DENTIST IN THE COMMUNITY

Every dentist wants to become a succesful private practitioner, either as a generalist of as a specialist. A success ordinarily will be directly related to the people in the community who place confidence in his ability. That confidence will not be limited to technical dental services but will extend over a broad scope of day to day community affairs. In particular they will expect expert advice on community proposal for dental health improvement. It is clear that the dentist has responsibilities to the community.

Brittain[14] pointed out that there are three responsibilities of the dentist or dental profession in the community :

1. Responsibility to educate the community not pertaining to dentistry directly.
2. Responsibility to educate the community not only in dental health but also in general health.
3. Individual responsibility of the dentist for dental care of the community at large.

1. Responsibility to educate the community not pertaining to dentistry directly :

The dentist has responsibility as an individual to the community and must adhere to these responsibility as well as his responsibilities :

(a) as an educated individual in the community : This implies a responsibility to society to fully

utilize not only the dental education he has re-acquired but also education related to associated paramedical and non dental dields.
It is better if dentist is able to converse fluently with them on topics of mutual interest.

(b) as an university graduate in society : Like all other university graduates the dentist will utilize all that he has learnt for improving the dental health services which are available to society in general. Achievement of higher, more wide spread standards and fascilities in dentistry means wider sections of the community will receive better dental treatment and more importantly dental health education.

(c) as a member of professional group in society : In return for the respect, special previliges and monopoly they enjoy professionsl people are supposed to make judgements about their patients by self-interest, exhibit the highest standards.

2. Responsibility to educate the community not only in dental health but also in general health :

One of the prime responsibilities of the dentist is to educate the public in matters of dental health. Dental health education of the community is very difficult to achieve for a number of reasons the base of which is apathy and lack of knowledge of dentistry in general in the community. Although people realise they are susceptible to dental disease most of them do not realise the severity of dental disease which is left untreated as shown by one fourth of the respondents in

survey who were of the opinion that a tooth ache does not necessarily require the attention of dentist since it will often disappear by itself. Also the individual does not realise that dental disease can be prevented by dentist.

As an educator the dentist must inspire in the people a sense of individual responsibility of acquiring and maintaining the best health he is capable of achieving.

3. Individual responsibility of the dentist for dental care of the community at large :

Each and every dentist has a responsibility to the community, to his colleagues and to himself to keep up with thelatest techniques.

The dentist also has a responsibility to support organized dentistry, other organizations, health or otherwise and also to support government policies which are benefácial to dental health in the community and to the dental profession.

He shares with the public health worker actively participate in planning realistic goals for dental health in the community. Furthermore, the next factor which is the sole responsibility of the dentist himself is to see that he utilises his practice efficiently.

He shall make a proper and full use of his auxiliaris.

PART TWO : THE CHANGING PATTERN IN DENTAL EDUCATION

Chapter IV : BASIC SCIENCES

Chapter V : CHANGING PRACTICE OF DENTISTRY

Chapter VI : CONCEPTS OF TEACHING

Chapter VII : UNIVERSITY ROLE IN COMMUNITY

PART TWO : THE CHANGING PATTERN IN DENTAL EDUCATION

"The purpose of education is not simply the transformation of information but bringing into being persons of responsibility and integrity" - Reuel Howe.

Similarly, the purpose of dental education is not only preparing the undergraduate students for the practice of the profession of dentistry but also developing in a sense of p@rsonal and professional responsibility.

Until recently the responsibility of the dental profession only lay in services to individual patients.

Several recent development have increased the scope of the dentists responsibilities.

The discovery of the beneficial effect of fluoride on the incidence of dental caries has brought the dental profession into a new relationship to the community.

A growing awareness of the dental profession for putting greater emphasise on public health or community health or social aspects of dentistry in dental school curriculum.

According to Restrepo[15], having passed through an emphirie period in which dentistry was practised as a technical art, into an academic period which gave emphasise to scientific training, dentistry, is now entering a humanistic period which includes man in all his aspects.

The dentist is concerned with the community and their dental needs. And the objectives are to give the greatest possible number of people the highest possible quality of dental care.

The emphasis has moved from the responsibility of the individual needs to the responsibility of the community needs.

Another change in dental education is the need for integration of correlation between basic sciences and clinical practice in dental school curriculum.

Chapter IV : BASIC SCIENCES

In early history the practice of dentistry was a skill easily acquired by dexterous candidates after apprenticeship.

Following the establishment of dental schools, a progressive emphasis has been placed on basic science subjects.

MacDonald[16] pointed out that the reason why basic sciences were taught in dental education was to place the practice of dentistry in the position of equality with medicine.

O'Rourke and Miner[17] in connection with the teaching of basic sciences in dental schools said : "The objective of this institution is to give those who receive its instruction a thorough medico-dental education so that when they enter upon the active duties of

Medicine"

The subjects of basic sciences were identical to those included in medical curriculum.

It was a common feature of dental schools to copy the relevant parts of the medical curriculum.

Some dental schools even insisted that dental students spend the first two of a four year course in medical school. Other dental schools tried to integrate medical and dental education, but a proper reorganization of training programme was lacking. Although the subjects of basic sciences were identical to thosd included in medical schools curriculum, many basic science departments gave courses to dental students which were inferior in quality and scope to those given to medical students.

Most programmes of study for dental students were made without having established a clear concept of the nature of the end product. As a result many misunderstandings among basic science teachers, pre-clinical teachers and clinicians came from the fact that although they seem to be concerned with the same problem each has a different picture of the dentist's made up and of his goal in life. The integration of basic sciences with clinical practice was almost fruitless.

Over the years where was a growing awareness for achieveing integration and correlation between the basic sciences and clinical practice by the dental educators.

They said that progress in the practice of dentistry can be measured by a certain degree of the basis of the increased knowledge acquired from the basic science.

Each school has its own method of approach with the ultimate and resulting in a more affective relationship between the basic sciences and clinical practice.

As a matter of fact, that the best solution to any dental problem is prevention. And prevention will come through a better understanding of the biologic process.

The better tje dentist understand dental diseases, the better will be prepared methods of prevention.

Chapter V : CHANGING PRACTICE OF DENTISTRY

As has mentioned previously and according to Restrepo, there are three periods of dental evolution :

1. The emphiric period, in which dentistry was practised as a technical art or trade.
2. The academic period, charaterized by university training of a high technical level.
3. The humanistic period, in which the educational and programme considers the interests of the profession and those of the population, evaluating man in all his aspects.

1. The Emphiric Period :

In this period dentistry was practised as an art or a trade. The emphasised was on skill, easily acquired by dexterous candidates after apprenticeship.
The practised of the profession was consisted, mainly of technical services to individual patients.
Services involving removal, restoration and replacement, and only for those who could afford the exorbitant fees.

Dental health education was never taken seriously by private practitioners.

2. The Academic Period :

This period was characterised by scientific training. Dentistry was practised based not only on an understaning of the material used and on skill in their manipulation, but also an a knowledge of those physical,bio-

logical and medical sciences essential when working with the living tissues of the oral cavity.

Research and clinical observation have been established to reduce dental caries.

The discovery of the beneficial effect of fluoride on the incidence of dental caries has helped to make both theprofession and the public more dental health conscious.

Dental health education is given in dental offices in which the dentist has the greatest opportunity to educate the individual in correct oral hygiene, to advise on diet that will contribute the development of sound teeth, and to the health of the teeth and their supporting tissues.

Also, dental health education is given to the community through education of the non dental professional and organised dentistry.

Chapter VI : CONCEPTS OF TEACHING

A good teacher must know the subject, know how to teach the subject, know the student and know one's self;..... Regardless of the subject taught good teaching depends upon the personality of the teacher and the conveying of ideas[18].

Teaching is certainly one of the most important functions associated with an educational institution The quality of the teaching is the measure of the success of the schools. If the teaching is good the school is good even though its equipment be inadequate. If the teaching is poor the school is a poor school even though it has a good equipment.

Similarly dental schools and other professional schools also depend on the quality of the teaching.
A good dental educator will educate the dental students not only in the techniques of dentistry and to give them the scientific knowledge they need but also to inspire in them a sense of personal and professional responsibility so that they will dedicate their lives more to the duty of improving dental health of all people.

Erickson[19] gave two fundamental pedagogic problems involved in concept of teaching :

(1) How to teach abstract concepts without divorcing the student from the logic, the objective data and the real world references that support these generalisation.

(2) How to teach for transfer of learning and the future utilization of conceptual knowledge by the practising dentist in a concrete problem solving or decision making setting outside the classroom.

Furthermore, he gave three guide lines for his contri - bution towards the meaning of concepts :

Guideline 1 : The material the students read and study and hear must be organised by the teacher into a logical hierarchy. Thus, the teacher must establishethe basic organizational sequence and structure that will enable the student to acquire the king of knowledge that carries some degree of generality beyond the original learning situation.

Guideline 2 : "Students learn only what they do". This is oversimplified but it does highlight the importance of active participation by students rather than their passive absorption of course content.

Guideline 3 : Knowledge results, feedback, or reinforcement is a prerequisite for learning. When a student makes a response, reaches a conclusion or makes a decision, he needs to know the rightness or wrongness of what he has done.

Chapter VII : UNIVERSITY ROLE IN THE COMMUNITY

The university, at inception, was created as an institution for the advancement of knowledge.
Now, by necessity, universities have to produce profesional people whose primary goal is to practice their profession rather than to advance knowledge in their profession.

The dentist as a university graduate is concerned with people and their dental needs. They therefore, have to study human beings with physical mental and spiritual attributes, living in the communities. They have now to think in terms ofmeeting the dental needs of all people.

They have the responsibility to society. Responsibility to improve dental health of all people by utilizing all that they have learnt.

In the future role of the university, Rose[20] pointed out : "First, the university has a responsibility to give a thorough understanding of where we are in a highly competitive and dynamic society".

"Second, is to prepare persons for chosen careers in such a way that they can meet the demands of our time with competence".

"Third, is to help the students assume their rightful place of service".

PART THREE : THE TEACHING OF PUBLIC HEALTH DENTISTRY

Chapter VIII : AREAS OR FIELDS COVERED

Chapter IX : RELATIONSHIP TO OTHER SUBJECTS

PART THRE : THE TEACHING OF PUBLIC HEALTH DENTISTRY

Most undergraduate curriculum placed their emphasis almost entirely on the diagnosis and treatment of individual dental patients and only a little attention to public health dentistry.

Peterson study[21] in U.S.A. in 1956 revealed that less than one percent of the entire curriculum of all dental schools was devoted to public health dentistry.

As a result the new graduated dentist have a tendency to enclose themselves in their dental offices and gave no thought to the dental problems that effect the population as a whole. But after several years in the profession, they will come to recognise that the knowledge and skills in public health areas are needed by every dentist.

From the articles in dental literature we can see a growing awareness of the necessity for putting greater emphasis on public health dentistry in dental school curriculum.

Petterson[22] pointed out : "It would be surprising indeed if the deans of our schools did not recognise the increasing importance of public health dentistry and the role that dentistry can play in the whole public health scheme".

Walker[23] in a comprehensive review of dentistry in the United Kingdom stated : Dental student must be aware of the meaning of positive dental health and of

its importance.....Some teaching in the principles of public health and particular place of dental practice within it will become necessary with the expansion of public dental health services".

Calasity and Kramer[24] pointed out : "The key issue is not to increase the quantity but to improve the quality of dental public health teaching".

World Health Organization, in 1965, issued a technical report on the organization of dental health services, under section headed "undergraduate training"appears the following sentences, which admirably summarize the general thinking on the subject.

"There is an increasing awareness among dental educators of the need for additional emphasis on the social aspects of dentistry ....Educators are experimenting with curricula that will enable graduates to become more responsive to the needs of society.

Petterson and Littleton[25] had compiled the information of the development of the allocation of the curriculair time and the organisational arrangement for the teaching of preventive and community dentistry in the United States; All of these information has shown that there were a growing awareness for putting greater emphasis on the public health dentistry.

According to the literature, reviewed by them, in 1899, preventive dentistry or public health were not taught in dental faculty. Dental ethics and dental history were considered to be subjects in the curriculum, but no time was specified for their teaching.

Approximately 6.5 percent of the curricular time was supposed to be used for teaching dental jurisprudence.

In 1916, jurisprudence, dental history, economics and ethics were allocated 32 hours collectively and approximately 0.7 percent of the total curricular time, in 1918, however, the Council added a requirement for accreditation of 32 hours in oral hygiene.

In 1934, 1.83 percent of the dental curriculum be devoted to public health and hygiene, and 3.16 percent to history, ethics, jurisprudence, practice management, and tehhnical composition.

Recommended of Clock Hours and Recommended Percent of the Dental Curricular Time for Preventive and Community Dentistry by Year of Recommendation.

Year Recommended	Total		Pub. Health & Prev. Dent.		Soc. Sciences		Prof. Life & Business Dent	
	Hours	%	Hours	%	Hours	%	Hours	%
1899	14	0.50	0	0.00	0	0.00	14	0.50
1916	32	0.70	0	0.00	0	0.00	32	0.70
1918	64	1.50	32	0.75	0	0.00	32	0.75
1934	212	4.99	80	1.83	0	0.00	132	3.16

Sources : Gies, W.J. Dental education in the United States and Canada, New York, Carnegie Foundation, 1962, XXI+692p. (p. 115 - 42)

Horner, H.H. Dental education today. Chicago, University of Chicago Press, 1947. VII+420p. (221 - 40)

In 1941 - 1942, Horner reported that the average percent o hours devoted to public health and hygiene was 1.00 and that 2.87 percent of the curricular time was devoted to history, ethics, jurisprudence, practice management and technical composition, with the exception of jurisprudence the quality of the teaching of these subjects was rated as lower than for most other subjects. In 1955, Petterson reported that 0.6 percent of the clock hours were devoted to instruction the public health.

In 1958 - 59, Mann reported that average of 0.54 percent of the total number of clock hours devoted to the teaching of public health and hygiene, history, ethics, jurisprudence, practice administration and technical composition accounted for an additional 1.32 percent of the curricular time for a total 1.86 percent.

Four years later, Blackerby found that 0.47 percent of the urricular time was devoted to subjects : public health or community dentistry. The average time for the teaching of history, ethics and jurisprudence was 0.86 percent, preventive dentistry 0.14 percent practice management 0.43 percent and psychology 0.08 percent. The mean number of hours for teaching these subjects was 20.8 for public health, 30.0 for professional life, 6.0 for preventive dentistry, 18.7 for the business aspects o dentistry (practice management)and 3.7 per ent for social science (psychology).

Surveyed by Sumnicht in 1965 - 66 indicated that the preventive dentistry was tauhgt for an average of 95 hours.

Lotzkar found (1966 - 67) that the average amount of time spent on preventive and community dentistry was 156 clock hours or 3.4 percent o the curricular time.

A survey was condu ted by the American Dental Association's Counsil on Dental Education in 1967 - 1968. Its findings indicated that an average of 133.5 clock hours or 2.95 percent of the curricular time was devoted to preventive and community dentistry.

The result of survey conducted by Petterson in early 1969 showed that an average of 201 hours was devoted to preventive and community dentistry during the four years of undergraduate study by students. The 201 hours constituted 4.5 percent of the total curricular time.

Public health received and average of 62 hours (1.3%), preventive dentistry 32 hours (0.7%), social sciences 31 hours (0.7%), professional life 43 hours (1.0%) and business aspects of dentistry received an average o 33 hours (0.7%).

The largest ranges in hours were found for social sciences (300) and public health (277), and the smallest ranges were found for professional life (77) and preventive dentistry (163).

Number of Clock-Hours and Percent of the Dental Curricular Time Devoted to Preventive and Community Dentistry by Year of Investigation

Year	Total Hours	Total %	Pub.Health Hours	Pub.Health %	Prev.Dent. Hours	Prev.Dent. %	Soc.Sciences Hours	Soc.Sciences %	Prof.Life Hours	Prof.Life %	Business Hours	Business Dent. %
Horner 1941-42	173.0	3.87	...	1.00	45.0	...	...	...	...	2.87	128.0	...
Peterson 1955	...	...	27.0	0.60	...	...	...	...	...	...	...	...
Mann 1958-59	82.0	1.86	...	0.54	24.0	...	...	...	...	1.32	58.0	...
Blackerby 1961-63	87.2	1.98	20.8	0.47	6.0	0.14	3.7	0.08	38.0	0.86	18.7	0.43
Sumnicht 1965	95.0	2.10	...	...	...	...	...	...	...	...	...	...
Lotzkar 1966-67	156.0	3.40	50.9	1.10	33.1	0.70	18.4	0.40	31.7	0.70	21.9	0.50
C.Dent.Educ. 1967-68	133.5	2.96	33.3	0.74	28.4	0.63	14.8	0.33	27.4	0.61	29.2	0.65
Petterson	201.0	4.50	62.0	1.30	32.0	0.70	31.0	0.70	43.0	1.00	33.0	0.70

Chapter VIII : AREAS OR FIELDS COVERED

It is necessary to understand the status and the objective of dental public health course, before suggesting the areas or fields covered in dental public health.

According to Colisti and Kramer[26] the status of dental health are :

Dental public health occupies a miniscule place in current dental education.
At the level of dental school administrator there is a growing awareness of the importance of dental public health.
At the faculty level there is only minimal awareness of and interest in dental public health.
At the student level internal motivation for the study of dental public health is weak and external encouragement is also weak.
The teaching of dental public health is weak both as a method and impart.
Dental public health is usually taught by periphera people.
Organisational structures for teaching dental public health are weak, but a significant number of schools are making important changes in this regard.

(27)

According to Morris the objectives of teaching publi- health dentistry are :

Give the student a clear understanding of the major concepts of modern dental public health.
Introduce the student to reliable apparatus for implementation of programmes in dental public health.

Provide the student with an accurate sense of professional purpose.
Enlarge the students's concept of social consciousness.

Over the years, dental educators and other leaders in the dental profession have emphasised the need to develop dentists who were sensitive to the needs of the communities in which they lived in an addition to their technical capability(28). And because of a growing awareness of the dentists to their responsibilities as a leadership in improving the total health of the population, proposals have been made for the inclusion of the teaching of public health and the social aspects of dentistry in dental schools.

One of these proposals has been made by dental school of University of California, which has been implemented, consists of three parts(29) :

I. Emphasis on interpersonal relations, including factors influencing perception; principles of sociologic types of investigation, with examples relating to the health profession; examination of political phenomena, with emphasis on the socialization process by which belief, attitudes, and political identifications are acquired and in which skills, contacts and experienced needed for political roles gained. The application of basic social sciences concepts and modes of reasoning to pressing social problems is the dominant theme of these course and the entire social science curriculum.

This aspects is an especially designed 3 - quarter, 2 hour per week, course in the freshmen year of dental school.

II. Each sophemore and junior dentalstudent is required to select and take one 3 to 4 hour course each quarter in the social sciences, humanities, or arts.

III. This part is a series of seminars on current social issues given in the senior year, The seminars are designed to intergrate, so far as possible, the knowledge and skills which senior students have acquired in their course work in previous years.

A 2-hour seminar each week is conducted. Selected read-ing assignment and an exchange of research finding in class are required of the students.

The three parts of the social sciences component of the dental curriculum were proposed in order to add parallel and comprehensive studies on man as an individual and as a member of a variety of social groups to the traditional biologic and clinical studies of the student.

The social sciences course was grouped with related courses to comprise the 3rd dimension of the dental curriculum entitled "Public Health Sciences".

Three-dimensional Curriculum - University of California at Los Angeles, School of Dentistry.

Biologic Science	Clinical Sciences	Public Health Sciences
Anatomy	Diagnosis	Biostatistics
Biochemistry	Endodontics	Epidemiology
Biology	Operative	Ethics
Biophysics	Orthodontics	Health Administration
Micobiology	Pedondontics	Health Economics
Pathology	Periodontics	Jurisprudence
Pharmacology	Prosthodontics	Practice Management
Physiology	Radiology	Social Sciences
	Surgery	

PART FOUR : SOME CURRICULA OF DENTAL SCHOOLS

Chapter X :

1. COLLEGE OF DENTISTRY OF UNIVERSITY OF KENTUCKY

2. FACULTY OF DENTISTRY OF UNIVERSITY OF SYDNEY

3. FACULTY OF DENTISTRY OF UNIVERSITY OF ALBERTA

PART IV : SOME CURRICULA OF DENTAL SCHOOLS

A study of some curricula of Dental Schools with special reference to the teaching of public health dentistry.

The curricula of three dental schools of 1971 were studies[31].

1. The college of Dentistry of the University of Kentucky.

2. The faculty of Dentistry of the University of Sydney.

3. The faculty of Dentistry of the University of Alberta.

The following structural elements were observed :-

1. The objectives or goals that the institutions seek to attain.

2. The content or the set of educational experiences which is likely to obtain these objectives.

3. The organization of learning experiences to maximize their cummulative effect.

4. The integration of public health dentistry in each curriculum.

5. The evaluation of each programme in regard to the effectiveness and importance of public health dentistry in relation to other subjects.

In order to bb able to draw a comparison between the three curricula, the subject are devided according to the concepts of the Kentucky University.

Basic Sciences
Correlated Dental Sciences
Clinical Sciences
Social Sciences
Preclinical Sciences

Chapter X :

1. The University of Kentucky - College of Dentistry.

The objective of this college is :

"The education of dental practitioners who are technically capable, biologically oriented, socially sensitive and who are keenly aware of their potential contributions to the total health of their patients".

Length of curriculum is four years which leads to a D,M.D. degree.

The subjects in the Dental Curriculum could be grouped into five major divisions.

Basic Sciences
Correlated Dental Sciences
Preclinical Dentistry
Social Sciences

Clinical and Preclinical Dentistry are directed toward technical capability.

Basic sciences and Correlated Dental are directed toward biological orientation.

Dental Social Sciences are directed toward social sensitivity.

First Year :	Hours per year
Clinical Dentistry	
Diagnosis	51
Operative Dentistry	56
Periodontics	58
Preclinical Dentistry	
Dental Physical Sciences	48
Operative Dentistry	128
Removable Partial Prosthesis	128
Correlated Dental Sciences	
Oral Biology (Prev. Dent)	76
Occlusion	136
Basic Sciences	
Anatomy	276
Dental Social Sciences	41

Second Year :	Hours per year
Clinical Dentistry	
Diagnosis	52
Operative Dentistry	128
Periodontics	96
Exodontia and local anaesthesia	30
Removable Partial Prosthesis	30
Preclinical Dentistry	
Dental Physical Sciences	288
Fixed Partial Prosthesis	64
Pedodontics	32
Full Denture Prosthesis	128
Endodontics	64
Correlated Dental Sciences	
Oral Biology	72
Occlusion	32
Basic Sciences	
Biochemistry	125
Physiology	125
Genral Pathology	125
Dental Social Sciences	8

Third year : Hours per year

Clinical Dentistry

Diagnosis	78
Operative Dentistry	32 (lectures)
Periodontics	32 (lectures)
Oral Surgery	92 (lectures)
Fixed & Removable Prosthesis	32 (lectures)
Full Denture Prosthetics	32 (lectures)
Endodontics	32 (lectures)
Pedodontics	32
Clinic	480

Correlated Dental Sciences

Oral Biology (Dental Caries, Prev, Dent)	80
Occlusion	32
Seminars	32

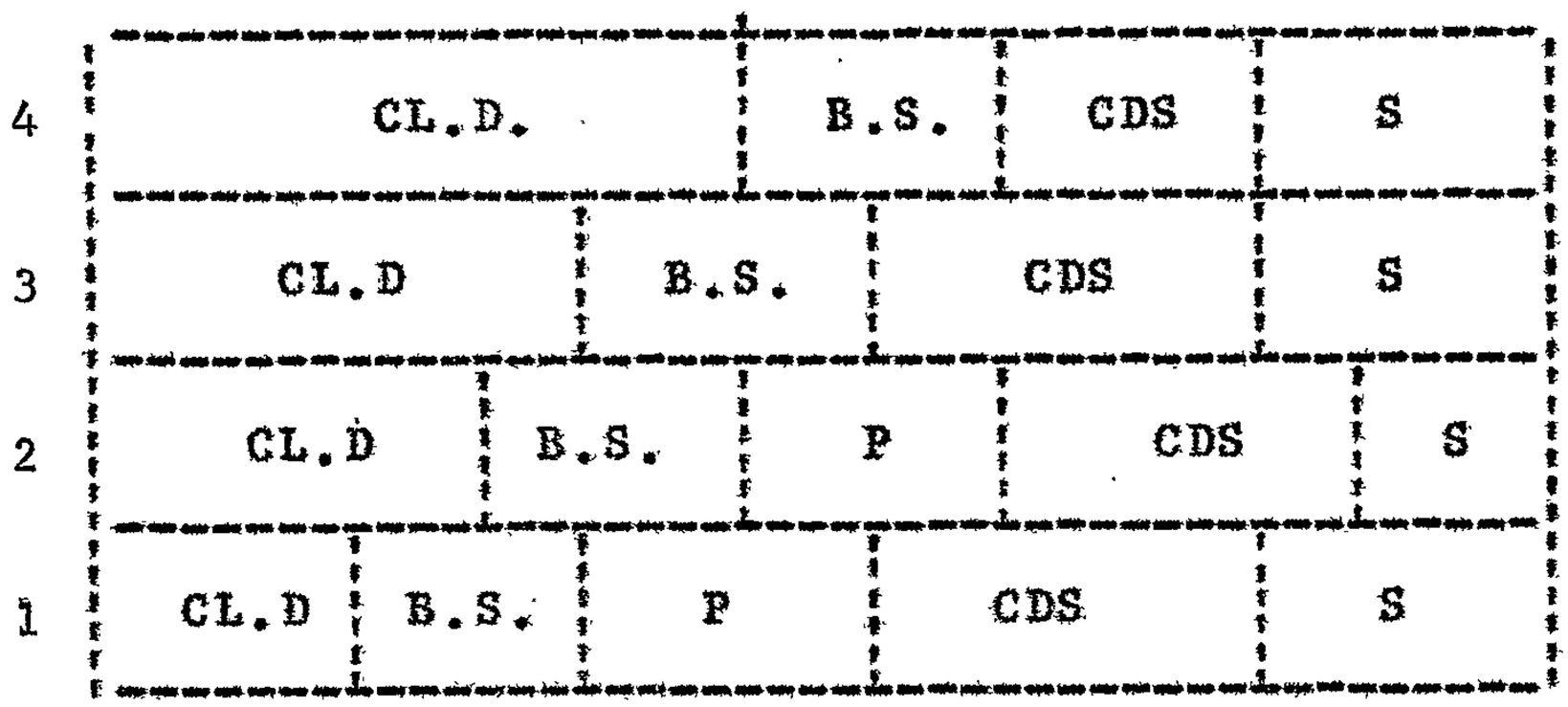
Basic Sciences

Microbiology	100
Medicine	32

Dental Social Sciences 12

Fourth Year :	Hours per year
Clinical Dentistry	
Comprehensive General Practice	832
Correlated Dental Sciences	
Oral Biology	30
Occlusion	16
Seminars	74
Basic Sciences	
Pharmacology	80
Dental Social Sciences	
Behavioural Sciences	8
Practice Management	26
Jurisprudence	
Auxiliary Personnel	
Administration	
Economics	
Community Service	16

PATTERN OF CURRICULUM



Notes :

B.S.	(BASIC SCIENCES)
C.D.S.	(CORRELATED DENTAL SCIENCES)
P.	(PRECLINICAL DENTISTRY)
CL.D	(CLINICAL DENTISTRY)
S	(SOCIAL SCIENCES)

2. <u>The University of Sydney - Faculty of Dentistry</u>

The goal of this faculty is :

The optimal health of the individual and the community, by the prevention of oral disease and the treatment of those diseases and abnormalities which can not be prevented.

The length of curriculum is five years, and provides an undergraduates educational programme which leads to the B.D.S. Degree.

First Year.

Physics
Chemistry
Biology

Introductory Medical Science, which consists of :-

Bio mathematics
Human Behaviour
Human Evolution
Comparative Morphology
Histology of Embryology
Introductory Bio-chemistry.

Second Year :

	Lent Term		Trinity Term		Michelmas Term	
	Lect.	Lab.	Lect.	Lab.	Lect.	Lab.
Basic Sciences :						
Physiology	2	-	2	5	2	5
Anatomy	3	8	3	10	3	7
Histology & Dental	-	-	-	-	-	-
Histology	2	4	2	4	-	-
Biochemistry	3	-	3	-	1	-
Preclinical Sciences :						
Dental Materials	1	-	-	-	-	-
Prosthetics Dentistry	1	6	2	6	2	9

Third Year:

	Lent Term		Trinity Term		Michelmas Term	
	Lect.	Lab.	Lect.	Lab.	Lect.	Lab.
Basic Sciences :						
Bacteriology	2	4	2	-	-	-
Correlated Dental Sciences :						
Oral Biology	2	4	1	-	1	-
Oral Physiology	-	-	1	-	1	-
Dental Clinical Sciences :						
Radiology	-	-	-	-	1	-
Operative Dentistry	2	9	2	9	-	12
Prosthetic Dentistry	2	6	2	8	1	12
Exodontics	-	-	-	-	1	-
Orthodontics	-	-	-	-	-	-
Pedodontics	-	-	-	-	-	-
Preclinical Sciences :						
Dental Materials	-	-	-	-	1	-

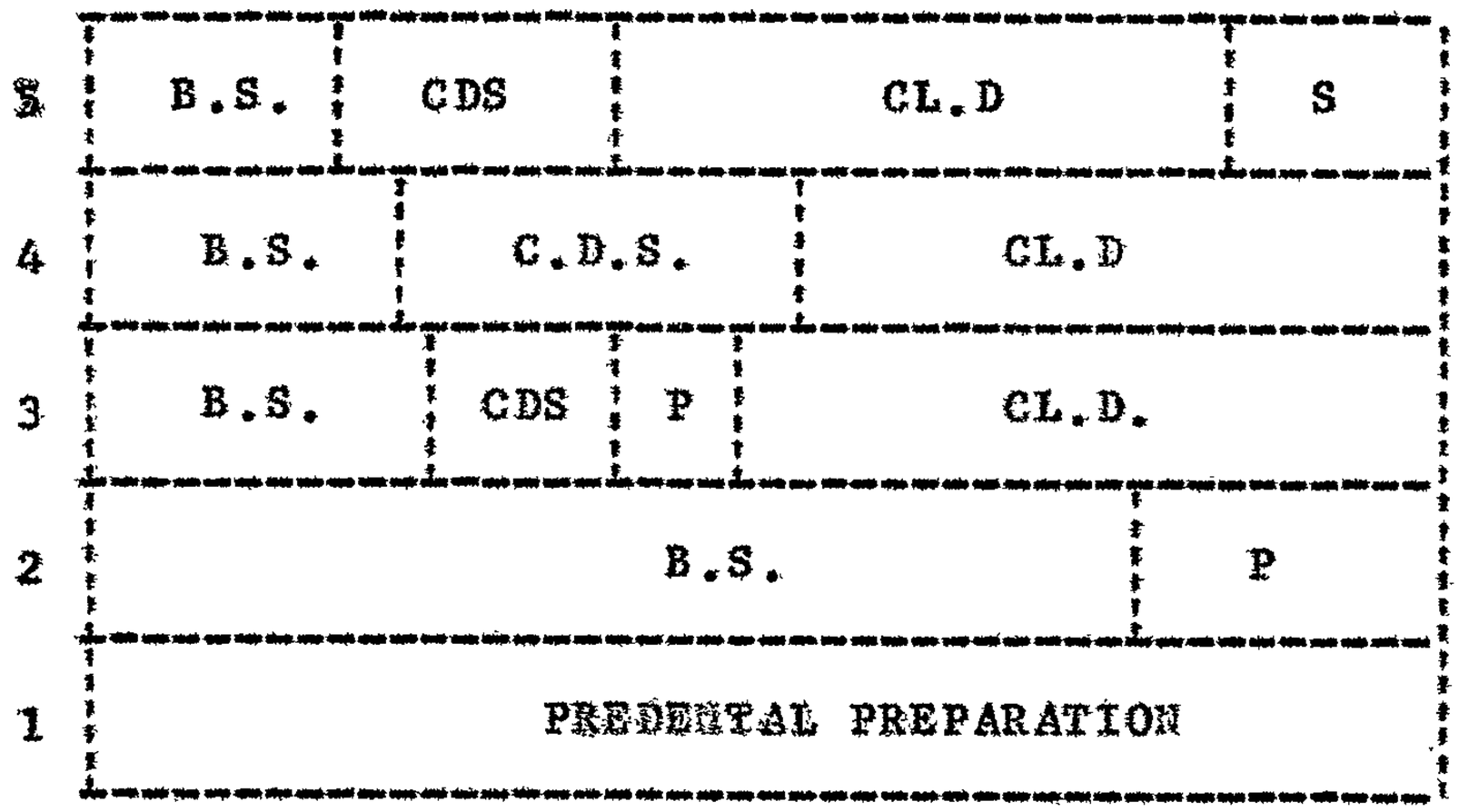
Fourth Year :

	Lent Term Lect.	Lab.	Trinity Term Lect.	Lab.	Michelmas Term Lect.	Lab.
Basic Sciences :						
Pharmocology & Therapeutics	-	½	1	-	-	-
General Med./Syrgery	-	-	2	-	1	-
Correlated Dental Sciences :						
Oral Pathology	-	-	1	-	-	-
Preventive Dentistry	4	-	2	-	2	-
Clinical Sciences :						
Radiology	-	-	-	-	-	-
Anaesthetics	1	-	-	-	-	-
Oral Surgery	1	24	1	42	1	42
Operative Dent.	2	12	-	6	1	6
Crown & Bridge(Ceramics)	1	-	1	2½	1	2½
Prosthetics Dent.	1	9	1	8	1	8
Orthodontics	-	6	-	12	-	12
Periodontics	-	6	-	9	-	9
Pedodontics	-	15	-	15	-	15

Fifth Year :

	Summer Term		Lent Term		Trinity Term		Michelmas Term	
	Lect.	Lab.	Lect.	Lab.	Lect.	Lab.	Lect.	Labe
Correlated Dental Sciences :								
Prev. Dentistry	1	-	1	-	1	-	1	-
Clinical Sciences :								
Operative	-	-	-	-	-	-	-	-
Operative Dent.	-	9	-	9	-	9	-	9
Prosthetic Dent.	1	9	1	9	1	9	1	9
Orthodontics	-	1½	-	2	-	1-1/16	-	2
Periodontics	-	2½	-	2	-	1-1/16	-	2
Pedodontics	-	4	-	3	-	1-2/3	-	3
Oral Surgery	1	6	-	4¾	1	3	1	6
Social Dentistry :								
Dent. Jurisprudence	-	-	-	-	-	-	-	1
General Med.	1	-	-	-	-	-	-	-

PATTERN OF CURRICULUM



Notes :

B.S.	BASIC SCIENCES
C.D.S.	CORRELATED DENTAL SCIENCES
P	PRECLINICAL DENTISTRY
CL.D	CLINICAL DENTISTRY
S	SOCIAL SCIENCES

3. <u>The University of Alberta - Faculty of Dentistry</u>.

The goal of this Faculty is :

"to graduate competent and well trained dentists, prepared for a role of leadership and service in their profession and in their community".

Length of curriculum is four years, and leading to the D.D.S. degree (Doctor of Dental Surgery)
Two years of pre-professional years is required before the dental curriculum

These two years provide the necessary background in inorganic chemistry, organic chemistry, zoology and physics, the humanities and social sciences.

First Year :

	First Term Lect.	First Term Lab.	Second Term Lect.	Second Term Lab.	Course Weight
Preclinical Dentistry :					
Dental Materials	1	-	1	-	2
Correlated Dent. Services :					
Introduction to Oral Diag.	-	-	1	-	½
Oral Histology	-	-	2	2	4
Oral Anatomy and Introduction to Restorative Dent.	2	6	1	3	8
Basic Sciences :					
Gen. Anatomy/Oral Biology	3	4	3	4	9
Microscopic Anatomy	2	4	-	-	4
General Biochemistry	3	3	3	3	9
Physiology	3	0	3	3	8
Dental Social Sciences :					
Preventive & Community Dent.	-	-	-	-	-
Orientation/Hist./Ethics	1	-	-	-	-
Dental Public Health	-	-	1	-	-

Second Year :

	First Term Hours Lect.	First Term Hours Lab.	Second Term Hours Lect.	Second Term Hours Lab.	Course Weight
Preclinical Dentistry :					
Full Denture Prosthesis	1	3	1	3	5
Removable Partial Dent.	1	3	1	3	5
Fixed Partial Denture	-	-	1	3	3
Operative Dentistry	1	6	1	3	7
Periodontics (Introduction)	-	-	1	0	1
Orthodontics	-	-	1	-	1
Pedodontics	1	-	-	-	1
Radiology	1	-	1	-	2
Correlated Dental Sciences :					
Oral Pathology	-	-	2	2	1
Oral Biology	3	-	-	-	3
Basic Sciences :					
Bacteriology	2	3	-	-	4
Genral Pathology	3	2	-	-	4
Pharmacology	-	-	3	3	5
Dental Social Sciences :					
Nutrition & Sociology	-	-	1	-	-
Psychodynamics	-	-	1	-	-

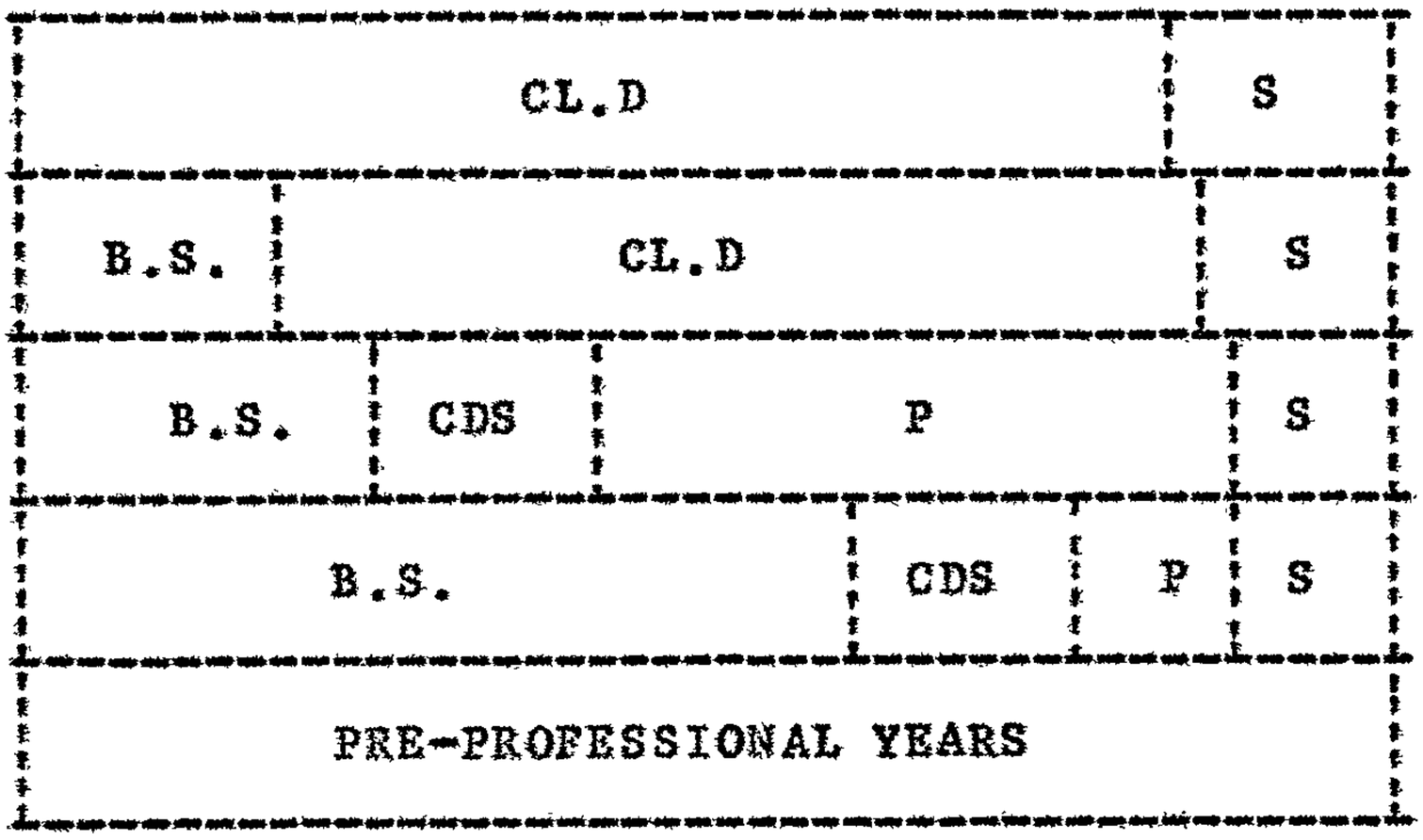
Third Year :

	First Term		Second Term		Course
	Lect.	Lab.	Lect.	Lab.	Weight
Clinical Dentistry :					
Management of Oral Disease	-	2	13	2	3
Clinical Oral Pathology	1	-	-	-	1
Full Denture Prothesis	1	6	1	6	8
Fixed Partial Denture	1	6	-	6	7
Operative Dentistry	1	6	1	8	9
Endodontics	2	2	-	1	3
Pedodontics	1	3	1	3	5
Periodontics (Intermediate)	1	3	1	3	5
Oral Surgery	2	-	1	-	2
Orthodontics	1	2	1	2	4
Basic Sciences :					
Medicine	-	-	1	-	-
Surgery	-	-	1	-	1
Dental Social Sciences :					
Preventive & Community	-	-	-	-	-
Dentistry	-	-	1	-	-

Fourth Year :

	First Term		Second Term		Course
	Lect.	Lab.	Lect.	Lab.	Weight
Clinical Dentistry :					
Management of Oral Disease	13	1	-	1	3
Denture Prothesis	1	6	1	6	8
Fixed Partial Denture	1	4	1	5	7
Operative Dentistry	13	7	13	8	10
Endodontics	-	1	-	1	1
Periodontics (Advanced)	2	3	2	3	7
Pedodontics	15	3	15	3	5
Orthodontics	15	3	15	3	5
Oral Surgery	15	3	15	3	5
Social Dental Sciences :					
Ethics and Jurisprudence	-	-	1	-	-
Practice Management	1	-	-	-	-

PATTERN OF CURRICULUM



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PART FIVE : PUBLIC HEALTH DENTISTRY CURRICULA FOR INDONESIA

Chapter XI : RELATIONSHIP TO OTHER SUBJECTS

Chapter XII : NEED AND CONTENT

Chapter XI : RELATIONSHIP TO OTHER SUBJECTS

Many dentist will work in the public health dentistry field. This means that the dental student must be prepared not only to be a dentist who are technically capable, biologically knowledgeble and sociaaly aenoitive, but also preventively orientated.

In the Survey of Dentistry a committee of the American College of Dentist has defined preventive dentistry as follows :

Preventive Dentistry consists of the various educational procedures, used by dentists, dental hygienists, physicians, nurses, teachers and others which will develop scientific oral health knowledges and habits, and will prevent the development of improper oral health knouledges and habits; it consists of those technics which will prevent the initation of oral diseases or conditions such as dental caries, disease of the supporting structures of teeth, and non-hereditary malocclusion; and it includes th prevention of such sequelae of the neglect of those conditions as oral and systemic infection, interference with normal growth and development of the arches, loss of masticatory function and impairment of the personal appearence of the social adjustment of the individual. The procedures utilized may be effective, scientifically correct, health educational measures or specific preventive technics, such as the topical application of sodium fluoride to teeth, the addition of fluoride to public water supplies, proper tooth brushing, proper diet, the interference with oral habits and the prevention of accident to teeth.

A measure may be considered a control technic if it is corrective in nature at the time it is utilized and if it prevents the development of sequelae. Such control technics are the early detection and correction of carious lesions, timely and proper orthodontics interference, the early detection and treatment of diseases of the supporting structures of teeth and the early detection and treatment of oral cancer and the developmental anomalies of the oral cavity.

This definition can be extended to include virtually all the treatment and restorative procedure that a dentist performs; for properly contructed all restoration prevent further progress of dental diseases or oral function.

Traditionally, dental students have been instructed first in the basic sciences and pre-clinical technics and then in the clinical application of the knowledge and skills that they have acquired in these course.

The student has obtained a knowledge of anatomy, biochemistry, pathology, physiology, bacteriology, pharmacology, can all contain little or more material that forms the basis of the Preventive Dentistry Course. But the philosophy, science, and clinical implementation fall under a Department of Preventive Dentistry, while implementation of Preventive Dentistry on large population groups, fall within Public Health Dentistry.

Chapter XII : NEED AND CONTENT

The development of dental education reflects a growing awareness of the need to strenghten the curricula in order to orient future dentist to the concept of preventive approaches to dental care, to instill in them a greater sense of social sensitivity and appreciation of their appropriate roles in the community as health pratitioners.

One of the results is a new trend for dental school to establish a new department, variouly known as the Department of Community Dentistry of Department of Public Health Dentistry of Social Dentistry, those courses in the curricula are closely related to the development of social sensitibity.

The content of the courses of public health dentistry are :

1. Education in the philosophy and concepts of public health :-
   Principle of Public Health
   Public Health in Dentistry

2. Education in the use of tools of public health dentistry :-
   Bio - statistic
   Epidemiology
   Preventive Dentistry
   Social Dentistry

3. Education in conducting of dental health programmes :-
   Dental need, Resources
   Dental survey and evaluation
   School dental health programme
   Dental Health Education

4. Education in management and relations :-
   Practice management and organisations
   Dental jurisprudence
   Ethics
   History

The laboratory for teaching public health dentistry should be the community itself[32].

The teachers in this area should relate to the student within a clinical framework. But, this situation is difficult to accomplish, because usually dental students see clinical patients as an individual with individual problems.

The subject areas which were deemed most appropriate and which were felt to be most effective for eimproving the student's ability to function as an effective practitioner and community leader are[32] :

1. Pattern of disease occurance in the population.
2. Relation between dental needs and demands.
3. Social and economic factors that influence the relation between needs and demands.

4. Factors in the community that effect the nature of dental practice.
5. Methods the dentist can use to overcome lack of acceptance of optimum dental care.
6. Community structure and the manner in which public policy decisions are made.
7. Community resources which supplement the effort of the dentist to improve dental health.

In order to achieve desired behavioural obejective the student should be given actual field experience :

A group of student and faculty member live together in a (rural) community for a week. During this week they observe dentists in their practice, converse with hospital administrator, local health and welfare officials or other agencies. They also do an abbreviated dental survey and record the prevalance attack of dental disease and frequency of treatment.

The teachers attempted to be neutral until after the students reported what they saw and gave their own reactions.

The teachers then gave from other situation after which all participants tried to reconcile differences and to formula ideas of the significant of what the students had observed.

The allocation of curricular time to public health dentistry :

The programme of the teaching of public health dentistry is desigged for 5 years study of dental students, consisted of lectures, seminars and field assignment.

Lectures of the concept of public health is provided in the 1st, 2nd and 3rd years. The number of clock hours is 1 hour/week.

Lectures and seminars of the public health dentistry and field assignment is provided in the 4th and 5th years. The number of clock hours in the 4th years is 1 hour/week and in the 5th year is 1 month for field assignment and discussion. The total clock hours is 264 hours devoted to the public health dentistry during 5 years of undergraduate study by dental student.

<u>The areas of curriculum which should be introduced</u> :

A. Dental Auxiliary Utilization Programme.

If the profession wants to bridge the gap between the demands and needs of the public, dentists must cooperate with non-operating and operating auxiliaries on a much larger scale[33]. The co-operative with non-operating chair side assistance is the only way to reduce our man power problems[33].

One method of meeting the increased need for dental productivity was determined to be more effective use of auxiliary personel - in particular increased utilization of dental assistance of the chair side[34].

It has been clearly demonstrated that productivity of a dentist can be increased through the use of auxiliary aids[35].

Education of dental students was considered to be the most feasible way in which to promote this enhanced utilization[34].

The purpose of the Dental Auxiliary Utilization Programme is to train the dental student and ultimately the dentist to increase productivity through expanded use of dental auxiliaries[36]. There are two components to this broad objective : learning to work effectively with the dental assistant as a chair side assistant, and learning the effective utilization of the service of auxiliary personel as active members of the dental health team[36].

The programme of Dental Auxiliary Utilization is designed for 3 years study by dental student, consists of lectures, discussions, field assignment and clinical experience.

Lectures and discussions concerned with the principle of efficient chair side assistant are provided in the 4th year. Attention is also given in taking case history, charting dental defects.

Several lectures relative to the utilization of dental auxiliaries are presented as a part of the course in practice management.

The clinical experience are provided in the 4th and 5th years.

In order to co-ordinate the educational efforts through all clinical departments, an inservice program should be established for the faculty members and the dental auxiliary.

B. Hospital Dentistry Programme.

Community dealth resources and services are becoming centered in the hospital and more emphasis is being given to the total health care of the hospitalized patient(37).

Current trends in health care delivery indicate that the nature of dental practice is undergoing drastic change and is likely to schange even more so in the years to come. Emphasis in dental and medical education is on comprehensive patient care with a team approach to the delivery of treatment. Because of changes in life expectancy, advances in medical and dental care third party payment program, and changes in emphasis in dental education, more patients in the future will receive dental treatment as a component of comprehensive health care in the hospital environment and other similar institutions(38).

The future development of community health resourses will center around hospitals, and physicians and dentist should be united in making both the inpatient and outpatient hospital services complete(39).

This conditions mean t at the dental student must be prepared to work in hospital environment.

Hospital programme is designed for 3 months study by 5th year dental students consists of lectures, discussions, and clinical experiences.

This programme includes learning concerning ward procedures. The student should be able to :

Determine which patients should be admitted to the hospital for dental treatment.

Complete a patient evaluation , including a medical history, an oral physical examination and appropriate consultations.

Write orders including those applicable for admission, preoprative and post operative conditions and discharge.

Follow proper operating room decorum, including scrub clothes, surgical scrub, surgical preparation of the patient and gowning and draping a patient.

Use a steril technic in the operating room.

Assist in the management of the patient from admission to discharge.

At the end of this period of time, each student has worked-up 5 patients and has assisted in oral surgical and restorative procedures under general anaesthesia.

The students would be exposed to emergency situation which they very likely would not otherwise encounter before graduation and they would see cases especially rare ones, which they would not see in the usual dental school clinic.

This theory will successfully achieved if the dental educators follow the recommendations of Mann in "Survey of Dentistry" in which he stated :

"every possible effort should be made at each dental school to help the teaching staff obtain the knowledge every teacher needs as he goes about his work. Each teacher should know the fundamentals of organizing course, methods of teaching, the construction of examinations, the basic information about the psychology of education and principles of learning and the teaching of motor skiils.

Certainly, there are many other important aspects of teaching that teachers should know, but it is doubtful, that a complete discussion would be useful her. However, each school should develop, with professional assistance if possible, an inservice programme designed to improve the quality and effectiveness of its teaching. Further, a planned program of orientations to teaching should be offered to new teachers each year".

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