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FINANCING DENTAL CARE PROGRAMS

BY

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B.D.S. (MYSORE)

Sushil Kaur

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1. INTRODUCTION

1.1 INTRODUCTION

Dentistry exists to meet all the needs of people for dental health at best, or amelioration of dental pain and the improvement of oral functioning, at least. Dentistry will continue to exist as a profession, only so long as it continues to aspire to meet these needs.57

Over the past half century, public awareness of health care has been growing rapidly, and this has acted as a powerful spur towards the demand for, and improvement of, dental care. This awareness emphasises the dental profession's attitude to the importance of early and regular treatment on a systematic basis. As the demand increases, either due to better education or an increase in family income, better and more convenient forms of financing of dental care programs have arisen.

The oldest and most common method of payment for professional services are those based on the traditional one-to-one relation of the private practitioner with his patient. The pioneer dentist, like his neighbouring grocer or baker, operated as best as he could, on a cash basis. When this was not feasible, he made whatever adjustments were necessary. Some patients received service without charge; others were treated and the bills left to be paid when they were able.71 Patients too, frequently delayed treatment, until they could accumulate sufficient reserves to pay cash, or at least treatment was spaced out at relatively long intervals so that they could afford to pay for the services as they were rendered.

This general pattern of financing dental care by private arrangement between the dentist and his patient remains essentially
unchanged to this day. Yet there have been significant departures from it, some dating back to the nineteenth century.

The earliest departure from the traditional pattern of direct patient dentist payment came as various voluntary or public agencies assumed responsibility for the dental care of special segments of the population. The first move in this direction probably came about through the establishment of free clinics for needy children. Early endeavours were the result of action by the dental profession and clinics were staffed frequently on a voluntary basis.

Dentists in New York city, as early as 1849, established an infirmary, with Philadelphia and Boston following soon after. As the number of clinics grew, private efforts were supplanted by voluntary health organisations, philanthropic foundations and tax supported agencies such as departments of health and education. Germany was the first country to establish a school dental service through the Department of Education, thus establishing a precedent. Much of the services offered at this stage, were provided by dentists in their offices at reduced fees or no fee, for the indigent and low income group.

Similarly, in the United Kingdom, local groups of public spirited dental surgeons initiated the establishment of dental hospitals and dispensaries for the treatment of the poor in some of the larger centres of population. However, from a very early stage, the profession recognized the need for an organised system of dental care for children. For more than twenty years, the British Dental Association was vigorous in its efforts to educate responsible bodies and the public generally, in the importance of dental health
before the first free dental clinic for school children was opened in Cambridge in the year 1907. This clinic was established by private benefaction, but in 1910 a publicly financed school dental clinic was started in London, with others soon following. The Education Act of 1918 made it obligatory for the first time for local education authorities to provide or arrange for dental inspections and for all children attending public elementary schools, and this - the Local Authority Dental Service - continues in existence today.

In Britain, a system of Health Insurance was introduced in 1911, but with dental benefits included only in 1923, and then too only as an "additional benefit", which was not always available. Only the worker himself, who paid weekly contributions to the scheme, and not any of his dependants, was entitled to participate in it and usually little more than half the cost of his dental treatment was defrayed from the funds. This system remained in force until 1948 when the National Health Service commenced, with much modifications on the dental benefits available.

However, in the United States, since the days of the depression, in the 1930's, arrangements had generally been set up whereby a public agency selected the case to be treated, and set a fixed indemnity for service. Unfortunately, the low rates established by most agencies for indigent care had done little to encourage acceptance of these programs by the dental profession. Frequently fees had been fixed so low that the dentist who accepted them had, in effect, been taxed twice; once as a citizen to pay his share of the cost of public welfare; and a second time as a dentist, to make the contribution, through a reduced fee to the same cause.  Technically,
the dentist was under no compulsion to accept welfare cases. The social pressures brought to bear upon him were, however, considerable.

Since any definition of indigency is necessarily arbitrary and because too, perspectives differ, misunderstandings have arisen as to who are eligible for treatment, and as to how fully or how best to meet their needs. There had been instances when dentists had felt that too liberal interpretation of indigency robbed the profession of possible private patients. The wisdom of programs that provide denture services for adults without furnishing complete care, including preventive procedures, for children, had also been questioned.

While individual dentists had misgivings about welfare programs, the neglect of the dental health of the population continued to be of deep concern to all members of the profession.

The second major departure from the traditional pattern of paying for services came as the Federal Government in the U.S.A., assumed the responsibility of providing care for certain employees and for its wards, some of whom, of course, may be indigent.

The services, first using contract dentists, and later their own commissioned officers, have utilized clinic facilities almost exclusively. Today, more than 3.2 million persons are eligible to receive dental care from salaried employees of the Federal Government. Among those receiving, and in a few instances, their dependants; American Indians and Alaskan Natives; Merchant Seamen; in-mates of Federal penitentiaries; and Federal hospital patients. In addition, limited services are offered on a fee for service basis in private offices for medically indigent veterans, dependants of servicemen and civilian Federal employees injured in the course of duty.24
Provision of care for employees and wards of the Federal Government did not raise much controversy. The American Dental Association recognized that the Federal Government had the right, as any other employer, to provide fringe benefits, including dental care, for its employees. Also, similarly, the obligation of the Government to provide care for those individuals for whom it has responsibility has long been assumed.

The major exception was the large dental care program conducted immediately following World War II by the Veterans Administration. In this case the ADA contended that an extremely liberal interpretation of "service-connected-disability" resulted in the provision of dental care to a significant segment of the population whose disabilities were not caused by military service. As a result, the program was curtailed.

The third breach in the traditional method of financing occurred when dental care began to be provided on programs sponsored by labour unions or consumer co-operatives.

The first efforts of this type were those of corporations e.g. Metropolitan Life Insurance Company, who have maintained a dental program for its employees since 1915. Despite their early beginning, privately sponsored programs grew slowly and were extremely limited in scope. It was only after the majority of the population had achieved some measure of protection against hospital and medical costs that any real interest began to be manifested in solving the financial problems related to the provision of dental care. This is not astounding, as generally life and death are frequently at stake when medical care or hospitalization is needed and the costs for the individual more frequently reach catastrophic
proportions. There was greater urgency in finding ways to finance medical care due to increasing costs of medical care.

Dentistry was not caught up in the mainstream of events shaping the future of the health services. The profession very early recognized that eventually the attention of the planners in the health field, and subsequently the attention of the public, would turn to dental care. The dental profession, had in fact, kept up a drumfire of public education on the importance of dental health and maintained constant pressure on all agencies concerned with health, in and out of government, to recognize the need for Dental Health Services.

The positive attitude of the American Dental Association was illustrated as early as 1943 in a report of a special Committee which urged study of existing hospital prepayment programs to determine whether dental care could be based on insurance principles. The Committee also urged the establishment of experimental programs in various parts of the country in order to gain additional experience with this prepayment method. To give guidance to those interested in establishing dental prepayment programs, the American Dental Association's Councils on Dental Health drew up a set of several principles which ultimately were approved by the House of Delegates in 1953; and which subsequently were incorporated in the prepayment plans.

Privately sponsored dental programs grew significantly during the 1950's. By 1960, 130 programs were known to be operating and in addition, 9 constituent societies of the ADA were sponsoring postpayment plans under which patients could borrow money for emergency treatment or a large backlog of treatment needs and repay the money
after treatment was completed. A hierarchy of responsibility for personal security, where dental care was concerned, developed. It stressed self support followed by family support and finally by societal support.

The recurring and cumulative nature of dental disease makes the receipt of professional care a basic pre-requisite to the maintenance of oral health, either for the individual or for the community. Although cost is by no means the only factor preventing people from obtaining dental care, it obviously is of primary concern.

It is difficult to define the goals of a new dental care delivery system. Several different approaches have been developed; and to a certain extent it is desirable that there not be a universal or overall system, since conditions would vary across a country. The important point is that each organisational approach should be capable of achieving as much as possible.

Hence, at present, we are faced with a multitude of quite different, and often complex, systems of dental care delivery programs. They have developed slowly, but steadily in response to the new public awareness of oral health and their consequent demand of it, as a right and not as a privilege.

In the following section, I will discuss the various systems, that have arisen, of dental care delivery programs, from the financial aspect. As no country seems to have as large a network of National, State and local organisations devoted to research and promotional work on this subject, as the United States of America, this thesis will be based mainly on the American system, but with systems in other countries being considered as well.
1.2 METHODS OF CLASSIFYING FINANCING OF DENTAL CARE

There is considerable evidence that expenditure for dental care and amount of dental care received are largely a function of family income. Since economic status is a major factor in the utilization of dental care, the dental profession has a vital interest in the various methods of financing dental services. Traditional fee-for-service private practitioners are being challenged by alternative dental delivery systems which profess a common denominator, lower cost.

There are many differences in organised plans for the provision of dental care. These variations relate to the method of providing or obtaining service, sponsorship of the plan (that is, who contracts for service) and the methods used to reimburse the professional persons providing the service. The new options of dental care delivery affect both providers and consumers and may be revolutionary, or evolutionary trends of the future.

While there may be numerous and excellent micro-systems in both the public and private sectors of oral health delivery, there are few national or provincial systems that differ in fundamental structural factors. In the 140 countries of the world, there could be, theoretically, 243 ways of combining all 15 factors (of Table I) into delivery systems. And although it is not possible to know every variation of definitive and experimental oral health delivery systems at local and provincial level in more than 140 countries, Barnes commented that it is not rash to claim that only a small percentage of the 243 possible variations have ever been tried. (P.T.O. Table I).
<table>
<thead>
<tr>
<th>QUALIFYING COMMENTS</th>
<th>AXES OF DIFFERENCE</th>
<th>PAYMENT</th>
<th>TYPE OF SERVICE</th>
<th>TARGETING</th>
<th>MANPOWER EMPLOYMENT</th>
<th>MANPOWER TYPE</th>
</tr>
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<tbody>
<tr>
<td>PREDOMINANTLY</td>
<td>DIRECT</td>
<td>CURATIVE</td>
<td>DEMAND</td>
<td>PRIVATE</td>
<td>PROFESSIONAL</td>
<td>PROFESSIONAL</td>
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<tr>
<td>SELECTIVELY</td>
<td>DIRECT-INDIRECT</td>
<td>CURATIVE-PREVENTIVE</td>
<td>DEMAND-NEED</td>
<td>PRIVATE-PUBLIC</td>
<td>PROF-AUXILLARY</td>
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<tr>
<td>PREDOMINANTLY</td>
<td>INDIRECT</td>
<td>PREVENTIVE</td>
<td>NEED</td>
<td>PUBLIC</td>
<td>AUXILLARY</td>
<td></td>
</tr>
</tbody>
</table>

NOTE 1: "Predominantly" is used for both extremes because the 100% to 0 situation does not exist for most of these factors.

NOTE 2: "Selectively" is intended to cover the many and varied priority group structures within systems, whether intentional or unintentional. This category, intermediate between the two extremes, is also intended to represent all cases where the selective process applies to large population sectors - more than 20% - without refining or complicating the exercise by contrasting degrees of selectivity within any one factor.

David E Barnes, Chief of Dental Health, W.H.O., in 1975 reviewed the current systems of delivery of oral health services, starting from predominantly direct fee-for-service payment and working through to predominantly indirect payment, with the National Systems Types in Table II being identifiable. (P.T.O)
### TABLE II: EXISTING NATIONAL ORAL HEALTH SYSTEMS TYPES.

<table>
<thead>
<tr>
<th>PAYMENT</th>
<th>TYPE OF SERVICE</th>
<th>TARGETING</th>
<th>MANPOWER EMPLOYMENT</th>
<th>MANPOWER TYPE</th>
<th>W.H.O: USPHS: INTERNATIONAL COLLABORATIVE STUDY COUNTRY EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. DIRECT</td>
<td>CURATIVE</td>
<td>DEMAND</td>
<td>PRIVATE</td>
<td>PROFESS.</td>
<td>AUSTRALIA (N.S.W.)</td>
</tr>
<tr>
<td>2. DIRECT-INDIRECT</td>
<td>CURATIVE</td>
<td>DEMAND-NEED</td>
<td>PRIVATE-PUBLIC</td>
<td>PROFESS.</td>
<td>NORWAY</td>
</tr>
<tr>
<td>3. DIRECT-INDIRECT</td>
<td>CURATIVE</td>
<td>DEMAND-NEED</td>
<td>PRIVATE-PUBLIC</td>
<td>PROFESS. AUXILL.</td>
<td>NEW ZEALAND</td>
</tr>
<tr>
<td>4. INDIRECT</td>
<td>CURATIVE</td>
<td>DEMAND</td>
<td>PRIVATE</td>
<td>PROFESS.</td>
<td>FED. REPUBLIC OF GERMANY</td>
</tr>
<tr>
<td>5. DIRECT-INDIRECT</td>
<td>CURATIVE</td>
<td>DEMAND</td>
<td>PRIVATE</td>
<td>PROFESS. AUXILL.</td>
<td>JAPAN</td>
</tr>
<tr>
<td>6. INDIRECT</td>
<td>CURATIVE</td>
<td>DEMAND-NEED</td>
<td>PUBLIC</td>
<td>PROFESS.</td>
<td>BULGARIA</td>
</tr>
</tbody>
</table>

The countries used as examples could be supplemented by a number of other examples fitting into the 6 systems he illustrated, using the factors from Table I, with different accents given to one or the other factors.

Although it is desirable that no person should have to pay directly for dental services, present day economics cannot really support this. Rather we should aim to ensure that no one person is prevented from receiving comprehensive quality oral health care because of an inability to pay, and this should be the overall guide for payment services.

Various groups and authors have attempted to approach the classification of financing of dental care delivery systems in
various ways. I will present a few of the more popular and well known ones here.

According to the World Health Organisation, dental health services can be grouped into 3 categories. This was put forward by an expert committee of the W.H.O. in 1965. They grouped them as follows:

**Group 1**
Dental services provided by dentists and dental auxillaries and financed by direct arrangements with the patient or through some form of organisation of payment not involving governments. In this group would fall prepayment plans, services organised by labor and other consumer groups and by private insurance companies, or by private philanthropic organisations and other plans without government participation.

**Group 2**
Dental services provided by dentists and dental auxillaries, who are partly or entirely remunerated by the government, but who are not considered to be government employees.

**Group 3**
Dental services provided by dentists and dental auxillaries who are directly employed by the government.

In many nations, where services are available under all 3 groups, the dominant group is the one which reflects the economic and political organisation of the country. For example, Group 1 is dominant in countries where a relatively unrestricted economic system is found, such as the United States of America and Australia. Countries with an economic system based on free enterprise but where a social philosophy allows a strong governmental responsibility in the provision
of health care, lean towards the Group 2 type of services. The United Kingdom is a good example of this. Group 3 services predominate in countries with a centrally planned economy where health services are considered a state responsibility such as the U.S.S.R. and Hungary. This system of grouping services and payment, is useful to illustrate the point that provision of dental care services cannot be separated from the political system and social philosophy of a country.

Rudko, in 1970, put forward a wider classification to characterize services. He grouped them according to the consumer, provider type of systems.

<table>
<thead>
<tr>
<th>Provider</th>
<th>Consumer</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Individual</td>
<td>Individual</td>
</tr>
<tr>
<td>(2) Individual</td>
<td>Society</td>
</tr>
<tr>
<td>(3) Individual</td>
<td>Group</td>
</tr>
<tr>
<td>(4) Group</td>
<td>Group</td>
</tr>
<tr>
<td>(5) Public Service</td>
<td>Group</td>
</tr>
<tr>
<td>(6) Public Service</td>
<td>Society</td>
</tr>
</tbody>
</table>

This wider classification clarifies the situation in greater detail.

It is not surprising that the types of services which are more concerned with the group or society as a whole, as the consumer of dental services are found more frequently in countries with a Welfare State or communist political philosophies. In the U.S.S.R. and China, for example, the public services provide dental services for the whole society (Rudkno No 6) while in the United States, however, the individual had to make his own arrangements for health
care and the predominant type of dental service being individual to individual (Group 1).

Francis A Stoll, in his book Dental Health Education decided to narrow the concept of dental care into specific methods. He states that dental services can be financed in 4 basic ways;

I Individual
- through fees paid by the individual when services are rendered. A large amount of dental treatment is financed this way through the efforts of the family.

II Taxation
This is a means of paying for medical and dental care and seems to distribute the financial burden over society as a whole. Persons securing care pay for services indirectly. It is the method which departments of health and welfare use to provide dental care.

III Charity
Dental fees may be paid for by charity when dentists reduce their fees for children of large families, for "borderline" cases not entitled for welfare, that is they are providing a charity service. Charity also takes the form of monetary gifts from individuals philanthropic organisations and other non-government bodies. They usually support clinics and constitute but a small part of the total system of dental care.

IV Prepayment Plans
Individuals or groups of people make periodic payments for fixed amounts to a third party for a rebate (or payment) of dental fees. This is a method that appears to be gaining in popularity in recent years.
Jerger, Marshall, Schoen and Friedman, put forward their concept of financing of dental care programs in quite a clear and precise manner. Their method of classification is as follows, according to types of payment mechanisms;

I Individual Patient Payment

(A) Fee for Service
(1) At the time service is rendered.
(2) Through monthly statements.
(3) Budget payments to the office.
(4) Postpayment plans - through bank loans or credit unions.

(B) Dental Health Insurance or Prepayment (Rare for Individuals)
(1) Purchased through insurance companies or other similar financial vehicles.
(2) Purchased directly from the dental office (e.g. Naismith Dental Plan).
(3) Purchased through membership in a co-operative (e.g. Children's Plan of Group Health Association of Washington).

II Third Party Payment

(A) Fee for Service (which may be prepaid to carrier by third party).
(1) Indemnity - based on percentage of a table or schedule of fees.
(2) Usual, customary and reasonable - based on a percentage of dentist's charge.
(3) Fixed fee - dentist may accept third party payment as full payment e.g. Medicare.
(B) Capitation Payment of so much per person, per family, per fiscal period without regard to services rendered.

(C) Budget - a specific sum, for the program is allocated for the fiscal period unrelated to the exact number of persons of family participating.

These authors have clearly illustrated the payment mechanisms used in financing dental care programs for individuals or groups.\textsuperscript{45}

Most countries would utilize a combination of methods of delivery of services as no one method could possibly fulfil the needs of society. Australia, for example, has a dental care delivery system that can be classified from a financial aspect, as follows:

I Public Sources
- with the Commonwealth Government being the largest channel of public money followed by State Governments.

II Private Sources
- examples being voluntary health insurance funds.

The breakdown of sources of current expenditure on health services is as shown below;

\begin{figure}
\centering
\includegraphics[width=\textwidth]{sources.png}
\caption{SOURCES OF CURRENT ACCOUNT EXPENDITURE ON HEALTH SERVICES. AUSTRALIA, 1966-67.}
\end{figure}
Here, more than 50% of health care flows through government channels, with the rest coming in directly from individuals. Expenditure in dental services can be easily classified in this manner.

Another method of classification of dental services is consideration of the way in which a patient pays. This was put forward by B. D. Moene.

I Individual private patient paying for dental care
   e.g. - direct payment by the patient to the dentist
         - prepayment to dentists
         - postpayment to dentists

II Member of a group with private arrangements for dental care
   e.g. - private prepayment
         - dental service plans
         - commercial insurance
         - self-insured trust
         - Blue Shield - Blue Cross

III Patients for whom public agencies finance all or part of dental care
   e.g. - direct care in public facilities
         - care through group prepayment

This system is fairly comprehensive and could cover all aspects of financing.
Hence, from the preceding, one can see that various attempts have been made to classify financing of dental care. Each method has its drawbacks as well as good points, with each one trying to be as comprehensive as possible. The very fact that there are so many ways just goes to show that no one method has reached the goal.

The closest one comes to the most complete method is as elucidated by Francis A Stoll, and using his system of classification, I shall attempt to discuss each method of payment for services in this thesis.
2. FINANCIAL SUPPORT OF DENTAL CARE PROGRAMS

2.1 INDIVIDUAL

Traditionally, most payment for dental services has been through individual effort. This has been the predominant code of payment for centuries and the largest amount of dental treatment is financed in this way through the efforts of the family.  

The development of the wage system in return for employment and the emergence of manufacturing and commerce laid the foundation for the modern monetary system - that is, the exchange of money for goods and services. This in turn led to the establishment of a tradition of purchasing health services for money where the provision of dental care was entirely an individual arrangement between the patient and the physician or dentist. As a result, Dental practice has often been likened to a cottage industry where the suppliers of dental care could be described as functioning independently, in small individually owned producing units which utilize whatever capital equipment they can afford and sell practices on a piecemeal basis, to whichever consumers come this way. Dentistry like other social institutions is influenced by demographic, economic, social and cultural forces. The consumers of dental care have helped develop this mode of delivery principally through their economic and political behaviour. Dentists too have helped foster this development by resisting the intrusion of middle men (who could be either government agencies or insurance companies) who have tried to negotiate between providers and consumers for the purchase of services.

Under individual payment for services, the patient pays the dentist directly "out-of-the-pocket". It could be an on-the-spot payment for each visit or billing for services rendered after a
course of treatment. Either way, the patient has to make arrangements for payment for services as he is able to foresee himself as needing in the near future and budgeting accordingly. As more and more delivery systems are developed, this primary mode of exchange for dental care between provider and consumer remains an important one, although its role in society is being replaced by more consumer orientated programs.

One of the advantages of individual payment for services is that the patient is free to choose the dentist of his choice and with whom he is comfortable. Among the older age group especially, this could be the family dentist who they would be reluctant to change, even if it meant easier payments. Another point favourable to individual payment is for those people who have relatively low treatment needs, and who with adequate home care and being in fluoridated areas, are able to preserve this state. They need not visit the dentist very often and individual payments would suit them well. Neither would they need to be burdened with expensive premiums for services that could only possibly include fluoride therapy every 6 months, or the odd restoration - which they may not even need. Another important consideration here is when the consumer is single and self dependant. Although insurance premiums could help distribute the payment over a period, he might find it cheaper to pay as services are required or used.

In spite of the many advantages, there are an equal if not greater number of disadvantages or objections to individual payment for services. One of the major objections could be attributed to the discriminatory aspect of this system whereby those who have the money at that time are able to obtain the service and those who haven't, do not. The flaws in individual payment also show up when
the patient faces large bills either for extensive restorative work, orthodontic work or even minor surgery, for him or his family. Among the lower socio-economic groups, rather than face this, they would neglect dental care until an emergency and then too they accept it as inevitable that they should lose their teeth and would require dentures. This attitude has been fostered by the relative expense of dental care, in the past, and its inaccessibility as well as public ignorance of the value of dental care.

The average citizen of the 17th, 18th, and 19th century was expected to provide the means to support himself in health as well as in illness. Consequently, health care and dental care was considered not a right, but a privilege. This concept is changing rapidly with better education and newer, more acceptable methods of financing.\textsuperscript{59}

Another disadvantage of individual payment is that the patient generally has only a vague idea of the difference in prices among dentists primarily because dentists do not advertise or quote fees over the phone. Regardless of his efforts to obtain a more favourable price, the patient generally will pay the usual and customary fee charged by dentists in the area. This subtle mechanism of professional fee regulation also places constraints on the dentist who fears being socially isolated by his colleagues if he attempts to reduce prices beyond the lower limits of the fee scale. Thus both the dentist and the patient are influenced by the legal ethical and social structure of the profession itself. Historically, this has meant that consumers of dental care have had a limited impact on the way services are delivered. In moving away from individual payment mechanisms, the public is now seeing and seeking greater involvement in other delivery methods.
American dentistry has been built on a system of private practice where the patient seeks the dentist and pays the fee he requests. Although the growth of this practice has given the United States world leadership in the sophisticated quality of dental care, no attempt was made to reach beyond the surgery walls and assume responsibility for an entire population until recent years. Dentistry everywhere started with solo practice with a direct out-of-the-pocket payment or barter mechanism. In the more underdeveloped countries, this situation is still prevalent, but with the rapid progress being made in the more advanced nations in the development of easier payment mechanisms, there is a chance that the larger segments of the lower socio-economic classes who have been denied a service that would not only improve the quality of life, but would also prevent crippling dental disability, would be the ones to benefit the most.
2.2 TAXATION AND SPECIAL GOVERNMENT PLANS

Taxation as a means of payment for Medical and Dental care serves to distribute the financial burden over society as a whole. Persons receiving care pay for it only partly or indirectly. It is the method which departments of health and welfare commonly use to provide dental care. National interests require that the risk of ill health be spread over the whole population to cover everybody and not only those who offer to insure voluntarily. This device has to be used ultimately to finance the whole spectrum of health services, and hence it is a matter of public interest to make certain that it is available. A major source of income for the governments, to enable them to finance health and dental care on a national basis, is through income tax, and to a lesser degree, from property and sales taxes.

In the United States of America, as in most other countries, the health policy has been guided largely by the belief in the ability of the private sector and the market economy to maintain a satisfactory equilibrium between the availability of health resources and the libiqity of health needs. Hence the role of the government in health and dental care has been less significant than in other Western industrialized nations. However, it has been playing an increasingly greater role in financing, administering and delivering health services, which have been manifested in changes in the delivery and financing of total health care. This movement towards government involvement reflects the current health care crisis, and the public acceptance of the philosophy that access to adequate health care is a basic human right. Straus has aptly described 6 conditions which
have influenced strongly the decision of the government to offer care to groups eligible for Federal Health programs. These are:

(1) When federal public medical services are in the interest of national defence or economic production.

(2) When such services are required by dependants or "wards" who are the peculiar responsibility of the federal government.

(3) When the health of the nation appears endangered and the public concern is aroused over that threat.

(4) When it is expedient to provide medical care as a form of guaranteed security or reward for persons who are needed to perform dangerous or undesirable work in the interests of society.

(5) When working or living conditions of persons performing work in the interests of society involve extra health hazards or extra health problems.

(6) When persons are isolated (physically, socially, economically) from access to adequate private or local public medical services.

The list of groups receiving federal health services in the United States included the American Indians, federal prisoners, veterans of the armed forces and merchant seamen. The armed forces, in particular, have developed large, well-organised health services with well-staffed dental services. They have also branched out into the field of clinical research and in the training of health personnel at various levels. 58

The first use of federal funds for the poor in the United States was in 1933, with the authorisation of Federal Emergency
Relief Funds for state distribution to people who were medically indigent and unemployed. This program was found to be of little use and in 1950, the Amendment to the Social Security Act to provide for medical vendor payments on behalf of Public Assistance recipients was instituted. However, this program too was found inadequate, reaching less than 1% of all persons 65 years of age and above.

The failures and inadequacies of these programs coupled with the recognition by some legislators of changing public philosophy, resulted in further examination of potential avenues for expanded government roles in health care. The establishment of Titles XVIII and XIX of the Social Security Act in 1965 was an expression of the government's concern and its changed approach to the rendering of health care. Title XVIII (Medicare) provides dental care only under specific medically related conditions, but represents the greatest political change in that an entire age group (65 and over) suddenly becomes eligible for extensive health care, regardless of income, hardship, or service to the national government. Title XIX (Medicaid) however, does permit extensive dental service, and the pattern of eligibility for assistance is of interest. The states must include in their programs from the start, all persons who receive financial assistance from the federally aided public assistance programs for the aged, blind, the disabled and families with dependent children, including persons who may be actual residents of the state, but who have not lived there long enough to satisfy certain state regulations which specify periods of time before welfare benefits are available. After July 1, 1967, all children under 21 must have been included who, except for a state age or school attendance requirement, would be eligible for assistance through the program of aid to families with dependent children.
Each state administers its health and welfare according to the needs of its population. Health care programs differ widely from state to state, in relation to the functions and sections of the population covered by these services. The Department of Welfare is concerned mainly with meeting the immediate needs of those who do not have the minimum necessities for a healthy life; whereas the Department of Health, within a state, shows that its prime concern is with helping people to help themselves to good health care. In all these programs, although the federal government, through the states, provides the financial support, it has to be delivered at the community level to be effective.

The agency within the Department of Health, Education and Welfare, which has the greatest state in dental health, is the United States Public Health Service. Dentistry finds its way into the activities of the Public Health Services mainly through the National Institute of Health and through it to the National Institute of Dental Research. Here, basic and clinical research is conducted and much more is stimulated through grants-in-aid to dental schools and other institutions employing research scientists. In addition to project grants for dental research, the Institute also maintains a fellowship program. Aside from these grants for dental research and education, administered through the Institute, the U.S. government also operates a system of grants for provision of dental care to special groups, either on a pilot program basis, or on a continuing basis. The best known of the grant systems is that operated by the Office of Economic Opportunity (OEO). One of its projects is "Project Head Start", which involves education and health care. The dental phase of Project Head Start, has revealed tremendous
dental needs in children between 4 to 6 years of age in many parts of the country and has instituted dental care for many of them. Originally starting with summer checkups, it has now developed into an all year round program of immense value. This co-ordinated approach to the problems of the preschool child, though not new in concept, seems to have achieved a national extent beyond any previous exercise. Other such projects under the OEO would be the "Job corps": that has brought dental care to young people whose caries incidence was at a peak. Various community action programs for people of all ages in poverty areas have also been instituted under the OEO.

Another grant system that looks as if it might produce a large amount of government assisted dental care in years to come is the Regional Medical Program. Although not designed to do this, it was indirectly included. It was found that in the management of cardiac patients, maxillofacial surgical cases (e.g. oral cancer), the nursing of stoke patients, all included a measure of dental care that was important enough to be considered.

The Medicard amendment, Title XIX, is the largest federal prepayment plan, in which 75% of all federal expenditures on dental care are instituted. This legislation led to the establishment of a program that was designed to provide access to "Mainstream health care to certain low income persons who are blind, disabled, aged or members of families with dependent children". In this program both the state and federal governments share the responsibility of establishing and guiding individual state programs. Although it is national in origin, often it is referred to as a state program since the states decide whether or not to enact it. By May 1968,
33 states had done so. Once the states decide to participate, the federal government provides varying amounts of matching funds (50 to 83%) depending on each state's income. Since each state holds the option of developing a Medicaid program to fit its own needs, within the parameters of federal policy, each program is different from the others. As a result, to describe a Medicaid program would be impossible as we would have to relate to 53 different programs covering different states and territories. It has been described as a complex, often confusing situation when trying to deal with the program and its problems. It was designed as a program for comprehensive care to the medically needy, and few would dispute the merits of that goal; but without concomitant careful planning the results were disastrous. Although it succeeded to bring health care to 12 million by 1977, its history has been full of economic chaos due to the fact that its policies were not developed as a result of an overall philosophy established at its inception, but rather in response to problems encountered. Dental programs in Medicaid were included fairly recently (1976) when there were 34 states offering dental care of varying comprehensiveness to their Medicaid eligible persons over the age of 21 years. The 1969 amendment requiring early periodic screening, diagnosis and treatment (EPSDT) for everyone under 21 who were eligible for Medicaid, attempted to reach young people at the poverty level and to produce continuous care for them and has removed at least part of the financial barrier to obtaining dental care for approximately 13 million children. However, due to the high cost and inefficiency, only 4% of the 13 million children eligible for EPSDT aid had been screened in 1975, six years after the law had been passed. Of the monies allocated to
dental care in Medicaid, only 2.5% went for dental benefits.

Federal involvement in financing of dental care has brought help to many, who formerly would have been unable to receive or afford such treatment. The U.S. Public Health Service, is preparing to assume greater responsibility in the planning of health and dental care, through the Social Security channel and through the various grant mechanisms that exist for the financing of group health programs.

Another country with a significant government role in dental care is Great Britain. It has one of the best known dental care programs under their compulsory health insurance plan, established in 1948. It is financed partly through tax funds, and partly through compulsory insurance of employed persons. Due to the access the patient has to government financing, about 90% of the dentists had joined the General Dental Service. This topic will be treated more fully in a later section.

In Europe, some examples of federal government financing can be found, to various extents. In Germany, there is compulsory dental health insurance, which is financed both by employees' and employers' contributions and the service is delivered by private dentists. The scale of fee per item of service is reviewed periodically on a national level by representatives of the insurance companies and the dental association. The government's only concern here is with the legal basis for these arrangements. Under this system, over 95% of the population is eligible for care.

In Sweden, the social security has no role with dental care and is largely concerned with sickness benefits and old age and invalidity pensions. The school children have dental care in the schools under their school programs; but adults will have to pay for their services through private programs, and consequently 75% of the
adult patients depend on private practitioners for treatment for
which they pay the full fee. About 27% of the dentists work for the
Public Health Service and receive a fixed salary. The service is
delivered in school or community dental clinics. 55% of the time is
devoted to children, and 45% to adults. School children 6 - 16 years
are treated free of charge; adolescents receive care at reduced
charges; and adults pay full fixed fees which are lower than those
in private practices. The dental public services work similarly
in Finland.

Another system operates in Czechoslovakia where access to
health care is granted as a right to every citizen. It is financed
from the National Budget. The whole population is eligible for care
which is performed in public dental clinics free of charge except
for limited charges, paid directly to the clinic for inlays and
fixed prosthesis. Children and priority groups of adults are exempt
from payment of these charges. Specialist treatment is available
in district or regional dental clinics. All dental health personnel
are employed by the health administration and receive fixed salaries.
Private dental practice is limited, and accounts for less than 1%
of the total volume of dental care. 

It would seem that most of the European countries have
begun to stress preventive programs, in connection with dental
care programs for school children. However, the common denominator
in most countries is that there is greater involvement and responsibility
taken by the governments in the planning of health, and dental care
coupled with the increasing cost of these essential services, and
the increased public demand.
2.3 PHILANTHROPIC

The earliest departure from the traditional pattern of direct patient dentist payment came as various voluntary or public agencies assumed responsibility for the dental care of special segments of the population. The first move in this direction probably came about through the establishment of free clinics for needy children; and the poverty stricken. Health care, including dental care, was available only to those who had the means to purchase it in the 18th and 19th centuries. Early endeavours however, were the result of action by the dental profession and clinics were frequently staffed on a voluntary basis. Dentists in New York city established an infirmary as early as 1849, with Philadelphia and Boston following soon after. As the number of clinics grew, private efforts were supported by philanthropic foundations and Voluntary Health Agencies.

Voluntary Health Agencies were originally stimulated by private individuals or groups specifically for the purpose of promoting an understanding of and action in the interest of solving certain community health problems. Although voluntary action in public health has been in force in earlier periods, a specific type of organisation, the Voluntary Health Agency had given concrete form to such endeavours. In this sense, it was a distinctly modern organisation that furnished health services of a kind that had not previously been available. Although this association has had its fullest flowering in the United States, such organisations have not been confined to that country, nor were they first developed there. The voluntary health movement had 2 main sources of inspiration.
They arose and based their efforts on concepts of health and disease that had gained importance and acceptance. They also arose out of efforts to grapple with poverty and deprivation which revealed the destructive role of ill health, and disease in the lives of the poor and the need for vigorous action to combat sickness and its consequence.

However, the great bulk of care for the indigent and low income groups was provided by dentists in their own offices at reduced fees or no fees. Charity cases, for example, children of large families or "borderline cases" not entitled to welfare, also benefitted.

The widespread poverty of the Depression years created such a demand for free or low cost private service that the sliding scale fee structure broke down. The few existing agencies could not cope with the demands made upon them. Furthermore, the inability of a large section of the population to pay for care made serious inroads on the professional's own financial stability. Consequently the dental profession found it necessary to call upon the government to assume the major responsibility for the care of the indigent. This was a good example of how voluntary action preceded and stimulated government action in the health field.

Hence voluntary organisations, non-government bodies and philanthropic societies, although constituting a small part of the whole picture of dental care, had a significant role to play.

The U.S. Peace Corps are a good example of what is often referred to as "Dental Ambassadors" serving in underdeveloped countries in a variety of different programs. The people to people program, a private agency, has sent dentists both for service and for teaching, to a variety of countries. Dentists participate in
project HOPE, which operates a hospital ship serving underprivileged coastal areas in various parts of the world. There are many church sponsored Medical Missions and private enterprises such as the Greengill Mission to Labrador, operated by an association with representation in the United States, Canada and England. The sum total of these philanthropic efforts is probably small in terms of direct service, but is an important expression of international goodwill.

More recently, there is charity or help for countries in the form of and from overseas funds. For example, Indonesia is given direct country and foundation support for specified purposes which may be determined by the donor and/or recipient. The donors in this case would be the limited nations and its agencies, such as W.H.O., and other international agencies eg. Colombo Plan, and they determine the priorities for and between countries and in general, type of assistance given, but within these limits, the priorities with a country must come from that country. Areas of overseas aid were in areas of consultancy, equipment, school dental clinics and schools for dental nurses, fellowships for overseas study and New Zealand government support for short courses and/or observational training of staff of Dental Nurse Schools (1959-1962). Denmark, Germany and Japan have also given some direct assistance and responsibility to dental epidemiology and research planning and to University dental teaching. In the program for Indonesia, the problem with external assistance from a number of sources (as indeed is the case for most recipient countries) was that there could be much overlapping due to tendencies for donors to identify the areas in which they could assist; and an understandable reticence
to reject offers of assistance. These factors, the co-ordinating team found, accented the need for careful co-ordination and a definition to donors of the type of assistance needed.

W.H.O. also has a 5 year plan (1976-1980) for 6 countries with funding possible in 3 ways.

(1) Partly dependent on funds outside the regular budget.
(2) Predominately dependent on funds outside the regular budget.
(3) Partly dependent on regional programmes.

The overall objective of the dental health activities is to assist countries to formulate dental health programmes for planning, developing and/or evaluating dental health services, both preventive and curative, and manpower, quality and quantity, within the framework of National Health Plans and programmes.

Another example of a philanthropic society that has moved with the times to assist in relevant issues, is the Kellog Foundation, who have contributed significantly to the field of dental care, with provision of aid in various fields. The foundation, through the years, assisted in programmes to shape and reshape informational and institutional patterns to cope with the demands of change. A quote from the President and Chairman of the Board - Blackerby and Morris, sums up the attitude of the whole idea of philanthropy:

"There obviously are limits to the Foundations financial resources and practicality and perhaps philosophical limits to the number of varied arenas of social action to which a foundation could or should extend aid. However, within the boundaries of these limitations we hope to continue to support action orientated programs applying knowledge
which will help mitigate human dilemmas, thus forming with all people of goodwill and energy to move "Towards the sun and away from the chasm." 26
2.4 PREPAYMENT PLANS

Prepayment is an arrangement by which periodic, specified payments (premiums, dues, contributions) are made in advance and used to pay for health services when the need arises. It could be administered either by the dental profession or insurance companies or consumer groups, under close supervision. Dental Prepayment is one of the "oldest" new concepts around and although these programs have only been popularized in the last 25 years, they were offered as a benefit of employment, as early as 1883 by the Denver and Rio Grande Railways Company of the United States on a group prepayment basis. Fourteen dental programs were listed in the Directory of Prepaid Dental Plans as existing prior to 1940 in the U.S.A. and Table 1 presents data from these programs.

(P.T.O.)
### TABLE III: 14 EARLY DENTAL PLANS (ESTABLISHED BEFORE WORLD WAR II).

<table>
<thead>
<tr>
<th>Year Established</th>
<th>Business</th>
<th>Reason for Establishing</th>
<th>Type of Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>1883</td>
<td>Denver &amp; Rio Grande Western Railways Hospital Associations, Denver, Colorado</td>
<td>Result of management offering a fringe benefit.</td>
<td>Paid in total by employer. Service benefits provided in private dentists' offices with payment made directly to dentists. Minimum coverage, plus simple extractions.*</td>
</tr>
<tr>
<td>1890</td>
<td>Colorado Southern Railways Employees Hospital Association, Denver, Colorado</td>
<td>Outgrowth of cooperative health plan.</td>
<td>Paid by shared employer-employee contributions. Service benefits provided in private dentists' offices with payment for services made directly to dentists. Minimum coverage, plus simple extractions and oral surgery benefits for on-the-job injuries.</td>
</tr>
<tr>
<td>1910</td>
<td>Kimberly-Clark Corporation, Neenah, Wisconsin</td>
<td>Result of management offering a fringe benefit.</td>
<td>Paid by shared employer-employee contributions. Service benefits provided in private dentists' offices with payment made directly to dentists. Comprehensive coverage; plan pays 75% of cost incurred up to a maximum of $37.50 per person per year</td>
</tr>
<tr>
<td>1919</td>
<td>Union Electric Company, St. Louis, Missouri</td>
<td>Result of an effort by a voluntary employees' association.</td>
<td>Paid in total by employer. Direct treatment benefits provided at an in-plant clinic, and service benefits provided in private dentists' offices with payment made directly to dentists. Coverage basic, plus root canal therapy.</td>
</tr>
<tr>
<td>1921</td>
<td>Missouri Pacific Employees Hospital Association, St. Louis, Missouri</td>
<td>Result of collective bargaining negotiations.</td>
<td>Paid in total by employer contribution. Indemnity benefits provided in private</td>
</tr>
<tr>
<td>Year Established</td>
<td>Business</td>
<td>Reason for Establishing</td>
<td>Type of Plan</td>
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<tr>
<td>1922</td>
<td>Stockham Valves and Fittings, Inc., Birmingham, Alabama</td>
<td>Result of management offering a fringe benefit</td>
<td>Paid in total by employer. Direct treatment benefits provided at an in-plant clinic. Minimum coverage, plus fillings and simple extractions.</td>
</tr>
<tr>
<td>1923</td>
<td>American Cast Iron Pipe Company, Birmingham, Alabama</td>
<td>Result of management offering a fringe benefit</td>
<td>Paid in total by employer. Direct treatment benefits provided at an in-plant clinic. Intermediate coverage, plus fixed bridges and root canal therapy.</td>
</tr>
<tr>
<td>1930</td>
<td>Bankers Life Company Employees Dental Program, Des Moines, Iowa</td>
<td>Result of management offering a fringe benefit.</td>
<td>Paid in total by employer. Direct treatment benefits provided at an in-plant clinic. Minimum coverage, plus prophylaxis.</td>
</tr>
<tr>
<td>1936</td>
<td>Consolidated Edison Employees Mutual Aid Society, New York, New York</td>
<td>Outgrowth of cooperative health plan.</td>
<td>Paid by shared employer-employee contributions. Service benefits are provided in the offices of 80 contract dentists. Intermediate coverage, plus fixed bridges, root canal.</td>
</tr>
</tbody>
</table>
TABLE III CONTINUED.

<table>
<thead>
<tr>
<th>Year Established</th>
<th>Business</th>
<th>Reason for Establishing</th>
<th>Type of Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>1936</td>
<td>Rock Hill Printing and Finishing Company, Rock Hill, South Carolina</td>
<td>Result of efforts of a voluntary employees' association.</td>
<td>therapy, and periodontal treatment. Paid by the profits derived from a canteen service. Indemnity benefits provided in private dentists' offices with payments made as reimbursement to patient. Comprehensive coverage; total eligible beneficiary is subject to the limitation of funds available.</td>
</tr>
</tbody>
</table>


*Categories of benefits (criteria defined by the Division of Dental Health to classify the benefit structure of prepaid dental care plans):

The type of treatment coverage, as can be seen, varied from minimum to comprehensive care. 32 The financial methods used for prepayment are those of insurance and usually included insurance coverage of health catastrophes, which are unpredictable for the individual. It is a system whereby the premiums of many people are pooled to protect against possible individual losses. Sometimes, using this expense sharing basis, the employee pays a deductible item, a coinsurance percentage, and the excess over any predetermined maximum yearly limit. 22 The deductible item saves the insurance carrier the high cost of small claims that are better handled by direct payment than through a third party. The coinsurance not only helps reduce the financial burden on the underwriter by a given percentage, but maintains the interest of the patient in the actual cost of the dental services. The maximum limit exempts the underwriter from unusually high claims, though these high claims, because of their infrequency, are fairly easily covered by acceptably small additional premiums. The result is a sharing arrangement that permits a combining of the resources of both employer and employee group. Employers and underwriters traditionally like these arrangements though labor unions and other consumer groups do not because of the potential cost. Notwithstanding this, most dental prepayment plans are still being offered by management in group plans with differences only in the coverage and being accepted by consumer groups, as individual coverage is still very expensive and not considered attractive to the carriers. 12

Inspite of the disadvantages of dental prepayment plans for the public (the cost of individual coverage was too high and did not become reasonable until the advent of group policies) and for the insurance carriers (prepayment was not considered "good"
business) by April 1976, 35 million Americans were covered by privately sponsored dental plans. This could be attributed to the early independent efforts and later joint efforts of management and labor to meet the needs of American workers. One hypothesis as to why management offered such plans as fringe benefits was that if their employees had ready access to medical and dental care, they would be less likely to take time off work for illnesses and injuries. Another theory was that these benefits were offered as inducements for workers in hazardous industries. There was also a tax advantage involved whereby these benefits were tax deductible. Labor or unions on the other hand used benefits as a tool in stabilising fluctuating union memberships. Union members, they pointed out, would be more likely to continue paying their dues if failure to do so meant the loss of benefits.

These unions were able to persuade management to commit themselves to health and welfare programs as they were tax exempt fringe benefits to their members. Soon after the unions began to object to employer controlled benefit plans and agitated for the right to bargain over these benefits. And by 1948, court ruling decided that insurance benefits had to be negotiated and formulated at the bargaining table.33

With these events setting a firm base for modern dental prepayment plans, group dental coverage emerged in response to the demand for better plans. At present there are several types of organisations offering dental prepayment plans with wide ranges in the type of coverage and payment mechanisms.

Among the prepaid plans in the United States are:
(1) Dental Service Corporations
(2) Commercial Insurance Companies
(3) Group Practices or Clinics
(4) Non-profit Insurance Corporations
(5) Union financed plans paid by union dues or other union resources. There are several differently financed types under the union plans.\textsuperscript{53}

By 1977, Dental Service Corporation (Delta Dental Plans) held 40% of the market, Commercial Insurance Companies held 50%, with the remaining 10% being held by smaller groups e.g. the recently emerging Blue Cross, Blue Shield Plans, self-insured plans, etc.\textsuperscript{33}

With the development of these plans, the House of Delegates of the ADA adopted and modified on certain principles in the formulation of dental prepayment plans. These will be discussed in the next section.
2.4.1 RULES FOR DESIGN AND ADMINISTRATION OF DENTAL PREPAYMENT PLANS

Over the years, rules have evolved for the design and administration of dental prepayment plans. The first statement of principles was decided upon in 1953 and subsequent revisions have regularly been instituted. The Council on Dental Care Programs, of the American Dental Association, in 1974 compiled the Association's policies on dental prepayment programs; outlining its standards for quality of these type of plans, and for the administration and delivery of these plans. In them, the term "carrier" is intended to include all types of dental prepayment programs and the term "insured patient" is intended to include all those eligible for the benefits of the programs. These rules are:

(1) Organised Dentistry at all levels should be regularly consulted by the carriers with respect to the development of dental insurance programs that best serve the interests of insured patients.

(2) Joint efforts should be made by organised dentistry and carriers to promote oral health with emphasis on preventive concepts.

(3) Patients should have freedom of choice of dentist and all legally qualified dentists should be eligible to render care for which benefits are provided.

(4) The provisions and promotion of the program should be in harmony with the Principles of Ethics of the American Dental Association and the code of ethics of the constituent and component societies involved.

(5) Diagnosis and treatment planning shall remain the
exclusive perogative of the attending dentist. Professional standards and review of treatment plans must be under control of dentists.

(6) In order that the patient and dentist may be aware of the benefits provided by an insurance plan, carriers should provide a method so that eligibility and the extent of benefits excluding emergency treatment, can be communicated in advance of extensive dental treatment.

(7) Third Parties should make use of dental society peer review mechanisms as the preferred method for the resolution of differences concerning the provision of professional services. Effective peer review for fees, quality and utilization should be made available by the dental profession.

(8) Procedures for claims processing should be efficient and reimbursement should be prompt. The carrier should use the attending dentist's statement and the "Code on Dental Procedures and Nomenclature that the Council on Dental Care Programs has approved after appropriate consultation with nationally recognized carrier representatives.

(9) Benefits available under a program should be clearly defined, limitations or exclusions described, and the application of deductible or coinsurance factors explained to the patient by the carrier and employer. The patient is fundamentally responsible for services received. In those instances, where the plan makes partial payment directly to the dentist, the remaining portion for which the patient is responsible should be prominently noted in explanatory materials given to the patient by the carrier and employer.
(10) Dentists should comply with reasonable requests for information regarding services provided to patients covered under a plan.

(11) Administrative procedures should be designed to enhance the dentist patient relationship and avoid any interference with it.

(12) It is preferred that the method of reimbursement adopted by third party programs provide for payment on the basis of the dentist's usual, customary and reasonable fee. Programs that provide for partial reimbursement should establish only one level of benefits for comparable services whether delivered by a general practitioner or a specialist.

(13) The program should encourage the delivery of a broad range of quality dental services. When funding limitations mandate purchase of limited benefits, first priority should be given to diagnostic, preventive and emergency services. Coinsurance is preferable to a deductible if either is considered necessary. Deductible or coinsurance for diagnostic, preventive and emergency services should be avoided whenever possible because they are an economic deterrent to the timely receipt of these services.

(14) An optimum dental insurance program would include the following procedures;

(A) Diagnostic: Provides the necessary procedures to assist the dentist in evaluating conditions existing and the care required.

(B) Preventive: Provides the necessary procedures or techniques to assist in the prevention of dental abnormalities or disease.
(C) Restorative: Provides the necessary procedures to restore the teeth.

(D) Oral and Maxillofacial Surgery: Provides the necessary procedures to extraction and other oral surgery including preoperative and postoperative care.

(E) Endodontics: Provides the necessary procedures for treatment of the tissues surrounding the teeth.

(E) Prosthodontics: Provides the necessary procedures associated with construction, replacement or repair of fixed prostheses, removable partial dentures, complete dentures and maxillofacial prostheses.

(H) Orthodontics: Provides the necessary treatment for the supervision, guidance and correction of developing and mature dentifacial structures.42

Many differences in organised plans for provision of Dental Care Service under a Dental Care Plan can be either open or closed Panels. Open Panel has three characteristic features.

(1) Any licenced dentist can participate.

(2) Beneficiary has his choice of dentist.

(3) Dentist has free choice of patient ie, he can accept or refuse.

In closed Panel the patient has to go to a selected dentist who has agreed to prove services in a prepayment plan and the dentist has to accept any payment under that plan. Group Practice clinics may participate in the plan either on an open panel or closed panel basis.

Most clinical facilities, non dental organisations, sponsored by industry, labour unions, consumer co-operatives, are 'closed panels' since service is limited to a certain group of beneficiaries affiliated to those groups.
And usually open panels are sponsored by dental/professional organisations.

With these suggestions as guidelines, more acceptable plans can be formulated which would find greater favour with the public. Dental service corporations, for example, arose from attempts of the state dental societies to fulfil these refinements or as many of them as possible.

It must be noted here that dental insurance is designed to provide partial reimbursement, not total compensation. It is meant to assist a covered person in paying for some of his or her basic dental needs. It is not intended to, nor could it, cover all expenses at 100% of every dentist's fee.

Continuing dialogue between the profession and carriers can help ease the problems of administration and it is fortunate that most carriers are willing to entrust certain decisions to the professionals and abide by their findings. This would certainly give sanction to better plans being formulated for the consumer as well as the profession.
2.4.2 **DENTAL SERVICE CORPORATIONS**

A dental service corporation is a legally constituted organisation that contracts with groups of consumers to administer dental care plans on a prepaid level. The corporation is sponsored by a state dental association and operates on a non-profit basis. It represents an advanced development of the principle of meeting problems through collective effort and it also provides the sole mechanism for projecting the profession's influence effectively.

Unlike commercial insurance companies, dental service corporations enter into contractual agreements with dentists who elect to become members of the corporation, who in turn have to abide by the rules set by the corporation.

The first dental service corporation, the Washington Dental Service was formed in 1954 in the United States as a result of negotiations by the International Longshoremen's and Warehouse Men's Union and the Pacific Maritime Association (ILWU--PMA) to secure a dental care benefit package. Its aim was to:

"secure to individuals and groups of individuals, including modest wage earners and their families, dental services to which many such individuals and their families had been heretofore deprived."

As the corporation developed, the Washington Dental Service (WDS), established three basic fund accounts, which were followed closely in the development of later dental service corporations;

1. A Trust Fund; established from 92% of the premiums paid by the union's welfare fund for payment of benefits.
2. An administrative fund, derived from the remaining
8% of the annual premiums paid by the welfare fund and used to pay overhead and other business expenses; and
(3) A research and development fund, established with 5% withholdings by WDS from participating dentists' reimbursement claims, which was used to evaluate programs and to develop such materials as manuals for participating practitioners on WDS operations.

Three years after the formation of the WDS, the American Dental Association formally endorsed the dental service corporation concept. Dental society sponsorship is the main point to consider in the context of modern day dental prepayment mechanism. This differentiates the Dental service corporation from other contemporary mechanisms for dental prepayment. It can also be seen as developing the business aim of State Dental Societies. Thus these societies now act as administrators and fiscal intermediaries in prepaid dental care plans that are sponsored by labour unions, government bodies and similar interested groups, with treatment itself being provided by dentists.34

According to Mitchell and Hoggard, a dental service has the following features:

(1) It is professionally sponsored.
(2) It operates as a non-profit corporation.
(3) It permits participation by all licensed dentists within the state.
(4) It provides benefits that consist of services and,
(5) It allows freedom of choice for both the patient and the dentist.

In operating as a non-profit national organisation, dentistry was able to declare that its role in prepayment was aimed at bettering
the quality and distribution of dental care, and not in making a profit. When compared to commercial insurance companies, whose costs include a profit percentage, it should be noted that in doing away with the profit margin, these corporations are acting not only in the interests of their subscribers by providing the maximum amount of dental care, but also in the interests of participating providers, who thus earn maximum profits.

The advantages of the dental service corporations to the dentist and the profession has also been stated concisely by Mitchell and Hoggard:

(1) The corporation provides a means whereby organised dentistry can discharge its professional obligations to the public.
(2) It helps to preserve the traditional practice of dentistry and the dentist patient relationship.
(3) It provides an effective mechanism for extending dental services to more people.
(4) It can raise the level of oral health generally by making quality care more widely available at a reasonable cost.

Dixon also puts forward a few other advantages;
(1) The ready availability of a variety of specialists' services.
(2) The service corporations utilizes review committees in strategic locations, to service complaints promptly.
(3) The dentist deals directly with the corporation and the patient does not have to file a claim.37

Together with the advantages, there has been concomitant expression of the disadvantages by several authors;
(1) Young has put forward the view that with the lower dental fees, "cut rate" dentistry might result. Also (2) that the government might take over the existing plans of prepayment. (3) The unrestrictive free choice of dentists offered by the service corporation could in fact, become a paradox as in signing a participating agreement, he becomes a member of a closed panel. -Sabel

These disadvantages have been put forward as opinions and could be contended.\textsuperscript{55}

Over the 26 years since the establishment of the first service corporations, they have grown rapidly in number and size. In 1965 the American Dental Association saw a need to establish a national agency to coordinate the activities of the many state corporations. It consequently formed the National Association of Dental Service Plans which in 1969 became known as the Delta Dental Plans Association. By April 1977, the Delta organisation consisted of 43 active dental service corporations in 47 states. These plans covered 12 million people or 40% of the private dental prepayment market.

So, the dental service corporation seems to be the mechanism through which the dental profession can operate to help answer the challenge of dental care for everyone.
2.4.3 COMMERCIAL INSURANCE

After the establishment of Dental service corporations, the next big evolutionary step in dental prepayment coverage came with commercial carriers' entrance into the market. In the 1950's Benefits had been restricted to oral surgery procedures requiring hospitalization. Comprehensive plans were slow to develop and it was only after the 1960's that they began to secure a large part of the market.

This was not surprising, as the hazards of attempting to predict operating costs in an area of little actuarial and empirical experience, was risky. However, a primary reason for this greater interest was that some of these private commercial companies feared the loss of lucrative medical contracts if they did not supply dental coverage as required by labor and management. This fact could well be the major reason why commercial companies, by 1977, had obtained 50% share of the market. In terms of cash, out of the $1.5 billion spent by third party payers in 1976, two thirds was paid through commercial insurance companies.

Since commercial insurance carriers expect to make a profit on their investment, the cost of providing coverage would be expected to be much higher than non-profit agencies. Hence several cost-control mechanisms have to be utilized to make their policies more attractive. A major hurdle is the rendering of initial care at a cost which often exceeds that of maintenance care per year by a ratio of 5:1. Often beneficiaries are required to meet all or part of the cost of initial care. Then too, deductible provisions, requiring the beneficiaries to pay a stated
amount before being eligible for insurance payments and coinsurance
features which limit the company's obligation to a certain percentage
of the total cost, is used.\textsuperscript{35}

The commercial insurance company would be more likely to
use a fixed-fee-schedule reimbursement method to contain costs.
Another cost containment mechanism is the pre-authorisation of
treatment plans, to which the dentists comply for the sake of their
patients and their own economic interests. These commercial carriers
rarely have contracts with dentists and this lack of contract means
that the carriers have much less control over the care received by
subscribers.

Several advantages have been listed by several people.
Cass, Secretary to the Travellers Insurance Company has listed;
(1) The patient has a free choice in the selection of
his dentist.
(2) No interference in the doctor patient relationship
is encountered.
(3) The company is able to offer coverage to groups that
consist of individual members residing in several different
states.
Bishop, past President of the California Dental Service
corporation and the California Dental Association, has expressed
the opinion that four advantages exist for the insurance company
offering dental benefits;
(1) They have clients who represent an excellent source
of patients.
(2) Unencumbered by the standards that the dental profession
requires, they have greater latitude in providing services.
(3) Costs of acquisition of clients may be reduced by
adding such costs to an existing program and
(4) The companies have flexibility in payment of claims. Several disadvantages have been put forward by Eilers; (1) The high administrative and selling costs of insurance companies' policies. (2) Insurance companies, with a self-professed goal of profit, have no or little interest in the quality of dental care. (3) Lack of control by dentists of the arrangements of the companies. (4) Commercial plans, involving deductibles and coinsurance has a tendency to inhibit the utilization of preventive services which are not usually covered due to their relatively low initial cost.56

In Europe, especially in central Europe, exists a Dental Health Insurance (DHI) which could be termed to represent a Social Security Scheme. Here, the patient pays a regular contribution which entitles him to dental care. This payment can be made either voluntary or compulsory and is either a state operated (rather like Dental Service Corporations) or private organisations (Commercial Insurance carriers). Similarly if the cost of treatment exceeds the contribution or premium, then the patient is charged the difference.

A good example is in Germany, where Dental Health Insurance has been established for more than 50 years. This insurance is compulsory and is financed by contributions from employers and employees depending on the income levels, and administered by private dental surgeries with nearly all dentists having contracts with insurance companies. This is a variation from the system in
the United States. Treatment is on a fee for service basis, which is reviewed periodically by representatives of the Dental Associations and Insurance Companies. Benefits are similar in most companies and vary little. Here, 95% of the population is eligible for this care.

In France and Denmark, benefits offered by insurance companies, cover 75% and 66% of the total expenditure, although prosthetic work has to be paid in full. The Nordic countries have a negligible role in dental insurance.
2.4.4 NON PROFIT INSURANCE PLANS

In the 1950's community wide dental care prepayment plans were developed by non profit insurance corporations. These organisations differ from closed panel group practices and from dental service corporations because they are independent stock corporations unaffiliated with dental or consumer groups outside the field of health insurance. And unlike commercial insurance companies, they are non profit organisations. These plans have resulted from the efforts of dentists and other community leaders to bring dental service within the reach of larger numbers of individuals by making it a regularly budgetable expenditure.

Initially, the development of these corporations were limited to the New York City area and although individual enrolment was allowed, they provided primarily group coverage. The administration structure and legal status of a non profit corporation provides even greater flexibility than the dental service corporation. Prepayment coverage has been offered on a service basis providing complete payment for dental care, on an indemnity basis with limits on the obligation of the plan, and in combination policies which give complete or partial coverage depending on the income of the family. An independent insurance company could also operate closed panel clinics. Since the organisations of this type are not limited necessarily to the geographic area of a component dental society, they can offer coverage to a group of widely scattered beneficiaries more easily than a dental service corporation.
2.5 POST PAYMENT PLANS

Prepayment for comprehensive dental care is a complex problem and the bulky backlog of needed initial care may provide a formidable barrier to enrolment in a program designed to facilitate yearly maintenance care. The solution could be in postpayment which is another method of individual purchase of dental services similar to that of financing a car or appliance; the patient, in effect, takes a loan from a bank or other lending institution, the dentist is paid immediately in full for his services and the lending institution has no recourse to the dentist should the patient default in payment. It could also be considered as the spreading over in a period of time, a lump sum of already existing indebtedness. This helps patients in paying for the restoration of accumulated defects by eliminating the necessity for a large immediate expenditure; as well as establishing a habit of periodic payments required for a prepaid maintenance care plan.13

There are several good reasons for extending credit, in dentistry, in the form of postpayment plans. Among them are the following:

(1) To bring dentistry within the economic range of more people.
(2) To attract new patients.
(3) To enable patients to select a more complete program of mouth rehabilitation.
(4) To eliminate any misunderstanding over fees.
(5) To give a very satisfying solution to collection problems.
These reasons would be sufficient to arouse and maintain an interest in postpayment plans, by the dentist, the Association and the public.

As set out by Roy W Fonds, in his Analysis of Postpayment Programs, there are four methods of postpayment today, each with its own advantages and disadvantages.

(1) Cash on Completion of Services

Here the patient pays as the work progresses, with the dentist attempting to equate the payments with the value of the time and materials used. The obvious disadvantage of this method, aside from the reflection on the patient's credit, is that it prolongs treatment over a long period of time, depending on the ability of the patient to accumulate enough money for more treatment. It also tends to fill appointment books at certain times of the month close to pay days, leaving unfilled days in between. Patients under this type of plan, generally select the minimum requirements of dentistry, since it is not possible for them to secure enough cash at one time to pay for a better type of service or a mouth rehabilitation.

(2) The Monthly Statement

Here the dentist renders the necessary service on an open account and bills the entire fee upon the completion of treatment. This method is successful with the financially responsible patient, but it also results in uncollected and uncollectible accounts since the dentist has no way of determining who is financially irresponsible.

(3) Office Notes

Here an agreement under the seal of a promissory note is entered into by the patient and the dentist. Specific payments are spread over a definite period of time. However, in most cases this
is found to be unsatisfactory since there is often a low level of business administration in the average dental office. The payments are made directly to the office so that the patient keeps in contact with that office for a year or more, or until the bills are settled. Often the dentist makes use of a third party company to inform the patient by mail, of his obligation of payments due and collection of these fees.

(4) Bank Cards and Credit Cards

With the widespread introduction, acceptance and use of credit cards in the 1970's it has become convenient for patients to pay for treatment by using a bank card or credit card. This idea is being increasingly utilized in the United States of America and Australia and may become an important factor in increasing utilization of dental services. The dentist's bill is paid promptly by the credit company with the dentist paying a service charge and the debt of the patient is to the credit company.

(5) Bank Plans

Perhaps the first organised interest in postpayment was taken by banks. The first known dental personal loan was instituted in the U.S.A. by the National City Bank of New York in 1929. Programs grew, but it was not until 1935 that the first dental society plan was established in recognition of the dental profession's desire to promote and help control personal loans for dental care.

A budget payment involves the processing and approval of an application for a loan from the bank. After approval by the bank, the dentist is paid his entire fee, less a discount charge, which is placed in a special "loss reserve" fund to reimburse the bank for any uncollectible accounts. The patient repays the loan, plus the interest, to the bank in budgeted amounts. The "loss reserve" fund is the
property of the dental society (or the participating dentists) and its use in reimbursing the bank for delinquencies permits greater numbers of patients to qualify for bank loans. When the reserve fund of the program has been sufficiently built up, the deduction may be abandoned and the dentist then gets his full fee immediately.60

There are several reasons for organised dentistry to take an interest in postpayment plans. Dentists who wish to encourage patients to undertake prompt, complete, initial care can do so more easily if they have a specific financial arrangement to suggest. They can suggest with confidence a plan endorsed by their own dental society and be free of the suspicion that they have a personal "deal" with any specific bank in arranging loans. The bank and the patient also benefit in the knowledge that they are working in a way approved by the local dental society.

The privilege extended to the patient through a postpayment plan - the privilege of paying a prearranged fee for services over a definite period of time based upon the patient's credit rating - can only result in benefits to the public at large, the dentist using the plan, and the dental profession as a whole.

The principal benefits from the public viewpoint would be;

(1) To simplify the nature of professional services rendered to the public.
(2) To reduce the actual cost of professional services to the patient.
(3) To improve the relations between the public and profession.
(4) To increase the actual net profit to the dentist for rendering professional services.
In simplifying the nature of professional services rendered it allows treatment to be instituted at an earlier stage; as the chief reason for postponing dental care is the inability to pay for a complete program.

It also reduces the cost of dental services in two ways. Firstly, neglect results in loss of teeth and often injury to the patient's general health; this although intangible in nature is more costly. Secondly, the tangible cost to the patient is incurred when necessary work is delayed by complicating the nature of restorative work required. The result is a direct increase in the amount of dentist's time necessary to place the patient's teeth in good condition and a corresponding increase in fee.

The third benefit aids by eliminating the frequent criticism that dentistry is too expensive. When organised dentistry offers an alternative convenient method of paying for necessary treatment, this criticism decreases, thus improving relations between the dentist and his patient.

The final benefit aids in increasing the dentist's profit by firstly, increasing the demand for services, and secondly by allowing him to schedule his operating time on the basis of production rather than on the basis of payment. 18

In conclusion, dentists should not expect these plans to act as panaceas to their financial problems. The mere signing of a note does not discharge the responsibility that dentists owe to themselves if they intend to keep out of financial difficulties with their patients. Yet, there is no doubt that mutual benefits accrue to the patient and the dentist by the wise use of postpayment programs that are now available and in keeping with the modern trend of credit in other lines of human endeavour.
3. METHODS OF PAYMENT

3.1 PAYMENT MECHANISMS

There are various mechanisms for reimbursement of dental bills, but the exact method by which payment to the dentist is calculated is not part of the general principle and varies from time to time and from program to program. The following outline categorizes payment mechanisms by the way primary funding sources pay dentist bills.

I Individual Patient Payments

(A) Fee For Service
   (1) At time service is rendered
   (2) Monthly statement
   (3) Budget payment to office
   (4) Postpayment (installment purchase through dental society plans, personal bank loan, credit union etc.)

(B) Dental Health Insurance or Prepayment
   (1) Purchased through insurance companies or other similar financial vehicle (may involve a fee-for-service to dentists)
   (2) Purchased directly from the dental office e.g. Narsmith Dental Plan
   (3) Purchased through membership in a co-operative (e.g. Children's Plan of Group Health Association of Washington)

II Third Party Payment

(A) Fee For Service (may be prepaid to the carrier by the third party)
   (1) Indemnity - based on the percentage of a table
or schedule of fees. The dentist may charge the patient any additional amount up to this fee.

(2) Usual, customary, reasonable (U,C,R) fees - based on a fixed percentage of the dentist's agreed charges. The dentist may charge the patient only the remaining percent.

(3) Fixed fee - dentist may accept the third party payment as full payment. e.g. Medicaid.

(B) Capitation payment of so much per person per family per fiscal period without regard to services rendered.

(C) Budget - a specified sum for the program is allocated for the fiscal period unrelated to the exact number of persons or families participating.

These various payment forms could be made either to solo or group practices. The private practices could be either independent or directly owned by a third party, such as a co-operative, trust fund or governmental agency.46

When the individual reimburses the dentist on a fee-for-service basis, it is a relationship solely between the dentist and his patient. This fee could be given at the time of service, after treatment, or the patient could be presented with a monthly statement. Sometimes the dentist will vary this and allow the payment to be made over a period of time, in smaller amounts called as budget payments. In several practices, payments are made on an hourly basis, only taking into consideration the materials used. Often the patient makes use of a postpayment mechanism whereby he borrows money from a bank or credit union to repay for treatment. These latter two mechanisms are often used when there is either a large
backlog of treatment or if there is expensive treatment to be carried out, whereby it is up to the patient to plan the costing out for himself, according to his ability to pay. Collection of fees depends to a large extent on the trust between dentist and patient and cost of treatment is no guarantee of quality. There is no third party that evaluates either the fee or the quality of work being carried out. However it does allow for the patient to have treatment as and when he wishes and to budget accordingly. There is also free choice of dentist.

Rarely do individuals make use of dental health insurance to reimburse the dentist. This is an expensive method, as the risk of dental disease is high and if not shared by a group will raise the premiums beyond reasonable levels. This is because dental disease is a predictable disease for the individual and as such goes against one of the principal objectives of insurance, which is, "There should be a large number of independent risks (i.e. policy holders) over a wide enough area so that it is unlikely that any substantial percentage of persons will demand services at any one time". Due to the greater risk of dental disease, premiums will be much higher and this in turn will discourage potential policy buyers and limits the number of people in a plan. If these insurances are purchased from insurance companies or from dental offices through membership in a co-operative, the premiums, will not be as high, as the risk is being shared.

When a third party enters the picture, some mechanism for controlling the level of costs is necessary and this is usually done by introducing rebates as a fixed or a proportion of usual, customary, and reasonable fee, or a fixed fee. These are mechanisms insurers use to define the limits of their liabilities under policies when reimbursing practitioners or patients.
Fixed fee requires that the dentist provides the service indicated at the fee set by the third party and is normally used in publically funded (government) or financially restricted programs. This fee for a given service is selected primarily on the basis of funds available. There is little or no relationship to actual, normal fees charged. The advantage is only to the program. Financial liability is restricted and limited. It is in actual fact a low cost program that sounds good, but provides little. The disadvantage is that the payment is nearly always well below the actual fees charged and usually the recipient is not billed the difference. The dentist obviously, must accept this fee as total payment and cannot charge an additional fee.22

With a table of allowance, the amount that will be paid by the third party towards each specific dental service is indicated. This type has a maximum fee limit for each service but is closer to the actual fee charged. The advantage here is that the amount paid is clearly spelt out and both patient and provider know what the insurance will pay and what difference the patient must pay "out of pocket". In the financial obligation of the plan, the purchaser is limited by the dollar benefit limit. Administrative costs may be reduced due to the simplified benefit structure and often premiums cost less. The disadvantages are that payments rarely approach the actual fee charged in the geographical area. It may be 50% of the most frequent, common or actual fee. The patients' health care expenses are only partially paid by insurance, resulting in a larger, out of pocket expense for the individual. Often the table is not adjusted for long periods (i.e. entire 2 or 3 year term of the contract) and hence the percentage paid of the real fees
charged is reduced. A potentially dangerous problem could result out of this if a national health insurance makes use of this system. The National Insurance could set nationally established minimum benefits and request all employers to provide health care for their employees. To limit expense the employers could select a 75th percentile table of allowances. Then, as a second, later step, the federal law, if modified to require that the dentist must accept that benefit as total payment, could result in a simple slide from a table of allowance to a fixed fee.

Often, in an attempt to incorporate an element of social welfare, a fixed fee schedule is provided for the care of families having an income below a stated level and a fixed table of allowances is set for the care of families above this level.

The third principle, the usual, customary and reasonable concept, often called as a service benefit program, was created to allow dentists to receive full payment for the services they performed, under prepayment plans. It was also thought of in an attempt to seek a method of reimbursement more acceptable to the profession, or insuring agency. It comes closest to paying actual charges than any other. The method of statistical analysis of actual fees submitted may be accomplished so that the statistical "customary" fee based on the 90th percentile of charges may accommodate the "usual" or actual fee of 95% of the dentists submitting claims in the same geographic or socio-economic area of the community. This means that the coinsurance factor, of 85% would be paid on virtually all of the bills submitted. Fees outside the specified percentile range are generally allowed for specialists, but if a dentist cannot justify his fees to the corporation, he is faced with being reimbursed by the carrier at a lower rate than he would normally charge. This
method is widely used by dental service corporations, Blue Cross and Blue Shield and is the favoured reimbursement mechanism of organised dentistry. The dental service corporation, in addition, requires the participating dentist to file a list of their fees, and they are paid accordingly. The advantage is that the patient pays less out of pocket difference. Patients are also encouraged to accept the highest quality care available. The disadvantages are that the premiums and administrative costs are higher, principally because of more detailed and extensive claims procedures. There is also a lack of uniformity of statistical analysis within identical geographic areas, resulting in different customary determinations. There are also many variables in the raw actual data upon which calculations are made. The time interval varies for updating, and sometimes the calculations may be made on old, inaccurate fees. Insurance companies use different geographic areas for analysis of fees and the sites of the highest or lowest fees may not be included which would change the customary determination.

According to a report in 1976, out of 176 plans surveyed, 71% used the usual, customary and reasonable fee principle and the remaining 29% used the fixed fee schedule. This is the general trend in most plans nowadays.

Capitation payment, a non fee-for-service method of payment is a system of payment paid to a provider of health care to cover a range of services necessary for one eligible consumer during a given period, regardless of volume. The sum of money is based, usually, on actual figures for the cost of care of persons of a specified age and environment, but costs for persons of all ages may be averaged in a group contract for comprehensive dental care. Hence income to the practice is more predictable with a capitation
plan and is based on the number of enrollees (not services provided). Another advantage of this method is that preventive measures are encouraged because they cut down the yearly load of restorative work - an advantage to both the dentist and the patient. Hence the preventive measures under capitation do not have to be measured either by time or the operation. Another advantage is that both the patient and third party are assured of fiscal control where fees are already fixed. It also eliminates claim forms, as once the patient is determined to be eligible, the dentist can proceed with the work without being subject to delays or changes in treatment planning. In cases where the capitation premium is not enough to cover all services and appliances, (or the services are not covered by contract), a fixed surcharge schedule is usually arranged so that excess costs are readily established in advance without doubt as to what the patient will or will not pay for.

On the negative side, capitation fees could lead to inadequate performance of restorative services especially for patients who are, or are thought to be, transients. The incentive to perform extra services are missing in some of these cases.

As can be noted, each method of payment has its inherent advantages and disadvantages, and it is up to the consumer group to decide which one is most suited to the policy holder, while being profitable to itself. Each method of payment, should ideally, also have some control to varying extents, over the quality of work being carried out.
4. SELECTED SYSTEMS

4.1 NATIONAL HEALTH SERVICES IN THE UNITED KINGDOM

One of the most mature National Health Programs, that incorporated comprehensive dental care is to be found in the United Kingdom. Their National Health Service is part of a compulsory National Insurance Plan, which was established in July 1948, after years of attempting to provide an organised system of health care. They had, for their objectives, the belief that the National Health Service (NHS) should;

(1) Encourage and assist individuals to remain healthy.
(2) Provide equality of entitlement to health services.
(3) Provide a broad range of services of a high standard.
(4) Provide equality of access to these services.
(5) Provide a service free at the time of use.
(6) Satisfy the reasonable expectations of its users.
(7) And to remain a National Service responsive to local needs.

Some of the objectives were controversial and others unattainable, but nonetheless, they were the ultimate goal of the NHS.²⁹

It started when groups of public spirited dental surgeons initiated the establishment of dental hospitals and dispensaries for the treatment of the poor in some of the larger centres of population, though from an early stage the profession recognized the need for a system of dental care for children, in particular, in order to instill a more dentally conscious public for the future. For more than 20 years, the British Dental Association was vigorous in its attempts to educate responsible bodies and the public towards this goal. The
first dental clinic for school children was set up in 1907, established by private benefaction. Soon after in 1910, a publically financed school dental clinic was established in London with others following suit. They were backed by the Education Act of 1918 which made it obligatory for local education authorities to provide and arrange for dental inspections and for treatment for all children in public elementary schools. This, the Local Authority Dental Service, exists even today, side by side with the NHS.

For the working population, a system of compulsory Health Insurance was introduced in 1911, but dental care was not introduced until 1923, and then only as an "additional benefit". Then too, only the worker himself, who contributed to the scheme, was entitled to the benefits but dependants were excluded. This system remained in force until public and professional attempts for comprehensive health care was materialised in the NHS in 1948.

The British National Health Service (BNHS) offered all citizens the full range of dental care, a program that attracted world-wide attention and sceptism. Dental care for adults through the National Insurance Scheme employing dentists in private practice with no limitations to age, sex or economic status of the patient. Priorities were given to children and expectant and nursing mothers, who even now, are still treated free of charge.

Any dentist wishing to participate in the service could arrange with the executive council for his names to appear in the dental list which is then publicised. At present, over 90% of the dentists in the country have chosen to join primarily because of the availability to their patients of government financing. Anyone requiring treatment goes to a dentist of his choice. He does not
have to register with that dentist and when the treatment is completed, the dentist is under no obligation to the patient should he return for fresh treatment. The dentist is free to refuse to treat any patient, without question.

On the request of the British Dental Association, the dentists are paid on a fee-for-service basis. When the dental practitioner undertakes to provide treatment, he is able to carry out most services without prior approval. Only children and expectant mothers receive free treatment. All others have to pay a small sum to their dentist for each course of treatment, and the excess is covered by the National Health Insurance. Patients also have to pay 50% of the cost of dentures. This coinsurance mechanism was shown to produce an immediate and dramatic decrease in demand to dental care when first introduced. Previously all treatment was free for all groups. However, at present, utilisation of services is quite high.

Given below is a list of dental benefits from the BNHS, General Dental Service, 1970:

L Clinical Examination
LP Radiological Examination
L Scaling and Gum Treatment
* Acute Periodontal Care
PA Deep Scaling, Gingivectomy
LP Fillings, Deciduous Teeth
* Fillings, Permanent Teeth (Amalgam and Silicate)
PA Gold Fillings and Inlays
* Root Canal Treatment, Pulpotomy, Apisectomy
PA Crowns
* Recementation, Inlays and Crowns
PA Extractions
PA Alveolectomy
LP General Anaesthesia
PA Dentures Including Major Alterations
* Relining or Simple Repair
* Addition of Clasp or Tooth
PA Bridges
PA Obturators or Splints
PA Orthodontic Treatment
* Repairs to Orthodontic Appliances
* Temporary Filling or Treatment
* Home Visits
* Biopsy
* Control of Haemorrhage

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* Available without prior approval
L Limited frequency permitted
LP Limited scope, prior approval required beyond that scope
PA Prior approval needed.

- Source: Adapted from NHS, England and Wales 1970.

Complicated courses of treatment requiring prior approval is arranged through the Dental Estimates Boards. These Boards are a central body and approve estimates for dental treatment and authorizes payments to dentists. The Board consists of a Chairman, a Vice-Chairman and 7 others. These Boards attempt to spread government funds as widely as possible among the population and in this attempt they
tend to authorize most readily those procedures which will result most rapidly in the termination of treatment. For example, dentures and extractions are preferred to conservative treatment which on a long term basis is more expensive. In the words of Eckstein:

"The very preservation in dentistry of the old fee paying service (by the Exchequeror) has led to the greatest inroads on professional freedom of any parts of the services".

In recent years, however, fees have been adjusted so that the dentist under NHS is paid by the hour, and a dentist cannot earn the approved rate unless he completes a certain quota of work. This system has its own built in accelerator. Inspite of the obvious limitations, most dentists are still in favour of continuing under a system that seems to them to offer "the best possible treatment for the greatest number of patients".

The General Dental Services of the NHS has been financed in part through tax funds from cigarettes and liquor and in part through compulsory insurance on employed persons. The total expenditure for health services in the U.K. was between 5% and 6% of the Gross National Product. The NHS premiums are generally compulsory from the time of leaving school with a flat rate for each individual worker and each member of the family. Employers also contribute a sum roughly equivalent to each employees' contribution. In hardship cases, an individual receives aid directly from tax funds. 97% of the population is covered by this insurance scheme.

Private practice still exists and is patronised by patients from a broader economic range. The more sophisticated dental operations not included in or commonly approved by the NHS must be performed in private offices, but patients who go to these offices tend to have all their work done rather than dividing it between practitioners.
and government practice. A recent review by the Royal Commission reports that the private sector is too small to have much impact on the NHS except locally and temporarily. But it is important to note that the private sector responds more directly to patients' demands than the NHS.

The quality of services by the General Dental Service is reviewed regularly once every two years, by the Dental Estimates Board. They, as stated before, approve both the estimates for treatment and claims for payment submitted. Located in Eastbourne, Sussex, it handles all estimates submitted by practitioners. One in every 25 claims is selected and analysed. This information is compared to the national and regional averages and if a practitioner should deviate from the regional average by a significant degree, his dental treatment is analysed more carefully, or the patients recalled so that the complete treatment may be examined. This comparison of information requires continual updating and the Estimates Board has been collecting data since its inception, so that the analysis and comparison of a dentist's pattern of treatment with the national and regional values has become quite accurate. An example of their analysis, is when the ratio of fillings to extractions is calculated by dividing the total number of fillings placed by the total number of extractions for a given period. The results will correlate accurately with the quality of service. Hence a high value of fillings as compared to extractions indicates a high quality, improved service. This system of evaluation works well in the United Kingdom due to 4 reasons;

(1) The magnitude of the NHS lends itself to statistical review.

(2) Most of the dentists participate in the NHS.
(3) The dentists use a standard billing form which is ideal for routine collection of data and
(4) The British government acts as the third party in providing dental care and hence is responsible for the quality of services provided to its taxpayers. The two disadvantages are;
(1) If there is a deviation, this is not necessarily due to the fact that his treatment is of inferior quality or that his patterns of treatment are in error and
(2) Analysis of the quality by this technique only measures patterns of treatment and does not evaluate the individual service, hence the human element is missing. 28

Insipite of the limited resources and the tremendous need for treatment, the dental profession faced, they rose to meet it as well as circumstances permitted and the quality of work was generally good despite the utilitarian services. The Royal Commission Survey of 1976 indicated that 80% of the patients thought that the service was good and a primary care survey indicated that on the whole the NHS did provide an accessible service, generally appreciated by its users. 29

Initially many of the older dentists had difficulty in adjusting to the scheme as they found it irksome to get permission before doing certain types of work and filling out of forms were viewed by some as a threat to the dentist patient relationship. As when large sums of public money is involved, it is essential to establish safeguards which the older dentists equalled with bureaucratic interference. The younger dentists entering the NHS (many of whom had served with the armed forces) had less antipathy and seemed to
appreciate the humanitarian aspects of the service. The personal advantage inherent in the program was also appreciated, i.e. there was no worry about collecting fees, and to start a practice was easier with a ready supply of patients. Earnings were good and government reimbursements were prompt. The trend towards conservative work also satisfied as some of the more refined techniques associated with good dentistry, could be employed. From the patient's point of view, he could obtain treatment with the bulk of the cost shifted out of sight. Informal estimates have indicated that about 40% of the British population visit the dentist annually and there has been a 5% reduction in edentulous patients in the last 30 years.

Irregardless of complaints that administration was expensive and with slow decision makers, the general impression received is that the British population are relatively happy with the service they receive. An equilibrium between supply and demand of services is finally in view.
4.2 MALAYSIAN HEALTH SERVICES

Malaysia, a country with a population of over 12 million (1976 estimate) has a very well developed public dental health service, that has its beginnings in 1899. It began then with the establishment of a single private practice in Penang, one of the states of Malaysia. The absence of adequate facilities and the appalling standard of treatment given and the wide prevalence of dental diseases, led to the establishment of a dental school in 1929, in Singapore. The first public dental health service began with British dentists employed in the main hospitals, with the locally qualified dentists assisting. These dentists visited districts or townships to do emergency dental care, twice a week. These part-time dental care centres, when staffed with qualified dentists became full-time Government Dental Clinics.

The second stage of development was between 1946 and 1952. A dental professional was appointed Head of Dental Services of Malaya. A new ordinance, the Registration of Dentists Ordinance (1948) was enacted and despite strong protests from the Malayan Dental Association, a group of unqualified dentists were admitted to the register. There were a total of 480 unqualified dentists, and 50 qualified dentists on the register. This era also saw the extinction of the "Tooth Extractors" often also referred to as "roadside dentists".

The third stage of development from 1952 onwards was more progressive. Organised dental professions started showing a deep concern for national dental health. Private practitioners also increased in numbers. The various states were given freedom to
develop their dental health programs under the direction of Principal Dental Officers. The demand for the training and employment of school dental nurses in government clinics was also increased. The need for awakening the public demand for better dental services was understood by the dental profession, and dental health education became an important part of the public dental health movement.

With this as the base for present day services, basic medical and dental services now had for its goal, to reach all people, adults and children alike. Services previously not so easily obtainable in the more rural areas of the country are now more accessible to a larger segment of the population through expansion of the Rural Health Service. District hospitals and dental clinics with specialised care, previously not available, is now provided in all General Hospitals. 25

In Malaya, the health and dental needs are the responsibility of the Ministry of Health, government of Malaysia, and they undertake to provide for the health needs of the people to the best of their ability. There is a Director of Dental Services who is responsible for co-ordinating services. At present, the services in Malaysia are provided for by:

(1) Public Dental Services
(2) Private Dental Practice and
(3) Dental Faculty of the University of Malaya.

The public dental services are entirely run and funded by the Ministry of Health and is of two types, preventive and curative. The way in which services are rendered are through the following services:
(1) School Dental Service

This provides free, systematic and comprehensive treatment for all primary and secondary school children, with emphasis on primary school children. Most of this service is carried out in the school dental clinics which exist in many of the larger primary schools and some secondary schools. A school dental nurse is usually responsible for the dental care of all students, but cases that require the attention of a dental officer as a specialist are referred to the clinics concerned. Secondary school children are encouraged to obtain treatment and those who do attend clinics are given systematic and comprehensive treatment.

(2) Rural Dental Services

These services are provided through a network of rural clinics which consist of dental units in main health centres and sub-centres, mobile clinics and squads. The inaccessible areas are not neglected and great efforts are made to extend services to these sections of the population. Treatment rendered is comprehensive, and emergency treatment is given where necessary.

(3) Hospital Dental Services

Dental clinics with specialist services are present in most hospitals in main towns. Treatment ranges from restorative, preventive to maxillofacial surgery (in case of accidents). Referred cases requiring specialist care are also seen. In-patients are also treated. Adults and children are charged a small fee according to the treatment received.

(4) Dental Clinics

These clinics may be incorporated either in maternity or health centres some distance from hospitals. These clinics attend
to school children general public and denture patients as well as pre and post-natal mothers. They are usually located in towns and have their own vehicles or staff and patient transport.

(5) Preventive Dental Services

These incorporate fluoridation of public water supplies which is being implemented by the government in stages. Dental Health Education in which dental officers, nurses and even teachers are involved, is taught in schools, community centres and frequently make use of the mass media to bring the message across. Topical fluoridation is also being carried out, especially on primary school children.

The Armed Forces have their own dental corps and the dental needs of police personnel are attended to by the dental surgeons of the Ministry of Health. All these services are organised at National and State levels, whereby dental services in the state are the responsibility of the State Dental Director and his staff, and the co-ordination of services and formulation of policies are carried out at the National level.

Financing of all these services are from federal allocation of the tax funds with an inbuilt percentage for dental requirements. In 1979, dental services constituted 5.6% of an operative expenditure of $650 million with 63% going for medical services and 23.5% for public health and the rest 7.9% going for research and administration (1979 January).

The dental services are free for indigent persons, but others are charged a minimal fee. Dentures and orthodontic treatment are charged a fixed fee. School services are free, irrespective of the type of treatment.
At present, there are 656 dentists, with 397 in government clinics, (19 in the armed forces), 28 in the university, and 231 in private practice. This gives a dentist patient ration of 1:18,000 (January 1979). The government is trying to improve this ratio and is being helped by the Malaysian Dental Association. One way in which they are doing this is by establishing rapport between dental professionals and career guidance, to help recruit more students to enter the profession.

Private practice is a small, but growing concern. However, private practice is still mostly confined to the more economically stable families and staff of commercial firms, which provide dental services as a fringe benefit. The Malaysian Private Practice Society which looks after the interests of the private practitioners, have contributed greatly to the quality of services and their availability. Legislation has been requested to make it mandatory for employers to provide free emergency treatment. In working in close co-operation with the Malaysian Dental Association, a suggestion has been put forth suggesting that the private practitioners be allowed to work on a part-time basis in government hospitals and clinics to help decrease the workload of the dental officers.

The quality of care delivered is assured to a certain extent by steps taken by the government, in only allowing registered dentists to practice and it takes a poor view of reports of malpractices. The Malaysian Dental Association also helps maintain quality control.

It is evident therefore, that with the keen interest shown by the Malaysian government and the profession, dental care in Malaysia is on an upward trend, with close co-operation between the Association and the Ministry of Health, helping this to progress systematically at a quicker pace.
4.3 AUSTRALIAN HEALTH SERVICES

The medical profession in Australia is derived from the English model and still reflects its British origin and inheritance in its educational systems, ethical standards, its institutions and philosophy. Its development was separate and independent, and remote of the Colonial Medical Service. The latter's function was restricted in its supply of medical services to the segment of the population of the colony totally dependent on the crown for sustenance and lodging, viz. convicts, military detachments, prisoners, etc. After 1820, free and freed citizens were excluded from the ministrations of the colonial medical service and there was a rapid increase in independent medical practice to cater for this group, including those who were socially and vocationally indigent or pauperised.

With the disintegration of the colonial medical service, the sole supply of medical services became, through government default, the responsibility and perogative of the practising medical profession in New South Wales.

At the present time, the medical care system in Australia is planned at central government level, but the administration is decentralised at regional level. The services are the responsibilities of the Federal, State and Local Governments, as well as being provided by non-government agencies.6

GOVERNMENT AGENCIES

(1) Federal Government

In addition to the Minister for Health there are two other ministers with important health implications. These are the ministers
for Social Security and Veteran's Affairs. The bodies which work in close liaison with the Commonwealth Departments of Health are the:

(a) Health Insurance Commission;
(b) Hospitals and Health Services Commission;
(c) National Health and Medical Research Council;
(d) The Repatriation Department;
(e) Commonwealth Serum Laboratories;
(f) The Commonwealth Department of Social Security

The Commonwealth Department of Health is staffed by members of the Commonwealth Public Service. It has a central office in Canberra and offices in all state capitals and via these, it implements the provisions of the National Health Act in co-operation with the required non profit health insurance organisations and the Commonwealth Department of Social Services. The Department also administers a variety of testing, research and educational institutions, e.g., Bureau of Dental Standards. It provides channels of communications between Commonwealth and State Health Departments, furnishes the secretariat for the National Health and Medical research council and maintains liaison with many non-governmental organisations such as the Australian Medical Association and representatives of the pharmaceutical and food processing industries. Subsidies are also paid to the states towards capital expenditures on public nursing homes, provision of paramedical services to aged persons in their homes and expenditure upon mental health institutions.

The departments under the Commonwealth Department of Health include;

(a) Health Insurance Commission.

This is a statutory authority of the Commonwealth Government which was established by the Whitlam government, initially to set up
and administer a scheme of compulsory Health Insurance. It is based on the principle of universal entitlement to a minimum set of benefits. The medical benefits were set at 85% of the level of a set of scheduled fees (established by independent arbitrators) with a maximum gap of $5.00. Thus the patient could pay the doctor and seek reimbursement of the benefit from the Health Insurance Commission or have a cheque for the benefit sent to the doctor and pay the difference. Provision was also made for an assignment of benefit attached to a service from the Commission as full payment. By agreement with the states, standard ward accommodation was provided free, and medical treatment in public hospitals, for 'hospital patients' was provided by staff engaged by the hospitals on a salaried, sessional or other contractual basis, at no cost to the patient. The commonwealth reimburses the states for half the net operating costs of the public hospitals and benefits of $16.00 per day per patient were also paid to recognised private hospitals. The scheme is financed entirely from general revenue.

(b) Hospitals and Health Services Commission.

This was established in December 1973, and set up by the Whitlam Government, and was a broad charter covering health policy analysis, development, evaluation and research. The original constitution provided for a full time chairman and deputy chairman together with part time members. In 1977, these were replaced with senior officers from within the Department of Health.

(c) The Repatriation Commission.

This commission cares for ex-service personnel returned from combat areas and specified classes of their dependents. Repatriation Institutions are included and examples are general hospitals, long stay hospitals and hostels.
(d) The National Health and Medical Research Council.

With its large number of standing and several ad hoc committees, it advises the federal and state governments on matters affecting the health of the community. It conducts inquiries into the efficiency of new methods of treatment and issues reports upon these. It also advises the Minister on the allocation of grants from the Medical Research Endowment Fund. The Commission's reports which are available to the public usually contain some of the relatively few authoritative statements on public health matters published in Australia.

(e) Commonwealth Serum Laboratories (CSL).

This is a corporate body under the CSL Act, 1961. The Commission took charge of the operations of the CSL which have been engaged in the production of biological products for human and veterinary use since World War I.

(f) The Commonwealth Department of Social Security.

The Department of Social Security is responsible for paying Commonwealth pensions and benefits, providing social work and rehabilitation and providing specialised services to migrants. The Department makes more than a million payments per week and in 1978-79 the total outlay was over $7,000 million. There exists a strong relationship between this Department and health: aged persons assistance, provision of children's services and facilities for the handicapped are all health related. An increasing proportion of the population are reliant on social security benefits.

(2) STATE GOVERNMENTS

These carry a heavy responsibility for the provision of a wider range of services. Each state has different legislations and organisations in addition to their traditional public health functions.
The degree of participation within a state, by the government, varies from those areas where government agencies completely or almost completely hold a monopoly (e.g., school health services) to those where a substantial part is left to voluntary or profit seeking enterprises, e.g., nursing home care, and those where the government does little than show some occasional interest and perhaps provide small amounts of financial assistance (e.g., family planning). The State Government also employs Ministerial Departments and semi-Governmental agencies to operate community health services. State Governments also delegate authority to local government authorities to act in certain areas affecting community health. They also cooperate with Commonwealth Governments in implementing certain national programs, e.g., Anti-Tuberculosis campaign and immunisation against poliomyelitis. Several aspects of health policies and legislations, e.g., food standards and drug control, are the joint function of Federal and State agencies.

(3) LOCAL GOVERNMENTS

These are required to exercise certain functions relating to health and are becoming increasingly aware of environmental responsibilities in addition to their traditional public health functions. These are bodies which exercise some measure of control over community affairs in cities, towns, corporates, boroughs, municipalities, district council areas and shires and who carry considerable responsibility in the health fields. These are conferred to them by State Parliamentary Public Health Legislation.

The obligations vary from state to state but in general they refer to environmental control and a limited range of personal health services. They control and arrange for the treatment of infectious
disease outbreaks in their districts and immunization services. The other functions may include the establishment of baby health centres and health related facilities like parks, swimming pools, the operation of ancillary health services. Local authorities may employ a medical officer or one or more health inspectors to cope with the responsibility of community health care. State Government authorities supervise their activities and provide guidance and assistance to Local Health Authorities.

NON GOVERNMENTAL AGENCIES AND MIXED PROVISIONS

(1) PRIVATE PROFESSIONAL PRACTICE.

Dentistry is the professional health care field in which private practice continues to flourish in a fashion most closely resembling the traditional concept of independent solo practitioners providing their services to persons who entirely of their own volition, seek out the practicality of their choice and reward him for his attention by some mutually acceptable form and amount of remuneration.

Some doctors who regard themselves as private practitioners are employed by other doctors as assistants or locum tenants; some derive part or all of their professional income from acting as agents or consultants to private enterprise firms in industry. This practice is regarded as private insofar as it has nothing to do with governmental agencies.

(2) COMMERCIAL HEALTH AGENCIES.

These are of two types, and are profit seeking. There is the institutional care for profit and the manufacture and distribution of goods used in maintenance and promoting health. The institutional
care for profit is seen by private enterprise and governments have no control over the financial operation of profit seeking hospital and nursing homes. Nonetheless, government policy does influence the profitability of such enterprises. Government policy in relation to access of the medical practice to public hospital facilities and payment of medical staff in public institutions affect the extent to which practitioners encourage patients to make use of non-public facilities and may encourage practitioners themselves to invest in private institutions.

And as for the manufacturers and merchandisers, apart from a limited range of pharmaceuticals and biological products produced by the Commonwealth Serum Laboratories, and prosthesis and other appliances produced by the Repatriation Centre, virtually the whole of medicaments, supplies and equipment industry is in the hands of private commercial enterprise. Although not government enterprises, they are subject to considerable government control and regulation. These are industries not solely concerned with health care who contribute significantly to their delivery, e.g., food industry and constructions.

VOLUNTARY AGENCIES.

These are established by someone who, with no thought of personal material gain, attempts to meet some community health need. Sponsors may (a) form an unregistered club or association committed to achievement of a health related objective;

(b) set up an agency under the auspices of an already existing religious organisation or philanthropic body;
(c) register the agency under legislation as a non profit organisation;
(d) seek legal recognition of the agency as a body authorised to appeal to the public for funds.

Governing of a voluntary agency is through a government body representing the agency's sponsors. The governing body receives no remuneration for their work, but employees appointed by and responsible to the government body are paid from agency funds. The agencies' revenue could come from either patient payments (subject to a means test) or from government subsidies (payment of which is conditional). The services provided by the agency are often free of charge.

**SEMI GOVERNMENT AGENCIES.**

These agencies were created to help cope with the evergrowing demand upon governmental administrative machinery. These agencies are often called statutory corporations or quasi government agencies. The differentiating factors from government departments are:

(a) Members of the Board are governmental appointees but not officers of a state public service.
(b) The Board generally employs its own staff and members may contribute to a government superannuation scheme.
(c) The Board funds are operated separately from government departments, but its finance operations are subject to audit by government officers.
(d) Finance obtained largely from government sources, but payments from recipients for services are credited to agencies rather than governments.
FINANCING

The level of economic development in a country will be a major constraint on the total amount of resource available for health services. This also determines to a certain extent, the amount allocated to health services.

The method of payment of health services is important because such large amounts of money are involved and because financial arrangements may affect the delivery of health care through distribution and efficiency. The proportions allocated to various sections within the health services should be considered.

GOVERNMENT FUNDING

Commonwealth Expenditure.

This can be obtained from the budget papers and is an important source of the most recent information on past and projected government expenditure. The inflation factor is taken into account. A significant fraction of the Commonwealth's general revenues from income tax and other inputs is directed to the health care system either directly to the Commonwealth Health Service activities through state and local government channels, directly to other agencies. The 'Medibank levy' imposed on income earners who are not covered by some form of health insurance or other form of cover is made available to the health care systems through the Federal Government's Health Insurance Commission.

State Expenditure.

State expenditure can be considered as a proportion of the total Australian expenditure. The relative amounts expended by the states have been declining in proportion to the Commonwealth funding. Some of the Commonwealth's general grants to the states and specific
purpose allocations from the Commonwealth are channelled into the health services. Part of the state's general revenues are allocated to health care and the state's revenues from certain sources, such as taxes on gambling and proceeds of state lotteries may be specifically designated for health service funding.

Local Government Expenditure.

The revenue from other government sources and from rates and other local sources may be allocated for health services.

OTHER SOURCES OF FINANCE.

(a) Direct Personal Payment.

This payment may cover the entire cost of services or goods purchased, e.g., most dental services and prostheses are paid for directly by persons receiving them. Non prescribed medicines, and services of oesteopaths and chiropractors are paid for in full by the recipient or some relative of his.

Many goods and services are supplied at some direct charge to the recipient. Most general and specialist medical services, prescription medicines, optometrical services, some hospital and other institutional care are examples of where individuals pay less than the actual cost, the balance being met by Governments or some other 'third party' - that is an agency other than the actual supplier and the recipient. Therefore, direct personal payments may be 'complete' or 'partial' cover of the costs involved.

(b) Charity and Fund Raising Activities.

Although the contribution of public spirited donors to the health finance pool is now only a small part of all financial input, donations from individuals and private organisations, e.g., hospital auxillaries, service clubs, still constitute an important source of
funds for some agencies. Children's hospitals and religious hospitals commonly rely quite heavily on charity for part of their finances.

(c) **Loans.**

Legislation may permit the Boards of Management of public hospitals to raise loans from approved lenders. The private enterprise sector of the health industry has recourse to the sources of loans open to any private business enterprise.

(d) **Private Investment.**

Those parts of the health care system in the hands of private profit seeking enterprise have recourse to the money markets available to commercial enterprise in general. Some non profit seeking organisations, e.g., trade unions, philanthropic associations, religious bodies, non profit seeking cooperatives, employ some of their resources in health care facilities. Their use of capital is not 'investment' in the sense of business investment, but does constitute a financial input to the health care system.

(e) **Employer Contribution.**

Generally, employers play a small part in directly providing finance for health services - a smaller part than in many other countries. Few large corporations, e.g., mining companies, provide health services for workers and their dependents in remote areas. Some larger employers employ health personnel on a part time or full time basis to provide limited services to their employees - often called as 'first-aid' services.

Employers are required by law to take out workers' compensation cover for their employees and thus employers contribute towards meeting the costs arising from employment-related disease and disability.
(f) Personal Payment into Health Insurance Funds.

Part of the income receiving population is required by Federal law to pay premiums into health insurance funds which are registered under Federal legislation. These funds operate on a non-profit seeking basis.

Those whose income level renders them liable to compulsory membership of a registered fund do have the option of not joining. If a person chooses not to join, then a Federal tax levy is applied to his or her income, in addition to the statutory income tax.

Any person may seek cover of certain health expenditures through a variety of optional insurance schemes - some operated by the registered funds, and others by 'commercial' insurance companies.

TABLE IV: HEALTH AND DENTAL EXPENDITURE, AUSTRALIA 1975-78.

<table>
<thead>
<tr>
<th>HEALTH EXPENDITURE</th>
<th>75-76 (7.8%)</th>
<th>76-77 (7.8%)</th>
<th>77-78 (7.9%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commonwealth Government</td>
<td>$2,717,000</td>
<td>$2,750,000</td>
<td>$2,682,000</td>
</tr>
<tr>
<td>State and Local Government</td>
<td>$1,336,000</td>
<td>$1,523,000</td>
<td>$1,760,000</td>
</tr>
<tr>
<td>Total of Government:</td>
<td>$4,053,000</td>
<td>$4,273,000</td>
<td>$4,442,000</td>
</tr>
<tr>
<td>Private Sources</td>
<td>$1,607,000</td>
<td>$2,187,000</td>
<td>$2,709,000</td>
</tr>
<tr>
<td>TOTAL:</td>
<td>$5,660,000</td>
<td>$6,460,000</td>
<td>$7,151,000</td>
</tr>
</tbody>
</table>

DENTAL SERVICES.

There was gradual development of private dental services during the 19th century. By the end of the 19th century, the dental profession was becoming organised with licensing and registration and
the commencement of training establishments. At the turn of the century clinics run by private practitioners for the less privileged segments of the population became dental hospitals.

At present, dental care is part of health care services provided by the government, although the type of care is dependent on the section of the population covered. However, the bulk of dental services are provided by private practitioners. Direct government services employing dentists and therapists provide dental services for priority groups in the community, including the armed services, pensioners, indigent, those in institutions, Aboriginals, school children and person in remote areas. Government sources also provided finance for some persons treated within the private sector with dentists providing services on a fixed fee for service to eligible persons for the Department of Veteran's Affairs, and some Aboriginals and pensioners. Close to 80% of expenditures for dental services is paid directly by individuals to self-employed dentists on the basis of fee for items of service rendered.

The priority given to dental care is reflected in the proportion of money spent. In 1976-77, for instance, 4.6% of the nation's total health expenditure was towards dental services.

With the introduction of the Australian School of Dental Services in 1974, by the Commonwealth, there is provision for free treatment for children up to 15 years of age. Primary school children treated by Australian School of Dental Services throughout Australia rose from 7% in 1974 to 24% in 1978. To implement this scheme, capital grants were made to states for the building of facilities for the training of school dental therapists, provision of state and mobile clinics and the support of training of field staff. Commonwealth subsidies were 100% for capital and training expenses. In 1979-80,
this subsidy dropped to 50% with the new government policy.

Since 1975, there have been marked changes in the availability of dental benefit schemes through Australian health and medical benefit organisations. A few funds have a long history of dental benefit schemes, but it was not until the introduction of Medibank that funds offered the possibility of budgeting (with some insurance) by premium payments against the cost of dental services. By 1978, there were 58 funds with an estimated 46% of the Australian population able to claim rebates against the direct payments made to dentists in private practice. The types of services provided by funds vary according to the amounts paid for premiums.

In Australia, there has been increasing amounts spent on dental services and it is concomitant with increases in utilization of dental services, use of dental benefit schemes, costs of providing dental services, the number of dentists, operating auxiliaries, and ancillaries to meet the increasing demand for a more comprehensive range of services.\textsuperscript{58}
5. RELATED ISSUES

5.1 MANPOWER PLANNING

In 1962, the Federation Dentaire Internationale set down certain rules and regulations regarding the development of any manpower program. It was recognized at that time, as the shortage of dentists was acute in many countries and steps had to be taken to rectify that. Since the basic objective of the dental profession in all countries is to make dental care available to all citizens who require it, it has the major, but not unshared responsibility in recruiting a sufficient number of legally and educationally qualified persons to meet present and future needs for manpower, in the practice of dentistry.

The factors associated with producing an adequate supply of dental manpower vary with individual countries and programs should be developed within the professional, legal, economic, political, social and educational practices and traditions of each country.

However, there are some principles that apply generally and are set forth by the FDI for such guidance as is necessary, keeping in mind the fact that a thorough knowledge of the size and nature of the dental health problem is an essential preliminary in developing a program of dental manpower. These principles set forth are:

(1) **Objective of the Program**

The program should be designed on the basis of a well developed goal, should identify the steps to be taken to achieve that goal and establish a schedule or time limit for their achievement. The program should also provide for periodic review and evaluation of the progress made in order to provide an opportunity for adjustment to meet changing conditions and goals.
(2) Status of the National Population

The program to obtain dental manpower must be based on a good knowledge of the status of the national population. Factors considered are;

(a) Total population and its rate of growth.
(b) Distribution of population by age and sex.
(c) Urban and rural population.
(d) Per capita and family income.
(e) Educational levels of the population.
(f) The incidence and prevalence of dental diseases on a national and regional basis.

(3) Position of Dental Profession

The current position of the dental profession has to be evaluated and the factors considered are;

(a) Census of dental personnel.
(b) The distribution of dentists by age and sex.
(c) The distribution of dentists by educational qualifications.
(d) The distribution of dentists by geographic location.
(e) The distribution of dentists by income.
(f) Present status of organisation of the dental profession at national and local levels.

(4) Dentist Population Ratio

After the characteristics of both national population and dental practices have been determined, they can be related by the establishment of a ratio of dentists to population. This ratio would vary widely between various countries and even between different sections of the country, and also with the social, economic and educational characteristics of the country concentration. Although
there is no optimum ratio of dentists to population, it is recommended that each country should strive to meet a predetermined ratio as an initial minimum standard.

(5) Educational Facilities

The achievements of goals will depend, in major part, on the availability of educational facilities. Due to the length of time required to educate a professionally qualified dentist and due to the time needed to construct, equip and staff educational facilities, planning should include projections for a period of 8 to 10 years. Consideration should be given to such factors as;

(a) Availability of qualified teaching personnel.
(b) Training of teachers and researchers.
(c) The availability of laboratory and clinical equipment.

(5) Recruitment of Personnel

The availability of educational facilities should be matched with a program to provide a sufficient supply of well qualified students. Such a program should be designed not merely to provide an adequate number of students, but also to ensure that the students are mentally and physically equipped for the practice of dentistry. Factors to be considered for recruitment are;

(a) The professional and social status of dental practitioners in the country.
(b) The economic factors related to dental practice.
(c) The establishment of a continuing program of recruitment to interest well qualified young men and women in dentistry.
(d) The screening of prospective students by techniques of educational measurements such as the aptitude test.
(e) The availability of scholarships and loan funds for qualified students.
(7) Dental Health Education

A program for dental manpower must be accompanied by a sustained program of educating the population, including governments, to the value of dental health. Public appreciation of dental health value has a direct influence on the number of dental practitioners that can be utilized gainfully and recruited in a given country. Dental treatment in the younger age groups is itself a powerful educational factor.

(8) Productivity of Dentists

The program should also consider the capacity of the individual dentist to render dental service which can be influenced directly in a number of ways, such as the improvement in dental equipment and technology and the use of dental auxiliaries. The age of the dentist and the maintenance of his health through his active career also are important factors in his productivity. In countries with little or no professionally qualified dental personnel it may be found practicable to develop a first stage auxiliary to provide emergency or elemental dental treatment in areas where such services now are not available. However, this sort of program should be established on a short term basis to meet urgent and critical needs and should be planned formally as the first stage of a program to train professionally qualified personnel for the country. Provision should also be made for the further training of this initial type of auxiliary, so that eventually the profession may phase out this person in the favour of the professionally qualified dentist. In more developed countries, consideration may be given to the development of qualified auxillaries who work under the direct supervision or prescription of the dentist and assists him in increasing the amount
of dental care that can be rendered to the population. Such auxiliaries have been established in many countries. In the development of any type of auxiliary, consideration should be given to:

(a) The legal status of the dental auxiliary.
(b) The clear definition of the duties of the auxiliary.
(c) The supervision and control of the auxiliary by the professionally qualified dentist in the duties assigned.
(d) The establishment of safeguards to prevent the auxiliary from engaging in illegal dental practice with resultant injury to the public's health and
(e) The placement of the final responsibility for the health of the patient with the professionally qualified dentist.

9 Health of the Dentist

Due to the special factors associated with the practice of dentistry, the maintenance of the dentist's health by proper operating conditions and hours are important in keeping the manpower at the highest level of effectiveness.

10 Other Factors

Other factors of importance to be considered in the development of manpower are:

(a) The distribution of dentists in a given country to ensure the availability of dental care for both urban and rural populations.
(b) The provision of various aids, such as insurance or subsidy, to assist the patient in paying for needed dental care.
(c) The role of the dental public health services either in providing services directly to such groups as infants
and school children, or in providing educational and preventive services such as the use of fluoridation and topical application of fluoride in the prevention and control of dental caries.

(d) The development of facilities for research and training personnel so that increasing information becomes available not only on the epidemiology of dental diseases and their prevention and control, but also on the dental manpower needed to treat these diseases and to maintain the dental health of patients at an optimum level.

In spite of the excellent principles outlined, it would be a mistake to take for granted that the solution of the problem of dental manpower in any country can be achieved easily or in a short time as the development and implementation of programs for gaining manpower are difficult, time consuming and costly. Unless a program is undertaken with a real desire to reach target objectives in an effective manner, no country can ensure the attainment of higher levels of dental health and thus higher levels of total health and well being for its citizens.

Determining the optimum number, practice organisation and distribution of dental manpower is extremely difficult, but is a task vital to anticipating dental manpower needs of the future. It affects directly proposals for national health programs, determination of shortage areas and development of dental educational systems.23

In the United States of America, in 1963, an Act was passed (Health Profession Educational Assistance Act), the need for which was partly due to the continued high growth rate of the population,
and the fairly constant level of the health delivery systems productivity rate. Since the passing of that Act, the government has been actively involved in programs that are designed to increase the supply of health manpower resources. These included financial giants to educational institutions and scholarship support for students in an attempt to increase enrolment in health related educational facilities. New reform bills were also passed whereby if a student was given assistance provided he agreed to serve in shortage areas for 2 years after graduation.

In addition, due to the increased involvement of state governments and professional associations in health resource programs, there has been a tremendous growth in these programs, both at professional and paraprofessional levels. In the early 1970's, the dental profession expressed concern on the emphasis placed on the increase in the number of dentists when very little attention was given to how, and what, services were being provided and they also stressed recognition of simultaneous changes in technological innovations and auxiliary utilization. The dental profession also pointed out the dubious validity of dentist population ratios as the sole, unassisted dentist is almost non existent.

In order to keep a check on these new trends, the dental associations maintain a registry of dentists which include all graduates of accredited dental schools and each dentist is further categorized by practice and occupation. This information would not only provide current distribution of dentists, but also allows for future projections of the number of dentists required. Using these updated figures, dentist population ratios could be prepared.

Although these ratios are still being used in planning
activities, there is need for better measures of available manpower. The dentist population ratio takes no notice of either the number or productivity level of dental auxiliaries other than dentists, nor does it take into account the differences in practice configurations, variances in hours worked per week or weeks worked per year by those providing services. This information is necessary to accurately determine supply capability.

The Léonard Dans Institute (America) developed a Dental Planning Information System (DPIS) which was utilized to provide the profession with a general description of the delivery system and a projection of the number of dentists in 1985. It also provided the expected productivity of dentists as well as the productivity index of the dental delivery system. The index, in turn provided an estimate of the number of services being produced, or which could be produced by the combined efforts of dentists and auxiliaries in any state. For example, group practices and partnerships would increase production, changes in equipment, delegation of bookkeeping and fee collections would also increase productivity.

The DPIS also compiled data that showed the association between dentist's age and the number of hygienists working in the same practice. It showed that a dentist 50 years of age and younger, tended to work with a hygienist more often than do dentists who are older. This is a favourable point as dentists who are used to this new trend would continue as they age. This has resulted in an increased service capacity for the system and increased productivity even if the active number of dentists stay the same. The role of hygienists reduced to statistics showing the average hours per week they spend treating patients, would provide information that permits a reasonable projection of the states total capacity, if the average number of hours worked
by hygenists were increased or decreased.

Hence research on dental manpower and its problems tends to elicit facts used with respect to the numbers of personnel, the productive capacity of the system, ways in which the present level of productivity is achieved and the differing ways in which it can be modified as necessary. Recently, (1976), it was found that there was no longer a shortage of dentists in the U.S.A., as in many other western nations - but there is now need to improve the geographic distribution of dentists within a country, and to try and eliminate all dentally underserved communities. This could be controlled, to a certain extent by the government, who could either assign dentists in the National Health Services to manpower shortage areas, or by restricting dentists from establishing a practice in an area of overpopulation with other dentists.  

The world situation regarding Dental Manpower (as at 31st December, 1977), can be seen from the following table issued by the Federation Dentaire Internationale.
<table>
<thead>
<tr>
<th>Country</th>
<th>Population</th>
<th>Dentists</th>
<th>Ratio of Dentists to Population</th>
<th>Physicians specialized in dentistry</th>
<th>Physicians practising dentistry without dental qualification</th>
<th>N.Z. type school dental nurses</th>
<th>Dental hygienists</th>
<th>Dental assistants</th>
<th>Dental laboratory technicians</th>
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<td>*Colombia (1972)</td>
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<td>90x</td>
<td>2,200x</td>
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<td>*Costa Rica (1972)</td>
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</table>
## World Situation Regarding Dental Manpower

### Appendix II (ii)

<table>
<thead>
<tr>
<th>Country</th>
<th>Population</th>
<th>Dentists</th>
<th>Ratio of Dentists to Population</th>
<th>Physicians specialized in dentistry</th>
<th>Physicians practicing dentistry without dental qualification</th>
<th>N.Z. type school dental nurses</th>
<th>Dental hygienists</th>
<th>Dental assistants</th>
<th>Dental laboratory technicians</th>
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<td>0</td>
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<td>*Fiji (1974)</td>
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<td>150x</td>
</tr>
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<td>*Haiti(1972)</td>
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<td>17</td>
<td>15</td>
<td>0</td>
<td>800x</td>
<td>300x</td>
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</table>

105.
<table>
<thead>
<tr>
<th>Country</th>
<th>Population</th>
<th>Dentists</th>
<th>Ratio of Dentists to Population</th>
<th>Physicians specializing in dentistry</th>
<th>Physicians practising dentistry without dental qualification</th>
<th>N.Z. type school dental nurses</th>
<th>Dental hygienists</th>
<th>Dental assistants</th>
<th>Dental laboratory technicians</th>
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<td>Dental hygienists</td>
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5.2 QUALITY OF CARE

There are four basic elements to be taken into consideration in assessing whether or not dental care is good. These are quality, accessibility, continuity and efficiency. Previously, the difficulty arose with the private practitioner as it was not possible to monitor the quality of care delivered, as the dentist is responsible only for the patient he treats, who may not conform to any particular geographic boundary. Nowadays, monitors of care delivered are the governments at different levels, the professions themselves, consumers or third party agents. The fact, however, made is that monitoring of care quality is increasing at a rapid rate and is already affecting the way professional skills are practiced.\footnote{9}

One of the most commonly agreed upon methods of quality assurance is the peer review system, where practitioners are evaluated by colleagues of similar training and expertise. Again, dentistry lags behind medicine in its scope of peer review, but in the prevailing climate of accountability, the gap is being narrowed. (In the U.S.A., in December 1979, a task force in California state for quality determination has developed guidelines defining "Clinical Parameters for the Quality Assessment of Dental Procedures". These guidelines are currently being field tested under the New York council on Peer review. These guidelines set forth objective criteria for evaluating oral health care delivery in each area of dentistry and provide peer reviewers with a set of standards for assessing quality of care. At present, local and state peer review committees investigate complaints against individual dentists. In this self-regulatory function, peer review committees are designed to protect the public from inferior care and the profession from increased external regulation. In a
complementary function, the office of Professional Conduct of the State Education Department investigates complaints lodged by the public, other practitioners and professional societies. Although these areas of quality assessment exist, they both function on a reactive basis and investigations are carried out only after complaints are lodged.

Insurance carriers also conduct quality assessment reviews prompted by vested interests in reimbursement. Although not completely reactive, these reviews are not characterised by regularity or thoroughness.

Voluntary peer review, involving systematic evaluations of the delivery of oral health care in the absence of complaints, is in an embryonic stage. Several prepaid group dental plans and Health Maintenance Organisations (HMO's), however, conduct regular assessments of member dentists. Often there is an economic incentive to conduct these reviews since plans are administered by dentists or third parties, who intend to please subscribers.39

Another method of quality review examines records, radiographs and models; this is called indirect review and it is a method for reviewing data about patients rather than the patients themselves. However, even with efforts to improve indirect review, it is controversial. Among dentists, this kind of review takes the form of utilization review by insurance consultants, and payment and quality are too inextricably intentioned for some dentists' comfort. Then too, indirect review only captures a small part of the dynamics of patient treatment.

Many dentists, especially those in private practice, assume that quality decreases proportionally with cost. Delivery systems, located in department stores and shopping centres, have been particular
targets for such criticisms. The answer, in fact, is as yet unknown. Increase in the volume of patients treated may rise from efficient management or other variables, rather than from decreased quality. This hypothesis had been substantiated by the fact that the number of complaints lodged against dentists practicing in departmental stores and shopping centres is no greater than those of other dentists. In the light of reactive peer review, it would be impossible to assess the quality of care in different delivery systems - time would prove to be the major criteria for evaluating quality.

The role of the government in the delivery of services has also increased its interest in the quality of care rendered. The greater its role in financing dental care programs, the more its control over the type of services and personnel delivering care. There has been an increasing awareness of the potential use of dental auxiliaries in the delivery of care and it is under government control. As a result, the type of auxillary personnel doing a specific job is under close supervision, thus ensuring a monitor of care control, as well as increasing the amount of services rendered.

One of the main methods of control it has is through licencing. A license is permission granted to an individual or organisation by competent authorities, to engage in a practice or occupation otherwise unlawful. Since a license is needed to begin lawful practice, it is usually granted on the basis of examinations and/or proof of education rather than measures of performance. Registration Boards in every country keep this well under control and illegal practices are dealt with severely. The use of dental auxiliaries as an adjunct to dentists to provide care to a greater majority of the population, has also helped to provide better quality of care, as dentists are able to spend more expertise in carrying out dental procedures with the help
of those auxillaries. They would also be able to carry out services that are not usually carried out due to lack of time - hence the quality of services itself would improve. With simple procedures being carried out by competent dental hygienists, the use of auxillaries have proved advantageous economically in the private practices of dentists.

Along with hygienists, there are the denturists - who by-pass the dentist to make dentures, claiming that they can make them at a lower cost. The main argument against these people is that in allowing lesser trained persons to provide care would lower the quality of dental care. The Federal Trade Commission's counter argument is that the competition would be responsible for maintaining quality care.  

A good example of government control of the quality of care of services rendered, is seen in the NHS Scheme of the United Kingdom. Services are reviewed regularly once every two years by their Dental Estimates Board, which evaluates claims for payment and approve treatments estimates. This is carried out by selecting one in twenty five claims forms and the information obtained is compared to the national and regional averages. If any significant deviation is noted, the patients are recalled so as to facilitate re-examination of the treatment. With the years of data collection and experiences, the analysis and comparison of a dentist's pattern of treatment with national and regional averages have become quite accurate. This system works very well for several reasons, among which is the fact that the magnitude of the NHS itself lends itself to statistical review.  

Although some of these quality control mechanisms, e.g., peer review, are not popular with dentists, they are here to stay. It should be considered fortunate that the quality of care can be reviewed by dental professionals themselves and not by some other
outside agency. The final and greatest safeguard for dentists hence is to make competent peer review available at all levels of organised dentistry.
6. DISCUSSION

With the increasing importance given to dental health, greater emphasis has been placed on the methods of delivery of this care to everyone. Beginning from its inclusion in public or community programs as a minor feature (normally involving only oral surgery), its importance has resulted in greater stress being placed on more comprehensive delivery methods, by the government and private sector. It can be said that the increasing cost of dental care was also a strong motivating factor for this involvement.

Government and voluntary agencies catered to the needs of the young primarily in the belief that a habit instilled at a younger age would not only equip them with a better oral health status for maintainence, but would also create an awareness of the importance of such a state of oral health. Dental services providing full dental care to school children of all ages appear to be quite common in Europe, whether locally or nationally managed. These services are paid for out of tax funds and frequently are of high quality e.g. in the Scandinavian countries and Switzerland. Systems of these sort, with early acceptance of dental services give a good opportunity for incremental care and for preventive procedures for the young. However, this could result in a neglect or lack of care for the general adult population in some countries, where they are expected to look after and plan for their own dental needs. In some countries, however, this is not the case. Government financing of adult dental care became necessary when it was evident that the cost of dental services was beyond the means of many and the most obvious consequence of this result was a heightened interest in the control
of quality of services as well as in the manpower planning situation, in addition to cost control.

The other methods of financing for dental care through prepayment plans (which include insurances) are rather diverse. Sometimes referred to as fragmented, these other methods of easier payment for delivery systems appeal to different sections of the population. Dental insurance seems to be the most often used system of planning for dental treatment and this implies an almost unlimited horizon for health achievement. In addition to the many advantages the fact that it meets with the approval of the dental profession places it firmly in the scheme of provision of services. Since most programs for insurance now include preventive services as an item, it contributes to an improvement in the general oral health status. The general increasing demand for dental care has kept pace with the increasing knowledge of more sophisticated dental techniques coupled with a competitive market that attempts to keep costs down and this has resulted in increased utilization of dental insurance plans. In some countries the costs of premiums are controlled by government agencies. In countries like Great Britain with its National Health Insurance Scheme, which is financed partly by tax and in part through compulsory insurance on employed persons, dental benefits are available and although they have to pay a small charge for it, the bulk of cost has shifted out of their sight. This aspect of government insurance (or social security) has stimulated the growth of dental care in many other countries because of easier accessibility of dental services to the patient.

Dental service corporations, in the United States of America, deserve mention here because they have introduced an element of
quality control that is lacking in plans financed by commercial carriers, as it places quality control procedures in the hands of the profession itself.

Postpayment plans also have their place in the scheme of delivery of dental care and it is found that the heaviest users are younger dentists who take on large programs of initial care for new patients and who are unable to help these patients with their financing in any other way. This takes care of those with a heavy backlog of treatment needs and it encourages those seeking coverage with prepayment financing plans.

The manpower problem is specific to each country and some countries, like Australia for instance, have reached near optimum dentist patient ratios, while others, like India with a dentist patient ratio of 1 : 100,000 have a long way to go yet. The increasing use of auxiliaries e.g. dental nurses and dental therapists in these third world countries has been of immense value in bringing care to them. In the western nations, it has helped by increasing the efficiency of already existing services. The use of dental nurses in schools has brought dental care to a large proportion of the population i.e. children. Fluoridation has also helped to diminish the need for care to a certain extent and allowed a higher dental nurse, child ratio.

The quality control methods of many of these delivery mechanisms have to be reviewed frequently and modified whenever necessary. Consumer participation in health planning and programs and in helping to decide priorities could help better the quality of programs being offered. Professional acceptance of plans is also important, and although not a controlling factor, it does have bearing on the success and growth of dental plans and it follows
that those that are most acceptable to organised dentistry and the consumer have the greatest likelihood of success. The multitude of delivery systems available are likely to confuse the consumer and make it difficult for them to find their way through the maze of programs and may intimidate some from even making the attempt. However, with the health services reaching out into the community and the identification of the needs of isolated individuals, it is possible to put them in contact with the appropriate sources of health.
Financing of dental care programs is gaining in importance in the general scheme of health care programs and there are various ways in which this is being done. Better and more convenient forms of financing have arisen in recent years to facilitate utilization of dental programs.

The traditional mode of payment through individual effort that has been in existence for centuries has had the disadvantage that it extends only to those who could afford care - and that too, the type of care involved was restricted as a result there was much neglect of dental needs.

In addition to the traditional individual effort, as early as 1849 public spirited philanthropic and voluntary associations established another form of financing dental care for the underprivileged and indigent people of the population. Charity has expanded from this narrower field into the wider sphere of provision on a larger scale to underprivileged countries. The World Health Organisation and other private companies eg, Kellog's Foundation, provide assistance to third world countries either in the form of finance or manpower.

The role of the government has also been expanded due to pressure from the community and the dental profession who have realised that they could never fulfil the demand for dental care without aid from a larger institution. The government's responsibilities lie in administering and delivery of services as well as financing. Different countries would finance their programs to differing extents and degree of comprehensiveness. However, it is obvious that most governments give children priority status where health and dental
health is concerned. In the United States of America, the aged and indigent are offered dental benefits under their Medicaid program. Dental benefits were included in this program only in 1976 and it is the responsibility of the state governments to tailor the program to suit the prevailing situation in that state. One good example of the government's role is seen in the United Kingdom, which is financed partly through taxes and partially through compulsory insurance on employed persons. Inspite of certain drawbacks, the scheme has been successful in that it has brought dental care to all who require it. In Sweden and Norway, government financing is largely concentrated on school programs, leaving the adults to seek coverage through insurance. Czechoslovakia, on the other hand, grants every citizen health and dental care, as a right, all being financed from the National Budget. As can be seen, to a lesser or greater extent, the governments of individual countries are taking an interest in the provision of dental services to their people.

Within each country, there have to be provisions for easier payments for dental care. Prepayment plans are plans that offer services for fixed sums of money. These plans are offered by management as well as labour unions, as a means to attract workers or members, and are called "fringe benefits". Dental service corporations are an example of group prepayment plans which are sponsored by the State Dental Associations and that operate on a non-profit basis. In this way the dental profession discharges its professional obligations to the public. Commercial insurances, another example of prepayment plans, entered the market in the 1950's in the United States of America and are profit organisations.
In spite of the higher premiums, the number of persons enrolled in these plans have increased tremendously - from 1 million in 1962 to 33 million in 1974. One of the contributing factors to its popularity is the more sophisticated type of services. In West Germany, where dental insurance was first implemented, (in 1980), there is currently a 95% utilization rate due to public acceptance.

Another form of financing, the non-profit insurance plan was initiated by efforts of dental and community leaders to bring dental services within the reach of larger numbers of individuals as a regular budgetable expenditure - but without a profit margin. These plans are offered on a group basis and the beneficiaries could be in widely scattered areas.

Postpayment plans are often utilized by patients who have a backlog of treatment needs that cannot be covered under insurance plans as well as when there is an inability to pay for a complete treatment service. It is often considered to be a preparatory program for a prepaid care program. Postpayment involves obtaining a loan from a bank or other lending institutions in order to pay the dentist in full for his services: the lending institution has no recourse to the dentist, should the patient default in payment.

The methods of payment for services and the sources of delivery, are varied and are tailored to suit as many persons as possible. The methods of reimbursement to dentists also vary depending on the programs. Third party prepayment plans reimburse dentists on the principle of either usual, customary and reasonable fee (UCR), fixed fee or table of allowances. The choice of reimbursement varies depending either on the carrier or the dentist (though the latter has not much say in the matter, often).
With the variety of provision of services, manpower planning is necessary to ensure proper functioning of the programs. In order to improve the provision of services, the increasing use of auxiliaries are being utilized. There is also need to improve the geographic distribution of dentists in order to allow for more efficient utilization of services. The quality of care delivered needs to be reviewed often as with easier payment methods, abuses do occur. Peer review is the most common method of quality evaluation, and at times indirect reviews are also carried out. Licensing of dentists and the maintainence of registers are also means of controlling the quality of work performed.

Hence the system, a "non-system", as it is often referred to in the United States of America, suggests a variety of alternative methods of delivery of dental care. In some countries, one system is more favoured than the other - but they ultimately seek to bring health and dental benefits to the consumer with a minimum of fuss. The schemes developed by the trade unions, insurance companies, and by the dental professions and the governments involve services to defined groups of the population in order to spread the burden of costs of care at the time of need.
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