THE UNIVERSITY OF
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ATTITUDES TO ORTHODONTICS

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WIE HAN KWEE.

ATTITUDES TO ORTHODONTICS

INTRODUCTION

Throughout the world as dental caries is being increasingly controlled, orthodontics has become an important part of treatment in promoting general dental health. This is more so in the more affluent countries in Europe, as well as Japan, Australia and the United States.

There is an increasing number of dental surgeons who specialise in orthodontics. In the University of Sydney alone, the full time degree course in orthodontics is filled by applicants until the end of 1976. Besides this the University is also conducting other courses in orthodontics.

In Australia alone the number of dentists who are self employed and have restricted their practice to orthodontists jumps from 69 at the end of December 1970 to 94 at the end of December 1971. (Facts and figures, Australian Dental Association).

In Norway, oral surgery and orthodontics are the only recognised specialties. (Monsen 1970).

In the U.K. the number of orthodontic cases treated in the General Dental Service in 1946 was estimated at 100 and the figure for 1966 is 132,942. (Hooper 1969).

So we can safely say that there is an increasing number of children receiving orthodontic treatment.

The main consumers of orthodontic services are the patients and parents who have to pay for the treatment, yet there is very little written on the attitude of patients and parents to orthodontics. The success of treatment depends so much on the attitude, and hence the co-operation of all parties concerned.

This thesis is a study investigating the attitude of parents, patients, the dental profession and the community to orthodontics.

ATTITUDE OF THE COMMUNITY

Great Britain (Allcorn 1969)

In 1946 the British Parliament decided that the people in Britain should not have to pay directly for treatment necessary to maintain their health and well being. This has been made possible by the National Health Service which includes Medical and Dental services. The money for this service comes partly from taxation and partly from weekly insurance contributions.

The patient has to pay only a small percentage of the fee for any treatment. However this has been increased since the last election when the new conservative government took office.

Orthodontic treatment is provided by three services, namely: the General Dental Service, the Hospital Service and the School Dental Service.

There is an enormous increase in the demand for orthodontic treatment during the last 20 years of the Health Service. (Hooper 1969). At the same time there is also an increase in the number of dentists who are engaged in the practice of orthodontics exclusively (Tully 1970). These two facts seem to indicate the favourable attitude towards orthodontic treatment from the people, the practitioners and the government who has included orthodontics in the Health Service.

Orthodontic Consultants from the Hospital Service also act in an advisory capacity to the dental officers of the School Dental Service and to practitioners in the General Dental Service. The aim of the Ministry of Health is that one Orthodontic consultant is appointed per 500,000 people.

Orthodontic treatment provided by the General Dental Service has received favourable acceptance by the public. During 1967 an average of 6,400 estimates for orthodontic treatment were received each week by the Dental Estimate Board. (Allcorn 1969).

The Dental Estimates Board is appointed by the Minister of Health and it consists of dental practitioners and lay persons. Its duty is to see that public money is properly spent, taking into consideration the interests of the taxpayer, the dentist and the patient. It makes approval of estimates for orthodontic treatment undertaken by the General Dental Service. Dental Advisers are employed to carry out this task.

All orthodontic treatment requires the Board's prior approval. The dentist is required to submit study models, radiographs and treatment plans for every orthodontic case.

The attitude of the Board and the Department is that the Dental Advisers should be given every opportunity to keep in touch with current trends and keep pace with new developments in dentistry.

This is done through attending the various clinics and courses conducted by teaching hospitals and Post-Graduate Institutes.

Since the Board is appointed by the Government, its policy on orthodontics reflects the Government's attitude. The Board feels that it is important to carry out orthodontic treatment when it is necessary and also it should have a reasonable chance of success. If equally satisfactory results can be achieved the Board is of the opinion that a simpler method of treatment at much less cost to public funds should be the choice of treatment.

United States of America

The utilisation of public funds to pay for medical and dental treatment is increasing in America as the Government is concerned about the health of the individual. (Salzmann 1966).

There are two types of programmes operating in the country. One is the Medicaid system and the other is the prepayment system. The Medicaid is a health insurance programme controlled by the Federal Government, but it is administered by the States. People receiving benefits must pass a "means test" which differs from state to state.

The orthodontists are directly concerned with Title 19 of the Social Security Act known as Medicaid. It provides health benefits including complete dental services for all "medically indigent" regardless of age.

The prepayment programme is provided by insurance companies where people pay premiums to get their dental benefits. The scheme provides orthodontic coverage but some insurance companies do not cover for orthodontic treatment. The lack of success of this programme is due to high premiums, lack of coverage for different types of treatment and lack of available funds. (Salzmann 1965).

The health care programme in America is not without its problems. The Nixon administration reduced 505 million dollars on the budget for Medicaid, and policy changes were made pertaining to

dentistry. Fee schedules are to be established for dentists and physicians based on minimum fees. Specific mention is made that federal matching funds for "cosmetic orthodontistry" (sic.) are to be eliminated (Salzmann 1969). Resulting from this the American Dental Association executive director, in a letter to H.E.W. (Health Education and Welfare) Secretary, Robert Finch, pointed out that there is no such term as "orthodontistry" and elimination of "cosmetic orthodontics" will have no discernible impact on present level of spending. Salzmann in this editorial went on saying that even one maxillary anterior tooth in malocclusion can adversely affect the personality and achievement level of a teenaged boy or girl.

The orthodontists, knowing that the practice of their profession is influenced by a "third party" and as Salzmann (1966) put it "Orthodontists will have to learn, as the medical profession has, how to deal with the third party, whether it is the government or private agencies".

The New York state and district dental societies in dealing with the "third party", have put forward the following resolutions:

1. free choice of a dentist;
2. a financial eligibility limit that would be more realistic and comparable to those in force in other states;
3. no prior authorisation of treatment;

4. compensation for services to be based on usual and customary fees; and
5. representation of the dental profession on all advisory committees.

Norway (Monsen 1970)

The attitude of the Norwegian government towards dental health is reflected by the low dentist to population ratio. Monsen estimated it at 1:800 which is the second lowest in the world.

School children between the ages of 7 to 14 years receive free operative dental treatment from the School Dental Clinic. Teenagers from 14 to 18 years can receive dental treatment on a "space-available" basis. For people between 18 to 21 years, there is specific dental insurance in a few parts of Norway. It provides a 33% reduction in fees. Adults receive treatment from dentists in private practice at a reduced fee through compulsory health insurance.

There are only two recognised specialties, namely oral surgery and orthodontics. The government is concentrating on getting a good supply of general practitioners before specialties can evolve.

For school children and people up to the age of 21, the government pays from 40% to 75% of the cost for orthodontic treatment, depending on the degree of malocclusion. A higher percentage is paid for the more severe malocclusion.

Before the second World War the practice of orthodontics in Norway was strongly influenced by Professor Andresen, but now fixed appliances are more generally used. (Berg et. al. 1970).

Although multi-banded techniques are being practiced more these days, the general opinion among Norwegian orthodontists is that the activator can be a most useful appliance in some selected cases.

The majority of orthodontic care is provided in private practice. Berg further indicated that in some larger communities all school children are examined by an orthodontist, usually at about the age of 10 years. If orthodontic treatment is indicated, parents are advised by letter to consult one of the local practising orthodontists.

Some orthodontists are employed by the School Dental Service in consultative capacity. They advise the School Dentist on the question of extraction and preventive orthodontics.

The government, besides paying a percentage of the fee for the patients, also refunds travelling expenses.

Berg was of the opinion that although the system is not perfect, it seems to function well, both from the point of view of the patient, and the orthodontist. It permits the orthodontist to treat the more severe malocclusion at the same time it relieves the patient from the heavy financial burden.

Sweden (Syrrist 1969)

Sweden has the lowest dentist to population ratio in the world. In 1939, the public dental service was introduced and it is subsidised by the State, counties, local communities and patients' fees.

There is a shortage of qualified orthodontists in Sweden and therefore only the most urgent cases can be treated. Treatment includes interceptive orthodontics in the mixed dentition and corrective orthodontic treatment for the permanent dentition.

Not much emphasis is placed on the field of orthodontics, due to the current shortage of manpower and apparent problems in controlling dental caries among young children.

Switzerland (Belkin 1972)

Orthodontics is the only dental specialty in Switzerland, but there are plans to recognise oral surgery.

Dr. Hotz felt that the future trend in orthodontics is towards the use of more fixed appliances, although he believes in early treatment with removable appliances. He feels that the future of orthodontics lies in a synthesis between European and United States methods.

There is a shortage of manpower. There are only nine certified orthodontists in Zurich. Dr. Hotz likes to see that orthodontic treatment is available for a large percentage of the population and he thinks that this can best be done by using removable appliances.

For the less privileged, orthodontic treatment is available at the Dental Institute where from 0 - 1,000 francs is paid. Swiss Federal Insurance will pay 100% of the fee for severe physically handicapping malocclusions. This type of case must be evaluated by a dental department, but can be treated by a private practitioner.

Finland (Belkin 1972)

The future of orthodontics in Finland is uncertain. In April 1972 a law was enacted which extended free dental care, including orthodontics to all youths under 17 years of age. Previously it was between 7 to 11 years.

Before the new law, most orthodontists were employed by the Government through the school on a part-time basis. 75% of Finland's orthodontists are women. Now government orthodontists are employed on a full time basis and work in centralised medical centres. They receive monthly salaries rather than case fees.

Australia

Up to now the Australian Government has not declared policies regarding general dental health care for the community. However the new Federal Labor Government has given the School Dental Programme top priority. The scheme which is operating at present in several states, would be progressively extended. The initial objective would be to cover all primary school and pre-school by 1980. The scheme would then be extended to cover secondary school children under 15 years of age. (A.D.A. News Bulletin March 1973).

There is a plan of decentralisation of services as provided by dental hospitals. The new scheme envisaged a network of dental clinics to be established in district hospitals. (The Sydney Morning Herald 25th May, 1973). This would overcome the problem of pensioners and low-income patients who otherwise would have to travel long distances to the Dental Hospital.

As far as people who are not covered by the two schemes are concerned, the only concession that the government provides is through income tax deduction. Orthodontic fees like other dental fees are tax deductable. In this way some of the fees can be recovered from tax refund from the government.

Orthodontic treatment is available for a small number of people from dental hospitals, some School Dental Services and outpatient dental services in general hospitals. Public hospitals

subject patients to a "means test" to determine eligibility for dental treatment. Some School Dental Services are now being re-organised and provision will be made for orthodontic treatment to be included in the treatment of school children. (Personal communication).

Unlike the Medical and Hospital Benefit Scheme, there is no dental benefit supported financially by the government. Dental insurance is available through such organisations as Manchester Unit, Mutual Dental Aid and Hibernian Society. A family taking part in one of these schemes still has to pay out a considerable sum of money. The yearly premium can be as high as $90.00 (e.g. Mutual Dental Aid) and the benefits are comparatively small for smaller premiums.

The maximum refund for a completed orthodontic treatment is $50 (Mutual Dental Aid and Manchester Unity). This sum falls short of the average cost for a comprehensive orthodontic treatment.

Some benefit societies employ dentists to treat patients who are members of such societies (e.g. Hibernian and Manchester Unity). Their fees range up to 40% less than the minimum fee schedule as set out by the Australian Dental Association, but they do not provide orthodontic treatment. However, a small amount ($20 for basic plan and $50 special plan) is recoverable by members of such societies who receive orthodontic treatment elsewhere.

The dental profession in Australia is implementing a scheme called the Australian Dental Plan (A.D.P.). It is a company

consisting of dentists. It will write contracts with groups who wish to provide dental care for their members and dependants. The group will pay a monthly contribution in advance for every member of the group. A.D.P. will pay direct to the participating dentists the agreed proportion (usually 75%) of the fees for members of the particular group. The balance will remain the responsibility of the patient. (A.D.P. circular July 1972).

The total lifetime A.D.P. orthodontic benefit for a single individual was originally set at $50, but this was changed to 50% of the customary orthodontic fees. At present the limit appears to be about $200. (Australian Society of Orthodontists Newsletter, June 1973).

Orthodontic treatment is one of the dental procedures that requires pre-authorisation. It was said that it is for the dentist's protection primarily. (Circular to Members of Australian Dental Association, N.S.W. Branch, July 1973). It is not yet clear, who will be chosen to be responsible for the authorisation and what criteria will be used for the authorisation of orthodontic treatment. I can only assume that submission of patient's records will be required and full mouth x-rays is also one which is subjected to preauthorisation. It is also not clear if patients can join the A.D.P. individually.

The patients of all these plans have free choice of their own dentist and they can get whatever treatment they require, but they still have to pay for these privileges.

ATTITUDE OF THE PATIENT

Esthetically, the effect of malocclusion on oral structure is obvious, but the psychological effect on a person is not easy to determine. The lengthy nature of orthodontic treatment demands a favourable attitude and co-operation from the patient. Anything less will result in failure in achieving the objective of treatment. There is nothing more frustrating than to find half way through treatment comes suddenly to a halt. On the contrary it is very gratifying to the operator and encouraging to the patient if treatment is progressing well and improvement is obvious.

There are many factors which influence the attitude of patients towards orthodontic treatment and they will be discussed under the following headings:

Esthetic consideration

Family Background

Social Environment

Esthetic Consideration

Howitt et al. (1967) in their article on Eastman Esthetic Index (employed to give a quantitative assessment of the significance of malocclusion) suggested that the purpose for orthodontic treatment is:

1. to improve function;
2. to correct esthetic problem.

In their study surprisingly, they found that there was a lack of sex correlation with the index. One would have expected that the females were more concerned with esthetics than the males.

On the contrary, Lewis and Brown (1973) from their study on patients attending the University of Wales Dental School in Cardiff for orthodontic treatment, found that girls were much more concerned about their looks than boys.

How often do parents bring their young children to see the dentist because of functional problem of malocclusion? More often than not they come for advice on "crooked" teeth which they see in their children's mouths. No doubt they come for advice primarily for esthetic reasons.

As dentists, we believe that the achievement of good dental function is particularly important in facilitating good jaw development. Some, if not all malocclusions discourage adequate function and so have potentially damaging effects. So often we hear people saying that they like to have "straight and white teeth" but usually they are referring to the maxillary anterior teeth and therefore to a superficial aesthetic or cosmetic viewpoint.

On the testing of a pilot questionnaire at International House (a resident for students from the University of Sydney), one of the questions was "Would you like to have straight, even teeth?" The answer to the question was a unanimous "yes".

Fisk (1963) in his article "Physiological and socio-psychological significance of malocclusion" quoted a survey by the National Opinion Research Centre of the University of Chicago in 1960 showed that the great majority of people believed that dento facial appearance is important in making friends, seeking public office, getting a job and gaining companionship of the opposite sex.

Family background

The socio-economic background of patients has a significant influence on their attitude towards dental treatment. It stands to reason that only when all the other family needs are met that other things such as orthodontic treatment can be considered.

Since orthodontic problems are often manifest early in childhood, as mentioned earlier, parents' motivation is an important factor. At such an early age, the young patients must depend on their parents to make the decision for them. A child who grows up in a family which is not "dentally conscious", cannot be expected to have a favourable attitude to orthodontics. The child needs a happy home and parental encouragement to cope with a long period of orthodontic treatment.

Maj et. al. (1967) showed that orthodontic treatment was lived as a stress situation by almost all the children in their study. The intensity of the stress varied considerably from one subject to another and did not correspond to the discomfort or pain actually

involved. Instead it was related to the emotional state of the child who tended to project his own problems and anxieties on the treatment. The emotional attitude hinders the child's co-operation and it does not favour satisfactory progress in treatment.

Social environment

The young and also the not so young have a habit of wishing to look alike. Some will go to great lengths to look like others.

Tulley (1970) stated that children have a natural inclination not to appear unusual. They want to be like their school friends. In a sophisticated society, the orthodontist has a much easier task in achieving co-operation when a large proportion of children in the classroom have some form of orthodontic appliance.

My personal experience has been that, the public at large are still unaware of what the orthodontist can do for them, except perhpas in the United States of America where orthodontics has received a greater acceptance. It is therefore our task to educate the public of the advantage of having good functional occlusion. What better way of doing it than giving the general practitioner a good background in orthodontics?

ATTITUDE OF PARENTS

Very little has been written on parents' attitude towards orthodontic care. Children cannot decide for themselves that they should go to the dentist or orthodontist. They are dependent so much on their parents. In the majority of cases it is the mother who will take their children to see the dentist. If the parent attitude is not favourable, the child will probably seldom see a dentist, unless he is in pain. In these circumstances, the chance of the child seeing the orthodontist is very remote indeed. On the other hand there are parents who will do so much for their children.

Dickson (1968) in his investigation of adult attitudes to the dental treatment of children found that these attitudes were class based. In his study he compared the attitude of two groups of people. He found that the middle class were more dentally conscious, and brought their children for treatment more regularly than the working class, whereas the working class demamded mainly emergency treatment, particularly for extraction of primary teeth from the School Dental Service.

From Dickson's studies we can reach the conclusion that parents from the working class are apathetic towards the oral health of their own and of their children, because the cost of such attention is too great a burden. Parents from the middle class group have a more favourable attitude towards the dental health of their children.

According to Dickson it went beyond the minimum requirement of the dental well being. One is tempted to speculate why this should be so. Is it because the middle class people have better education and therefore there is a greater awareness? Or is it because parents are preparing their children for better things to come? Better job opportunity? High social circle? etc.

There is evidence (Cohen 1970, Fisk 1963, Howitt 1967) to indicate that esthetics and sociological consideration are the cause of parents seeking orthodontic treatment for their children.

Tully (1970) indicated that some parents have had orthodontic treatment themselves or failed to have it and become conscious of their own malocclusion. Knowing their own problems, they are now demanding that something should be done about the malocclusion of their children. Some parents are so dedicated to giving their children the best of everything that they will deny themselves many things in order to pay for orthodontic treatment. Tully went on saying that extroverted parents tend not to be concerned over malocclusion, whereas introverted parents are often unduly anxious about their child's mouth.

Baldwin and Barnes (1965) found that some parents would seek orthodontic care for their children despite the financial hardship involved.

Cohen and Horowitz (1970) conducted a survey, asking parents about straightening the crooked teeth of a child. They found that

a large majority thought corrective action should be taken because of the child's sensitivity, embarrassment or self-consciousness.

Baldwin and Barnes (1965) suggested that there are psycho-social factors beside severity of malocclusion which may determine motivation of orthodontic treatment. The source of these factors includes parental socioeconomic and ethnic background, dental health, previous experience with orthodontics. Results of their study showed that the mother is usually the motivating and deciding member. She is more likely to be from a higher socioeconomic background and is more likely to have had orthodontic problems and ot have received orthodontic treatment than her husband. The desire for treatment may represent family needs which are unrelated to the severity of the child's dento facial problem.

Gajda (1972) from his studies came also to the conclusion that the success of orthodontic care depends significantly on the attitude of the patient's mother and hence her influence on the child.

In a follow-up study, Baldwin and Barnes (1966) explored the pattern of motivation of families seeking orthodontic treatment. The psychological significance of such factors as achievement, need and social aspiration, disturbed self-image and identification with the child's malocclusion, as well as displacement of unresolved family problems on to the child's orthodontic problem and treatment is clearly demonstrated in the motivation of parents seeking treatment for their children.

From their further work, Baldwin and Barnes (1967) came to the conclusion that straight, even teeth were perceived as more important and desirable for girls by an overwhelming proportion of the parents of their patients, regardless of the sex of the child actually brought to the clinic. This preference was usually stated in terms of projected adult roles and appeared to represent an extension of the parents' own social and cultural value and attitudes.

I think we can safely say that parents, especially mothers, play an important role towards the success or achieving our aim in orthodontic treatment. This is a strong reason why we should always endeavour to get the co-operation of parents.

ATTITUDE OF THE PROFESSION

1. Increase in undergraduate curriculum

The attitude of the dental profession towards orthodontics seems to be that more should be taught at an undergraduate level. This will prepare the general practitioners to handle the uncomplicated malocclusions, thus leaving the difficult ones to the specialists. This will partly overcome the manpower problem.

Anderson (1967) believed that to prepare a patient and parent for orthodontic care, one must first prepare the referring dentists. They must be aware of orthodontic evaluation at an early age and they must be trained in areas of growth and development, habits, calcification patterns, missing teeth, supernumerary teeth, and hereditary problems. From this they would have a better appreciation of the proper time of referral. The orthodontists should establish better communication with the referring dentists by sending a diagnosis and treatment outline.

Nord (1956) felt that the general practitioners should receive instruction so that they are able to diagnose and treat patients with uncomplicated dental anomalies, and refer the difficult cases to the specialist. This view was also shared by Bawden (1967).

In the University of Sydney there has been a steady increase in the teaching of orthodontics in the undergraduate curriculum for the last 30 years.

In 1942 only special lectures in orthodontics were given to the final year students and the practical work requirements were:

1. treat one case of malocclusion;
2. make Magill bands and plain spurred band;
3. make sheath hooks and attach to expansion arch as required;
4. make retainer;
5. make completed case casts and lodge the case.

(University Calender 1942).

Later in the 1940's some lectures were given in the third year of the course and in the final year one hour lecture per week. By the early 1950's one hour lecture per week was given in third term of the third year covering introductory consideration, development of natural dentures, normal occlusion, malocclusion and classification. Further lectures were given during first term of the final year covering differential diagnosis, aetiology and prevention of malocclusion. In second and third term three hours per week were spent on practical work.

By 1959 lectures were given one hour per week during the second and third term of the third year and the final year was spent on demonstrations, practical work and clinical work. Students were required to construct appliances on plaster casts for correction of simple type of malocclusion, removable appliances, lingual arch, labial appliances using bracket bands and resilient stainless steel arch wires. The clinical sessions were spent on observing treated patients at various stages of orthodontic treatment, discussion

of case history and the progress of treatment.

In 1961 and 1962 the number of lectures were further increased to one hour lectures per week for the whole of third year. Growth and development of the dento-facial complex both normal and abnormal was also taught. Students were also required to do practical work. The final year was the clinical year, where students were required to examine patients and prepare a diagnosis and treatment plan, including a cephalomatric analysis and also to undertake simple corrective, interceptive and preventive treatment. Treatment of various types of malocclusion including the use of fixed appliance were also demonstrated.

1961 saw the start of the five year course under the new by-laws. In the third year of this course which started in 1963, introductory lectures in orthodontics were given. The fourth and final year were the clinical years. The general outline of the course emphasised growth and development of dental occlusion and head structures and associated oro-facial physiology of mastication, deglutition, respiration, speech and facial expression. Integrative function of relating basic knowledge of anatomy, histology, physiology and pathology to the modification and improvement of occlusal function and the treatment of malocclusion and dento facial deformity were taught in the third year. (University Calendar 1967).

The curriculum as it stands now is basically the same as in the 1960's. Introductory lectures in orthodontics are given in the third year in "Oral Physiology".

ANALYSIS OF DENTAL REGISTERS IN AUSTRALIA

31ST DECEMBER 1970 and 31ST DECEMBER 1971

NUMBER OF SPECIALISTS SELF EMPLOYED*

SPECIALTY	N.S.W. '70	N.S.W. '71	VIC. '70	VIC. '71	Q'LD. '70	Q'LD. '71	S.A. '70	S.A. '71	W.A. '70	W.A. '71	TAS.		N.T.**		A.C.T.*** '70	A.C.T.*** '71	AUST. '70	AUST. '71
ORTHODONTICS	32	38	10	25	8	7	10	12	8	11					1	1	69	94
ORAL SURGERY	14	11	5	7	5	4	3	3	2	2					1	1	30	28
PERIODONTICS	5	6	1	1	3	3	1	1							1	1	11	12
PEDODONTICS	1	1			-	1	2	3									3	5
ENDODONTICS	1	1		1	1	1	1	2									3	5
PROSTHODONTICS					1	1	5	1	1	-							7	2
CROWN AND BRIDGE	1	1	-	2				1	-	1							1	4
PREVENTIVE DENTISTRY							1	1									1	1
RADIOLOGY			1	1													1	1
ORAL REHABILITATION																	0	0
OTHER OR NOT INDICATED	1	1	19	4	1	1											21	6
TOTAL	55	59	36	41	19	18	23	23	11	14	0	0	0	0	3	3	147	158

* Defined as a dentist who restricts his practice to the speciality or registered by State Board where required.

** Specialist in Government service and from interstate.

*** December 1970

DATA TAKEN FROM A.D.A FACTS AND FIGURES 1971 AND 1972

During the fourth and fifth years the objective is to integrate clinical orthodontics into the general clinical teaching programme. (University Calendar 1973). Types of orthodontic treatment are mainly interceptive work and minor tooth improvements.

In fourth year half day per fortnight is spent on orthodontics. During the first and second terms it is in the form of tutorials and students spend the third term in the clinic. In the fifth year the time is increased to one half day per week and students are required to attend patients in the clinic and also to attend seminars. At present the students are seeing more orthodontic patients, and in addition each student is required to write an essay and case reports.

2. Increase in the number of orthodontists

In May 1972 in America alone the American Association of Orthodontists has active and associate membership of 5,088 (A.A.O. Jan. 1973). One has only to look through the News and Comments at the back pages of the American Journal of Orthodontics to see that this number is still increasing. In some areas this has reached a critical level because of the decrease or stabilisation of the population.

In Australia, orthodontics is by far the largest specialty in dentistry. (See table from 1971 and 1972 Facts and Figures, Australian Dental Association). As it has been already mentioned in the Introduction, there was a substantial increase in the number

of self employed orthodontists from 69 in 1970 to 94 in 1971. This surely must be a reflection of attitude or interest of the dental profession to orthodontics.

The need for orthodontists is still great in Australia. Godfrey (1963) estimated that 15 to 20% of children of school age in Australia require specialised orthodontic attention. Approximately 50% would benefit from orthodontic treatment by the general practitioners. The need appears obvious, how about the demand. The present demand, however, may be assessed by the long waiting lists for orthodontic treatment at various public dental services.

Orthodontics in Australia is primarily concentrated in the big cities, the country areas are less well served. Patients often have to pay extra expenses and inconveniences of travelling long distances. (Henry 1965). To many people orthodontic treatment is still a luxury and the standard of treatment is directly related to the cost of treatment.

Since 1965 the situation has improved as far as the availability of orthodontic treatment in the larger country towns, especially in the state of New South Wales. Many orthodontists have established branch practices in the country area and they make regular visits from the state capitals. (Australian Society of Orthodontists Directory 1973).

3. Demand for postgraduate courses

One has only to apply at a reputable University for enrolment in a formal postgraduate orthodontic training programme to be aware of the lengthy waiting lists. This is evidenced at the Australian Dental Schools, all of which conduct formal postgraduate courses in orthodontics leading to postgraduate degrees.

In 1936 the University of Sydney, Faculty of Dentistry granted only two degrees, one was the Bachelor of Dental Surgery (B.D.S.) the basic degree and the other was the Doctor of Dental Science (D.D.Sc.). In 1937 the Master of Dental Surgery (M.D.S.) was introduced and from 1949 on, the Faculty also granted the degree of Doctor of Philosophy (Ph.D). It was not until 1965 that an organised postgraduate course in orthodontics leading to a postgraduate degree of Master of Dental Science (M.D.Sc.) was started. Now the Dental Faculty grants four postgraduate degrees.

There is a heavy demand for the two years M.D.Sc. orthodontic course at the University of Sydney. Application for enrolment is now closed until 1976. The number of enrolments to the course is aimed at a maximum of four per year. Beside this there is also a number of candidates preparing for the M.D.S. degree.

4. Demand for orthodontic training courses

The Postgraduate Committee in Dental Science, The University of Sydney is also active in conducting orthodontic training courses. These courses are less formal and do not lead to a higher degree.

One such course is the "Long Course in Orthodontics". This course is a follow-up on the existing undergraduate curriculum, and is a more intensive clinical application of the present undergraduate orthodontic teaching. Participants are taught in interceptive orthodontics and treatment of Angle Class I malocclusion with minimum overbite and overjet problems, using a modified edgewise technique. Dentists are required to spend half a day per fortnight for two years on the course. At present there are 20 dentists taking part. The course is not taking any more applicants until April 1975.

The Postgraduate Committee in Dental Science this year has also successfully conducted an eight day Begg Light Wire Technique Course. It was attended by 23 orthodontists and postgraduate students from all over Australia and also from New Zealand. The Committee also conducted a two day Begg refresher course for those who had done the Begg course before.

5. Increase in Congresses

Again one has only to look at the back pages of News and Comment in the American Journal of Orthodontics to see the numerous congresses and meetings that are organised.

Last year the fifth Australian Orthodontic Congress was held in Melbourne from March 6 to March 10, 1972. It was attended by orthodontists from all over Australia and also from other countries. (News and Comment 1972).

The one major event for 1973 was the staging of the third International Orthodontic Congress in London from 13th to 18th of August. The Congress was sponsored and organised jointly by the American Association of Orthodontics and the European Orthodontic Society. (A.A.O. 1973). The first Congress was held in New York in 1926 when worldwide meetings of any sort were most unusual among professional organisations. The second Congress was in London in 1931. This was during the depth of the Great Depression; yet there was a registration of more than 812 persons from all over the world. (Editorial 1973). The 1973 Congress obviously was a much greater event. This could be easily seen from the elaborate and comprehensive symposium titles and speakers (A.A.O. May 1973), as well as the clinical and lecture programme(A.A.O. Jan. 1973).

Other noteworthy events for 1973 were:

1. the combined meeting of the European Begg Society and North American Begg Society in Madrid from 30th March to 5th April 1973;
2. the second International Congress on Cleft Palate held from 26th to 31st August 1973 in Copenhagen, Denmark.

The Scandanavian Orthodontic Society was one of the sponsoring societies in the latter event.

6. Specialist Registers

Sharpe (1972) conducted an attitude survey in British Columbia, Canada, on the continuation of education in dentistry. Over 90% of dentists who responded to the questionnaires, believed that continuing education was necessary in order to practice good dentistry. 98% stated they would attend such courses if they were available. 68% even went so far as to favour that continuing education be made a requirement for licensing purposes.

The establishment of orthodontic registers is the trend in several countries. Certification boards exist in the United States, the Netherlands and Norway and one is in view in Australia. (Cousins 1970). In Britain the formation of an orthodontic register has been given urgent consideration by the three groups of orthodontists, namely, the British Society for the Study of Orthodontics, the Consultants' Group and the British Association of Orthodontists. The General Dental Council is in favour of the formation of vocational registers, but the British Dental Association has taken the attitude that "there is no case for the creation of vocational reigsters within dentistry at the present time". (1969).

The requirement for recognition as a specialist in Australia in the future is likely to be based on the following:

1. two years in general practice;
2. there is a two year course which is not yet obligatory;
3. it seems likely that a two year M.D.Sc. course will emerge as a basic requirement;

4. the Sydney M.D.Sc. course demands a thesis on research projects and the M.D.S. demands a thesis on original work;
5. minimum of four years full time orthodontics;
6. minimum of six years following initial registration.

(Cousins 1970).

7. Tightening of Dental Board on specialists

In New South Wales in the early 1960's for a dentist who wished to register as a specialist all that was required from him was an undertaking in writing to the Board to confine his practice exclusively to that Specialty.

In the last few years, however, all that was required was to satisfy the Board that one has gained special skill in a particular specialty by adequate training and/or experience. The Board considers that the ideal will be attained when each applicant for recognition will be in possession of a higher degree or diploma relating to his specialty. The Board is aware that courses are not presently available in all specialties, the satisfaction of the requirement that an applicant has gained special skill may also be met for the time being if an applicant has been engaged exclusively in the clinical practice of that specialty for a period of not less than the equivalent of four years full time.

After 1st January 1974 all applicants for approval to use a Specialist Description will be required to show proof of possession of a higher degree relating to the specialty concerned.

The Specialist Descriptions recognised by the New South Wales Board are:

Oral Surgeon, Periodontist, Pedodontist, Orthodontist and Endodontist. (Dental Board of New South Wales).

8. Increase in number of textbooks and journals

Only two notable textbooks were published in the 1940's or earlier, one was Salzman's Orthodontics Principles and Prevention and the other was McCoy Applied Orthodontics (5th edition). In the 1950's more textbooks were published by White, Gardiner and Leighton, by Adams and by Moyers. Strang's: A Textbook of Orthodontia may have been published in the 1940's or earlier but his third edition was published in 1950. By the 1960's there were numerous orthodontic textbooks published, too many to be listed here, but it can be said that the majority of textbooks available today were originally published during this period.

In the 1930's there were few orthodontic journals published in the English speaking countries. Between the year 1933 and 1935 there were three journals which were published annually, one published quarterly and only one monthly. (List of Journals Indexed 1933-1935).

In the 1950's there appeared to be a drop in the number of journals published. In the 1956 Journals indexed there were only three listed namely American Journal of Orthodontics, Angle

Orthodontics and European Orthodontic Society Transactions.

By the early 1960's there was an increase in orthodontic journals published, although most were published annually and quarterly. At present there are eight orthodontic journals published in the English language, (Index to Dental Literature 1972). Those listed were:

American Journal of Orthodontics

Angle Orthodontist

Australian Orthodontic Journal

Bulletin, Pacific Coast Society of Orthodontists

European Orthodontic Society. Report of Congress

International Journal of Orthodontics

Journal of Clinical Orthodontics

The Orthodontist

The Australian Orthodontic Journal was first published in 1968 and it has been published ever since. This surely must be an indication of increasing interest in orthodontics by the dental profession.

METHOD

Attitude of the Community

Data is available regarding the number of self employed orthodontists in the various states in Australia (A.D.A. Facts and Figures). Therefore it is my intention to investigate orthodontics in public institutions generally in Australia.

A list of Dental Hospitals and Government Dental Services was taken from 1972-1973. A.D.A. Dental Directory. Only those institutions which the general public make use of were taken, therefore Dental Services from the Armed Forces and Repatriation Department were not included.

List of Dental Hospitals:

New South Wales	-	Sydney
Queensland	-	Brisbane
South Australia	-	Adelaide
Victoria	-	Melbourne
Western Australia	-	Perth

List of Government Dental Services:

Australian Capital Territory	-	Canberra
Northern Territory	-	Darwin
New South Wales	-	Sydney
Queensland	-	Brisbane

South Australia	-	Adelaide
Tasmania	-	Hobart
Victoria	-	Melbourne
Western Australia	-	Perth

Letters were sent to the corresponding Superintendants and Directors making enquiries regarding orthodontic services provided for the public. Where orthodontic services are not available, the government's attitude towards providing such a service was asked. The questions asked were:

1. The number of full time orthodontists on the staff.
2. The number of part time orthodontists, as clinicians or consultants on the staff and are they normally engaged in private practice?
3. The type of treatment - full band, removeable appliance etc.
4. Is there any limit in age for patients?
5. Who are eligible for treatment?
6. Is there any priority in treatment?
7. Is treatment free or is there a means test?
   If so, what percentage of the fee do patients pay?
8. The approximate numbers of patients receiving treatment annually.

Attitudes of Parents and Patients

An attempt initially was made to gauge the public's attitude towards orthodontics by the use of a set of questionnaires which

consisted of 26 questions. The aim was to investigate the public's knowledge on orthodontics and awareness of malocclusion. Also included were questions on aesthetic and functional aspects of occlusion, the importance of good occlusion to the individual and financial aspects of orthodontic treatment.

A pilot survey using the questionnaire was conducted at International House, a student's residence of the University of Sydney. One hundred questionnaires were distributed and only 39 were returned. From this trial survey it was realised that in this kind of survey a better response could have been expected if fewer questions were used although simple answers of yes, no, or don't know that, was all that was required for most of the questions. It was also learned that a questionnaire could only be effective if the questions were very specific, aiming at specific sections of the community, because a question can have different interpretations by people of different background. Unlike a survey that will affect the public directly, this type of survey requires a more personal approach to get a better response. For these reasons it was decided to rewrite the questionnaire using orthodontic patients from the University Orthodontic Department and from the United Dental Hospital Orthodontic Department. Parents of these patients were also included in the survey.

Patient's questionnaire:

1. Who was the first person who suggested that you should go to an orthodontist?

Answer: (a) Yourself,

(b) Parent,

(c) Dentist,

(d) Doctor,

(e) Teacher,

(f) Friend,

(g) Others.

2. Do you think that having straight (regular) teeth is desirable?

Answer: (a) Yes,

(b) No.

3. Do you think uneven front teeth should be straightened?

Answer: (a) Yes,

(b) No.

4. Do you think that having straight teeth is a help for better chewing?

Answer: (a) Yes,

(b) No.

5. For better chewing, do you think that a good bite (occlusion) of the back teeth is more important than straightened front teeth?

Answer: (a) Yes,

(b) No.

6. Do you think that straight teeth are easier to clean than uneven teeth?

   Answer: (a) Yes,

   (b) No.

7. Do you think to have a set of good, straight, natural teeth is important in:

   Answer: (a) Getting a good position (job).

   (b) Making friends.

   (c) Gaining the companionship of the opposite sex.

   (d) Others.

8. Would you, or do you mind having "braces" (bands) put on your teeth if it is necessary.

   Answer: (a) Yes.

   (b) No.

9. Do you have friends, brothers or sisters, who are having orthodontic treatment with "braces"?

   Answer: (a) Yes,

   (b) No.

Parent's questionnaire:

1. Who was the first person who suggested that your child should go to an orthodontist?

   Answer: (a) Yourself,

   (b) Dentist,

   (c) Doctor

(d) Friend,

(e) Others.

2. Do you think that having straight (regular) teeth is desirable?

Answer: (a) Yes,

(b) No.

3. Do you think uneven front teeth should be straightened?

Answer: (a) Yes,

(b) No.

4. Do you think that having straight teeth is a help for better chewing?

Answer: (a) Yes,

(b) No.

5. For better chewing, do you think that a good bite (occlusion) of the back teeth is more important than straightened front teeth?

Answer: (a) Yes,

(b) No.

6. Do you think that straight teeth are easier to clean than uneven teeth?

Answer: (a) Yes,

(b) No.

7. Do you think to have a set of straight natural teeth is important in:

Answer: (a) Getting a good position (job),

(b) Making friends,

(c) Gaining companionship of the opposite sex,

(d) Others.

8. Do you think orthodontic treatment is expensive compared to other dental treatment?

Answer: (a) Yes,

(b) No.

9. Would cost prevent you from seeking orthodontic treatment for your child?

Answer: (a) Yes,

(b) No.

10. Do you think that dental benefit funds should pay for orthodontic treatment?

Answer: (a) Yes,

(b) No.

If yes, what percentage should they pay?

Answer: (a) 25%,

(b) 50%,

(c) 75%,

(d) 100%

If No, then who should pay for the treatment?

All questionnaires were numbered, no names were used. Each questionnaire was accompanied by an explanatory note of the purpose of the survey. These notes were not used when the patients and parents were seen personally.

100 questionnaires for patients and 100 questionnaires for parents were left at the front desk of the United Dental Hospital, Orthodontic Department with the prior permission of Mr. Lewis who is the head of the Preventive Dentistry Department. The nurse in charge of the desk was asked to distribute the questionnaires. A number of stamped self addressed envelopes were also provided for parents who did not accompany their children to the Hospital.

Parents and patients who came in to the University Orthodontic Department, were given the questionnaires when they came for their regular visits. They were asked to complete the questionnaires while they were waiting and to return them before they left the surgery. Children who were not accompanied by their parents were asked to give their parents the questionnaires with the explanatory notes and also stamped addressed envelopes.

The survey was carried out for 6 weeks. Patients who were undergoing active treatment were normally seen every 6 weeks, therefore by the end of 6 weeks, the survey had covered the majority of patients who were under full band treatment.

Patients under the age of 10 were not included in the survey, because of the likelihood of them not understanding the questions.

Attitude of the Profession

An attempt was made to assess the attitude of the dental general practitioner toward orthodontics. In order to gain a representative view, it is necessary to take a large enough sample of the dentist population. To take a random sample to cover the whole of Australia and taking account of the distribution of the dental population is beyond the scope of this thesis. The state of New South Wales was chosen because of the location of the University of Sydney.

The sample of dentists was taken on recommendations from lecturers in orthodontics, University of Sydney. This was decided because only a small sample was intended. It was felt that a better response would be obtained if the samples were recommended by people who know them.

Thirteen letters were sent to dentists in an area covering the North, North Coast, North West, West and South of New South Wales and also some of Sydney's suburbs. Towns chosen were Inverell, Armidale, Taree, Tamworth, Dubbo, Orange, Moss Vale, Nowra, Caringbah; some of Sydney's suburbs chosen were Carlingford, Eastwood, Beecroft and Lindfield.

In each letter, each dentist was asked to give his comment on the following questions:

1. Do you refer patients for orthodontic treatment?

2. At what age do you refer?

3. Approximately what percentage of your clinical time do you spend on orthodontics?
4. Are you interested in orthodontics, enough for you to attend courses?
5. What is your attitude towards orthodontics in general?
6. Do you have any comment in regard to patients who have received orthodontic treatment?

From the replies, the comments made on each question was analysed question by question and conclusions were drawn.

HOSPITAL ORTHODONTIC SERVICE IN AUSTRALIA

Hospital	Full Time	Part Time	Type of Treatment	Age Limit	Eligibility	Priority	Means Test	Fee	Patients Per Year
N.S.W.	6	1	All Types	No	Means Test	Assessed Individually	Yes	Range 0-$60	± 4000
VIC.	5	3	Mainly Full Bands	No	Financial	Disfigure-ment & Cleft	Yes	Range 0-$280	± 1,200
Q'LD.	4	1	Mainly Full Bands	No	All	Confidential	Yes	Confi-dential	± 1,500 *
S.A.	4	8	All Types	No	All Indigent	Degree of malocclusion	Yes	* *	7,732 †
W.A.	No Information was released								

* Include those under observation
† Include consultations
* * Full charge, 75%, 50%, 25%, No charge

RESULTS

Attitude of the Community

Dental Hospital

Replies were received from all five states. Queensland classified the questions on priority of treatment and on fees and means test as confidential information. Western Australia considered that information on all questions asked should not be freely released, if at all. Therefore no information was released.

1. The number of full time orthodontists on the staff.

N.S.W. - six.

Vic. - five.

Qld. - One Specialist Orthodontist (with higher degree) and one Staff Orthodontist at the Children's Dental Hospital; two Staff Orthodontists at the Brisbane Dental Hospital.

S.A. - The Orthodontic Staff consists of:

University Teaching Staff

Reader in Orthodontics.

Senior Lecturer in Orthodontics.

Hospital Staff

Director of Orthodontics.

Senior Dentist, Orthodontics.

Honorary Staff

Eight - all are engaged in private practice.

S.A. - Postgraduate Trainees

Six Dentists on half time.

One Dentist on full time.

2. The number of part time orthodontists.

N.S.W. - one.

Vic. - three part time orthodontists who spend the rest of the week in their private Orthodontic Practices.

Qld. - one Acting Co-Ordinating Orthodontist (with higher degree) who spends three days in Hospital Service and two days in Private Practice.

S.A. - See Honorary Staff and Postgraduate Trainees from the previous question.

3. Type of treatment - full band, removable appliance etc.

N.S.W. - All types.

Vic. - Mainly full banding techniques and also some removable appliances.

Qld. - The greater proportion of patients are treated with full band techniques, but a number of removable appliances are also used.

S.A. - All types of orthodontic treatment and a variety of techniques are used.

4. Is there any age limit for patients?

N.S.W. - No.

Vic. - No.

Qld. - All age groups are accepted for treatment, there are few adult enquiries but fewer subsequently commence active therapy.

S.A. - No.

5. Eligibility of treatment.

N.S.W. - All of those who pass the means test.

Vic. - Patients must meet the financial eligibility requirement of the Hospital, and also must have a good standard of Oral Hygiene.

Qld. - Those who pass the Means Test.

S.A. - All indigent persons and dependants of pensioners.

6. Priority in treatment.

N.S.W. - It is assessed individually, on the basis of urgency of treatment.

Vic. - Gross disfigurement and Cleft Palate cases.

Qld. - No information was given, the reason given was that this information is confidential.

S.A. - Priority is established by assessment of the degree of malocclusion and the physical and psychological effects resulting therefrom. A high standard of oral hygiene is demanded.

7. Means test and fee.

N.S.W. - Patients are subjected to a means test. The fee ranges from free to $60.

Vic. - Pensioners and patients on Social Welfare are treated free. Other patients pay a fee up to $280 depending upon their income.

Qld. - This information is also confidential.

S.A. - Treatment is free for all pensioners and indigent persons. For people who are eligible for treatment under the existing means test are required to pay according to their assessment, i.e. "full charge, 25% discount, 50% discount, 75% discount, no charge".

8. The approximate number of patients receiving treatment annually.

N.S.W. - ± 4,000, number of appointments for 1972 was 13,906.

Vic. - The annual number of patient attendances is 12,000 and approximately 1,200 patients are under active treatment.

Qld. - Approximately 1,500 patients are receiving treatment or are kept under observation annually.

S.A. - The total number of patients attending for treatment and for consultation for the period of January 1972 to December 1972 was 7,732.

GOVERNMENT ORTHODONTIC SERVICE IN AUSTRALIA

Health Dept.	Full Time	Part Time	Type of Treatment	Age Limit	Eligibility	Priority	Means Test	Fee	Patients Per Year
N.S.W.	1	1	Full Band and Removable	School Age	School Children	Severity		Free	2, 164 *
VIC.			Some Removable						
Q'LD.			Included in the hospital service						
S.A.			Removable	5 - 13	School Dental	Dentists Decide		Free	300
W.A.			Some Removable						
TAS.	1		Mainly Full Band	No	School Children	No		Free	600
N.T.	1	5	Mainly Begg Full Band	No	All	No	No	0-$276	250
A.C.T.			Reply was not received.						

* Total Number of Appointments for 1972

Government Dental Services

The Government provides Dental Services to the community through the School Dental Services. As the name suggests it is a service for school children. Most malocclusions, if not all, develop in children during their school age, and yet there are only three full time orthodontists employed by the various governments in the whole of Australia.

Only the Northern Territory which is under the jurisdiction of the Commonwealth Government stated its policy which is: A decision was made in 1964 that a service by visiting orthodontists be established during 1965. The Commonwealth appears to have accepted the need to provide specialised services where not available on a private practice basis. This was probably due to an acceptance of the difficulties created by isolation and distance. Although there were some initial problems in obtaining this policy decision because of difficulty of evaluating the proposition of cosmetic to physiological benefit in orthodontic treatment.

Victoria indicated that it was planned that within the ensuing twelve months, the Dental Service would be re-organised and that provision would be made for an Orthodontist to be included within the establishment of the School Dental Service.

Western Australia felt that the Government attitudes to the provision of orthodontic treatment for the public would be enunciated shortly when the Federal and State Governments continue their discussion on dental health matters.

The Queensland Government Dental Service was included with the Hospital Service.

No reply was received from the Australian Capital Territory.

1. The number of full time orthodontists on the staff.

N.S.W. - one.

Vic. - nil.

Qld. - see Hospital Service.

S.A. - nil.

W.A. - nil.

Tas. - one.

N.T. - one. A position is available for a second specialist and they are actively seeking a recruit to this position.

2. The number of part-time orthodontists on the staff.

N.S.W. - one.

Vic. - nil

Qld. - see Hospital Service.

S.A. - nil.

W.A. - nil.

Tas. - nil.

N.T. - five. This is a consultant service provided by a group of visiting Adelaide orthodontists under the nominal management of Dr. G.I. Brown. Persons involved are Dr. Milton Sims, Dr. R. Porter, Dr. B. Hussey and also Dr. I. Edwards from Sydney. They visit on a

basis of one week every six or seven and provide both consultancy and treatment services in Darwin and Alice Springs.

3. Type of treatment.

N.S.W. - full band and removable appliance.

Vic. - a few removable appliances as part of routine dental treatment.

Qld. - see Hospital Service.

S.A. - interceptive orthodontics and minor tooth movements are performed by any of the dentists who wish to do so using mostly removable appliance.

W.A. - Simple orthodontic procedures confined to the use of removable appliance. Orthodontic consultant reports can be obtained by submitting study models, radiographs and patient details from orthodontists.

Tas. - mainly full band.

N.T. - almost exclusively fixed appliance therapy using the Begg Technique. Removable appliances are used in interceptive cases. The staff dentists have immediate access to the specialist orthodontist for consultation.

4. Limit in age.

N.S.W. - school age only.

Qld. - see Hospital Service.

S.A. - patients who are normally treated by the School Dental Service, approximately 5-13 years.

Tas. - only clinical convenience.

N.T. - no age limit; school children and full time students are treated free; others with income, a fee is charged.

5. Eligibility.

N.S.W. - school children. Although no active treatment is continued beyond school age; some patients may be "in retention" at the time of leaving school, treatment is maintained until the retainer may be discontinued.

S.A. - all children in the areas treated by the School Dental Service.

Tas. - all school children.

N.T. - no restriction, but the following criteria must be satisfied;

(a) the patient must have a dental future;

(b) good oral hygiene

(c) degree of conviction, and level of co-operation available, must be adequate in both patient and parent.

Children of families on 12 month transfers are not accepted.

6. Priority in treatment.

N.S.W. - determined on severity of malocclusion, oral hygiene etc.

S.A. - determined by the dentist himself within his own limitations, otherwise advice is given to people to seek for an orthodontic consultation.

Tas. - no.

N.T. - no formal structure of priorities.

7. Means test and fee.

N.S.W. - a confidential means test is applied similar to that conducted by the United Dental Hospital. Treatment is free.

S.A. - all treatment of the School Dental Service is free.

Tas. - yes.

N.T. - see 4. Fee charged to non-exempt patients is usually $276 for a full banding case or less, determined by the Director-General on recommendation by the Senior Dental Officer.

8. Approximate number of patients receiving treatment annually.

N.S.W. - for 1972 full time orthodontists had 2,049 appointments and part-time orthodontists had 115 appointments.

S.A. - 300 patients annually.

Tas. - approximately 600.

N.T. - with one orthodontist in service at present, an attempt is made to maintain a level of 250 cases of major content (full band) in course of treatment at any one time.

There is a waiting list in excess of 600 for orthodontic treatment.

Attitude of Patients

Distribution of patients from University Ortho. and Hospital Ortho.

	University	%	Hospital	%	Total
No. of questionnaires completed	119	81.5	27	18.5	146
No. of questionnaires distributed	121	100	35	100	156
% of response	98.35		77.1		93.5

Distribution by sex of patients responding to questionnaire

	Male	Female	Total
Number in sample	59	87	146
% of sample	40.4	59.6	100

Two questionnaires (one University and one Hospital) have been excluded from this investigation because of insufficient information given for analysis. The age of the samples ranged between 10 and 25 years and the average age was 13.9 years.

1. Who was the first person who suggested that you should go to an orthodontist?

	N	%
Yourself	7	4.8
Parent	26	17.8
Dentist	94	64.4
Doctor	12	8.2

	N	%
Teacher	-	-
Friend	3	2.1
Others	4	2.7

The majority of patients who come for orthodontic treatment were referred by dentists (64.4% of the total sample). Parents constituted the second largest group who felt that their children should go to an orthodontist. This was followed by doctors, patients, themselves, others and friends. The group of the others people were E.N.T. surgeons, other orthodontists and patient's sister. Other orthodontist referred patients to the Hospital or to University Ortho. Department if patients were unable to meet the fee of the private practitioner, and if two or more members of the same family required orthodontic treatment, thus it became a financial burden.

2. Do you think having straight (regular) teeth is desirable?

	N	%
Yes	137	93.8
No	7	4.8
Did not answer	2	1.4

A clear majority of patients thought that to have straight teeth is desirable.

3. Do you think uneven front teeth should be straightened?

	N	%
Yes	140	95.9
No	2	1.4
Did not answer	4	2.7

The majority of patients also thought that uneven teeth should be straightened. This concurs with question 2 for the desire of having straight teeth.

4. Do you think that having straight teeth is a help for better chewing?

	N	%
Yes	114	78.1
No	30	20.5
Did not answer	2	1.4

5. For better chewing, do you think that a good bite (occlusion) of the back teeth is more important than straightened front teeth?

	N	%
Yes	94	64.4
No	48	32.9
Did not answer	4	2.7

This question was intended to find out if patients consider aesthetics more important than good functional occlusion. If the question was correctly understood, a larger percentage, 64.4% of patients, thought that

functional occlusion was important, more so than aesthetic consideration. It is possible that the younger patients might have some difficulty in understanding the question.

6. Do you think that straight teeth are easier to clean than uneven teeth?

	N	%
Yes	137	93.8
No	8	5.5
Did not answer	1	0.7

It is clear that 93.8% of patients understood that well aligned teeth are much easier to keep clean than crowded teeth.

7. Do you think to have a set of good, straight, natural teeth is important in:

	N	%
a. getting a good position	52	35.6
b. making friends	56	38.4
c. gaining the companionship of the opposite sex	62	42.5
d. others	28	19.2
Total sample	146	100

Most patients gave more than one answer. The percentage given above for each answer was taken from the total sample. Five patients (one male and four females)

thought that straight teeth was not important. Five patients (two males and three females) did not give any answer to this question at all. It appeared that a larger percentage of patients did think that the appearance of their teeth is important in getting boy friends or girl friends. Making friends and getting a good position seemed to be just as important but to a slightly lesser degree. Other answers given by patients for having straight teeth were for: speech, health, good occlusion, own satisfaction, self confidence and T.V. appearance. Among patients who gave other answers, by far the greatest majority felt that to have a set of good, straight, natural teeth is important for cosmetic reasons.

8. Would you, or do you mind having 'braces' put on your teeth if it is necessary?

	N	%
Yes	18	12.3
No	128	87.7

A great majority of patients did not mind wearing fixed orthodontic appliances, only 12.3% of the total sample did mind wearing appliances.

9. Do you have friends, brothers or sisters who are having orthodontic treatment with 'braces'.

	N	%
Yes	90	61.6
No	56	38.4

61.6% of patients surveyed did have friends, brothers or sisters who wore orthodontic appliances and 38.4% did not.

Attitude of Parents

Distribution of parents from University Ortho. and Hospital Ortho.

	University	%	Hospital	%	Total
No. of questionnaires completed	82	68.33	38	31.6	120
No. of questionnaires distributed	98	100	46	100	144
% of responce	83.67		82.6		83.3

Distribution by sex of parents responding to the questionnaire

	Male	Female	Total
No. of sample	33	87	120
% of sample	27.5	72.5	100

Five questionnaires (three University and two Hospital) have been excluded from the survey because of insufficient information given for analysis.

1. Who was the first person who suggested that your child should go to an orthodontist?

	N	%
Yourself	27	22.5
Dentist	83	69.2
Doctor	9	7.5

	N	%
Friend	-	-
Others	4	3.3

Three of the samples gave two answers. 69.2% of parents were advised by dentists to seek orthodontic treatment for their children. Parents themselves constituted the second largest group of people who initiated the seeking of orthodontic treatment. Wives, speech therapists and orthodontists were the other 3.3% who thought that the patients should have orthodontic treatment.

2. Do you think that having straight (regular) teeth is desirable?

	N	%
Yes	120	100
No	-	-

All parents unanimously agree that to have straight teeth is desirable.

3. Do you think uneven front teeth should be straightened?

	N	%
Yes	117	97.5
No	3	2.5

97.5% of parents included in the investigation thought that uneven front teeth should be straightened and only 2.5% did not think so.

4. Do you think that having straight teeth is a help for better chewing?

	N	%
Yes	110	91.7%
No	9	7.5%

One parent did not answer this question. 91.7% of parents thought that having straight teeth is a help for better chewing and 7.5% did not think so.

5. For better chewing, do you think that a good bite (occlusion) of the back teeth is more important than straightened front teeth?

	N	%
Yes	88	73.3
No	28	23.3
Did not answer	4	3.4

73.3% of parents thought that good occlusion of posterior teeth is important and 23.3% did not think so.

6. Do you think that straight teeth are easier to clean than uneven teeth?

	N	%
Yes	115	95.8
No	3	2.5
Did not answer	2	1.7

95.8% of parents thought that well aligned teeth are easier to clean than crowded teeth, only 2.5% did not think so.

7. Do you think to have a set of straight, natural teeth is important in:

	N	%
a. getting a good position (job)	55	45.8
b. making friends	43	35.8
c. gaining companionship of the opposite sex	44	36.7
d. others	45	37.5
Total sample	120	100

Most parents gave more than one answer. Each percentage was taken from the total sample. Seven parents (3 males and 4 females) thought that to have well aligned teeth was not important for any of the answers. Seven other parents (one male and 6 females) did not give any answer to this question. A larger percentage of parents did think that appearance of teeth is important in getting a good position. 37.5% of parents gave others answers which were: speech, appearance, self confidence, personality build up, mental health outlook in life, psychological importance, good function, health, self satisfaction, would make a difference in one's whole attitude to living. Among parents who gave other answers by far the greatest majority felt that to have a set of good, straight, natural teeth is important in gaining self confidence.

8. Do you think orthodontic treatment is expensive compared to other dental treatment?

	N	%
Yes	94	78.3
No	22	18.3
Did not answer	4	3.4

9. Would cost prevent you from seeking orthodontic treatment for your child?

	N	%
Yes	59	49.2
No	58	48.3
Did not answer	3	2.5

10. Do you think that dental benefit funds should pay for orthodontic treatment?

	N	%
Yes	109	90.8
No	2	1.7
Did not answer	9	7.5

If yes, what percentage should they pay?

	N	%
25%	1	0.8
50%	39	32.5
75%	58	48.3
100%	7	5.8
Others	4	3.3

If no, then who should pay for the treatment?

One said parents should pay and the other was a pensioner, therefore did not have to pay for treatment.

Two of the nine parents who did not answer this question; one is receiving free dental treatment and the other said that it should depend on income whether dental benefit funds should pay for orthodontic treatment or not. Four of the parents who answered 'yes' to this question but did not check a percentage figure, thought that the fund should operate as: 1. means test at the United Dental Hospital; 2. Medical Benefits Fund; one said that the percentage should be as much as fund income will allow; and the other said that a number of people can not afford to contribute to a Fund.

As it is to be expected that parents' attitudes varied widely on the financing of orthodontic treatment, here are some of the comments made:

1. The present Hospital and Medical Benefits Fund should also include dental treatment.
2. One mother was prepared to go back to work to pay for orthodontic treatment for her daughter.
3. One was not at all impressed with the concept of A.D.P. as it now stands and can not see why dental treatment cannot be covered by a National Health Scheme as in the U.K.

4. A Dental Scheme is not practical for a large family and the fees at the United Dental Hospital are more than reasonable.
5. A Dental Benefit Fund should not be controlled by the Government.

Attitude of the Profession

1. Do you refer patients for orthodontic treatment?

All 10 dentists who replied said that they do refer patients for orthodontic treatment. One dentist who has been in practice for over 28 years said that earlier in his career he referred only about 4 to 5 patients annually but now he would refer 30 annually.

Some dentists would treat simple malocclusion requiring only minor orthodontic tooth movement, and refer the more difficult cases.

It appeared that the dental profession is now more concerned about occlusion, rather than just treating caries teeth. One dentist specifically examines routinely the occlusion of all children and adolescents. It seemed that there are patients who would not have the benefit of seeing an orthodontist for financial reasons.

2. At what age do you refer.

If the patient is seen at an early age, dentists do refer patients early, so as to avoid the danger of missing the optimal time for treatment. Some refer as early as 6-7 years.

Generally patients are referred between the ages of 8 to 12 years, depending on the nature of malocclusion and the circumstances. Girls are referred earlier than boys. Class III and pseudo Class III

malocclusion are referred as early as possible. Class II division 1 are referred later when the upper canines are ready to erupt.

One dentist would seek consultations before extracting molars in cases that may require orthodontia - to determine the desirability of endodontic treatment; if these teeth are needed for anchorage.

3. Approximately what percentage of your clinical time do you spend on orthodontics?

The answers to this question seemed to reflect the attitude of individual dentists to orthodontics. Those who are interested in orthodontics would naturally spend more of their clinical time in treating malocclusion. The reply to this question ranges from "no idea" to 15% of clinical time. The average time spent for the group was 5%.

It seems that there are three groups of general practitioners.

1. Those who spend minimal time on orthodontics.
2. Those who spend an average of 5% of their clinical time on orthodontics.
3. Those who spend an average time of 15%.

It appeared that Australian dentists spend slightly more time on orthodontics than dentists in New Zealand, who spend only about 2% of their clinical time. (Trevathan 1967).

For dentists who have an easy access to the orthodontist; the temptation is to leave it to the specialists.

Serial extraction in suitable cases seemed to be practised quite commonly by the general practitioners, appliances were often used in conjunction with this.

Appliances generally used were, space maintainers, oral screens, inclined planes, and removable appliances with springs. Andresen appliance was also mentioned in one instance.

4. Are you interested in orthodontics enough for you to attend courses?

Two out of ten dentists who replied said that they are not interested in orthodontics. Eight said that they are interested in orthodontics and five of these have definitely attended courses.

Some of the reasons given for the difficulties in attending courses were:

(a) Geographic isolation of country practices.

(b) Not allowed to attend courses - presumably by the employer.

(c) Greater preoccupation in other fields of dentistry.

(d) No desire to do it now, may be later.

One dentist commented that the preamble of theory in orthodontics as being abstruse and various diagnostic and classification systems of little use and confusing to a General Practitioner.

5. What is your attitude towards orthodontics in general?

From the replies it became very obvious that orthodontics was seen as an essential part of preventive dentistry. Dentists get a sense of satisfaction in resolving malocclusions successfully and it is also a satisfying variation in the routine of general dental practice.

Orthodontics was looked upon as a useful specialty for the correction of functional and aesthetic problems. Psychological

benefits and improvement in mental outlook of patients, resulting from orthodontic treatment was also recognised.

It was felt that there should be less emphasis on appearance as distinct from aesthetic. If patients are happy with their appearance, treatment in such cases should not be undertaken. A too perfectionist attitude held by the dentist, orthodontist, patient and parent should be avoided. Elaborate treatment can sometimes not be justifiable.

One dentist thought that the practice of orthodontics is too fiddley and the outlay is too expensive for the General Practitioner.

6. Do you have any comment in regard to patients who have received orthodontic treatment?

Comments made on this question can be divided into two groups: one with favourable comments and the other with criticism.

Favourable comments.

(a) Patients were delighted with the results and the orthodontist who treated them.

(b) Patients appear to have a greater interest and awareness in oral hygiene as a result of orthodontic treatment.

(c) Patients are nearly always well motivated towards looking after their teeth.

(d) Patients have an air of confidence.

(e) Benefit greatly from orthodontic treatment, first functionally, second aesthetically.

Criticisms:

(a) Some Class II division 1 patients look more attractive before than after treatment, especially if treatment is commenced later than ideal time.

(b) Teeth are left with open contacts.

(c) Root resorption.

(d) Impacted 3rd molars after bicuspid extractions.

(e) Crowded lower anteriors.

(f) High incidence of periodontal disease and tooth mobility.

(g) Tendency for enthusiasm and co-operation to wane in the final stages because they felt that the ultimate relationship has been achieved and they could not see the necessity for minor corrections and prolonged retension.

(h) Relapse after retension period resulted in patients becoming "anti".

DISCUSSION

Attitude of the Community

Orthodontic treatment appeared to be adequately provided by the Dental Hospitals in Australia. There are at present more than 19 full time orthodontists with the Hospital Service. All these Services operate under a means test, therefore they are providing treatment only for people with lower incomes. Besides the full time orthodontists, there are also 13 part time orthodontists at the Hospitals. Western Australia has not been included in the present investigation, as there was no information given from that State.

As already mentioned previously, there are at present only three full time and six part time orthodontists employed by the Government Dental Services in Australia. Considering the number of school children that are under the care of the School Dental Services, the number of orthodontists must be highly inadequate. Although there are signs of improvement, as already stated, the Northern Territory is actively seeking another orthodontist and Tasmania has also advertised for another orthodontist. (Sydney Morning Herald 6.10.73). It seems that Victoria and Western Australia will also include orthodontics in their services in the near future.

At the end of 1971, there were 94 orthodontists engaged in private practice, if it could be assumed that this number has not changed, there would be approximately a total of 120 orthodontists in Australia in 1973. If it could be further assumed that there were 1,191,134 (1970 census) children between the age of 10 and 14

in Australia at present and Godfrey (1963) estimated 15-20% and Peel (1973) estimated ±18% of children of school age require specialised orthodontic treatment, it would work out that each orthodontist has to treat approximately 500 patients per year. If one orthodontist could handle 250 cases per year, we would need twice the number of orthodontists. If the Universities in Australia could train 10 specialist orthodontists per year, it would take 12 years before the number could be doubled. From 1961 to 1966 there have been a fall in the numbers of live births per year in Australia. Since 1966 numbers have been increasing (Census 1972), therefore at the present there seems to be no solution to the problem of orthodontic manpower. However to estimate the situation realistically, the demand for orthodontic treatment should also be investigated.

Reading (1965) recognised the problem and suggested three possible solutions to orthodontic problems in Australia:

1. Increase the number of persons qualified to deal with the treatment of malocclusion.
2. Reduce the incidence of orthodontic problems by preventive dentistry.
3. Assess the problem as a public health measure of national importance.

Attitude of Patients and Parents

It is not claimed that the finding of this study represents the attitude of orthodontic patients and parents in general. The sample was a biased one, because they had to pass the Hospital means

test before they could be accepted for treatment. To obtain a cross section of orthodontic patients and parents, the study should include those from private orthodontic practices. Systematic sampling of orthodontic practices and the patients and their parents is essential. For better results a more personal approach to the survey is advisable. The careful wording of the questions on a survey is also important, bearing in mind the different types of people who are likely to be included in the survey. Questions should be as short and specific as possible. This study however does represent the views of orthodontic patients and parents from the United Dental Hospital and also from the University Orthodontic Department.

Dentists were by far the majority of people who referred patients for orthodontic treatment. 64-69% of patients in this study were referred by dentists. Parents especially mothers were the second largest group who motivated their children to have orthodontic treatment. 17 to 22% of parents provided the incentive. Some patients were referred by the medical profession, or the speech therapist. Other orthodontists referred patients to the hospital when parents were unable to meet their financial obligation.

All parents thought to have well aligned teeth is desirable, only 93.8% of patients thought so. But 97.5% of parents thought that uneven front teeth should be straightened and 95.9% of patients thought so. It appeared that some patients could be swayed to have orthodontic treatment if anterior teeth were crowded, but some girl patients did not worry about crowded teeth. On the contrary parents thought that to have well aligned teeth is desirable, but 2.5%

would not be worried by crowded anterior teeth.

From the results of questions 4, 5 and 6 parents appeared to be able to appreciate the functional aspect of good occlusion and patients appeared to appreciate more the cosmetic aspect of good occlusion.

A larger percentage (45.8%) of parents thought that to have a set of straight, natural teeth is important in getting a good position, where as a larger percentage of patients said that it is important in gaining the companionship of the opposite sex. Among parents and patients who gave their own answers to question 7, an overwhelmingly large percentage of parents said that to have well aligned teeth is important for self confidence, but patients tended to think that it is important for appearance. Therefore it seemed that parents were thinking more in terms of long range benefits and patients were thinking more in terms of immediate benefit. The later finding agreed with Baldwin et. al. (1967) in the investigation that children were more likely to see treatment in terms of the immediate advantage for their own sex.

Results of question 8 showed that 87.7% of patients did not mind wearing fixed appliances, only 12.3% did mind. From question 9, it was found that 61.6% of patients have friends, brothers or sisters who wore fixed appliances. It would appear then that these patients, from question 9, were influenced by other people who also wore appliances. It would also appear that these patients constituted the majority in question 8, who did not mind wearing fixed appliances.

78.3% of parents thought that orthodontic treatment is expensive compared to other dental treatment, but only half of the parents who responded to this survey, indicated that the cost factor would prevent them from seeking orthodontic treatment for their children.

As far as the financing of orthodontic treatment is concerned, 90.8% of parents in the survey were in favour of the Dental Insurance Scheme or the Dental Benefit Funds. 48.3% of these parents thought that the Funds should pay 75% of the fees and 32.5% thought that the Funds should pay 50% of the fees. Only 5.8% thought that the Funds should pay all the fees.

The private Dental Insurance Schemes that are operating in Australia do not provide sufficient coverage for orthodontic treatment and some do not even provide benefits for orthodontic treatment. The Manchester Unity and Mutual Dental Aid in Sydney provide a maximum benefit of only $50. The Australian Dental Plan initially in 1972 set the total lifetime of orthodontic benefit for a single individual of not more than $50. But in the latest development this has been changed. A.D.P. will now pay 50% of orthodontic fees up to a limit of $200 depending on the customary fees prevailing in the state in which the orthodontist works. This appears to be more realistic. Considering the majority of parents in the survey thought that dental benefit funds should cover between 50 to 75% of the cost of treatment, A.D.P.'s recent decision was certainly a step in the right direction.

Comments from Parents

One father commented that on four occasions his daughter travelled 10 miles to see an orthodontist and on each occasion she was referred back to her dentist. He suggested that there should be some direct communication between the dentist and the orthodontist.

One mother said that her son had been going to the School Dental Clinic and her child was 10 before she realised that his teeth were too crowded. She wondered if some extraction could have been done earlier which might have saved a longer course of treatment later. She thought that the School Dental Service could have a School Orthodontist to explain the clinical finding to parents and children instead of only publicising cavities.

From these two examples it showed that some parents are getting sophisticated in their views as they become more dentally aware.

Attitude of the Profession

To obtain a representative view of the dental profession, it is necessary to conduct a survey which covers a large cross-section of the dental population. A sample of 20% of all dentists would give a workable figure. Sampling should also be systematic and cover larger areas. (Metropolitan and country).

Lengthy answers to questions in a large survey makes it difficult to analyse the results. Therefore it is preferable to ask specific questions which can be answered by "yes" or "no" or by a short sentence.

The reason for the good response from the dental profession seems that the sample was taken from a group of dentists who were interested in orthodontics therefore the result of the survey would probably not represent the view of the whole cross-section of the dental profession. However the findings of this study are the view of some dentists. Because dentists are the main group of people who refer patients to the orthodontists, it is only reasonable that the orthodontists should be sensitive to the constructive comments from the general practitioner.

CONCLUSION

Attitude of the Community

1. The Hospital services are better served by orthodontists than in the Government Dental Services.
2. There are signs that the Government will improve the orthodontic service for the community.
3. The Hospitals and Government Services provide orthodontic treatment only to a limited number of people.

Attitude of Patients and Parents

1. Dentists are by far the largest group of people who advise patients to seek orthodontic treatment.
2. Parents, especially mothers seem to have a strong influence on patients for seeking orthodontic treatment.
3. Parents, more so than patients thought that it is desirable to have well aligned teeth.
4. The majority of parents and patients thought that crowded teeth should be straightened.
5. Parents seemed able to appreciate better, that good occlusion is desirable for proper function of masticatory apparatus. Although the majority of patients also supported this view they were less sure.
6. Parents, more than patients, thought that posterior teeth were important. About one in every three patients thought that anterior teeth are more important, while one in every four parents thought so.

7. The majority of parents and patients thought that well aligned teeth facilitate in keeping teeth clean.

8. Whilst more parents thought that to have a set of straight natural teeth is important for seeking a good position, more patients seemed to think that it is more important in gaining the companionship of the opposite sex. It appeared that parents were thinking of long term benefits, while patients saw it as an immediate advantage.

9. Parents appeared to recognise the psychological importance of aesthetic on a person's outlook in life. Patients could see only the superficial benefit from a good set of teeth.

10. Most parents thought that orthodontic treatment is expensive compared to other dental treatment.

11. Parents were evenly divided as far as cost to be a factor in not seeking orthodontic treatment. About half would seek treatment regardless of cost, while the other half would not seek treatment because of cost.

12. About 90% of parents thought that some sort of dental benefit funds should pay for orthodontic treatment. The majority felt that the funds should pay 75% of the fees.

13. Most patients would not mind wearing bands on their teeth during orthodontic treatment.

14. About 60% of patients have friends, brothers or sisters who are wearing bands.

Attitude of the Profession

1. Dentists do refer patients for orthodontic treatment and it is increasingly so.
2. A lot of dentists in N.S.W. seemed to practice preventive dentistry and orthodontics is considered as an essential part of it.
3. The dental profession is now more concerned about occlusion rather than just treating caries teeth.
4. Patients are referred between the ages 6 to 12 years old.
5. Most G.P.'s do provide their patients with orthodontic treatment although this is only confined to the simpler cases.
6. Quite a few G.P.'s are interested in orthodontics and some do attend courses.
7. Psychological benefits resulting from orthodontic treatment were recognised.
8. Over-treatment should be avoided.
9. Patients do benefit from orthodontic treatment, but more attention should be placed on profile, root resorption, open contacts, impacted 3rd molars and relapse of lower anteriors.

SUMMARY

Literature on orthodontics as a health service in some countries was reviewed. Attitudes of patients, parents and the dental profession to orthodontics were discussed.

Method of investigation by the use of questionnaires on attitudes of orthodontic patients and their parents from the United Dental Hospital and University of Sydney, Orthodontic Department was presented. The results were analysed and discussed, their conclusions were drawn.

Investigation was made on orthodontic services provided by the Dental Hospitals and the Government Dental Service in Australia. Method and result of investigations were presented and the findings were discussed.

Method of investigation of the attitude of the dental profession in N.S.W. was presented. The results were analysed and conclusions drawn.

APPENDIX

Further information on A.D.P. obtained from personal communication with Dr. R.H. Abbott, State Director A.D.P. for N.S.W.

1. At present an individual subscriber cannot join A.D.P. He can only join as a member of a group.

2. Authorisation for orthodontic treatment will be done by A.D.P. central office who will employ a dental consultant as is done by Repatriation at this time. A written report will suffice, but if any further records are required they will be asked for. Each case is handled on its merits and whether or not the person asking approval for orthodontic treatment is a trained orthodontist or otherwise would have bearing on the need for records or otherwise.

3. Orthodontic treatment is usually charged for over a period of time; if a patient loses eligibility part way through treatment, due to a change in place of employment, then A.D.P. will have paid 50% of the bills already rendered by the orthodontist up to a maximum of $250. From losing eligibility, the patient will pay the rest of the account himself.

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