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DENTAL HEALTH EDUCATION IN AUSTRALIA

1971

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INTRODUCTION

Oral and dental health status depends largely on regular personal and group behaviour throughout life, therefore effective utilization of the educational approach is central to any widespread improvement in oral and dental health. The world wide prevalence of dental disease is a constant reminder of the almost universal need for effective dental health education programmes. In many countries, including Australia, vast quantities of dental health materials have been distributed and countless numbers of dental health information programmes have been conducted in schools and other settings. However these efforts have not succeeded in influencing behaviour to the extent expected. Even in those countries providing free and adequately staffed dental services, many people do not avail themselves of the services they need. More effective approaches to dental health education are urgently required.

The aims of this thesis are to examine, in brief, the application of principles of health education in dental health education as is evident in recent literature and to investigate approaches taken in dental health education in Australia by various organisations and individuals.

REVIEW OF TRENDS IN DENTAL HEALTH EDUCATION

The focus of health education is on people and on action. In general, its aims are to persuade people to adopt and sustain healthful life practices, to use judiciously and wisely the health services available to them, and to take their own decisions, both individually and collectively, to improve their health status and environment.⁶⁶

Since dental health education is an integral part of general health education,⁶⁵ the achievement of dental health goals will require the application of principles and processes which are effective in other aspects of health education. The degree to which dental health education goals can be achieved is determined by a series of inter-related factors, which include:

- (i) the accessibility of dental health services and of advice in which individuals have confidence;
- (ii) the economic feasibility of putting into practice the dental health measures advocated;
- (iii) the acceptability of the proposed dental health practices in terms of customs, traditions, and beliefs of individuals, families and groups;

- (iv) the extent to which people already have the kinds of learning experience needed to enable them to understand or to desire the benefits which arise from new or modified dental health behaviour; such behaviour may often require a considerable personal sacrifice of a financial, social or psychological nature.

It is essential, therefore, that all health workers and others involved in dental health education recognise that attainment of the desired changes¹⁶ in dental health behaviour are conditioned by social, psychological, and economic realities and by the quality, amount and availability of dental health services. At the same time it is also essential for those involved in dental health services to recognise that the degree to which health policies and plans become meaningful and health programmes fulfil their purpose is determined largely by the actions of the people for whose benefit and welfare they are intended.

There is no right or easy way to educate people to take an interest in their dental health behaviour, yet people of all levels of society must be so educated if a nation is to obtain the maximum return from the investment it makes to raise the dental health standards of its people, to reduce

major dental health problems and hazards, and to promote oral health.

The ultimate objective of all planned dental health education activities is to obtain and maintain optimum dental and oral health status for all individuals throughout life. Although this goal may never be fully achieved, considerable progress towards it can be made by judicious application of what is now known about human behaviour and ways of effecting social and behavioural change.

Because dental disease is almost universal and because no infallible means of preventing it has been found many people who would choose to have good teeth are deemed the right to make their own choice because their dental health has not been safeguarded through the critical years of childhood and adolescence. What is needed is a generation of adults, parents, teachers, dentists and public health workers who will assume responsibility for seeing that the necessary preventive, educational and corrective services are available to the children until they reach the age where they can make their own decisions about the relative value of good dental health.

The provision of dental health information to people in

such a way that they apply it in everyday living can be provided either to the individual on a one-to-one basis or to groups of people in the community setting. Dental Health Education is only one facet of the total educational stimuli that are constantly being presented to the individual or the community.

Long-range educational efforts may be more successful in modifying public attitudes than short term efforts. Today, and probably for many years to come, most dental health problems can be prevented and controlled only by daily, continuous effort by the individual. Prevention of periodontal diseases,⁴ for example, depends on a modification of patterns of daily living. This objective, of course, entails a more profound change in attitudes than is needed to benefit from single, infrequently repeated actions such as immunization. Short term educational approaches which urge people "to do a specific thing now" are useful in attacking some problems, but are inadequate to change dietary patterns, toothbrushing habits, and patterns of visiting the dentist. Haefner⁵ has stated that, if one is willing to settle for long range gains rather than a short term approach, the school setting offers a great potential for effective dental health education. It provides an excellent opportunity for communication with

virtually all persons within the entire school-age group and in an explicitly educational context where learning is emphasized and rewarded. Continuing educational influence can be exerted on the target audience over a considerable period of time.⁴⁸ The process can begin at an early stage, when habit patterns are still in the process of being formed rather than having been firmly established and resistant to change, as is true of adults. The school setting also offers the advantage that the dental health educator can use both mass and group communication and face-to-face communication approaches on the same audience and derive maximum benefit from each. The mass communication approach can be used to present health information efficiently to groups via lectures, motion pictures, slides, models, books, pamphlets,¹² posters and other ways.⁵ This approach can in turn be supplemented by face-to-face communication between teacher and students. The face-to-face aspects can provide an opportunity for individualizing instruction to meet the needs and problems of individuals and can serve as a powerful motivating force. The classroom setting also offers the possibility of making use of the powerful forces of group dynamics in inducing students to take appropriate dental health actions. Williford⁶³ found that a group of high school students showed significant improvements in the oral debris, calculus and oral hygiene Index score, Periodontal Index, toothbrushing

frequency, and in the dental I.Q. score by being subjected to an authoritative question answer teaching approach during one hour lectures on each of two successive days at the beginning of a study and again after one and two months. The technique was to use one theme throughout the entire series: "Why is it that 140,000 Americans are not getting dental treatment and how can we motivate them to learn about dentistry and good oral hygiene?"

Health teaching cannot be merely didactic. Stolpe et al⁵⁶ in a study to measure the effect of oral health education in schools found that although dental health knowledge was improved, improved oral hygiene was not maintained and that intensive instruction was not significantly better than that of the instruction by graded text books in the classroom. It must be embedded into the socialization process so that rewards for successful learning occur at all levels of society. This objective, of course, means that parents of children must co-operate;¹⁵ it also means that school systems must participate actively instead of relegating dental health efforts to intermittent dental inspections and sporadic lectures. Frequently the school environment is destructive to dental health.⁷ School canteens sell unsuitable food^{20,15,} and thus fail to provide training in sound food habits.^{32, 52.} The availability of sticky cakes, sweets and biscuits, soft

drinks and cordials, may tempt children to spend lunch money on them and lead to poor food habits. Their high energy value and continual availability are likely to affect children's appetites for regular meals and lack of substitute foods such as potato chips, cheese sticks, fruit drinks and nuts fail to enforce classroom teaching of diet as related to good dental health. School grounds often contain equipment which may cause loss or injury of teeth through accidents and only recently have boys been encouraged to wear mouthguards in contact sports such as football. Badly designed drinking fountains are often responsible for broken front teeth.

Dental health educators wishing to use the school setting to accomplish some of the objectives of dental health should become fairly sophisticated in educational methods, procedures, policies and organisations.⁶⁹ Educators should;

- (i) become acquainted with the methods by which health education is incorporated in the school curriculum, the person or persons responsible for curriculum decisions, general policies, and the legal and moral responsibilities of the school that help determine these policies;
- (ii) develop an understanding of the preparation of teachers in the field of health and how this preparation can be

improved through co-operation with teachers' colleges and school systems;

- (iii) find out what is being done already by the school in dental health education before initiating a new programme or suggesting new approaches to the problem.⁵⁹

Health professionals should be cautious in answering requests to participate directly in classroom instruction. Teachers possess skills as unique to their profession as are the skills of the dentist to his. In a study of the attitudes and motivation of dental students relative to the teaching of dental public health it was found that they appeared to avoid social participation in community affairs. It would seem much better for health professionals to spend their time working with these who in turn will do the teaching. A well prepared session with the staff during a teachers' meeting⁴³ would be of much more benefit than an isolated talk by a health expert to a classroom of primary school-children. In dental health education the dentist and auxiliaries must be responsible for providing guideline information on and the direction of dental health.

Major emphasis in all dental health education programmes should be placed on primary prevention, with special focus on motivating people to seek and use dental care services.

Harris⁴⁰ discusses the value of education combined with clinical procedures in the school setting, and Land³⁵ describes fluoride applications as an aid to Dental Health Education in Swedish schools. An analysis of the literature on school health education reveals that schools in many countries have attempted over the years to conduct dental health education programmes. These programmes have essentially been of the "information-giving" type, and their informational content has almost always been the same. In general, patterns of living cannot be taught - at least not in the sense that skills such as reading can be taught, instead they must develop out of the life experience of the individual. In order to develop these patterns it has been suggested that long term educational goals should be focused not on the adults of today but the adults of subsequent generations - to try to develop in children patterns of life in accord with sound dental health practices. This approach includes improved dietary practices, periodic visits to the dentist, and learning effective personal hygiene habits. It includes also learning about dental diseases, the impact they have on the person and on the family,⁴² and the kind of preventive and remedial actions that are available. Furthermore programmes of teacher education focused on improving the status of dental health have employed the same approach. Yacavone⁶⁸ defines the problem as that of few schoolteachers

having specific training in dental health education and feels it is the responsibility of the dental profession to provide the school teacher with the basic dental concepts and to tell him when to teach them. In spite of the overwhelming evidence that providing teachers and children with information about dental health is not an effective method of obtaining behavioural change, this approach has continued to predominate. Education for dental health is a very complex problem and remains to this day an intriguing challenge to the dental health educator. Most schools in the U.S.A. have programmes for Dental Health Education,¹ yet, in spite of this, dental cavities may still be the most prevalent chronic disease in that country today. A number of studies^{31,60} have highlighted the influence of parents in promoting children's dental health practices. Parents everywhere have a significant role in influencing children's behaviour in all areas of health. Although the need for and importance of parental education in dental health is widely and strongly supported, there is no general agreement on the appropriate content of such programmes or on the best methods to use.⁵⁷

In countries where the demand for dental treatment services can be met, adult dental health education is planned around the dentist-patient relationship.^{40,41} It is clear that opportunities for education of patients by dentists are not

being fully exploited, and the extent to which dentists engage in educational activities outside their office is extremely limited.²⁶ Perhaps one of the main reasons for this is that many dentists have been educated to think chiefly in terms of therapy, repair, and restoration, with little emphasis on prevention and education. Another reason may be the way dental practice is organized and financed.

During the past decade social scientists have taken a growing interest in studying the dimensions of patient behaviour, and their efforts have produced more realistic explanations of dentists' failures in educating patients in oral health.⁸

A review of the recent literature^{62, 53} confirms that people at various socio-economic levels and in diverse cultural groups have different views of what constitutes appropriate dental health behaviour and that these views are major determinants of the specifications they will take.⁵¹

Relationships between the interacting psychosocial and cultural variables are complex and at present unclear. However it would appear that attempts to change dental health behaviour should be based on the relation of recommended actions to things that are valued by the people involved. Unfortunately, many dentists and other professional health workers tend to view patients in the

light of their own system of values. One of the chief weaknesses in many dental health education programmes has been the failure to make adequate educational diagnoses before prescribing programme activities. Problems confronting dental health education are now being studied more carefully.²⁹

The crucial person in the development of dental health activities is the dentist himself, whether he works in a health institution or in private practice.²⁴ As head of the health team, he has the important task of educating his patients and of seeing that other members of the health team make the best opportunity for educating patients. If the dentist is to accept and carry out these responsibilities he must receive appropriate training during his undergraduate dental studies. The curriculum of dental schools should therefore provide opportunities for participation in a variety of dental health activities,²⁵ in school, hospital clinic and industrial settings. In addition, basic concepts of dental health education should permeate the entire curriculum.² The incorporation of social science subjects into the dental school curriculum is becoming accepted and the training at post graduate level of more dentists in dental public health is increasing. The role of dental auxiliaries, particularly in the field of dental health

education,⁵⁸ is well recognised and in the training of dental hygienists, dental nurses, dental assistants and other types of dental auxiliaries there is a need to include practical experience in developing and applying a variety of educational procedures and materials.¹⁶ The emphasis on target groups such as women in pre-natal clinics and mothers of young children,⁶ as groups where individual face-to-face methods and procedures applicable with small groups can be used most effectively is being stressed.

Members of other health professions have important roles in dental health education and it has become recognised that they should receive appropriate training. The doctor occupies a special place in any health team and attention should be paid in this undergraduate medical training to dental and oral health problems so that he can reinforce the educational efforts of the dental health team. All health workers such as nurses, infant welfare sisters, and social workers who have direct contact with people either in their homes or in health facilities, should be aware of opportunities for dental health education related to specific needs and should be familiar with community dental resources⁷ - they are the people who are often opinion leaders in the community and who have a better

rapport with members of that community than the dentist himself. Kindergarten or pre-school teachers are another group who are in a position to exert tremendous influence on a group of both parents³⁴ and children in all matters related to health and it is important that their training should include basic concepts of health education as they have ideal conditions to put these concepts into practice.

A key principle to be noted when planning any health programme is to attempt to develop participation by a broad range of members of the community.¹⁶ There are many competent sources in the community who are now associated with dental health education programmes. Organised dentistry such as state dental associations usually have a sub-committee for dental health education, with appropriate resources.³ Often the state health department, even if it does not have an individual trained in dental health education on its staff will have a division of general health education with competent health educators who can work in conjunction with the director of the dental services in that State. The professional organisations' role deserves notice for it is through them that authentic dental health information based on controlled research is best made available. The health educator frequently has a well-established liason with the school educational system. Some countries have National organisations

which are involved in dental health education activities and provide assistance to state and local organisations with both advice and materials for programmes, providing an increasing trend towards better planned total health activities. In countries where service organisations such as Rotary International are active it has been found that they have been active participants in dental health education programmes.³⁷ Co-ordination of all the different dental health education activities in the community is essential.

Much of the current dental health educational material has been based on the structure and function of the teeth. It would seem that patients, and school children in particular could be motivated to better dental habits without having to know technical information about the dentition and learning "rules for good teeth".⁶³ Materials available from state and national agencies, must of necessity be of a general nature since they are used in many areas. There is an increasing trend for dental health educators to be aware of the necessity of reviewing material to make sure it is appropriate.³⁵ In the U.S.A. the Bureau of Dental Health Education is revising its materials for educating patients. It is working to make certain that the materials will suit a flood of new patients. Illustrations in the Bureau's publications, for example, are being racially and ethnically

integrated, language is being simplified, and style is being enlivened. Pamphlets and films and televised announcements are only aids to dental health education - in the past there seems to have been a tendency to assume that health education is founded on these aids rather than to realise they can be used most effectively in conjunction with interpersonal contact between people, still the basis of health education.³⁴ Without this contact the distribution and showing of educational material is largely a waste of money and manpower. If using films it is important that they should be followed with a planned discussion - perhaps re-emphasizing the message or explaining any short comings. Warner⁶¹ has pointed to the dangers inherent in the showing of some dental films. It is important to use a film where the dental health message does not become lost when the audience becomes carried away by situations quite unrelated to everyday experiences.

Dunning²¹ writing on health education in industry says that dental health education in conjunction with an industrial dental service might be expected to accomplish two objectives: first stimulation to utilise the treatment services which are offered, and second, an increase in knowledge of preventive measures for dental disease. Industry does not

offer a very favourable setting for generalised health education. The health education unit at the Harvard School of Public Health, in a study of 25 plants found a number of barriers to exist in the path of reception. Activities fared best, however, that were an integral part of some type of medical or preventive service or were particularly appropriate to the needs of the plant or its workers. This indicates the advisability of focusing dental health education for an eligible group of industrial employees or their dependents upon use of an existing dental treatment service and letting education on personal health habits assume a secondary role or be handled at the chairside in connection with visits for treatment. The Harvard group also found that these media and methods which required little time, effort or interruption of plant routine were more readily utilised. These various findings gave hints towards the efficient development of a phase of industrial dental service to which little attention had so far been given.

The development in U.S.A., particularly in the last decade, of pre-paid dental care plans largely associated with labour unions and industry, has offered an excellent mechanism for effective programs of dental health education.⁶⁹

Materials can be designed expressly to meet the particular requirements of particular groups. The use of appropriate

educational methods may prove almost as important as lowering the cost barrier in persuading beneficiaries to seek the care they need. Since the entire group of eligibles is identifiable, effective use can be made of such materials as brochures and pamphlets, reminder slips inserted in pay envelopes, and a host of other possibilities exploited to influence eligibles to seek care. Workable systems of patient recall can be instituted with both sponsors and dentists taking part in order to attain the highest possible rate of utilisation. The increased number of children receiving routine care under the programmes should raise the level of dental awareness of the next generation of parents. Plans which include dental health educational efforts may be expected to bring about a marked change in attitudes toward dental care even among the adults of today. If the problem of payment has been eliminated, educational efforts to remove other blocks to seeking care should be much more effective.

In the last decade more and more people are being reached by the mass media in the form of television, press and radio. The media should logically have enormous influence in health education but this does not appear to be so.¹⁶ Most communications serve not to change people's behaviour

but rather to reinforce what they already believe. However, expert health television, radio and press usage may gradually win public confidence by accurate material well presented, and above all, timely and useful to specified target audiences. Rosen⁵⁴ found that the usefulness of mass media appeared to be limited to the transmittal of information and that the effectiveness of educational efforts to induce change is dependent on whatever motivates man's behaviour. Applewhite¹ writing recently on the best way to develop dental health education in the schools comments that programs that rely on exhortation together with some form of explanation are more likely to provoke resistance than to encourage co-operation. He suggests that perhaps more indirect methods of communication should be sought and more frequent evaluation of the effectiveness of different methods and approaches to dental health education should be made.

The recent report of a WHO Scientific Group on Research in Health Education specifies quite clearly the general context of research needs in health education in general.⁶⁷ Many of the specific educational research problems noted in that report are, with minor modification, equally relevant to dental health education. Recommended studies are those on school dental health education, with emphasis on the social

and emotional consequences of dental neglect rather than the clinical ones and the assessment of the outcomes of active participation in the educational process by learners. Other studies recommended are those on the extent to which utilization of dental care facilities acts as a means of dental health education, the methods of providing these dental services, the organization of the time and functions of dental personnel in the dental office;³³ the education of members of the dental team,⁴⁴ all in relation to providing the most effective dental health education services particularly in the field of oral cancer, topical fluoride, personal hygiene practices, wearing of dental orthodontics and dental and facial anomalies. Further studies concerned with the practices recommended by the dental profession, especially as related to their effectiveness in the prevention of caries and periodontal disease, and the problems arising in carrying out these practices, would appear to be important. Up to now, very little research, directly related to dental health education, has been carried out in this important behavioural area.

One of the objects of dental health education is to promote the development and proper use of existing dental services. Fluoridation, the most effective community measure for prevention and control of dental caries cannot be made a

part of a community's services unless the authorities have the knowledge and motivation to accept and implement this procedure. In recent years dental health education has gained more and more importance and is now recognised as playing a major role in dental public health and particularly in the field of preventive dentistry, as it is obvious that no improvement in the field of dental health can be expected if the application of preventive measure is not encouraged.¹² Prevention, public health and oral education, are all areas which dentists have, in the past, either neglected, or failed to utilize fully. The dentist has not been in the habit of expecting a fee for consultation but it has been demonstrated that patients who can afford restorative dentistry are quite ready to pay for a preventive service.¹³ In the past, the dentist in spite of being interested in prevention has never actually made time to practice this philosophy. Pressures have permitted the dentist opportunity for only superficial prophylaxis and no time for analysis of the patient's oral habits or instruction in proper prevention oral care.³⁰ It is now becoming accepted that this is one of the important roles of the dental hygienist. Dental health education is being considered as being a broad field with two main aspects, the education of the dental team rather than just the dentist and the education of the patient and the community. Dental Health Education is

helping people to help themselves. It is now accepted that before any health education programme can be started it is important to know what people already know about health matters and their beliefs and attitudes towards health.

One of the most significant trends in dentistry in the last decade has been the entry of the social scientist into the field of dental science. Investigations have been carried out on both the providers and recipients of dental care.^{40,41} An international organisation, Behavioural Scientists in Dental Research, has been formed to facilitate communication among researchers. Most of the members are employed in the U.S.A. but interest is growing in Great Britain, Australia, Israel and in the Scandinavian countries. In the field of dental health education researchers have noted differences in approach over time and by country. After posing research questions geared toward changing behaviour, a new model for dental health education is proposed underlining the need for international comparative research to test out such a model.⁹ Co-ordination of studies on how the dentist views his public and how the public views the dentist may lead toward answers on how the dentist can affect behaviour change of his patients. Building communication channels between the social scientist and the dentist is a difficult task but in the last ten years

group discussions with dentists coming together in seminars is taking the place of didactic lectures. This is particularly relevant in dental health education.² There is a feed back of information in a group discussion and it has taken dentists quite a long time to accept them, but as effective health programmes depend on effective communication and are a two way process where the patient, not only the dentist, should contribute quite a lot, they are showing the way to a situation where it is possible for the patient to suggest his own line of treatment and giving him the opportunity to express his own attitudes and feelings about dental health. Health Educators have increasing reservations about the significance of the lecture as a changer of attitudes and feel the time would be better spent gaining rapport with selected patients or people who are opinion leaders in the community - motivated people who will act as a health educator, allowing the dentist to be the source of reliable and relevant information on dental health.

W.H.O. has accepted the importance of giving every possible assistance to member states interested in strengthening the dental health components of their general public health programmes. In 1964 a W.H.O. Expert committee on Dental Health recommended, as a first and most important step in

the organisation of an effective dental health programme, the appointment to the central health administration of a full-time dentist, preferably one with appropriate qualifications in public health.⁶⁴ Further support and encouragement should be given to training the dental and administrative manpower that is essential to the development of health programmes of acceptable quality. It was felt that the major object of such services should be to contribute to all phases of the planning, development, and evaluation of dental health education programmes.

F.D.I. at a recent meeting in New York, formed a working group to develop dental health education activities over a three year term. An informal two day workshop of 20 dentists and 9 public relation officers from 12 West European countries was held at Utrecht and should lead to closer co-operation and exchange of material between these countries and F.D.I.

At a conference of representatives of national dental associations from Commonwealth countries in the South East Asian and Western Pacific regions in 1970 one of the ways many of the countries felt mutual assistance programmes could be developed was in the field of dental health education,

particularly with the preparation and distribution of suitable visual aids.

When looking at possible future trends the current low level of public interest in dental health must be recognised. Even in the developed and overdeveloped countries large proportions of the community are still inclined to regard their teeth as expendable items. Dental Health Education can do much to alter this attitude, particularly if dental problems can be linked to other health problems of a high level of interest.³⁶ Thus linkage to maternal and child health, which rate very high can be expected to increase the amount of attention which will be given to dental disease. Careful selection of target groups and recognition of the different approaches necessary with each different group are recognised as being of equal importance. Scientific advances may produce highly effective preventive measures not incompatible with modern cultures, health education may secure virtually universal utilisation of these measures, and long range changes in the diseases themselves or in human resistance to them may reverse the upward trends of recent centuries. Without all three, the likelihood of success is small.

INVESTIGATION OF DENTAL HEALTH EDUCATION IN
AUSTRALIA - 1971

Method

In Australia the responsibility for the health care of the community rests primarily in each state. Dental Health Education is included in the functions of both the Departments of Health and Departments of Education in those states.

Dental Health Education seeks to help the individual discovers his problems and take action to solve them. It can be taught in many different ways and many methods of approach are used. This thesis is an attempt to review the ways and methods of approach which are being used by various organisations and individuals in Australia in 1971.

In order to obtain first hand information from individuals and organisations involved in dental health education activities in Australia it was decided to send a standard letter (see Appendix 1.) to all those who in the author's opinion were active in this field. The selection of this group made out of background reading of dental health literature and the author's personal experience with many

of the people concerned. It was subsequently necessary to enlarge the extent of this group, acting on replies received from a number of the original selection.

Some information was obtained from annual reports and some further information by personal discussion and personal reports. The information is presented in this review in the form in which it was sent back to the author as a reply to the letter requesting information - minor editing has been carried out for grammatical corrections and sense. All information received has been included in the review. Some requests were not answered so no information of those organisations has been included.

Results

New South Wales:

N.S.W. the largest state in the Commonwealth has by far the largest number of dentists, the majority of whom are in private practice. The overall dentist/patient ratio is 1:3,145 with a higher proportion being in the metropolitan area of Sydney.

The State Government dental services, conducted by the Division of Dental Services of the Department of Public Health, comprise a school dental service and a service to patients in State hospitals and homes, chest hospitals, psychiatric hospitals, child welfare Department wards and penal establishments. In addition, the United Dental Hospital, controlled by the Hospitals Commission, provides dental services to those in the community who are eligible under a means test - as well as providing training facilities for dental students attending the University of Sydney. The Dental Hospital extends its services to country areas by use of a dental train and road mobile services.

In 1967 the unique Western Shires Dental Service was estab-

lished to serve the sparsely populated middle western areas of the state. This service was established by collaboration between local shire councils, the Department of Public Health, the Department of Local Government and the Australian Dental Association (N.S.W. Branch).

The School Dental Service conducts fixed clinics in selected State schools and mobile clinic services stationed in country areas. This year a dental clinic has been opened at an Area Health Centre in a Sydney suburb as part of a complex of other community health services for children. These Area Health Centres will eventually be part of a planned Regional Health Service in N.S.W.

Department of Public Health - Division of Dental Services

The Dental Division is primarily a service division, responsible for the actual dental treatment of school children and some adults. Only a small percentage of the total number of school children in N.S.W. receive treatment or are examined regularly by the service.

Before the Health Education Division of the Department of Public Health and the Dental Health Education and Research

Foundation entered the field of dental health education, the Dental Division undertook radio and television programmes, lectures to Teachers' Colleges and more duties in the nature of talks to Parents and Citizens' groups and Service Clubs. This aspect of the Division's activities has diminished in recent years, although it is still responsible for some lectures to Teachers' Colleges (Newcastle and Westmead), and to Parents and Citizens' Associations, some classroom talks and a few radio programmes. Some newspaper and journal articles are prepared.

The senior staff also undertake lecturing programmes to the University, and to in-service and post-graduate nurses' training courses. A mobile clinic visits the campus of the University of New South Wales in school vacations.

Now, most of the dental health education, in the accepted sense of the term, is carried out at the chairside and to small groups of children attending the clinics for treatment. Some direct contact is made with parents in waiting rooms. A pamphlet "The A.B.C. of Dental Health", issued by the department, is distributed to support this instruction.

To improve communication with parents, since 1960 the Division besides attempting to provide a greater coverage to

school children, has only been examining many Infant and Primary School children and sending home to the parents a notification of dental defects, which also includes advice on dental health. Where it is possible to provide treatment in addition to advice, a different type of form is sent, seeking the parents' permission to treat where necessary. During 1970, 23,300 children received these type of notices. Where children require no immediate treatment and the mouth is well cared for a small card confirming this is given to the child. On the back of the card is printed advice to parents on good dental health procedures. Where no treatment is required because multiple extractions have already been carried out another card with the same advice to parents on the back but with pictures only on the front, is given to the child. Small yellow pear and red apple adhesive stamps are given as extra rewards to younger children.

Recently, translations in Italian, Greek and Yugoslav have been prepared and stamped on to the cards notifying parents of migrant children that treatment is required.

For many years posters have been used in the clinics and distributed to some schools. A series of instructional charts prepared by a Dental Assistant with art training, is

available to the staff. Pamphlets other than "The A.B.C. of Dental Health" are used, e.g. those produced by the Dairy Board and the Commonwealth Health Department and also the N.S.W. Health Department booklet "Fluoridation of Public Water Supplies". A few "Frasaco" instruction models have been given to teachers who are particularly interested.

A coloured film strip on dental health has been issued to all Infants' and Primary schools with the co-operation of the Dental Health Education and Research Foundation and the Visual Education Centre. An artist recently appointed to the Division of Health Education is now preparing new posters, each carrying a single message, with a large tooth in the background. It is anticipated that models of teeth suitable for classroom instruction will be produced cheaply and distributed to schools. An instruction manual is also envisaged. Some toothbrushes are distributed, mainly to aboriginal and indigent children. There are approximately 100 coloured 32mm slides which are available to the dental staff for instructional purposes. All District Medical Offices of Health possess a series of slides on Fluoridation. A selection of films is available from the library of the Department of Public Health.

Department of Public Health - Division of Health Education

This department provides a comprehensive service in the field of health education. Programmes of research and training in health education for health workers are developing rapidly. There is a Nutrition Education Section of the Division which acts as a resource for information and advice for school canteens and lunch services.²³ The Education Officer of the Division is a member of the School Dental Health Education Programme committee which was formed in 1971 to supercede the Dental Health Education Planning committee of the Dental Health Education and Research Foundation which was dissolved in 1970.

Education Department

The Department of Education's thinking on what and how children should be taught in the primary school is the concept that health education should seek the development of individual and community health, through the establishment of patterns of behaviour, the development of attitudes and the acquisition of knowledge. The aims are to enable the child to acquire sound health habits, attitudes and practices, to give the child sufficient knowledge to enable him to make intelligent health decisions and to use freely

the school medical and dental services and the relevant community health services. The principles underlying the teaching of health include the need for direct instruction so that the child may acquire valid information on which to base decisions concerning his personal well being both now and later in life and the importance that the child should have before him consistent standards of self control, and observance of the health practices advocated by the teacher. As the main aim of health instruction is to influence behaviour, practical experiences which are significant to the child must be given as important a place in instruction as those which involve him in knowing and thinking. In the field of dental health education some desirable learning outcomes for first and second grades include the selection of food according to basic food requirements, in third grade care of the teeth, fourth grade, understanding how teeth work, their importance, function and structure, helping them to work well, daily care, protective and harmful foods and the value of regular visits to the dentist. In fifth grade the fourth grade concept is enlarged and in sixth grade the role of the dentist, dental care, dental clinics and school dental services are considered. The advisor on health education in primary schools is a member of the School Dental Health Education Programme committee of the Dental Health Education and Research Foundation.

When the Dental Health Education and Research Foundation of the University of Sydney was formed in 1962, it stated among its objectives that it would work for the improvement of the dental health of the community through public education. One of the first Foundation committees formed was the Dental Health Education planning committee which included psychologists, social scientists, educators and dentists. Among its activities was school dental health education. Following discussions in 1969 with the Departments of Education, Public Health Education and Preventive Dentistry, it was considered desirable for the Foundation to step up its dental health education programme within schools. Subsequently three young women with experience in dental nursing were appointed as dental health educators. Following a six weeks in-service training course arranged by the three Departments, two educators operated within the metropolitan area of Sydney and the third visited specific country districts in N.S.W. Initially the programme was aimed at third and fourth grades and later included fifth and sixth grades.

The Director of Education determines the areas in which the educators work. On receipt of this recommendation contact is made with the Area Director of Education and a carefully co-ordinated school programme is organised by Foundation

office staff. Schedules are drawn up and copies forwarded to the appropriate Departmental officers. Wherever possible efforts are made to include parent organisations in a dental health lecture or a screening of films during the visit to the area by the educators. The Good Teeth Puppet Theatre, well scripted and presented by a professional puppet company and the educator school programmes are co-ordinated wherever possible, the Puppet Theatre preceding the educator at a school by about six weeks.

The Puppet Theatres is supported by an anonymous commercial donor to the Foundation and performances given in schools are free of charge to the children. Literature and posters, pre and post theatre visits are available to teachers and children. Over 60,000 children have written to become members of Smiley's Good Teeth Club. Service Clubs, P & C Associations, Dental Groups and the Ladies Auxiliary of the Foundation have paid for expenses involved in country visits. More emphasis is given to infant schools in the scheduling of the theatre which has now been seen by more than 150,000 children. The Puppet Theatre has made frequent visits to Teacher Training Colleges and performed at the Wollongong Dental Convention in 1971. In 1970, the theatre was featured at a Preventive Dentistry Seminar held at the University of Sydney, and as a result, considerable interest

has been expressed from interstate branches of the Australian Dental Association for a visit from the theatre. At the beginning of 1971, the first interstate trip was made to Melbourne, where the theatre appeared at teacher training colleges and schools and was extremely well received. An evaluation of recall of the theatre content material has been carried out but effectiveness in changing dental health practices has not.

The three Dental Health Educators, members of the panel of dentist lecturers and Foundation staff, from time to time show films and/or give dental health lectures to teacher trainees, mothercraft nurse trainees, kindergarten teacher trainees, P. & C. Associations, Girl Guide groups, Red Cross and National Fitness Camps, church organisations, community service clubs and others. Trainee teachers are issued with a booklet "Dental Health Facts for Teachers" and mothercraft nurses with a copy of a specially prepared set of dental health notes.

Posters, teacher follow-up dental health material, a teaching aid chart, all specially designed and produced for use within the schools is left with each class teacher. A recently designed leaflet for parents of the children who have that day received a lesson by the Dental Health Educator

is now being distributed in schools. Late in 1970 an evaluation of recall of the educators' dental health messages was carried out and this study is at present being further extended and collated by the Foundation's social scientist. School Principals have shown considerable interest in the Foundation's dental health education programme and many requests are received from mistresses of Infants' Departments for the inclusion of their classes in the school programmes. The three dental health educators are trained to give lessons to the smaller children and with the Puppet Theatre preceeding and performing to these classes the time is now considered opportune to give consideration to including Infants' Departments in the overall school dental health education programme.

This educational programme in schools is financed through the Foundation by dentists, grants by the Department of Health and the Dental Board of N.S.W. and other contributors sponsoring a specific educational activity.

The Dental Health Education and Research Foundation -
University of Sydney

The Foundation was formed in Sydney in 1962 by the Dental Alumni Society of the University of Sydney and the Australian

Dental Association (N.S.W. Branch). An initial sum of \$105,000 was raised for the purpose of establishing a fund for dental health education and research. In the period since its inception there has been an increasing awareness in the public of dental health due to many factors, the most important of which are probably due to both the expanded dental education of local dental graduates, particularly in preventive dentistry and the continuing education of the public. It is believed that the impact of the Foundation has been such that the present situation would not have been achieved in so short a time without its co-ordination and guidance.

A very considerable part of the Foundation's activities have been described in the previous section dealing with dental health in the Department of Education's dental health programme.

During 1970 all Foundation poster material and pamphlets were updated and as a result there is a growing demand for dental health literature from all states in Australia although the largest demand is from New South Wales. The very successful booklet "Food, Drink and Your Teeth" has had tremendous impact and more than 40,000 copies have been distributed throughout Australia and New Zealand.

Members of the Sydney suburb of Bankstown Rotary Club have adopted Dental Health as their Community Project for 1971. As part of the project, the Club purchased 8,000 copies of "Food, Drink and Your Teeth" and one of these booklets was placed in every home in the Bankstown area. The Foundation assisted in the Publicity and Promotion which resulted in coverage by Press, Radio and Television. Ten thousand primary school children were actively involved and as well as each family receiving a copy of "Food, Drink and Your Teeth", samples of toothpaste and dental health educational material were given to children in the third and fourth grades of primary schools.

In conjunction with the Federal Australian Dental Association a very successful weekend workshop was held in 1970,¹⁴ participants coming from all states of the Commonwealth and New Zealand. Findings and recommendations from the workshop have been incorporated in the latest Foundation publication "A Guide to the Practice of Preventive Dentistry".¹³ This publication has been distributed, free of charge, to every dentist in Australia and New Zealand. This study has been followed up during the latter part of 1971 by seminars and discussion groups and by lecture programmes taken to A.D.A. Country divisions and metropolitan groups. The second Dentist/Patient relationship report⁴¹ carried out under

the direction of Professor R.T. Martin of the Department of Applied Psychology of the University of New South Wales was completed at the end of 1970 and contains many interesting findings in relation to the practising dentist.

The recommendation and subsequent appointment during early 1971 of a Social Scientist is considered the most significant step taken in the history of the Foundation.

At the community level the Foundation hopes to produce and distribute a preventive booklet suitable for parents and patients, publicise Preventive Dentistry through the mass media, inform pharmacists of the desirable aids to dental health which they should stock, invite chain store retailers to co-operate in making available to the public only recommended toothbrushes and to facilitate the giving of accurate advice on dental care to young mothers through Baby Health Clinics. Production of foreign language literature for migrant sections of the population is planned and also continued support for the School Dental Health Education programme and Tuckshop Programme.

The Foundation is financed mainly by contributions and donations from private dentists, N.S.W. Department of

Health and commerce and associations. In 1970 the budget was just in excess of \$70,000.

The University of Sydney - Faculty of Dentistry

The Faculty of Dentistry is active in dental health education of the dental profession at both undergraduate and post-graduate level.

At undergraduate level, students in fourth year are introduced to the principles of social and community dentistry, human relationships and in particular interpersonal relationships which emphasize understanding and two-way communication. In fifth year this is enlarged into consideration of specialised programmes and the role of the dentist in dental public health programmes. Other areas of study include Dental Health Education - principles, attitudes to health, fluoridation, important groups, learning and communication.

Three senior undergraduates sit on the Advisory Committee of the Dental Health Education and Research Foundation and the President of the S.U.D.U.A. is a co-opted member of the Foundation Council.

A graduate course in Public Health Dentistry, leading to the

Diploma in Public Health Dentistry is offered each year by the Faculty of Dentistry at the University of Sydney.

Dental Health Education involving lectures, tutorials and seminars is included in the course.

The Post Graduate Committee in Dental Science offers courses to all members of the dental profession, both from within N.S.W. and in Australia. During 1971 amongst the courses offered was a two day course in Preventive Dentistry which was attended by 32 dentists from several states. Dental Health Education particularly of the individual patient, was considered at some depth.

Members of the staff of the Department of Preventive Dentistry lecture on dental health to some medical undergraduates, post graduate students in the School of Public Health and to trainee dental assistants at Technical College. Many members of the academic staff of the Faculty are very active in Dental Health activities of the Dental Health Education and Research Foundation.

Australian Dental Association - N.S.W. Branch

The Dental Health Committee of the A.D.A. comprises the Advisory Committee of the Dental Health Education and Research

Foundation which was formed jointly by the A.D.A. (N.S.W. Branch) and the Dental Alumni Society of the University of Sydney in 1962. It is elected annually by the Council of the Association and it functions as its name suggests, as the active committee of the Foundation.

Western Shires Dental Service

The dentist in charge of this service visits schools in the area to examine children's teeth but has not been involved in any dental health education activities personally. A dental health educator from the Dental Health Education and Research Foundation visited the area on one occasion but the patients receiving treatment by the service have not mentioned her visit to the dentist in charge. The dentist feels that he should make a point of giving more chairside instruction in dental health but doubts if it would be very effective with the majority of patients.

Manchester Unity Optical and Dental Clinics

This clinic provides dental treatment to members on a non-profit making basis. The clinic has no formal dental health education programme but staff dentists try to give their patients the best advice possible regarding dental care and

oral hygiene. The Senior Dental Officer is aware that the Education Department has a programme in schools of dental health education and feels that the Department of Public Health may provide some service in this field too.

Legacy Dental Clinic

This dental clinic which has a staff of two dentists provides free dental treatment to legacy wards who are dependents of deceased ex-servicemen. All dental health education is carried out at the chairside.

United Dental Hospitals - Sydney

The Dental Hospital has no formal programme of Dental Health Education by its own staff. The Hospital provides facilities to the Faculty of Dentistry for teaching of undergraduates and their dental health education activities are controlled by the Faculty. The Hospital employs a part time nutrition advisor to whom patients may be referred by staff dentists. Any chairside dental health education is a matter of personal choice for the staff dentist concerned.

Victoria:

Victoria has a dentist/population ratio of 1:3,815¹⁹.

Dentists are particularly scarce outside the metropolitan area of Melbourne the capital city where the dentist to population ratio is about 1:5,000. However these ratios although establishing that access to dental treatment is easier in the city than elsewhere does not necessarily measure the relative availability of dental services in the two areas. In Victoria, the Minister for Health, the Dental Board of Victoria and the Australian Dental Association receive requests from time to time for practitioners in country towns. These requests can rarely be satisfied. The Royal Dental Hospital of Melbourne is permanently below establishment for dental officers, and even if it were up to establishment it would be unable to cope with all treatment demands from the indigent. Many city and suburban practices find it difficult to treat emergency patients, particularly in outer suburban areas where some practitioners have closed their books and refuse to see any new patients.³⁸

In February 1965 the Victorian Minister for Health set up an advisory committee to investigate the dental problems of the State. The committee sat for a period of over four years

and a report was issued to the Minister in September 1969. One of the recommendations in this report was for a continuing intense educational programme to make the public aware of the adverse effects of dental diseases on general health and well being. A further recommendation was a fundamental change in the philosophy of dental care from one of reparative therapy to one of prevention. The committee endorsed the fluoridation of water supplies. Melbourne does not yet have fluoridated water.

Dental Health education in Victoria is largely the responsibility of the Dental Health Education Committee of the Victorian branch of the Australian Dental Association. Of a total of 842 dentists registered in Victoria, 761 are in private practice, 22 work in hospitals, 38 in State Government departments, 16 in University teaching and 5 others in various organisations.¹⁹ The school dental services which have been operating since 1921 are controlled by the Deputy Director of Child Health (Dental) within the State Department of Health and in 1970 employed 37 dentists.

Department of Health - Dental Division

The Dental Division does not possess a Dental Health Education Unit. However the Australian Dental Association (Victor-

ian Branch) is given an annual grant for Dental Health Education purposes by the Department of Health, to carry out lecture programmes to schools, kindergartens, teachers' training colleges and infant welfare centres; participation in community health projects; promotion of dental health education within the teaching profession; production and maintenance of visual aid material and mobile displays; purchase of films and slides; conduct of various other campaigns such as the wearing of mouth guards when playing sport.

The Department of Health produces two pamphlets. "Dental Decay - the cause and what you can do to prevent it" is designed for distribution to older children, and parents of school and pre-school children. "Fluoridation, a Public Health Measure" is directed specifically at members of Water Trusts to influence them in favour of fluoridation of their local water supply.

Dental Health Education is a continual process in the School Dental Service and is strongly emphasised in the Metropolitan Dental Centres and in the various institutions routinely visited. It is also encouraged on visits to country areas, and most dental officers co-operate by giving talks to

interested groups and to children on a class basis. Talks are given to parents of handicapped children and other interested bodies upon request. Infant welfare sisters are supplied with relevant information which they pass on to mothers at pre-natal and post-natal clinics.

Department of Health - Maternal and Child Welfare Branch

Staff of the Infant Welfare Centres and the Pre-School Centres give a great deal of attention to teaching the facts relating to the building of sound dental health. Right from the child's infancy the mothers are taught the importance of foods rich in calcium and the harmful effects of excess sugar and carbohydrate. Development of jaws through chewing and the introduction of foods requiring mastication as soon as the child has teeth are the next points emphasised. Leaflets and posters are used to emphasise these facts and there is a chapter in the book given to all mothers on child care, relating to dental health. In the pre-natal clinics stress is put on diet and dental health and the expectant mother receives a dental examination. Dietitians and infant welfare sisters use posters in the centres. A lecture on dental health is given to trainee infant welfare nurses and a chapter in the text book "A Guide to the Care of the Young Child" is devoted to dental health and development.

In the Pre-School Centres the daily routine for the children includes a mid-morning or afternoon snack consisting of a glass of milk and a piece of raw apple afterwards. The parents and children are taught the importance of cleaning teeth after food. Posters illustrating the important points of diet, cleaning of teeth and regular supervision by a dentist are used, also the advisability of consulting the dentist about fluoride tablets if the drinking water is not fluoridated and the topical application of fluoride solution to teeth.

The Pre-school medical officers always pay careful attention to the state of the child's teeth and advise the mother about diet. Referral to a dentist is made when necessary. In a few municipalities the local Council provides a dental service for the Kindergarten children, e.g. Melbourne City Council, Prahan and Heidelberg. The Director of Maternal, Infant and Pre-School Welfare welcomes the possibility of dental hygienists or dental nurses giving preventive dental treatment to all pre-school and school children. Pre-School teachers are trained at Melbourne Kindergarten Teachers' College. At the present time health education is included in the Early Childhood Development and Education lectures. It is part of the students' study of physical development, and preventive dental work is included with the physical

care of children.

Department of Education

Dental health is taught to children in primary school in Victoria and the curriculum is included in the 1958 Primary Health Syllabus.⁵⁹ The course is being revised at this time. The Visual Education Branch of the Education Department has several filmstrips on dental health that may be borrowed by teachers on application. The charts that many teachers use are generally obtained from various independent bodies concerned with dental health. In addition, the Australian Broadcasting Commission Health Broadcasts for Primary Schools which originate in N.S.W., usually deal with the problem of dental health. There is no in-service training for teachers in this field.

In the general introduction of the syllabus it is emphasised that health teaching should be widely interpreted and stresses the importance of class-room environment, co-operation of home and school and the role of the teacher as an example. While conforming the necessity that some knowledge is necessary the emphasis is placed on acquiring health habits in practice and relating this training to community health and the various agencies by which it is

conserved. What the child should do and what the child should know for dental health is set out Grade by Grade together with information for teachers.

Teacher Training Colleges

Monash Teachers' College and Secondary Teachers' College,
Parkville.

These two colleges are preparing teachers for secondary schools where health education is not a subject and consequently it is not dealt with in Teachers' Colleges.

Burwood Teachers' College

Students at this college take Health Education with Physical Education, as a major (3 year) sub-major (2 year) or minor (1 year) study. Therefore, amount of time allocated to Dental Health varies. With Health Education as a major there is more time for in-depth study. A student who majors in Health & Physical education will have a total of 26 lectures in Health Education over a three year period - one or two of these will have been on Dental Health. The lectures are given by the College Medical Officers and

Physical Education Staff. The context of the dental lectures are:-

Attitudes to Dental Health

Dental Health in Australia at present

Cost of dental care - need for Dental Health Insurance

Development of teeth-intrauterine-diet and pregnancy

Eruption of primary and secondary dentition

Importance of teeth in the assessment of growth and development

Dental care - value of prevention of disease

Nutrition and dental health - Influence of school tuck shop

Orthodontics - importance of

Services available (i.e.) School dental service.

Limitations of.

Importance of dental health to school teachers.

How to teach dental health to children

Attitudes of children towards the dentist

Role of fluoride in Preventive Dentistry.

Aids used for teaching include pamphlets, posters and film from the Oral Hygiene Service, 1 Macquarie Street, Sydney, leaflets on fluoridation from the Victorian Department of Health, pamphlets from the A.D.A., a visit from the D.H.E.

& R.F. Puppet Theatre, film from the State Film Service and articles from the Medical Journal of Australia, British Medical Journal and Institute of Health Education Journal U.K.

The College would like more visual aids in the form of slides and models of teeth to demonstrate orthodontic conditions. The Oral Hygiene Service has been found to be most helpful and the College considers their posters are excellent. The posters are available from the visual aids room for students to take out on teaching rounds.

Frankston Teachers' College

Students doing Part I of the course, Physical Education and Health, receive one lecture (50 min.) on Nutrition and Dental Health. In this they cover the basic causes of dental decay and discuss the ways in which the teacher can influence the children to care for their teeth. It also includes a discussion on the role and operation of the school tuck-shop. They may pursue the subject further themselves in assignments where they study in greater depth, or may design a teaching unit suitable for use through primary grades. Pamphlets from the Dental Health Education Committee of the A.D.A. and the Queensland Health Education Council are

available through the Medical Officer, as ar posters for use on teaching rounds. This year the Good Teeth Puppet Theatre performed at the College for local children and was seen by most of the students.

Coburg Teachers' College

Health Education is an integral part of the subject, Health and Physical Education and dental health is included as being part of the total health concept. Studies include Human Anatomy and Physiology where the teeth are taken as an integral part of the digestive system, principles and methods of Health Education and causes, prevention, recognition and management of diseases and defects of various organs including teeth. Students may elect to study in depth one of the topics covered by the group just mentioned. A topic in the field of dental health could be: "An evaluation of the use of audio visual aids in teaching dental health concepts."

Other resources available to assist Staff include:

School Medical Service, Victorian Department of Health, Australian Dental Association (Victorian Branch). This association arranges for practising dentists to visit the College and speak to students.

Duplicated material outlining objectives of dental health; simple experiments and demonstrations to be used in the classroom situation, and advice and information concerning the establishment of school tuckshops, is issued to students. The Puppet Theatre from the D.H.E. & R.F. (University of Sydney) visited the College in March 1971. The visit was arranged by the A.D.A. (Victorian Branch). Appropriate 16mm. colour movies, filmstrips and slides, models and charts.

Australian Dental Association (Victorian Branch)

The Dental Health Education Committee feels that the pre-school level is the best possible one for producing a worthwhile impact, particularly at the Infant Welfare Centres, when a mother can be given a positive directive at a time when she is most receptive to ideas that will enable her to develop favourable dental health attitudes, towards her children.

In the first six months of 1971 the Committee has spent \$1,800 in producing pamphlets directed towards educating mothers, and the great majority of these have been, or will

be issued to the Health Department for distribution to Infant Welfare Centres. A comparable sum is required to finance posters for kindergartens, and this is a prime priority.

As a supportive measure, the Committee feels that lectures should be arranged at group levels for Infant Welfare Sisters and Directors of Kindergartens and assistance and co-operation is required to arrange these. This has been given in the past but recently positive encouragement at Directorial level has not been forthcoming. Lectures require no financial commitment, as it is accepted as a duty by members of the committee, however it is felt that a more positive approach by Infant Welfare Sisters and Kindergarten Directors would be of value and encouraged.

It is felt that finance should be made available for a permanent dental health instructor to be employed by the Committee similar to dental health educators from D.H.E. & R.F. University of Sydney or by the School Dental Service in Victoria as it is felt that Dental Health Education should be one of the primary responsibilities of that service. A recent visit to Victoria by the Good Teeth Puppet Theatre of the D.H.E. & R.F. was considered to be a great success.

A long term project currently being pursued is the production of dental health education material for all school teachers at primary school level as it is done in U.S.A. and in N.S.W. by the D.H.E. & R.F. This will require extensive financial support of the order never before envisaged in Victoria but certainly the area is one in which improvement and guidance are sadly needed. This will need to be considered by both Health and Education Departments in the future.

Lectures are given to as many of the Teachers' Training Colleges as possible, to provide primary school teachers with knowledge to enable them to help children.

At present the office of the Minister for Education is considering conducting a course of education for school tuckshop supervisors, as is officially conducted by Health or Education Departments in South and West Australia. Material from these states is currently in the hands of the Minister of Education.

The profession is kept informed by lectures from committee members to suburban and country groups, of new developments in the Dental Health Education field. A library of slides and suitable lecture notes are available from the A.D.A. so that dentists may use them when called upon to lecture.

School of Dental Science. University of Melbourne

The Faculty of Dentistry does not teach Dental Health Education as a specific subject in its undergraduate course but rather tries to educate and motivate the students in this field throughout his whole course particularly in the dentist/patient relationship. It is hoped that students will have the ability to provide scientific knowledge, sound value judgements and motivation for those engaged or interested in public dental health education. The concept that the dentist is the mainspring from which the public and the politician should be informed on dental health matters is encouraged and the student is helped to be aware of his responsibilities in this field. It is regretted that because of present legislation, students receive no experience in working with auxiliary personnel who might go to form a dental health team, nor do they do any field work in public dental health education. There is some behavioural science content in the course which together with seminars, tutorials and clinical teaching experience go to make up the Dental Health Education Component. Reference books used are DUNNING²¹ and YOUNG & STRIFFLER.

Industrial and Friendly Society Clinics Dental Clinics

Reports on dental health education were received from two organisations. There are three Friendly Society Clinics in Melbourne, one of these, A.N.A. Dental Surgeries, reports that they are following out the principles of preventive dentistry as set out in the latest publication issued by the D.H.E. & R.F.¹³ of Sydney University using multiple stannous fluoride therapy including personalised oral hygiene instruction.

The Medical Officer of the Department of Occupational Health at The Trade Union Clinic and Research Center Limited at Footscray regretted that the dental clinic at their organisation no longer functioned. He feels that the whole situation in Victoria is appalling as far as Dental Health Education is concerned and quotes the example of a school teacher who teaches mainly migrant children, who wrote to the Department of Dentistry at Melbourne University and to the Melbourne Dental Hospital requesting material for teaching Dental Health. He received several large posters and some booklets printed in England by the Ministry of Health which apparently were not considered satisfactory to him.

Queensland:

The most comprehensive and widespread government dental service in Australia exists in this state. With a dentist/patient ratio of 1:2,782,¹⁹ 137 dentists are currently engaged in all State-provided dental services, 433 are in private practice and 20 engaged in University teaching.

Department of Health - Dental Services

These services, under the control of the Director of Dental Services (responsible to the Director-General of Health and Medical Services) consist of three metropolitan dental hospitals (including the children's Dental Hospital), 46 Base Dental Clinics, 39 Itinerant Clinics (attached to hospitals), 49 other dental centres including missions, aboriginal settlements, Bush Nursing Centres, Australian Inland Mission hostels and welfare institutions, 3 part-time dental clinics attached to hospitals and serviced by private dentists and 1 aboriginal settlement serviced by a private dentist. Only persons who satisfy a means test are normally eligible to attend any of the above institutions and clinics for dental treatment. There is a maximum fee which can be charged but there is a provision to scale it down to as low as zero, depending on assessed capacity to pay. There are special arrangements operating in respect

of people living in areas where there is no private dentist.

The School Dental Services operate in rural areas of the state outside a 15 mile radius of established clinics.

Children's parents are advised of the services offering, including details of income requirements. However, in areas where there is no private dentist, all children can use the service. Although not all parents request that their children be treated, the school dental service has the right to, and does, examine each child dentally when visiting a school.

The Department gives active encouragement to the efforts of individual Government employed dentists as regards Dental Health Education. They do not, however, provide a formal Post Graduate education programme for dentists in this field. It acts in collaboration with the Queensland Health Education Council in the provision of printed material.

Children's Dental Hospital

Dental Health Education activities at the children's Dental Hospital are classified into two categories, active and passive. The active category includes the periodic presentation of Dental Health films in the theatrette at the

Hospital. Programmes are arranged for an afternoon some days in advance, and the patients and parents, whose appointments are appropriate, are invited, in writing, to attend with such children as they see fit to bring along. The films are supplied mainly by the Queensland Health Education Council which has a lending service. They are such as should appeal to both patient and parent, both in content and manner of presentation. One particular film, "Let's Keep Our Teeth" seems very appropriate from the point of view of the practising dentist (See Appendix 1.).

It is felt that there is no substitute for chairside discussions and demonstrations. These give the parent and patients the opportunity to ask questions and raise objections. Toothbrush techniques can be demonstrated by means of models and toothbrushes. The application of a disclosing solution shows dramatically the need for toothbrushing technique. The patient is invited to try his or her own procedures and the results demonstrated.

Literature from several sources including the Queensland Health Education Council is available to any interested enquirer and is found to be useful in conjunction with oral hygiene instruction. It is also felt to be useful in such matters as fluoridation of water supplies which are not

easily demonstrated. A series of posters are exhibited in waiting rooms. These are of a design calculated to appeal to people of all ages, and to drive home some important points. Passive Category - Patients and parents are educated by encouraging the early attendance of young children. This is felt to have the advantage that the patient becomes accustomed to being treated or handled by a stranger during that period of innocence, in which the child is often susceptible to kindness, and is the better equipped to adjust to the inevitable disillusionment experienced in later years. Further advantages are preventive procedures which can be initiated to prevent early malocclusion and caries. Topical fluoride is available to all patients.

Since Dentistry does not exist per se, but is closely related to other disciplines, involved in human welfare, orientation courses are arranged so that students may more readily appreciate the relationship of Dentistry to other problems. In 1971 the first year class of Speech Therapy students from the University of Queensland has visited the Hospital and has been introduced to orthodontic and cleft palate problems. A class of qualified nurses organised by the Division of Maternal and Child Welfare visited also.

Queensland Health Education Council

The Council is constituted under the Health Acts of 1945 and commenced active operations in 1947. It has always included dental health education in its total programme and acts in collaboration with the Queensland Branch of the Australian Dental Association as well as with the Dental College, University of Queensland; the State Dental Health Services and the School Dental Health Services.

Part of its initial programme - the one which is still in existence - is the provision of Dental Health Education lessons as part of the Health Education Syllabus for primary schools. This Syllabus calls for one period for Health Education per week for all grades of primary schools. Lessons for this series are incorporated in a manual for use of teachers, which is prepared by the Council. There is also a Handbook for Teachers for Grade 8 in Secondary Schools.⁶³ The Council has always had available a number of publications on dental health which are readily available to members of the dental professions, the Dental Services and the general public. Also it has amongst its library of 1200 educational 16mm. films, about 32 films on dental health. These are used in schools and by dentists.

The Council has also been active in the promotion of fluoridation, in collaboration with the Department of Health and the Fluoridation Committee of the Queensland Branch of the A.D.A.

At the present moment, there is an Ad Hoc Advisory Committee on Dental Health under the auspices of the Council to which all the bodies previously nominated have representations. The present task of this Committee is revising all dental publications and its particular aim is to prepare publications which could be used as pamphlets and teaching aids by dentists as part of their treatment of patients.⁵

The Council is also involved in the instruction of dental students in health education philosophies and procedures.

Two of the 18 members of the Council are dentists. One is the representative of the A.D.A. The other is a member of the teaching faculty of the Dental College.

Teachers' Training College

There is no time allocation for Health Education specifically in the College programme and it is fitted into a small unit of work which for secondary students is an elective

and for primary students is short and inadequate. A Handbook for Teachers,¹⁷ Health Education for Secondary Schools, Grade 8, gives the total amount of dental information available to Secondary students. The staff work with this publication with their Health Education Classes for Secondary teacher trainees and also have access to teaching aids from the Queensland Health Education Council. Primary student teachers use a manual for Health, which has a continuing section on teeth and is graded into Lower, Middle and Upper Primary grades. These books are available from the Queensland Health Education Council. The following are the teaching units listed in these chapters:-

Lower Primary School

- First Teeth : Their Foundation
- Cleaning Teeth : Use of Toothbrush
- Strong Teeth : Eating Crunchy Foods
- Caring for Teeth : Dentist is a Friend

Middle Primary School

- Our Teeth : Why we Have Two Sets
- Our Teeth : What Foods Help Our Teeth
- Our Teeth : What Work They Do

Upper Primary School

- Care of Teeth : Good Dental Habits
- Care of Teeth : Tooth Decay and Gum Disease

Kindergarten Teachers' College

First year students, as part of their Education "B" course, are given lectures in Physiology which are expected to cover all aspects of personal hygiene. The Pre-School Advisory Staff of the Creche and Kindergarten Association inform the Australian Dental Association (Queensland Branch) of the address of all affiliated kindergartens in Queensland and the Association forwards leaflets and posters to the kindergartens and also gives lectures on dental health on request.

Department of Health - General Nursing Training

Except for dental care in connection with total patient care, there is no specific dental education content in the general nursing curriculum. The Department is aware that pamphlets produced by the Queensland Health Education Council are available.

Maternal and Child Welfare

This department works closely with the Queensland Health Education Council.

Australian Dental Association - Queensland Branch

The present A.D.A. policy re dental health education is simply to further it in any way possible. The Dental Health Education Committee is a sub-committee of State Council appointed by the State President. Currently it has eight members. Meetings are held monthly and all aspects of dental health education are discussed. The following is a summary of the committee's activities in the past two years:-

1. Liaison with the Queensland Health Education Council with respect to all Dental Health Education matters which the Council becomes involved in.
2. Tuck-shops. Menus suggested and a school lunch recipe competition conducted through the Courier-Mail, Brisbane.
3. Mouthguards. A campaign to encourage greater use of mouthguards was held last year and is continuing in 1971.
4. Preventive Dentistry Seminar. An A.D.A. sponsored seminar was planned to be held in Brisbane in July 1971.
5. Kindergarten Visits. The Committee organises yearly visits by dentists to kindergartens in South-east

Queensland. The dentists are encouraged to give a dental health "talk" to the children. Tooth-brushing instruction is given and free toothbrushes and fluoride tablets are distributed.

6. The Committee considers and answers all requests for talks, to lay audiences or requests for dental health information, pamphlets, posters, etc.
7. Apex National Dental Health Week 1969.³² Although organisation of this exercise resulted in insufficient time for proper preparation, requests by Apex Clubs for help by dentists were met almost without exception.
8. Liaison with all other health and allied professions in Queensland.
9. Regular "dentist education" through the publicising of articles in the Queensland branch monthly Newsletter.
10. Mass Media. Press releases are issued when considered relevant. Committee involvement in "Romper Room" and a Channel 0 T.V. "Kindy" programme.
11. A review of existing dental health films held by the Queensland Health Education Council and the rating of them for dentists is to be carried out shortly.

A recent investigation⁵⁹ of the Health Education Curriculum in Secondary Schools in Queensland by the Staff Inspector, Physical Education, on attitudes of students, teachers,

parents and health educators, to what should be the content of a health education course at secondary level concluded that students are most interested in learning about the attitudes, behaviours and processes involved in the fulfilment of their role as family makers. While medical practitioners and parents ranked this concept third and fifth respectively, health educators ranked it second lowest. Dental care was ranked high by all groups. The evidence also suggested that course content related to structure and functioning of the individual should be sufficient, to provide an elementary background for an understanding of behavioural outcomes, and that scientific knowledge as such should not be studied in depth in health education courses. It was concluded that there is no need for differentiation in the general pattern of content in the health education curriculum for boys and girls. Dental care had been rated slightly higher by girls.

South Australia:

In South Australia the dentist/population ratio is 1:4,167¹⁹ and similarly to Victoria, Western Australia and Tasmania dentists are particularly scarce outside metropolitan areas where the ratio is about 1:5,000. However, these metropolitan/non-metropolitan ratios, although certainly establishing that access to dental treatment is easier in the capitals than elsewhere, do not necessarily measure the relative availability of dental services in the two areas.

Of a total of 262 dentists in the state, 219 are in private practice, 17 are employed in hospitals and 18 in the school dental service. The Adelaide Dental Hospital is a teaching hospital and a department of the Royal Adelaide Hospital. It renders service principally to low income groups. Other responsibilities include treatment for children at welfare and other institutions, patients in mental institutions, gaols and geriatric institutions. The school dental service provides treatment for primary school children in country areas where no private dental service is available using mainly mobile dental caravans. There are now also 28 dental therapists employed in the service.

Adelaide water supply was fluoridated at the beginning of 1971.

Royal Adelaide Hospital - Dental Department

The whole of the endeavours in Dental Health Education in the Dental Department rests upon the personal efforts of the staff. Toothbrushes and toothpaste are provided for all indigent people and literature on care of teeth and diet are on display and are given to patients. Provision has been made for the use of hygienists, but they cannot be employed until a new Act permits their registration. No treatment of patients is undertaken until instruction in oral hygiene is given and a propylaxis of the mouth carried out.

Royal Adelaide Hospital - Training for Dental Assistants

The Royal Adelaide Hospital has a training school for the Dental Assistant which is completely separate from the General School of Nursing. The training of the Dental Assistant is of 10 months duration at the end of which there is a final examination. The successful student is then eligible for enrolment with the Nurses Board of South Australia. One whole unit in the teaching programme for the Dental Assistant deals with Preventive Dentistry. Throughout the whole of the training programme the trainee is made aware of the necessity for Preventive Dental Health

Education in the community. The student Dental Assistant has on occasions been rostered for tuck shop duty at various schools in the city and suburbs. Seminars for the Dental Assistant are arranged including buffet luncheons, serving only the suggested type of foods advocated in a Dental Health Diet. Latest information of Community Dental Health is available to the Training School through the Reader in Preventive Dentistry at the University of Adelaide. Journals and as many other publications that are available are made use of by the school.

The Tutor Sister at the school expressed the opinion that she would like to see a uniformity in the length of training of dental assistants in each state in Australia and also a uniformity of teaching material available. She feels that at present there must be a variation in the depth and quality of the Dental Health Education which students receive and comments that as in Medicine the Dental Assistant like the General Nurse is the most likely person in the health team to get the message of Dental Health Education across to the Community.

During training discussions on human behaviour are held and instruction given in how to advise patients in oral hygiene and preventive measures. There is also a discussion on

communal health and 3 lectures on nutrition.

Hospitals Department - South Australia

The Dental Health coverage in the General Curriculum of training of general nurses has recently been revised in South Australia. Dental Health is not taught specifically but is included in lectures on Anatomy and Physiology, personal hygiene, patient hygiene, nutrition and the positive approach to health.

Anatomy & Physiology

Developmental Anatomy

Study of oral cavity and teeth

Endocrine integration

Nutrition

Nutritional requirements related to dental
development for expectant mothers -

Infants, Children, Adolescents, Adults

Fundamentals of Nursing

Care of the mouth and teeth in health and disease.

(i.e.) dental, oral care and cleanliness

Study of Disease to include Mouth and Teeth.

Sociology

Personal and Community considerations in dental
health.

Department of Public Health - School Health Branch
Dental Service

In this department there is a Superintendent of School Dental services and also a Senior Dental Officer (Research) who spends a major component of his time in areas related to Dental Health Education.

The staff of the department is impressed by the need for dental health education and the role that they must play. A programme of dental health education has been designed, which is considered appropriate in form. For maximum effect, it is felt by the department, that the programme should be larger and more intense.

Dental health education is considered a major responsibility of dental therapists and receives an appropriate emphasis in their undergraduate course. Lectures provide the necessary facts and group discussions and projects are used to engender interest and initiative. Students provide 7 lessons to groups of six children. Subsequent to a series of lectures and practicals on teaching techniques provided by the Adelaide Teachers' College, students give approximately 10 lessons in the classrooms of primary schools. All student therapists participate in at least one address to a

parents' association. A number of excursions to child guidance clinics and homes for handicapped children encourage an empathy for children. Students provide chairside education to all children using visual aids which they prepare. Older children complete questionnaires on attitudes and behaviour, which are used by the therapists in chairside education. Periodically, children are quizzed by a member of staff, and the ability of the therapist to "get the message across" is evaluated.

After graduation, therapists work under the direction of regional dental officers, and perform the dental health education considered appropriate by these dentists. Each clinic contains sets of slides and educational material to forward to parents. A programme of dental health education incorporating chairside education and lessons to small groups of children and in the classroom is advised, with appropriate themes for each age group. This programme may be modified by the regional dentist in any way that he considers is appropriate to his area.

Questionnaires completed by parents and clinical records are used in the construction of reports on the dental situation, which are forwarded to the clinics, headmasters and parents' associations. Second year high school students will be

surveyed and the dental health of children treated by the Dental Service of the School Health Branch in primary school will be compared with the remainder. Reports will be sent to the clinics, headmasters and parents' association.

Recently a controlled brushing programme commenced in an Adelaide School to allow evaluation of the short and long term effects of intensive instruction in tooth brushing.

An education and research unit in the School Dental Service is responsible for the evaluation of treatment and preventive programmes, the provision of dental health education in the community and the production of visual aids. A programme aimed at improving canteen menus has led to a considerable change for the better. The Audio-visual section of the Education Department is improving its stock of dental visual aids. Talks have been given to groups of canteen supervisors, parents' associations, school committees, dental students and student social workers and teachers. Data obtained from surveys are used to demonstrate the gravity of the dental problem and the inability of financially deprived sectors of the community to tackle the problem.

The Kindergarten Union of South Australia, Inc.

This organisation for many years has had the voluntary services of many South Australian dentists who visit the Kindergarten usually twice each year for each group of children, morning and afternoon groups, to check the children's teeth. They usually use the broad classifications of (1) "Needing urgent treatment"; (2) "Needing treatment" and (3) "No attention appears needed, but you are asked to take your child to your own dentist for a more thorough check".

A number of dentists attended parent meetings in the evenings to discuss oral hygiene and tooth care, sometimes using films or slides in conjunction with their talks. This helped to re-inforce the value of dental inspection and dietary needs for tooth care.

In 1970, the Kindergarten Union, the Australian Dental Association (South Australian Branch) and the School of Dentistry co-operated to launch a computer survey of the teeth of pre-school children before the addition of fluoride to the water supply so as to be able to compare pre and post fluoridation data.

The children are provided with a take home leaflet following a dental examination, the Kindergarten Director completes a form noting briefly the recommendations for treatment by the dentist and stating whether or not the dentist has spoken to the Mothers' Club. There is also a dentists' record sheet which contains questions to be asked for the mothers just prior to the dental inspections. Some mothers are expressing anxiety at being asked the same questions two and three times. The purpose was to see if family patterns changed, but it is now recommended that Directors use their discretion as to the way this information is requested, especially for children who have an eighteen month stay at Kindergarten. Many children in new housing areas have only six months at Kindergarten although a full year is considered preferable wherever possible.

In 1970 there were 134 Kindergartens in operation - of 9,387 children enrolled 7,679 were examined by the team of dentists during 120 examinations. The Kindergarten Union is very grateful to the dental representative on the Pre-School Council for the time and effort he and his staff gave to the dental examination scheme and to the Department of Preventive Dentistry at the University of Adelaide for its interest in promoting dental care amongst pre-school children and their families.

Kindergarten Teachers' College

Dental Health is included as part of the Health Education taken in the second year of the course. It is presented in a two hour session by the Professor of Dentistry, University of Adelaide. In the section of the course dealing with nutrition, attention is given to dental health and emphasis is placed on the need for appropriate parent education, and in this connection, student attention is drawn to pamphlets issued by the Health Department Dental Service and Parents' News Sheets published by the Australian Pre-School Association which include those on care of teeth. Students are aware of the visits to kindergartens by dentists.

Education Department

Primary Education:

The Health Course for Primary Schools is divided into eight main topics for each grade - general health, food, anatomy and physiology, teeth, safety first, pests and posture. Activities are suggested so that the subject may be treated in as practical way as possible. A teachers' handbook, "Health Education in Primary Schools - Notes for Teachers" gives background information on dental health. Teaching aids for dental health are not provided by the Education Department. However, brochures and posters may be obtained

by Head Masters on application to the School Dental Health Services.

Teacher Training Colleges

Adelaide Teachers' College:

Dental Health is covered in one lecture given by a member of the staff of the School Dental Health Service to students studying Health Education. Health Education no longer exists as a separate unit - it is incorporated within Environmental Studies and because the course is run on seminar lines where students elect the topic there is no guarantee that Dental Health will be covered at all. Health Education as such is available only to part-time internal or external correspondence students who need the subject under the old Diploma regulations.

Salisbury Teachers' College

The course in Health Education (121) which is compulsory for all students in the College, involves one lecture and one seminar per week, over a period of 13 weeks (one semester). Within this course one lecture and one seminar are devoted to dental health education. The lecture is given by the Principal Dental Officer of the Department of Public Health

and the follow-up seminar is taken by staff in the Physical Education Department.

Western Teachers' College

The course in Health Education is fairly compressed and advantage is taken of expert lectures from a number of fields. A dentist from the School Dental Service takes over the section dealing with dental health and the College leaves the format to him. College Staff who have sat in, consider he is an expert in his field.

The University of Adelaide - Faculty of Dentistry

The formal courses in dental health education in this School are the responsibility of the Department of Dental Health. Formal lectures are given by the Reader in Preventive Dentistry. Members of staff who teach orthodontics and periodontics stress prevention in tutorials.

In commencement term the third year students are given one lecture on dental health education in conjunction with the occlusion course. Later in third term, when the treatment of patients is commenced, the students attend a course of weekly lectures related to dental health education and the

preventive measures which form a routine part of clinical therapy. During fourth year a lecture programme which runs once a week through commencement, first and second terms, includes more detailed information on fluoride therapy and oral hygiene. Techniques of communicating information are stressed. In fifth year the students meet once a week to discuss public health dentistry and related problems. They undertake a group research project and spend time observing the methods of training and operative techniques carried out by students at the School for Dental Therapists.

Dental Health Education forms a routine part of dental care for every patient and students have the opportunity of observing how the subject is handled by tutors. An attempt is made also to involve dental students personally in dental health education projects. For instance, all students, apart from first year, recently participated in a sugar intake study which analysed the type of sugar eaten and the time of ingestion.⁵¹ The purpose of the study was to score the sugar intake in terms of its most destructive effects upon the teeth.

In addition, fourth and fifth year students are rostered in the primary examining room for clinical tutorials with the DEan of the Dental Faculty who is also head of the

Department of Dental Health, and while these tutorials carry the official designation of "Oral diagnosis" a considerable proportion of the time is related to dental health education.

The Dental School possesses a loop projector for 8mm. film which it is intended should be used for patient dental health education. Unfortunately the number of loop films available for this purpose is limited and therefore the project has never come to fruition. The hope that it will come to provision has not been abandoned.

On a number of occasions preliminary discussions have taken place concerning the possibility of an organised project on dental health education in which the collaboration of the teaching training colleges in Adelaide would be sought.

West Australia

West Australia has a dentist/patient ratio of 1:3,065.

The Perth Dental Hospital working in conjunction with the University dental faculty, provides treatment for patients on a means test basis. In addition, three suburban, three country and three mobile clinics have been established.

There are also out-station units which service general hospitals and government institutions and an aerodont service for the outback which operates in conjunction with the Royal Flying Doctor Service. There are 185 dentists in private practice in W.A., 55 working in hospitals, 19 in State Government Departments, and 9 in University teaching.¹⁹

In 1968 a Principal Dental Officer was appointed who is responsible to the Commissioner of Public Health and through him to the Hon. Minister for Health. Assisting the Principal Dental Officer is an Assistant Principal Dental Officer who is responsible for services within the Department of Dental Services and a Dental Health Education Officer who is a dentist and who has the responsibility of promoting dental health education at the community level.

West Australia also has a State Health Education Council. A school for dental therapists enrolled its first students in the beginning of 1971. The majority of the state water

supplies were fluoridated in 1968.

Department of Public Health - Dental Health Service

This department operates the School Dental Services and provides dental services to institutions. The school dental service operates mainly in rural areas using mobile dental units and three fixed dental clinics in the North-West.

In rural areas where there is a dentist, school children and pensioners, subject to a means test, can receive dental treatment from their local dentist, who is re-imbursed by the Department of Health. Dental Officers working in the North-West of the state provide treatment for the whole population, white adults pay fees.

The Dental Health Education Officer sees his function as development of a preventive approach to dental practice in all the Service's Dental Clinics, including extra moral activities such as clinic dentists assisting in school programmes and communicating with all kinds of outside groups in an effort to get the community to involve itself in its own problem. It is felt the first step is recognition of the need for regular inservice instruction and exchange of ideas amongst staff dentists. However pressure of demands for clinical treatment and equipment have not

allowed the complete implementation of this plan. One dentist working in the South-West area of the state is involved almost wholly in Dental Health Education and it is hoped to have a New Zealand trained dental nurse working in the Metropolitan area. The Dental Health Education Officer is hoping to resume an advisory programme for school teachers in primary schools in the form of in-service training in Dental Health by a dentist experienced in D.H.E. which was begun during 1970 and lapsed. In this way contact with schools is established and research into D.H.E. possible.

A programme is being prepared by the D.H.E. officer as a guide to staff members of the Department who may be engaged in D.H.E. It involves a three directional approach - pupils, teachers and parents. The standard of the school canteen is felt to be a reflection of parent/teacher attitude, so the approach to canteen improvement is based on well-known principles of the need for attitude change before a behaviour change is likely. School canteens are being assessed into A (lolly type), B (average) and C (Nutritious and non-carious foods only) groups. These will be co-related with D.M.F. rates and will be used for facts and figures for P & C groups at the schools.

Recently a large number of primary school children have had

annual dental examinations at school by the Dental Health Service using dentists working on a sessional basis. It is felt that school inspections have the advantage of contact with teachers and entry into the school situation, however it appears that many parents seem to think that if the child is examined at school it is unnecessary to attend the family dentist regularly. Future policy will probably concentrate effort on schools that ask for help (advisory teaching visits, canteens, P & C or clinical examinations) rather than trying to examine each child as this is being done to some extent by school medical officers.

During 1970 the D.H.E. officer was invited to lecture to teachers at primary Teacher Training Colleges and this was extended to secondary Training Colleges in 1971, so he was able to make contact with all teachers leaving the colleges. Lectures are also given to trainee General Nurses at the main teaching hospitals, to trainee Kindergarten teachers, Mothercraft Nurses and Dental Assistants⁶⁰ as part of their training courses. The aim here is to identify opinion forming groups and give them correct information and thereby create informed opinion leadership. The Dental Therapy School will provide another group capable of influencing behaviour of people in dental matters. The D.H.E. officer has had a weekly session with them during 1971 and hopes to

involve them in some field work during 1972. The contributions made by the Health Education Council in the way of journalistic ability and contacts is felt to be essential to a successful Dental Health Education programme.

The Dental Health Service has available as teaching aids for staff, good models, most material from D.H.E. & R.F., University of Sydney and the Oral Hygiene Service, and a publication "Let's Keep Our Teeth", by the Health Education Council of W.A. which is distributed free.²⁹ School teachers are encouraged to seek material from their own Teaching Aids and Audio-Visual Aids Department in the hope that the demand will stimulate a supply. The Education Department has recently, on the advice of the Dental Health Service, produced 2,500 copies of a teaching chart showing three clocks, to illustrate the important part in between meal snacks play in the problem of dental caries. The D.H.E. officer is arranging to talk with groups of teachers who come into formal in-service courses at the teaching aids centre. It is felt that the formal syllabus is not as important as the teacher's interest and it has been the experience of this Department in the past that this interest has been able to be promoted by personal contact. The aim is to apply the learning process to teaching dental health.

The Health Education Council of Western Australia

This organisation has a full time Executive Director and several health educators working in fields of health. It feels that the principle of developing early, a child's understanding of what he needs to do to keep his teeth cannot be questioned, but it is reluctant to isolate dental health from a broad pattern of social issues related to general health in the modern community. A child's ability to care for his teeth, is felt to be very much dependent on his ability to have effective relationships with himself and perhaps with his parents, siblings and other people and therefore dental health is just as much an issue of human relationships as drug taking or smoking. It is felt that dental diseases should fit somewhere in a broad spectrum of human relationships and that D.H.E. in the past has failed because we have concentrated on decay, attempts to produce better teeth have been presented for the most part as attempts to avoid decay.

School of Dental Therapists

This school which is associated with the Department of Medical Technology at the Western Australian Institute of Technology enrolled its first 12 students for a 2 year course at the

beginning of 1971.

A basic aim in the training is to motivate the students into believing that attractive, healthy teeth are important, so that they in turn can convey this attitude to their patients and to the members of the public with whom they make contact. During their first year the students have one lecture each week on Preventive Dentistry. Quite considerable detail is given to diet, oral hygiene and fluoride. As well as formal lectures the girls do a certain amount of field work with interested groups, in schools and at the Children's Hospital.

To help them to be dental health educators there is included in the course a unit of English which runs for all of first year, and a unit in Psychology which runs through first and second year. The purpose of these subjects is to broaden their horizons and also help them to both understand and communicate with people.

At present it is envisaged that the dental therapist will work within the Dental Health Service.

The University of Western Australia - Dental School

Dental Health Education is introduced briefly in Second Year during the Preliminary Operative Course. The lectures and laboratory exercises cover the prevalence of dental disease in the community, the recognised preventive measures and community education. In Third Year as part of 12 lectures in Preventive Dentistry, 1 lecture re-enforces the Second Year dental health education lectures. On entering the clinic for the first time students are expected to practise the principles of Preventive Dentistry and Dental Health Education. In the Fifth Year of the course there are 5 two-hour seminars in Dental Public Health. These seminars embrace Prevention, Dental Health Education, Epidemiology and investigation of community needs. As the dental curriculum is at present under review it is anticipated that more extensive courses in Preventive and Public Health Dentistry will be available, besides actual participation in community projects.

It is hoped that in the not too far distant future there will be an appointment of an Associate-Professor in Preventive Dentistry which could be a joint appointment between the University and the State Department of Health. If and when this occurs it would give considerable impetus to the undergraduate course and would allow some post graduate education

in this field.

Education Department

The Education Department in 1970 introduced into some primary schools as a pilot study a new experimental syllabus on Health Education.²² In the introduction to this syllabus it is noted that Health Education has failed to achieve the desirable objectives. It comments that the acquisition of anatomical facts does not result in the child automatically developing desirable practices and suggests that for effective health education a variety of learning experiences should be used such as:-

1. Class Discussion or Teacher-Student Discussion
2. Student-Group discussion
3. Visits from health personnel within the community.
4. Films and Filmstrips
5. Creative activities.

Evaluation, apart from measuring health knowledge, is considered essential, and should be based on the particular objectives relevant to the section of the course being dealt with. A considerable amount of the Oral Health content

for Junior, Middle and Upper Primary grades consists of "do" and "don't" facts but would be an accurate basis for a teacher to use to develop a desirable programme of health attitudes and practices.

Tasmania

Tasmania has a ratio of 1 dentist per 4,585 population. There is no dental school at the University but a School of Dental Nursing was established in 1966 based on the New Zealand system. By 1970 23 of these nurses had graduated from the 2 year course and were engaged in the school dental service. This service, inaugurated in 1907, is the main dental service provided by the Tasmanian Government. Available free to all school children, the service aims to examine every child each six months. In 1970 Tasmania also had 43 registered dental mechanics licensed to carry out certain clinical procedures associated with dental prostheses.

Department of Health Services - Dental Health Service

On graduation, School Dental Nurses are integrated into the School Dental Service of Tasmania. While no specific programme of Dental Health Education is carried out, this aspect of children's work is part of the day to day function, of both Dental Officers and Dental Nurses. Dental Nurses in particular, apart from instruction to individual patients at the chairside, address small groups and classes on this subject. Each nurse is expected to carry out two units of

Dental Health Education each month. One unit consists of a lesson to a group or class of about 30 minutes. They also address Parents and Friends Association whenever asked, or whenever there appears to be a need. The Senior Dental Officer of the Service is available to speak to parent groups or on radio or television.

During training, School Dental Nurses in the first year of their course attend lectures at the Hobart College of Art to assist them in preparing their own dental health posters and other visual aids. They are encouraged to use this material freely in their waiting rooms and their schools generally after graduation.

The syllabus of Dental Health Education in the second year of training provides for lectures on dental caries, emphasizing the chronic nature of the disease and its apathetic acceptance by the public generally. Classification of caries and the theories of its causation are discussed in some detail.

Benefits of fluoride are explained, and particular attention paid to the role of topical applications of Stannous Fluoride in Preventive Dentistry. Reference is also made to Calcium Sucrose Phosphate and its possibilities.

Probable and improbable methods of preventing tooth decay are discussed, and advantages and disadvantages of different toothbrushes and dentifrices are explained.

Emphasis is laid on the essential task of patient motivation.

"Battle-cries for freedom" - from decay:-

1. 3 good meals a day
2. Cut-out in between meal snacks - and particularly those containing Sucrose or Carbohydrate.
3. Finish meals with fruit or "detergent" food
4. Use toothbrush immediately after eating.
5. Have regular dental examinations.

Lectures and practical demonstrations are given in the use of flannel board and cut-out figures to illustrate dental health problems and propaganda. The senior students receive lectures at the Hobart Teachers' Training College in Teaching Practice, and each girl has the opportunity to take a class of school children on some aspect of dental health. Subsequently there is criticism and discussion of their performance by the Principal of the College, the teachers of the school and the students themselves.

For demonstration within the School, films, slides and film strips are used. These are available on request by the graduates in the field to assist them in putting over their subject.

Australian Dental Association (Tasmanian Branch)

The Tasmanian Branch of the Australian Dental Association at this time does not have any project in hand concerning Dental Health Education. Each individual practitioner carries out the normal chairside routines, but as an association there is no uniform policy.

Schools - Primary

The Tasmanian Education Department does not have a separate syllabus for health. It is incorporated into the Curriculum for Primary School Science in the section that deals with "Living Things". A handbook¹¹ gives some idea of the way in which dental health topics could be handled. Teachers are reminded that frequent direction is necessary to bring about desirable habits in teeth cleaning, general cleanliness and food habits. The Education Department recognises that the Department of Public Health make a very considerable contribution to the health welfare of pupils by periodic medical

examinations at schools and by the setting up of school dental clinics in larger towns and provision of mobile dental clinics for rural areas.

Schools - Secondary

In the secondary schools health education is included under Biology where it is pursued to some depth. During 1971 some pilot schools are trying out a new approach where instead of studying prescribed topics, it is left to the school to select areas of study that meet the students' needs and interests.⁵⁵

Hobart Teachers' Training College

Dental health is dealt with as a general topic within the content of Health Education during lectures on Nutrition, Diet (both personal and child-school areas) and lectures on various aspects of teaching health in infant and primary schools. There are no specific lectures on Dental Health alone.

Dental nurses from the School of Dental Nursing are given a short course in teaching methods employed in schools. Materials available and used in these lectures and by

students are:-

1. Teaching pictures and charts providing a story and questions related to the picture.
2. Strip films and booklets.
3. Dental Kit - "Teaching Dental Health" from Dental Health Education and Research Foundation, University of Sydney.
4. Roneod material in the form of stories and suggested topics and suggested projects.

Industrial Dental Clinics

Reports on dental health education programmes were received from two clinics in mining communities in Queenstown and Roseberry in the more rugged and isolated parts of Tasmania.

At one clinic the dental health education programme consists of:-

1. Oral hygiene instruction to every new patient using disclosing solution for plaque and demonstration toothbrushing technique in patient's own mouth.
2. Donation of multi-soft toothbrush, disclosing tablets and instruction in their use.

4. Prophylaxis using Cavitron and Stannous Fluoride prophylactic paste or polishing brushes and rubber cups, where indicated.
5. Attempts at motivation of patients - mainly by pointing out contra-indications of complete denture prostheses.
6. Re-instruction at future clinical appointments where warranted.

At the other clinic the dentist in charge regrets that very little dental health education has been done. He has co-operated with Apex and other service clubs in talks to parents and has been involved in discussions on diet and oral hygiene with them. In the clinic where about 75-80% of the population is seen it has been found that personal counselling in conjunction with a dental appointment appears to be more effective but there is great difficulty in evaluating, how effective. The Dentist in charge felt that much more extensive work in health education had been carried out in Papua-New Guinea when he had been working there as a dentist but he did not comment on its comparative effectiveness. The clinic uses some pamphlets for distribution to patients.

A.C.T. - Australian Capital Territory

Canberra, the National Capital has a very favourable dentist to population ratio - 1:1,810.¹⁹ In addition the child Dental Service, established in 1949, provides treatment for children in all infants' and primary schools. Training of dental therapists for the A.C.T. Child Dental Service began in Tasmania in 1968; five dental therapists were employed in this service in 1970 in addition to sixteen dentists.

The Child Dental Service which operates under the control of the Commonwealth Department of Health places an emphasis on the importance of dental health education as an integral part of its total programme. There is also however a recognition of the fact that the prevention, control or treatment of dental caries is a multi-faceted problem for which at this stage no single panacea is available.

Staff members associated with dental health education are aware that any involvement in a programme of this nature without

1. first stimulating a community demand for good dental health as being both a desirable and an integral part of general health,

2. involving patient and parents in the programme,
3. motivating both educators and educated,
4. using a consistent schedule of endeavour and being aware of its efficacy,
5. accepting the fact that the dietary habits of the community are not easily changed

is neither realistic or practical. The obvious complexity of the problem is acknowledged and therefore at no stage to date in the development of this service could it be said that here is the ultimate blue-print for a dental health education programme - it is a continuously reviewed and flexible concept.

The role of dentists in dental health education:

It is felt that the contribution made by dentists to the dental health education programme is a valuable one. As dental health educators they have an opportunity to educate, involve and recall patients at the chairside. There are also opportunities to communicate with parents either individually or collectively in school and community groups. Dentists are available in an advisory capacity, upon request, to school staff and school canteen administrators. Films, film strips, slides, models and other dental health education materials are available for use by dentists from the dental

section office and other supply sources.

In the main the dentists' approach is an individualistic one to this subject. Variations in pre-graduation, training and post graduation experience may be contributory factors towards this individualism.

The role of dental therapists in dental health education:

During their course of training at the School of Dental Nursing in Hobart, Tasmania dental therapists employed in the Child Dental Service attend formal lectures on dental health education. Practical demonstrations as to how this subject may be handled are also given and students undertake various projects in small groups of either 2 or 3. In-service training is given at the Teacher Training College with opportunities for practical teaching experience in primary schools. Observers from the Teacher Training College and the School of Dental Nursing later join in group discussions at which problems that have been encountered are aimed and constructive criticism and advice given. Students also attend the College of Art for a course in Art and Poster work. A dental health education workshop is held towards the end of the course - students are formed into groups of five and given projects to execute, e.g. to

produce songs or plays that may be acted by children, or a dice game with a dental health message. Advice from staff members is given concerning basic concepts only, originality and execution are left to students.

Upon the completion of training, dental therapists are employed in dental clinics associated with infant and primary schools in Canberra. Their dental health education programme is strengthened by their involvement within the school environment and by joining in school activities. Headmasters have been enthusiastic and co-operative. Dental therapists give children from Kindergarten to the end of primary school, lessons in dental health education. Approximately eight sessions are conducted by each therapist each month.

Dental health education displays are a regular feature in those schools where dental therapists are employed; children are often active participants in producing the material displayed.

Chairside demonstrations are given using models to stimulate involvement in the treatment given and to demonstrate effective methods of maintaining good oral hygiene.

Routine, random examination of the standard of oral hygiene of children treated in this service by dental therapists is made by senior dental officers in the department. Both dentists and dental therapists are available at all times for consultation with parents.

During the spring school vacation, 1970, dental therapists, under the direction of the Chief Dental Officer and a senior dentist held a dental health education workshop - some of the material produced was of a high standard. Much of this material was of a personal basis for use in waiting rooms and surgeries - wall posters and other "decoration", games such as snap-and-grab cards with dental motives. A few of these items have been printed and are available for use in all clinics to supplement the pamphlets obtained from various sources. It is the view of the Chief Dental Officer that the mass use of pamphlets should be rather restrained and used more as an adjunct to other more personal dental health teaching. One of the main purposes of the therapist workshop was to stimulate interest in the field of dental health education generally.

Each dental therapist has her own kit of Dental Health Education material supplied by both the training school in Hobart and the child Health Service in Canberra. This con-

sists of cyclostyled plays, stories, material for waiting room and surgery displays, flannelgraphs, models, competitions, activity and participation drawings and games. Films, film strips and slides considered suitable for use by dental therapists are also used by dental staff in the schools. The A.C.T. Dental Section is rapidly developing its own film library.

School teachers - their role in dental health education:

School teachers in the A.C.T. are in the main interested and most co-operative in this field. School dentists arrange for dental health education material to be made available to teachers where requested. Some teachers in charge of children in younger age groups are encouraging and supervising toothbrushing after lunch.

School Canteens:

The National Health & Medical Research Council's booklet "A Guide on School Tuck Shops" is distributed to school canteens where appropriate, and also advice is given to canteen organisers upon request. The Dietetic Association of the A.C.T. organised a seminar on Community Nutrition in March 1971. "Dental Caries and the School Canteen" was one

of the topics discussed. A further seminar is to be conducted by the Dietetic Association of the A.C.T. together with the Centre for Continuing Education in October 1971.

A.C.T. Health Services, Commonwealth Department of Health:

The A.C.T. Health Services has a Health Education section which is playing an active role in health education generally.

The first of a series of two Health Education seminars was held in February-March 1971 - the second series in July.

From the first series it was apparent that dental staff within the Department of Child Dental Services make a considerable contribution in a specific field of health education. Participants from this section expressed interest in further strengthening this role, with continuing reappraisal of requirements and assessment of the efficacy of existent methods of health education. The service feels that one other aspect of dental health education which is often overlooked is that the mere presence of a dental surgery in a school stimulates both children and teachers to be aware of dental health and dental care. Dental Health Education is integrated into the total programme of the Child Dental Service, Canberra, A.C.T. Dental therapists with their specialised training in this field have a considerable contribution

to make to the team. Finally it is recognised that the involvement of families and organised community groups in dental health education is necessary for success to be achieved.

A list of dental health items which are available to the service is listed by the A.C.T. Child Health Service and includes a film library resume which advises suitable films for a specific audience or group.

Australian Dental Association

Dentists in Canberra, A.C.T. who are members of the Australian Dental Association (A.D.A.) belong to the Southern Tablelands Division of the Australian Dental Association (N.S.W. Branch). This branch has a Dental Health Committee of the Association Council and details of the activities of this committee are given in the section of this review concerned with dental health activities in N.S.W.

Territory of Papua and New Guinea

One of the stated objectives of the Dental Health Service in Papua, New Guinea is a firm practice of effective dental health education routines within the Service and promotion of such practices outside the Service.

Both dental students and auxiliary students at the Port Moresby Dental College receive instruction in the principles of health education and their adaptation to the delivery of dental health education. This instruction is given by the Division of Health Education of the Department of Public Health. The Division of Health Education having the facilities and staff to produce teaching and visual aids material, liaises with all the Department's divisions through the District Health Education Officers. These District Health Education Officers - there are 18 attached to the 18 districts throughout Papua, New Guinea, assist the various community health divisions (malaria, tuberculosis, leprosy, dental, maternal and child health, and environmental health) with their health education activities in the field.

The Division of Health Education produces, in liaison with the Chief of Dental Services of the Department of Public Health, and Dental College Staff, dental health education

material, e.g. posters, visual teaching aids. These are pre-tested in the field, and if found suitable, are produced in quantity and distributed throughout the country for use by health education personnel as well as dental personnel, thus ensuring the promotion of dental and oral health throughout the whole Department and not just through the dental division.

The Chief of Dental Services feels that this overall approach to the specific problems of health education associated with dentistry, is a good one. It utilises the whole of the Department's resources and brings oral health firmly into the context of the promotion of health generally. A handbook¹⁸ for dental assistants on Dental Health Education gives information on dental disease, dental health education principles, diet and suggested dental health education activities. It has been prepared specifically for Papua - New Guinea and all material is relevant and the presentation in a form suitable for its users. A poster in the form of a calendar was similarly well prepared and presents dental health as part of total health.

Cocos Islands

These islands are an Australian possession administered by the Department of External Territories, which provides a regular twice yearly dental visit by an Australian dentist. The community consists of an Australia expatriate group of 130 residing on West Island and the Cocos Islands of basically Jabanese descent and numbering about 480 living in a separate community on Home Island.

Dental health education is provided for Australians in the normal way : chairside instruction with provision of suitable toothbrushes, material supplied through the school and screening of dental health films at the regular picture nights. It is interesting to note the receptivity of children and parents, when the whole community have their attention drawn simultaneously to the importance of dental treatment and sound dental health practices.

The indigenous population had virtually no dental treatment prior to 1967 - the rate of caries is low but periodontal disease is a severe problem due to poor oral hygiene and accumulation of calculus. It became evident to the dentist at present visiting the islands that not much progress could be made in teaching correct oral hygiene attitudes and

practices to most of the older people however he felt that for the younger people with correct homecare and professional oversight and treatment there was more hope. The young people were amenable to teaching and parents, as elsewhere, wanted the best for their children. Interest was aroused throughout the Kampong by the programme of "brush-ins" with groups of about 10 children. Real progress was made and enthusiasm was high as parents gathered each day to watch and encourage their children. It is felt that apart from teaching better oral hygiene a real climate of awareness of better dental health has been established. The pattern of regular dental visits backed up by ongoing treatment by the local medical orderly has achieved a measure of success. Being able to deal with the community as a unit and not piecemeal with individuals as has been done in Australia has led to more effective education and more natural acceptance of treatment. There is no evidence of a cultural bias against the dentist.

NATIONAL ARMED FORCES

All three Australian divisions of the Armed Forces have their own divisions of dental services. The directors of each of these services have completed post-graduate training in Public Health Dentistry. A Tri-Service Dental Hygienists course for hygienists from all three services has been established at the Naval Training School at Westernport in Victoria.

Royal Australian Navy

Each year there are approximately 2,000 male and female entries into the R.A.N., age ranging from 15½ - 25. As these young adults come from all walks of life their dental conditions vary from great neglect to excellent dental health.

Each entry group or class is given an initial en masse 20 minute health talk by a senior dental assistant, dental hygienist or junior dental officer. Wherever possible the services of an auxillary, trained in this field is used in preference to a dental officer. The talk is illustrated with slides and followed up with a dental health film. Opinion in the Navy is that this particular

type of introductory talk does not have a very great impact and that much more effect is gained during the initial chairside appointment with either a dental officer or hygienist.

The Naval Dental Training School at Westernport, Victoria, conducts courses for dental assistants, hygienists and mechanics. There is a minor emphasis on dental health education in the junior Dental Assistants Course and this auxillary is expected to assist in educating the patient at the chairside whenever the opportunity presents. There is a much greater emphasis on dental health education in the Hygienists Course. The Navy trains its own hygienists and also those for the other two services. The Service hygienist spends a fair proportion of his or her time on educational matters and is involved in a number of projects during the course which are aimed at developing skills in this area.

Dental Officers are also obliged as part of their normal professional duties to undertake chairside education as appropriate.

It is felt that the impact of education comes from the

hygienist. Every recruit has initial bite-wing x-rays taken, is given the 3-stage fluoride treatment which has been well documented by U.S. authors and is issued with a recall card stating when the next annual fluoride application is due and also briefly stating the principle of multi-stannous fluoride therapy.

The Deputy Medical Director-General (Dental) of R.A.N. Dental Services feels that the Preventive Programme works well. He is personally constantly examining personnel arriving from all areas and almost without exception their hygiene is first class. The Navy has a very favourable dentist/population ratio of 1:650 as well as 6 hygienists. Sample tubes of fluoride toothpaste are supplied for an individual issue and also for issue where appropriate small tubes of 10% self application Zirconium Silicate Stannous Fluoride prophylactic paste. Pamphlets are obtained from various sources and book-type chairside instructors are used.

Royal Australian Air-Force

R.A.A.F. dentists are responsible for treating the following patient categories.

1. Adult male and female members of the permanent Air-Force.

2. Adolescent male members of the permanent Air-Force.
3. Dependants (wives and children) who accompany service personnel based in Malaysia.

It is felt that health education of patients in these categories is essential to minimise the varied range of problems that may be encountered. The R.A.A.F. dental service is currently engaged in a major rebuilding and re-equipping programme. Three multi-surgery, air-conditioned permanent buildings have been completed to date. Special hygienists facilities comprising a treatment area and a separate lecture/instruction room have been incorporated in all new dental buildings. Support furnishings in the instruction room include:

1. Five built-in wash basins, permitting supervised toothbrush technique.
2. Lecture facilities.
3. Teaching aids in the form of a blackboard/screen, models, charts, movie projector and dental health education films.

While providing for instruction in oral hygiene procedures and other health activities, the R.A.A.F. oral health care programme also involves a periodic follow-up of individual

patients to ensure the efficiency of dental health care. The specialised instruction rooms are used to facilitate this reinforcement of dental health education.

The task of dental health education is considerably assisted by the dental hygienist to whom special instruction in dental health education is given. Although provision is made for training both male and female dental hygienists, only female hygienists are currently employed in the R.A.A.F.

Duties of the dental hygienist include prophylaxis, polishing teeth, application of disclosing agents and topical fluoride solutions and instruction in oral hygiene procedures, to both individuals and groups. The hygienist also prepares lectures and promotes discussion on topics such as

1. the formation and effect of calculus on periodontal tissues
2. the harmful effects of improper toothbrush technique
3. the theory of formation of carious lesions
4. the relationship of diet to oral health
5. the importance of regular hygiene procedures, especially under field condition.

The Dental Officer is responsible for supervision of dental hygienists and also instruction and advice to individuals on such aspects as fluoride supplements, maintenance of deciduous teeth, the advantages of using a mouth guard when engaged in contact sports, care of dentures and fixed appliances, post-operative care and the importance of early and regular dental care.

A selection of pamphlets relating to oral hygiene are available and are distributed to patients in the latter stage of their preventive care instruction as a means of further reinforcing their dental health education. Movie films are available to aid the presentation of lectures and discussions - most of these films were made 20 years ago. Dental Officers who are members of the A.D.A. may borrow films from there on a personal basis.³

Australian Military Forces

It has been found within the Army Dental Corps, the value of dental health education has been a somewhat contentious subject. In discussions at Unit Commander and other dental officer conferences, opinions on the merits of such programmes range from "worthless" to "essential" with considerable shades of opinion in between.

From some fairly superficial studies the indications have been to the directorate that dental health education is a very necessary part of the preventive programme. Objections in the main have been because of the difficulty of finding objective methods of determining changes in attitudes and the extent and duration of any change and from the belief of some that, in the Army, it is easier and better, to tell a soldier what to do rather than to educate him to do it. However the directorate feels that this approach often results in a feeling of resentment on the part of the individual and rarely effects any lasting changes in patterns of oral hygiene, consequently preventive programmes have a significant content of dental health education.

Dental Health Education in the army is split into two programmes, one for the dental officer and dental auxiliaries and the other designed as a follow on aimed at the patient.

All dental officers entering the Dental Corps. attend a course of eight weeks at the School of Army Health. This is devoted mainly to administration and other purely military subjects. Some lectures are given in methods of dental health education including use of films and other visual aids, the role of posters and pamphlets and patient

counselling. This is really a reinforcement of what has been taught in Dental Schools and is not considered adequate. It is intended to introduce a subsequent course of "Military Dentistry" which will include a great deal more detail on the present subjects. Methods and operation of intensive preventive programmes stressing dental health education, patient attitudes and motivation and ways in which change can be effected will form part of the course. It is intended to make use of the resources of the Research Department of the Psychology Corps. in the field of education, attitudes and motivation.

All members of the Corps. who undergo training as auxillaries are initially trained as Medical Orderlies, and then undertake a further five week formal course as Dental Assistants - subsequent "on the job" training is given before catagorisation as Dental Assistant. During the formal course, introductions in methods of dental health education is given to trainees but the instruction is not very extensive.

Selected candidates who proceed, after a period of service as Assistants, to the Tri-Service Dental Hygienists Course at Westernport Naval Establishment in Victoria are given a fairly comprehensive course in Dental Health Education. This includes methods of instruction both at the chairside and in group situations, public speaking, visual aids

including poster design and preparation of other visual aids, oral hygiene and diet.

In the day to day conduct of Army dental practice the hygienist is the member of the dental team most actively engaged in dental health education under the direction of the Command Preventive Dentistry Officer.

With Regular Army personnel dental health education begins at the Recruit Training, Battalions where enlistees and National Servicemen are given group lectures, films and chair-side instruction by both Dental Officers and Hygienists. This education is continued during Corps. training of the soldier, using the same methods. On the posting of soldiers to Units, previous instruction is reinforced by films, posters in the Mess halls and dental centres, pamphlets and lectures.

At the All Arms Army Health Course, held periodically at the School of Army Health, for officers and senior N.C.O.'s of all Corps, dental health education is one of the subjects. Officers are expected to communicate the importance good dental health to their troops.

The programme which has been outlined is the ideal at which the Directorate aims. Frequently it is found to be only a token effort, particularly at Unit level where shortages

of dental officers and hygienists and pressure of routine dental treatment militate against a really effective programme. It has been included in Military Board Instructions that dental health is the responsibility at all levels of the troop commander. This is in the hope that people in charge of troops; from the platoon lieutenant up, will take an active interest in the dental health education of their soldiers. No dramatic results are expected but it is felt that it may contribute.

The use of flouride supplements and flouridation of Army Camp Water supplies have been recommended by the Dental Corps but the latter project has been slow moving mainly because of cost. It is intended in 1972 to conduct a survey at the Army Apprentice School on the effects of stannous flouride prophylactic paste on carus increment. Concurrently it is hoped to run a study on dental health education with the assistance of the Psychology Corps. The final form of this study on dental health education has not yet been determined but it is hoped that it may be possible to determine what methods of education are best suited to such a group and what long term effects are likely.

The National Health and Medical Research Council

This organisation which is an advisory body only has a standing Dental sub-committee and also a Health Education Committee.

At its 57th Session in 1964 the Council recommended that the Australian Council of School Organisations obtain the advice, assistance and co-operation of the State Health Departments and State Branches of the Australian Dental Association concerning school and parent education programmes to improve dental health and programmes to control and prevent dental disease involving the early detection and correction of dental disorders.

The Council considered that the incidence of dental caries is related to the types of food eaten and the pattern of eating, and that in particular sticky carbohydrate rich foods consumed at frequent intervals between meals will result in the incidence of dental caries. The Council therefore recommended that the Commonwealth and States give consideration to influencing those responsible for school tuck shops to reduce the sale of such items.

At its 72nd Session in 1971 the Council re-iterated the

principles, conclusions and recommendations contained in the publication,⁴⁵ "Dental Auxiliary Personnel", which amongst other recommendations considered the use of auxiliary personnel in the field of dental health education.

The N.H.M.R.C. has also produced two other reports which provide education in dental health for members of the dental profession.^{46,47}

The Health Education Committee is responsible for an Epidemiology Course of 1 week each year at the United Dental Hospital in Sydney. Representatives from all over Australia attend. In 1971 there were no participants.

Australian Dental Association - Federal Office

The Federal Office of the Australian Dental Association carries out many duties with respect to the Commonwealth but as much of the activity of dentistry is controlled by State legislation a good deal of the work has to be undertaken by State branches of the Australian Dental Association. In this respect the Federal Office acts as a catalyst and co-ordinator. The Federal Committee prepares statements on policy in general terms with respect to the diverse conditions in the various states, it provides leadership, a means of co-ordination of State activity and prepares material required for the Commonwealth Government and its various instrumentalities. The By-laws of the Association set out the brief of the Dental Health Education Committee.

In its annual report the committee stated the necessity of educating both the profession and the public to enable the community to have the advantage of the knowledge dentistry has to control dental disease. The profession has the problem of informing the community that the control of dental disease is possible and that the means are practicable. It is felt that a great deal can be learned by the various State Dental Health Committees from one another and to facilitate this exchange the Federal Committee is arranging to circulate

bulletins from each State.

UNIVERSITY
OF SYDNEY
DENTAL LIBRARY

A Sub-committee has been established to study and evaluate anticaries agents and to deal with relevant matters referred to it from time to time. The Sub-committee is at present studying aspects of calcium sucrose phosphate.

The Committee made submissions concerning new standards for toothbrush design to the Standards Association. A submission is also being prepared supporting the inclusion of topical fluoride application in any dental scheme offered to the A.D.A.

A thorough evaluation of the Dental Health Workshop held at Sydney University in August 1970 is being undertaken. One of the immediate results of this workshop has been the publication of "A Guide to the Practice of Preventive Dentistry" by the Dental Health Education and Research Foundation of the University of Sydney.

Much of the future work of this Committee will be to co-ordinate the dental health activities throughout Australia. Positive means are available to control a great deal of dental disease, the problem is one of education.

The Mass Media in Dental Health Education

Items of dental health have a considerable coverage in the Australian mass media. The Dental Health Education and Research Foundation have a publicity officer on the staff. During 1971 the fluoridation of water supplies in Victoria received considerable press coverage but all other states seemed to have about an equal number of press items in their local media.

Health educators have two tasks in connection with the mass media presentation of health information. One is to be ready to aid, correct, supplement, and extend the news and views at all times by provision of a good and approachable "health intelligence" service. The second is to become continuously concerned with the preparation of timely press, library, radio and television material on the dental interests of the day. Media of local, technical, or recreational expression are as important as the major national media. Unusual forms of presentation in cartoons, shorts items, domestic interest items, and even fictional health and medical interest materials may be of particular value in attracting interest of the hard to reach section of the community.

Commercial interests, advertising toothpaste and toothbrushes

use sophisticated presentations of their products in all the media for advertising in Australia. The majority of school children can identify a fluoride toothpaste by a brand name.

It is difficult to assess the role of the media in moulding public opinions about health - the extent of their real or lasting influence over people's behaviour is not clear but it is undeniable that they are important.

DISCUSSION

It is obvious that a considerable amount of effort is being extended in the field of dental health education in Australia. Much of the effort is aimed at primary school children and those associated with teaching such as trainee school teachers and kindergarten teachers. Education authorities without exception accept the idea that dental health is a part of total health and it is evident from the changes being made to the health syllabus for primary schools in most states that health education trends are to seek the development of individual and community health through the establishment of patterns of behaviour, the development of attitudes and the acquisition of knowledge. Much of the dental information still relates to structure and function of the teeth although some evidence is apparent that the importance of personal behaviour in relationship to good dental health is being recognised by those responsible for planning health education in schools.

At the professional level there has been a feed-back of information through group discussion. It has taken dentists in Australia in common with dentists from overseas, a long time to accept this type of communication. There is now almost a complete movement away from the formal type lecture

that for so long was the accepted form for the delivery of dental health education. There is also an increasing involvement at the undergraduate level, of the student in the dental health education process.

Attempts are being made in varying ways to reach many of the accepted target groups in the community with dental health education. These include mothers of young children, opinion formers in all areas, service organisations, parent groups, adolescents and women's groups. Each State seems to be approaching these groups in different ways and this is largely dependent on the structure and relationship of the main bodies in each State concerned with dental health education. The Dental Health Education sub-committee of the State branches of the A.D.A., the Departments of Public Health - Dental Services and the Dental Schools of the Universities, together with Health Education Councils in two states are the most active bodies and it would appear that each of these is influenced and guided to a lesser or greater degree by the Dental Health Education and Research Foundation of the University of Sydney.

The need for Dental Health Education, particularly as a part of an effective Preventive Dentistry programme appears to be undisputed but there would appear to be considerable differences

in effective planning and implementation of this concept in the various states. Dental manpower available, delivery of dental services, use of auxiliary personnel and calibre of administrators would all appear to contribute to this situation together with a seeming lack of effective communication between organisations responsible for and interested in dental health education.

Promotion of dental health in Australia is very much related to overseas trends in developed countries. Because health in Australia is a state responsibility there is no Federal Dental Bureau to act at the Public Health level although the Federal body of the Australian Dental Association can act at the professional level. The Dental Health Education and Research Foundation seems to fill a role of national body of reference in dental health.

When considering future trends in the dental health education field it would seem that because of nationwide acceptance of the necessity of an effective educational programme, the increasing inability of states to finance medical and dental services and the existing Federal professional body of the A.D.A., that a certain amount of planning must take place at a national level. It would be reasonable however to have dental health education associated with other areas of health

education - many of the major public health problems in Australia today are closely allied to behaviour and are linked to health education in general. All the evidence suggests that the most effective community health education is carried out by trained health educators who have available to them information from the professions.

In the planning of any broad based educational campaign it is important to take into consideration the considerable variation in the emphasis given to individual aspects of dental health by various professional workers which may be likely to cause imbalance in the programme or confusion in the minds of the public. For this reason it is essential that there is a pre-agreed policy on the details of the content of the dental health education being offered and a definite programme of training for all dental and other personnel involved. This is a need which is being met by the Dental Health Education and Research Foundation in Australia. The professions themselves have the responsibility of researching and developing new and effective techniques and of educating their patients besides also looking out into the community. The distribution in 1971 to all dentists in Australia and New Zealand of "A Guide to the Practice of Preventive Dentistry"¹³ is a very encouraging development.

The fact that so much of the dental health education in Australia is in the hands of primary school teachers emphasises the necessity of adequate in-service training as distinct from teacher college training. The concept of the dental profession providing information to opinion formers and professional educators, especially with the knowledge explosion in the field of preventive dentistry, is facilitated by the ready availability of a spokesman for the profession to be able to provide the teaching profession with this information and who is trained to evaluate and research education programmes. In both South Australia and West Australia this type of personnel is available in the public health services. The teaching profession, overall, has the expertise to provide effective health education but there would appear to be some general lack of communication from the dental profession in making the necessary dental health information available and accessible to them and presenting it in a form which does not necessitate the individuals at whom it is aimed depriving themselves in some way.

It is difficult to assess the effectiveness of any form of health education. In Australian scene there is almost a complete absence of indicators and evaluation of the effectiveness of dental health education programmes. South Australia would appear to be doing far more in this field than others

and some attempt to evaluate visual aid material has been made in Queensland. Certainly a tremendous amount of information is being disseminated in the field of dental health. It is interesting to speculate if the present level of community dental health education is too elementary with too much repetition and is not aimed sufficiently at the level of maturity of the target group. Are there too many pamphlets being distributed indiscriminately and are these pamphlets too general and not aimed at specific groups?

There is a consistent lack in all states of re-inforcement of dental health principles through the school canteen and also a lack of co-ordination of dental services with educational programmes although the gradual introduction of increasing numbers of dental auxiliaries may improve this situation. All evidence suggests that there are many opportunities to apply more effective dental health education but there is a lack of effective overall planning to utilise the resources and expertise available.

Education of the profession at both undergraduate and post graduate level is developing particularly in the field of behavioural sciences, however there still appears that underlying feeling in the dental profession that dental health education is important, that it is an essential part of any effective preventive approach, but that it is the responsibility of someone else to carry out.

SUMMARY

From the review of world trends in dental health education and from an investigation of what is happening in Australia together with a general discussion of the subject certain major points have emerged.

1. Good health is no longer a privelege - it is a right and dental health is considered a part of total health.
2. Dental disease is largely preventable. Processes leading to dental disease are understood by the dental profession and also means by which the disease can be controlled. The profession has the problem of informing the community that the control of dental disease is possible and that the means are practicable.
3. There is an increasing awareness in the dental profession of the nature of health education and the necessity of influencing people to form desirable patterns of health behaviour or to change undesirable ones. However there is still a widespread tendency to regard the giving of dental information as dental health education.

4. The effectiveness of dental health education will depend to a considerable extent on the ability of the educator to communicate effectively. Personnel trained in this field appear to be the most effective educators but it is the responsibility of the dental profession to provide guideline information.
5. Health education may be directed towards the community, to groups or to individuals. The field in which the main approach to community dental health is made, both overseas and in Australia, is in school programmes. However there seems to be a widespread lack of reinforcement of these programmes. School canteens, with some exceptions, continue to provide an unsuitable choice of food and school dental services are often unrelated to the dental health teaching in the schools.
6. There is an increasing emphasis in undergraduate and post graduate dental training of the place of the behavioural sciences in the dental curriculum.
7. The concept of the dentist as head of the dental team and supported by more and better trained auxiliary personnel, particularly in the field of dental health education, is gaining support.

8. There is an increasing trend for dental health educators to be aware of the necessity of reviewing teaching and materials, to make sure it is appropriate and to attempt to evaluate its effectiveness.
9. The Mass Media does not appear to have had any significant effect in the field of dental health education.
10. The entry of the pre-paid dental care plans into the field of the delivery of dental services in developed countries in the last decade is providing large identifiable groups eligible for dental care.
11. Till now, very little research has been carried out in the field of dental health education.
12. In Australia and also overseas there appears to be a lack of effective communication between organisations responsible for and interested in dental health education.

CONCLUSION

When considering what new ideas and methods Australia is contributing to dental health education, the work of the Dental Health Education and Research Foundation of the University of Sydney must be regarded as an outstanding attempt to improve the standard of dental services in Australia through effective education of both the profession and the community.

Areas for improvement can be found in the field of dental health education for care of handicapped children, the chronically ill and the geriatric section of the community. In the field of dental health education in schools it must be recognised that dental health practices will be taught much more effectively if they are related to other social factors not just "health". Education Departments in several states are introducing "Social Health" into Secondary Education - this would seem a very good area in which to introduce dental health - not as a collection of anatomical and physiological facts but as a form of social behaviour. Since there appears to be so little time available for dental health in the presently crowded curriculum it would seem to be wiser to be more selective in the dental health teaching which is done.

In Australia, health is the responsibility of the individual state governments and the situations within the states varies, however in order that a dental health education programme should be effective, co-operation between the Dental Services Divisions of the Departments of Public Health, the State and Federal branches of the Australian Dental Associations and the Dental Schools of the State Universities for the development and evaluation of any dental health programmes, would appear to be essential.

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APPENDIX 1

Dear

I am writing to ask if you would be kind enough to give me some information on the Dental Health content of your

.....

This year I am doing a post-graduate course, Diploma of Public Health Dentistry in the Department of Preventive Dentistry at the University of Sydney, for which I am writing a thesis - "Dental Health Education in Australia".

I am particularly interested in how Dental Health Education is integrated into

Any personal comments you may have in this field would be very much appreciated.

Yours sincerely,

M.L. MINNS,
Dentist.