AN EPIDEMIOLOGICAL COMPARISON OF RURAL VS. URBAN, AND NATIVE VS. NON-NATIVE, DENTAL HEALTH IN MANITOBA CHILDREN AGED SIX AND THIRTEEN YEARS

BY

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A Thesis
Submitted to the Faculty of Graduate Studies
in Partial Fulfillment of the Requirements
for the Degree of

DOCTOR OF PHILOSOPHY

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ISBN 0-315-86038-3

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ABSTRACT

The purpose of this study is to compare the dental health status of two groups of Manitoba Native children, six and thirteen years of age, to studies of Manitoba White children of similar ages, and to determine whether whether any differences found are due to the often isolated rural environment in which they commonly live. The populations included in this study consist of both Native and White children living in rural communities in Manitoba, and a sample of White children living in an urban environment.

The first part of the study is a dental survey of the children belonging to the Swampy Cree Tribe and living on six reserves close to The Pas, in northwest Manitoba. The second part of the study looks at the Native children in central and northeastern Manitoba, primarily Ojibwa, who were treated by the Manitoba Children's Dental Program. Most studies of Canadian Native children have shown very poor overall oral health, with a dental caries rate three to four times higher than the general population. This study attempts to determine whether this problem of rampant decay is primarily the result of limited access to dental care found in the rural environment. The results of this study indicate that: first, in most measures of dental health status, there is a significant difference in the quality of dental health of Manitoba children at six and thirteen years of age, that follows a rural-urban, as well as an Native-White distribution. Second, there is a clear urban-rural dichotomy in the extent to which the treatment needs of Manitoba children are being met. The rural White children are only slightly better off than the rural Native children, and both are significantly worse off that are urban White children. There is more of a difference in the 6-year-olds between the urban and rural White children than there is for 13-year-olds. These results are consistent with the results of previous studies in which Native and rural children had significantly greater caries rates and fewer of their treatment needs were met, especially for younger children, 5-6 years of age. The implications of this research are that perhaps this is the appropriate framework within which to evaluate the delivery of dental health care, and perhaps health care in general, at least within Canada, a country in which the rural population is, for the most part, far more removed from the urban centres than is true of virtually any other country. Most of us presume that the general health status of Canadian Indians and Inuit is well below that of the predominantly White population, and that this is part of the overall pattern of neglect that has been accorded historically to Indian and Inuit people. What may not be so clear is the extent to which simple remoteness from urban centres of treatment may be an equally important variable. Certainly, there is evident need to improve the standards of health care for Canada's Native peoples, but this need should be assessed within the broader context of an urban-rural framework, rather than as simply one of ethnic neglect.

ACKNOWLEDGEMENTS

Above all I wish to sincerely thank my advisor, Dr. William D. Wade, for his guidance, his encouragement, his remarkable patience, and in particular for his faith in me over the past many years. Yes Bill, there is life after Bonnie!

All the members of my committee have been very helpful and have been diligent in offering suggestions for improvements to this thesis, but in particular, Dr. John T. Mayhall, who saw some substance in the first draft and meticulously critiqued my efforts.

I am extremely grateful to Dr. Peter Cooney, Mrs. Ronda Plett, Dr. Lisa Cohoe and the Swampy Cree Tribal Council, without whom this project would not have been possible.

I also would like to acknowledge the fantastic support and encouragement of my husband Jerry, and several of my colleagues and true friends, especially Ms. Marg Handziuk, Mrs. Nancy Hughes and Prof. Shirley Gelskey. A special thank you as well to Dr. Mark Gabbert who helped me to persevere over the last several months.

I am also indebted to both the Canadian Dental Hygienists Association and the Canadian Fund for Dental Education for their financial support in the form of research fellowships.

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CHAPTER I INTRODUCTION

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A. PURPOSE

The purpose of this study is to compare the dental health status of two groups of Manitoba Native children six and thirteen years of age to studies of Manitoba White children of similar ages, and to determine whether any differences found are due to the often isolated rural environment in which they commonly live.

B. THE POPULATION

The populations included in this study consist of both Native and White children living in rural communities in Manitoba, as well as a sample of White children living in an urban environment (Winnipeg). Unfortunately, a sample of Native children living in an urban environment was not available for this study. The native population in this study consists of two groups. The first part of the study is a dental survey of the children belonging to the Swampy Cree Tribe and living on six reserves close to The Pas, in northwest Manitoba. The second part of the study looks at the Native children in central and northeastern Manitoba, primarily Ojibwa, who were treated by the Manitoba Children's Dental Program.

The Cree and Ojibwa form the majority of the Native populations of Manitoba, which is considered part of the central subarctic. They represent two linguistically and culturally related groups. Their languages belong to the Algonkian family of Amerindian. Blood group studies and genetic-distance analyses suggest that these two "tribes" are very closely related (Szathmary and Ossenberg, 1978).

The Ojibwa, also called "Chippewa" and "Saulteaux" in northwestern Ontario and northeastern Manitoba, belong to the "Northern Ojibwa" branch of the Algonkian family. The related Indians living on the west coast of James Bay and Hudson Bay have generally been known as "Swampy Cree". Farther inland, they have also been referred to as "Woodland Cree" (Young, 1988:12-13).

C. HISTORICAL BACKGROUND

1. GENERAL HEALTH

Among the early European explorers and traders who came into contact with the Indians of the subarctic, there was a consensus that the Indians were in relatively good health. This state of health did not last long. The profound social and economic changes that occurred among the Indians after initial European contact were also associated with a marked deterioration in their health status. In the late eighteenth century and throughout the nineteenth century, famines and epidemics appeared in the northern forests with alarming frequency. A drastic reduction in the Indian population threatened the very existence of many bands. By the beginning of the twentieth century the poor physical condition of the Indians in the north was marked (Eaton and Konner, 1985:285).

Any description of Indian health prior to the arrival of Europeans and recorded history is mainly conjectural. There are scant paleopathological data from the Canadian subarctic region to shed light on the occurrence of specific diseases among Indians in pre-contact times. Studies of the contemporary hunter-gatherers in different parts of the world can be applied to prehistoric Algonkians, making allowances for the different ecological circumstances. One could assume that the Indians probably consumed a high-protein diet based on meat and fish and rarely suffered from chronic malnutrition, although acute starvation as a result of hunting failure did occur from time to time (Trowell and Burkitt, 1981:32). In terms of dental health, Grant (1960:315) reported that "their teeth, of a beautiful ivory white, (were) regular well set and seldom (failed) them, even with the most advanced period of life."

2. NUTRITIONAL STATUS

Prior to the fur trader, refined carbohydrates were largely absent from the diet of subarctic Indians, and the rate of dental caries was relatively low. With the establishment of trading posts, European foods such as flour, oatmeal, sugar, lard, and tea were introduced. After the Second

World War, the tendency toward permanent settlement and the abandoning of hunting and trapping led to a dependence on store-bought foods. An investigation by Winterhalder et al. in 1975 found that the ten most common imported foods by weight were: white sugar, evaporated milk, wheat flour, soft drinks, white bread, eggs, lard, canned luncheon meat, potatoes, and preserved meats. These items accounted for 55 per cent of the total imported food. While imported foods are an important source of carbohydrates and calcium, they are, on the whole, very high in fat content and contain ten times the sodium content of local foods. As well, the increased amount of refined sugar in the diet has led to a dramatic increase in the rate of dental caries.

Two health and nutrition surveys were conducted in the 1940's among the Cree and Ojibwa Indians in northern Manitoba (Moore et al.,1946) and the James Bay coast (Vivian et al.,1948). The dietary records of the Indians examined (215 children and adults from Norway House and 728 children and adults from four bands living around James Bay) showed deficient intake of calories and most types of nutrients, far below the recommended allowances of the time. They also suffered from an excessively high rate of disease, particularly tuberculosis and childhood infections. The findings of these two teams, both composed of public-health and nutrition experts, underscored the plight of the Indians, and gave impetus to the massive government intervention in the post-war years.

In the four decades since the end of the Second World War, rapid changes have occurred in subarctic Canada. Government involvement in the areas of health care, social assistance, education, and economic development has increased substantially. While these efforts resulted in increasing the dependence of Indian communities on external Euro-Canadian institutions and personnel, they nevertheless assured a basic level of living that was superior to that of the 1940's and before (Young, 1979:200).

Compared to the 1940's, the nutritional status of Indians in the subarctic has greatly improved, at least in terms of adequacy of calories. In the 1970's and 1980's, malnutrition was rare, but by no means absent. The most common condition was iron-deficiency anemia, followed by unspecified malnutrition. In the early 1970's the Department of National Health and Welfare conducted a national nutrition survey, which included the Inuit and Indians as well. In the Indian survey, about 1,800 Indians from twenty-nine bands across the country, both rural and urban, were examined, although the participation rate was rather low, at 30 per cent. In this survey, Canadian Indians were found to be comparable to the national population in terms of intake of calories, proteins, and vitamin B. The median intake of vitamin C, however, was below the national sample but still above the established standards of adequacy. Within the Indian sample, those living in remote areas had considerably lower intakes than those living closer to urban centers. The intakes of vitamins A and D were also lower among Indians than Canadians nationally (Nutrition Canada Survey, 1975).

While figures for the 1980's are not readily available, Young (1991) has found that imported store foods are even more important in the diet of the Indians in the subarctic. The lack of refrigeration facilities, the high costs of transportation, and a near-monopoly situation for food suppliers, mean that food that is sold in Indian reserves is generally of poor quality, rarely fresh, and prohibitively expensive. Fresh fruits, vegetables, and dairy products are seldom seen on the shelves. Many people, children in particular, have developed a preference for sweetened carbonated drinks and various snacks of very little nutritional value, and extremely harmful to the dentition. Ironically, these items are rarely out of stock. The immediate consequences nutritionally can be seen in their deplorable dental-health status, while the long term effects have yet to be assessed.

3. DENTAL HEALTH

In a Sioux Lookout Zone survey, conducted between 1972 and 1981, a complete physical examination was performed. The proportion of subjects with abnormalities ranged widely from about 1 per cent in central nervous system, heart, and external genitalia, to over 80 per cent in the oral cavity, the latter mainly as a result of the extent of dental disease (Young, 1979:222).

The extent of dental problems was evident from the fact that just under half of the subjects reported problems in the oral cavity and about a quarter complained specifically of toothache. (Hargreaves and Titley, 1973:712). All available school children (174) were examined in three communities considered to be representative of the Sioux Lookout Zone. Dental caries was present in 72 per cent of deciduous teeth, and missing teeth were found in 67 per cent of those examined. Overall, about 60 per cent of the individuals required consultation with a dentist (Titley and Bedard, 1986).

The DMFT (the total number of decayed, missing and filled permanent teeth) and Russell indices (which measure periodontal health), indicated an extremely high level of dental disease in the population, which far exceeded that of other Canadians of a comparable age. A smaller scale follow-up survey in one community (Sandy Lake) in 1983, showed very little improvement in the dental-health status of children, despite more than a decade of intensified dental services in the communities (Titley and Bedard, 1986:925).

The chief source of water supply for Indian households is the lake or river near which most communities are located. Indoor running water is almost totally absent from Native homes. Most people carry their own water from the lake by pail, while in some communities water is trucked in or distributed through standpipes in the street. A few communities have wells in operation. Local soil and rock features in individual communities determine whether it is economically feasible to drill a well. Within the Canadian Shield, the presence of large outcroppings, of primarily granite bedrock, influence the type of sanitation systems that can be installed (Campbell, 1980). As a result community-wide fluoridation of the water supply is usually not possible. In a few communities the school water supply has been fluoridated, but this type of fluoridation has virtually no impact on the deciduous teeth as they have all completed development prior to the child starting school. The effects on the permanent teeth are primarily topical, as the crowns of the permanent anterior teeth and first molars have completely calcified by the age of six years. As a result, the teeth of Native, and other, children living in these communities are much more susceptible to dental caries than children living in urban centers who enjoy the benefits of community water fluoridation, as well as much greater access to dental services. Many children have had several deciduous teeth extracted by the age of 3-4 years.

Other studies of Canadian Native children have shown similarly poor oral health compared to the general population. A study by Shaw et al. (1987) of 406 Cree children in Quebec aged four to fourteen years, found the rate of decay to be significantly higher than the general population, and the proportions of decayed teeth and missing teeth were approximately 30% and 20% respectively, with only 20-40% of the teeth being filled. A similar study by Klooz (1988) in Saskatchewan of 600 Native children five to eighteen years, found the caries rate to be three to four times higher than the general Saskatchewan population in 1985, with less than half of the decayed teeth being filled. A follow up study in 1987 found a significant decrease in the deft (decayed, indicated for extraction due to caries, and filled deciduous teeth) and DMFT (decayed, missing due to caries, and filled permanent teeth), as well as a significant increase in the proportion of teeth filled. The improvement is attributed to the program of treatment implemented by the provincial government utilizing dental therapists.

Studies which have looked at the dental health of Inuit children in the Northwest Territories and Alaska (Curzon and Curzon, 1979; Gagnon et al., 1990; Jones and Schlife, 1990) all showed very high rates of decay, much higher than for the general population of the same area. Curzon and Curzon surveyed 766 Inuit children three to nine years of age. The mean deft in the 3-5 year-old sample was 5.27. For the children aged 6-9 years, the overall mean score was 6.85 (Curzon and Curzon, 1979:170). Gagnon et al. examined 411 children between the ages of 5 and 17 years. For the largest group, 10-14 years-old, the DMFT ranged from 10.8 at 10 years of age, to 18.4 at 14 years of age (Gagnon et al., 1990:681).

Jones and Schlife compared 708 Native and non-native, rural and urban children, between 3-5 years of age, in the Head Start program in Alaska. Only 22% of Native children were caries free, while 65% of non-Native children had no caries. Rural children had significantly higher caries rates as well, with only 20% being caries free, while 50% of urban children had no caries. Jones and Schlife did a logistic regression analysis to attempt to derive possible predictors of caries status. Four factor were identified which accounted for 62% of the variability: 1) race - caries rates were four times higher in Native children, 2) community - rural children have approximately three times the caries rate, 3) father's working status - caries probability in children is 90% higher if the father does not work, and 4) mother's schooling - caries decreases 20% for every year of mother's schooling (Jones and Schlife, 1990:661).

None of these studies compared the Native samples to a sample of White children living in the same environment. No intra-population statistical comparisons were done. Only an analysis of inter-population differences was explained.

This study attempts to determine whether this problem of rampant dental decay is primarily the result of the limited access to dental care found in an isolated rural environment. An understanding of all the causal factors related to dental caries is very complex, and an explanation of all these factors is beyond the scope of this study.

Because of numerous restraints, this study is not considered to be an "ideal" comparative study. Politically, Native populations are very reluctant to be surveyed. For this reason, available data were used for the Manitoba Children's Dental Program sample. The charting procedures employed by MCDP are very thorough and well standardized, although several different examiners were involved. The study of rural and urban White children (Cageorge et al, 1978), is used because it is felt to be the best available study (Cooney, 1989) and consists of a truly representative sample, which would be difficult to duplicate with the resources available. Although the Cageorge et al. study surveyed 5-year-old children (born in 1971) and the other data sets looked at six-year-olds, the difference in age is, in reality, only six months on the average, because of the difference in criteria used. Extensive consultations were also done with the individuals directly involved with the different sources of data to ensure that the comparisons between the data sets are as rigorous as possible.

CHAPTER II MATERIALS AND METHODS

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A. INTRODUCTION

Part of the data upon which this thesis is based was derived from a dental survey done as part of a program evaluation authorized by the Board of Directors of the Swampy Cree Tribal Council. The survey was conducted during the spring of 1988 by Dr. Lisa Cohoe, the dentist employed by the Swampy Cree Tribal Council (SCTC).

The remaining data came from northern Manitoba communities serviced by the Manitoba Children's Dental Program (MCDP). This program is funded by the Provincial Government, Department of Health, and employs Dental Therapists and Dentists who operate a school based program of dental services. These two rural Native groups were compared to the 1976 study of Manitoba White children which included both a rural and urban sample (Cageorge et al., 1978).

B. SWAMPY CREE TRIBAL COUNCIL DENTAL SURVEY

1. INTRODUCTION

The Swampy Cree Tribal Council Dental Program is a program funded by Medical Services Branch and National Health and Welfare and by the Manitoba Children's Dental Program of the Manitoba Department of Health. Begun in the mid seventies, this program delivers community-based dental treatment to two target groups:

a. Status Indians living in Swampy Cree Tribal Council communities.

b. School age children within the age group of the Manitoba Dental Program, both treaty and non-treaty, living in SCTC communities and attending schools within these communities.

The Swampy Cree Tribal Council Board of Directors approved an evaluation of the program on March 20, 1987. Concerns had been raised at the Tribal Council and in the funding agencies regarding consistency of the program, the ability to attract dentists to the program, the licensing and use of dental paraprofessionals such as dental nurses and dental therapists in the program and the overall effectiveness of the program in delivering service. The evaluation, requested by the Board of Directors was to look at both the administration and management of the program in terms of types of staff, reporting system, goals and objectives, etc., and also on the performance of the program over its life in terms of dental treatment in the community.

There were two main objectives for the program review:

a. To assess the program and its structure

b. To suggest changes in delivery of the program in order to deliver the best possible dental treatment to the Swampy Cree Tribal Council communities.

A major component of the program review was the dental survey which was designed to determine the dental needs of the population. The survey was very extensive, involving the collection of demographic data, utilization of dental services, a history of fluoride exposure, oral pathology, occlusion, and charting of decayed, missing and filled teeth for two groups of children, six- and thirteen-year-olds, from the six reserves serviced by Dr. Cohoe: Easterville, Grand Rapids, Moose Lake, Pukatawagan, Pelican Rapids and The Pas. Indian Birch was not included as there is no dental clinic available on this reserve (Table 1).

2. SAMPLE

Six- and thirteen-year-olds were selected as the target population in accordance with the World Health Organization's recommendations (WHO, 1977).

TABLE 1. SWAMPY CREE POPULATION

	On Reserve	In Community	Total	Est. # (13-yr.)	Est. # (6-yr.)
Easterville	474	230	704	12	12
Grand Rapids	370	645	1,015	18	18
Moose Lake	351	580	931	16	16
Pelican Rapids	450	219	669	12	12
Pukatawagan	1,234	49	1,283	22	22
The Pas	1,328	–	1,328	23	23
			5,930	103	103

Children whose sixth or thirteenth birthday occurred between April 1, 1987 and March 31, 1988 were eligible for inclusion in the survey.

Estimates of the number of six- and thirteen-year-olds were made based on 1981 Manitoba population statistics. Children in these age groups constitute 1.75% of the total population (Cooney, 1989).

An attempt was made to examine all the children in each age group. The children in the survey were selected from school records. If there were children in the school records who were not attending school, attempts were made to contact their guardians or parents to have them come in for the survey. There were a few 6-year-olds in Pukatawagan who were not attending school and, although they were contacted, did not show up for their appointments. It was estimated by Dr. Cohoe that between 90 and 100% of the six- and thirteen-year-old population were included in the survey (Cohoe, 1989). The total number of children in each age group was 108.

The methodology was similar to that of the 1976 and 1982 surveys of Manitoba urban and rural children which used the Combined Oral Health and Treatment Assessment protocol published by the World Health Organization in 1977. All data were compared to the Dental Health Survey of Manitoba Children 1976 (Cageorge et al., 1978), in particular, rural Manitoba children five and thirteen years of age, as the results for rural Manitoba children in 1976 are the most comparable to the SCTC population. A copy of the survey form used is included (see Appendix A).

3. SURVEY FORMAT

a. General Information

Each child included in the survey was identified by a registration (examination) number in order to maintain confidentiality of the personal and clinical information collected.

The personal information recorded included the age of each child, sex, birthdate, grade in school, and location name (reserve). Department of Indian and Native Affairs (DIAND) numbers were also recorded for each child but were not used in any way in the analysis of the data. Permission was obtained verbally from the parent or guardian prior to the survey examination. The number of children included in the survey by reserve is shown in Table 2.

b. Service Utilization

Four questions were asked of each child examined. The responses were coded as follows:

1. How often do you visit the dentist?

   1 = 1 or more times per year

   2 = once per 2 years

   3 = once per 3 years

   4 = once per 4 years or more

   5 = don't know

2. Why do you see the dentist?

   1 = toothache

   2 = examination

   3 = cleaning

   4 = filling

   5 = root canal

   6 = other

   7 = don't know

TABLE 2. SWAMPY CREE DENTAL SURVEY POPULATION

RESERVE	6-year-olds	13-year-olds
Easterville	15	14
Grand Rapids	21	14
Moose Lake	15	24
Pelican Rapids	11	11
Pukatawagan	14	22
The Pas	32	23
N	108	108

3. Why do you not see the dentist more often?

    1 = afraid

    2 = service not available

    3 = nothing wrong

    4 = don't like

    5 = other

    6 = don't know

4. Where do you go to see the dentist now?

    1 = on reserve

    2 = nearby community

    3 = Winnipeg

    4 = don't know

c. Disorders of Mucosa, Teeth and Bone and other Conditions

This section included a variety of abnormal conditions which may be present, involving the soft tissues of the oral cavity, defects in the enamel of the teeth, or pathology present in the alveolar bone surrounding the teeth.

Oral Mucosa

Conditions such as gingivitis, stomatitis, lichen planus, leukoplakia, candida, herpes, etc., were recorded as present or absent.

Defects of Teeth

The presence or absence of defects such as supernumerary teeth, hypoplasia, fractures, erosion, abrasion, attrition were recorded.

Disorders of Bone

Pathologies such as a radicular cyst, osteoma, osteomyelitis, odontogenic tumors were recorded as present or absent.

Fluorosis

The worst tooth was recorded using the following criteria: (WHO, 1979:17)

0 (Normal) The enamel presents the usual translucent, semi-vitriform type of structure. The surface is smooth, glossy and usually of a pale creamy white colour.
1 (Questionable) The enamel discloses slight aberrations from the translucency of normal enamel, ranging from a few white flecks to occasional white spots. This classification is utilized in those instances where a classification of "Normal" is not justified.
2 (Very Mild) Small, opaque, paper-white areas scattered irregularly over the tooth but not involving as much as approximately 25 percent of the tooth surface. Frequently included in this classification are teeth showing no more than about 1-2 mm. of white opacity at the tip of the summit of the cusps of the premolars or second molars.
3 (Mild) The white opacity of the enamel of the teeth is more extensive but does not involve as much as 50 percent of the tooth.
4 (Moderate) All enamel surfaces of the teeth are affected, and surfaces subject to attrition show marked wear. Brown stain is frequently a disfiguring feature.
5 (Severe) All enamel surfaces are affected and hypoplasia is so marked that the general form of the tooth may be affected. The major diagnostic sign of this classification is the discrete or confluent pitting. Brown stains are widespread and teeth often present a corroded appearance.

Optimal Fluoride Exposure

Fluoride exposure was recorded as being either optimal (1) or not optimal (0), based on the number of years the child was exposed to fluoridated water only. Other sources of fluoride were not taken into account in this section.

1 = for 6-year-olds - 4 1/2 years exposure was considered optimal

for 13-year-olds - from 3-13 years exposure inclusive

0 = (for both ages) anything less than above

Fluoride Rinse Program

Each parent or guardian was asked the following questions:

1. Does your child participate in a weekly fluoride rinse/tablet program at school? The response was coded yes or no.

2. Has the Consent Form for rinse/tablet program been filled out? The response was coded yes or no

3. How many years has he/she participated? The responses were coded from 1 to 5 to indicate the number of years (1 to 5+)

d. Prosthetic Status

If the child had either a full or partial denture, or required either a full or partial denture, this information was coded as follows:

0 = no denture

1 = denture wearing (required)

2 = denture not wearing (repair, reline required)

As no children had, or required dentures, this section was used instead to record the presence or need for space maintainers.

e. Community Periodontal Index of Treatment Needs (CPITN)

The CPITN was used to assess the extent of periodontal disease (Ainamo et al., 1982). Five codes were used to evaluate each of the six sextants of the oral cavity:

0 = healthy periodontal tissues

1 = bleeding after gentle probing

2 = supra- or subgingival calculus

3 = a pocket of 4 or 5 mm., black band of calculus partially visible

4 = a pocket ≥ 6 mm., black band of calculus not visible

f. Dentofacial Anomalies and Occlusion

Dentofacial anomalies such as gross defects in appearance, masticatory function, or pathology were recorded as :

0 = absent

1 = present

2 = treatment required

The molar relationship was recorded as:

1 = Angle's Class I

2 = Angle's Class II

3 = Angle's Class III

The Overjet was recorded as:.

1 = normal (2 mm.)

2 = Increased (>2 mm.)

3 = Decreased (<2 mm.)

The Overbite was recorded as:

1 = Normal (20%)

2 = Increased (>20%)

3 = Decreased (<20%)

Crowding was recorded as either present (1) or absent (0).

g. Conditions Needing Immediate Treatment

The following four items were checked as either present (needing immediate treatment) or absent (no immediate treatment required):

1. Relief of pain or infection
2. Treatment for lesions likely to cause pain or infection in the immediate future
3. Treatment of pulpally involved teeth
4. Other (specify)

As a general rule conditions in this section should be recorded only if there is an obvious immediate need for treatment. The items listed on the form are self-explanatory. Reliance is placed on the clinical judgement of the examiner to decide whether emergency treatment is required. By immediate attention is meant that, in the judgement of the examiner, pain or infection will result unless treatment is provided within a month.

Examples of conditions that require immediate attention for the relief of pain or infection include; acute periapical abcess and acute necrotizing ulcerative gingivitis.

Examples of lesions likely to cause pain or infection in the immediate future unless prophylactic treatment is instituted include: chronic alveolar abcesses in children and gross caries.

The need for treatment of pulpally involved teeth should be recorded only when there is obvious evidence of pulp exposure in a tooth that apparently can be satisfactorily restored with a filling or a crown. A probe should never be inserted into the depth of a cavity to confirm the presence of a suspected exposure.

h. Dental Caries Status and Treatment of Teeth

All teeth were coded as to whether they were deciduous or permanent, whether they were sound, decayed, missing or filled, and for the type of treatment required. The recording form is included in Appendix A.

h.1 Coding System

A numerical coding system was used for permanent teeth and an alphabetical coding system for primary teeth to record the status of each tooth (Table 3). A box was numbered for each primary and permanent tooth with the first five boxes in each row used for both the primary and permanent dentitions, whichever was present, either the primary molars or permanent premolars, primary or permanent canines, and primary or permanent incisors The last three boxes in each row were reserved for the permanent molars. The distinction between deciduous and permanent teeth was made solely by the use of the alphabetical (for deciduous) or numerical (for permanent) coding. An entry was made in every box on the chart.

CRITERIA FORCODING (WHO, 1979:7-9; WHO, 1977:38-40)

(i) Sound Tooth (A or 0) A tooth is recorded as sound if it shows no evidence of treated or untreated clinical caries.

(ii) Decayed Tooth (B or 1) Caries is recorded as present when a lesion in a pit or fissure or on a free smooth tooth surface has a detectably softened floor, undermined enamel or a softened wall, or the tooth has a temporary filling. On approximal surfaces, the explorer enters a lesion with certainty. Where any doubt exists, caries should not be recorded as present. The stages of caries that precede cavitation as well as other conditions similar to the early stages of caries are deliberately excluded because they cannot be diagnosed positively and reliably. Defects not to be counted as caries in the absence of other positive criteria are:

- White or chalky spots
- Discoloured or rough spots
- Stained pits or fissures in the enamel which catch the explorer but do not have a detectably softened floor, undermined enamel, or softening of their walls.

(iii) Filled Tooth with no decay (C or 2) Teeth are considered filled without decay whenever one or more permanent restorations are present and there is no secondary (recurrent) caries or other areas of the tooth with primary caries. A tooth with a crown placed because of previous decay is recorded in this category. A tooth that is crowned for reasons other than decay, eg. trauma, or as a bridge abutment, is recorded as EXCLUDED, and coded X or 9.

(iv) Filled Tooth with primary decay (D or 3) A tooth is scored as filled with primary decay when it contains one or more permanent restorations and also one or more areas that are decayed but have no physical association with the restoration(s). A tooth with a temporary filling should be coded as DECAYED (B or 1).(A fissure or pit can only be recorded as decayed if, following moderate pressure on the explorer, it will remain in the pit or fissure without any digital support).

(v) Filled Tooth with secondary decay (E or 4) A tooth is scored as filled with secondary decay when it contains one or more permanent restorations, and there is secondary decay (in physical contact with the restoration[s]). If a tooth is filled and contains both primary and secondary decay it should be recorded in this category.

(vi) Primary Tooth missing due to caries (Under 9 years only) (M) This score is used only for primary teeth missing at an age when normal exfoliation would not be a sufficient explanation for absence.

(vii) Permanent Tooth missing due to caries (Under 30 years) (5) This score is used only for permanent teeth, and for persons under 30 years of age. In as much as very few teeth are extracted because of periodontal diseases in persons under 30 years, all extracted teeth (except those included under the category 6) in persons up to the age of 30 should be recorded as having been extracted because of caries.

One problem that may be encountered, particularly in some age groups, is distinguishing between unerupted teeth (Code 8) and teeth extracted because of caries. Basic knowledge of tooth eruption patterns, the status of the corresponding contralateral tooth, the appearance of the alveolar ridge in the area of the tooth space in question, and the caries status of other teeth in the mouth may provide helpful clues in making a differential diagnosis between unerupted and extracted teeth. Code 5 should not be used for extracted or exfoliated primary teeth nor for adults 30 years of age or older.

(viii) Permanent Tooth missing for reasons other than caries (Under 30 years) (6) This score is used for permanent teeth judged to be absent congenitally or extracted because of orthodontic reasons.

(ix) Permanent Teeth missing for any reason (30 years of age and older) (7) This score is also used for permanent teeth. Since it becomes extremely difficult to ascertain whether permanent teeth in older persons have been extracted because of dental caries or because of periodontal disease, all extracted teeth in persons 30 years of age or older are arbitrarily coded 7.

(x) Unerupted Teeth (8) This classification is restricted to permanent teeth and used only for a tooth space with an unerupted permanent tooth, and no primary tooth, present. Teeth scored as unerupted are, of course, excluded from all calculations concerning dental caries. For differential diagnosis between extracted and unerupted teeth see section (vii) above, permanent tooth missing owing to caries.

(xi) Excluded Tooth (X or 9) A permanent tooth or primary tooth should be excluded from any calculations concerning dental caries if it has been restored for reasons other than caries such as trauma, cosmetic purposes, or as an abutment for a bridge.

TABLE 3. TOOTH CODING SYSTEM (WHO, 1977)

	Primary Tooth Code	Perm. Tooth Code
Sound Tooth	A	0
Decayed Tooth	B	1
Filled Tooth (no other decay)	C	2
Filled Tooth (with primary decay)	D	3
Filled Tooth (with secondary decay)	E	4
Primary Tooth prematurely missing due to caries (under 9 years only)	M	-
Permanent Tooth missing due to caries	-	5
Permanent Tooth missing due to reasons other than caries	-	6
Permanent Tooth missing for any reason	-	7
Unerupted Tooth	-	8
Excluded Tooth	X	9

TREATMENT REQUIREMENTS OF TEETH

This section was completed when the examination for dental caries was being done, that is, when the caries status of a tooth is recorded the type of treatment required, if any, should be recorded next, before going on to the next tooth space. If no treatment is required, a "zero" is place in the appropriate treatment box. The codes and criteria used are as follows (WHO, 1977:51-52):

Code 0 = None. This code is recorded if a tooth is sound, or if it is decided that a tooth cannot or should not receive restorative treatment (filling or crown). Moreover, this code is used only if the tooth is not indicated for extraction, because of periodontal disease, prosthetic reasons, orthodontic reasons, traumatic injury, or for any other reason.

Codes 1, 2, 3, or 4 = Restorations and Crowns. Depending on how many surfaces will be involved for restoration, one of these codes should be used to designate treatment required to remove primary or secondary caries, to repair damage because of trauma, or to replace unsatisfactory fillings. Discoloration of a tooth because of trauma, a pulpal condition or a developmental defect may also be a reason for restoration. Replacement of a filling or crown should be recorded in the absence of caries when there is one or more signs of the following:

a) a deficient margin to an existing restoration that is likely to permit leakage into dentine. The decision as to whether or not a margin is deficient should be based on the examiner's clinical judgement, on evidence gained by the insertion of an explorer at the margin, or on the presence of severe staining of tooth structure.

b) an overhanging margin of an existing restoration of a dimension that causes obvious local irritation to the gingivae and cannot be removed by recontouring the restoration.

c) a fracture of an existing restoration that either causes it to be loose or permits leakage into dentine.

Code 5 = Extraction for Caries. A tooth is recorded as indicated for extraction because of caries, depending on treatment possibilities, when:

a) caries has so destroyed the crown that it cannot be restored;
b) caries has progressed to an extent that there is an obvious and open exposure of the pulp, or
c) only the roots remain.

A single tooth may be indicated for extraction for more than one reason - for caries and periodontal disease, for example. In such cases, the examiner should attempt to decide the major reason for extraction and record that reason only.

Code 6 = Extraction for Periodontal Disease. A tooth is recorded as indicated for extraction because periodontal disease has progressed so far that the tooth is loose or functionless and, in the clinical judgement of the examiner, cannot be restored to a firm and functional state by periodontal therapy.

Code 7 = Extraction for Prosthetic Reasons. A tooth should be recorded as "indicated for extraction for prosthetic reasons" when it does not specifically require extraction because of caries or periodontal disease, but rather because a full denture is planned. These teeth individually could be restored or conserved, but, because there are too few for proper function, extraction for a prosthesis is the only possible treatment.

Code 8 = Extraction for Other Reasons. A tooth is recorded as indicated for extraction for other reasons when extraction is required for orthodontic reasons, for a developmental defect, impaction, or for cosmetic purposes.

Code 9 = Other. This category is used for any other treatment not specifically covered by codes 1 to 8. Examples that might be included in this category are removal of gross overhangs, replacement of pontics of bridges, splints for loose teeth, removal of occlusal interference on restorations might be included in this category. Note, however, that treatment of pulpally involved teeth is included in section VII Conditions Needing Immediate Treatment.

C. MANITOBA CHILDREN'S DENTAL PROGRAM SURVEY

1. INTRODUCTION

Charts were used from several schools in northern Manitoba where the children were treated by dental therapists employed by the Manitoba Children's Dental Program. These schools were chosen because the population of each school was almost exclusively of Native origin (Plett, 1989).

2. SAMPLE

AGE CRITERIA

For 13-year-olds, children born in 1974 or 1975 (January to December inclusive) were surveyed. These children entered the MCDP in Sept. 1981 or 1982 at ages varying from 5 yrs. 8 months. to 6 yrs. 8 months. They remained in the program for 8 yrs. and 4 months, leaving the program in December 1989 or 1990 respectively, at ages varying from 14 yrs. 0 months to 14 yrs. 11 months.

For 6-year-olds, children born in 1981 or 1982 (January to December inclusive) were surveyed. Occasionally, kindergarten children were screened at four or five years of age. Severe cases were often treated and some children seemed to stay in the program continuously after this. Data were collected for these children at the examination closest to their sixth birthday. The sample for both six- and thirteen-year-olds is shown in Table 4.

3. SURVEY FORMAT

a General Information

This section was recorded in the same way as the SCTC data. The examination dates used were the first and last appointment that the child was seen in the year in which they were 6 or 13 years old. These dates, along with the birthdate, were used to determine their exact age at the time of the examination. A child may have been seen the previous or following year, when they were 5 or 14 yrs., but none of this information was recorded, i.e., the chart was only 'read' up to this date. This study only looks at the initial examination data, as these results are the most comparable to the SCTC data.

b. Service Utilization

No information was available to record in this section. It is not known if the child was seen somewhere else in the years that were missing on a chart. The children tend to move around a lot and the MCDP has no method of keeping track of children who move, perhaps to live with another relative or foster parent, and then reappear in the program in another school, or whether children are seen by a private dental practitioner, except when referred by MCDP.

TABLE 4. Manitoba Children's Dental Program Sample

Year of Birth	1981	1982	1974	1975	Total
Age	6 yr	6 yr.	13 yr.	13 yr.	
Barrows Junction	3	3	6	6	18
Berens River	18	25		3	46
Cormorant	7	6	7	16	36
Julie Lindal	1	2	4	3	10
Matheson	4	4	4	1	13
Pikwitonei		6		1	7
Pine Dock	3	4	1	3	11
San Antonio	3	3		2	8
Thicket Portage	5	3	4	3	15
Wabowden	7	12	9	11	39
Wanipigow	6	12	12	21	51
TOTAL	57	80	47	70	254

c. Disorders of Mucosa Teeth and Bone and other Conditions

Oral Mucosa:

Specify: Only general comments were made on the charts re: oral hygiene, scaling, etc. These were noted here.

Treatment: "prophy & Fl, and OHI" (prophylaxis, topical Fluoride treatment and oral hygiene instruction) were done for most children. If so, "preventive" was recorded in this section. If scaling was recorded on the chart, it was noted as well.

d. Prosthetic Status

No information was recorded on the charts. This most often indicates a lack of need. This section was used to record the presence or the need for Space Maintainers, either upper or lower, partial (one side) or complete (both sides).

e. Community Periodontal Treatment Needs Index (CPITN)

Unfortunately, no information was recorded in the charts for this section other than if the child required scaling, or their oral hygiene was noted as being good, fair, or poor.

f. Dentofacial Anomalies and Occlusion

Angle's molar classification was recorded as well as overjet and overbite for all children. Crowding was marked occasionally but not systematically enough to be useful. Midline shifts, cross-bites, and spacing were sometimes recorded. There is a space on the chart to record Cleft lip/palate but no cases were recorded. No other dentofacial anomalies were recorded.

g. Conditions Needing Immediate Treatment

This section was recorded in the same manner as the SCTC data. As the 13-year-old children had been in the program for several years, in most cases treatment was completed for each child in the previous year, so that no urgent treatment was noted. The 6-year-olds. however, were just entering the program at this point so that their treatment needs were often more urgent.

h. Dental Caries Status and Treatment of Teeth

Bite-wing radiographs were taken routinely for each patient every year or two. If they were taken at the examination (when the child was 6 or 13 years old) they were noted as yes "1" in Column 65. The radiographs were used to confirm restorations completed and the eruption of teeth.

For 13-year-olds, if a tooth were filled and caries free requiring no treatment, rather than recording a code of "20" (filled-no treatment), it was recorded "21, 22, 23, or 24" to indicate the number of surfaces filled. This was done in order that a DMFS could be determined.

For 6-year-olds, the codes "C1, C2, C3, or C4" were recorded to indicate the number of surfaces filled in order to determine a defs.

Preventive Resin Restorations were considered to be fillings. They have been done in the MCDP for about 4 years. They are used to fill fissures which are discoloured or tacky but not decayed. The fissure is cleaned out with a high-speed round bur (usually #4) to a depth of less than 2 mm. If there is no decay, the fissure is cleaned, etched, washed, and a filled resin is applied. This is followed by an unfilled resin (sealant). The MCDP has done an internal review to see when and how many preventive resin restorations were being done. In about 15% of cases the fissure ended up being carious and an amalgam was placed instead.

Unerupted Teeth:

Radiographs were used if possible to determine the eruption status of premolars and second molars, and to check for fillings not completed by MCDP. Third molars were seldom visible on the bite-wings. They were recorded as "80" in all cases.

For 6-year-olds only bite-wings were usually available. If current, they were used to assess eruption of first molars. The code "X0" was used for anterior teeth if the deciduous anterior teeth were recorded as missing (exfoliated) on the chart and there was no way of assessing the eruption status of the permanent anterior teeth. The code "X0" was also used if the eruption status of the first molars was unknown.

Missing Teeth:

<u>For 6-year-olds:</u>

Code "M5" was used for a tooth extracted by MCDP due to caries.

Code "M0" was used if tooth extracted elsewhere-history unknown

- if a space maintainer was present or not required

Code "M8" was used for a deciduous tooth extracted for orthodontic reasons.

Code "M9" was used for a missing deciduous tooth where a space maintainer was required.

Code "N9" was used for a deciduous tooth congenitally missing or gemination.

Code "A8" was used for a tooth <u>requiring</u> extraction because of a lack of space (for orthodontic reasons) rather than for caries.

<u>For 13-year-olds:</u>

Code "68" was used to designate teeth extracted for orthodontic reasons, or where there was no space, or ectopic eruption.

Code "69" was used if the permanent tooth was known to be congenitally missing.

Code "08" was used for a tooth <u>requiring</u> extraction because of a lack of space - for orthodontic reasons (no caries).

CHAPTER III. DESCRIPTION OF MANITOBA RURAL NATIVE DATA RESULTS

CHAPTER III DESCRIPTION OF MANITOBA RURAL NATIVE DATA RESULTS (SCTC + MCDP)

A. INTRODUCTION

This chapter describes the results of the data collected for both the SCTC and the MCDP for 6- and 13-year-olds. The results were then tested to see if there was a statistical difference between the two samples.

B. SWAMPY CREE DATA

I. 6-Year-olds' results

a. General Information

Each child's exact age at examination was calculated by computer from the birthdate and date of examination. Each child was assigned a reference number and coded according to sex and the location of the reserve.

b. Service Utilization

The survey form included a section that asked four questions with regard to utilization of dental service. This section was completed for the 13-year-old group, but not for the 6-year-olds because it was felt by Dr. Cohoe that a six-year-old child was unable to accurately answer the questions, and the child was often accompanied by a person other than the parent, who also was unable to accurately answer the questions. Several of the following sections, c through f, were also not completed for 6-year-olds.

c. Disorders of Mucosa, Teeth and Bone and other Conditions

Optimal Fluoride Exposure:

For 6-year-olds, 4 1/2 years exposure to a fluoridated water supply (0.7 to 1.2 ppm) was considered optimal.

In addition to the fluoride supplement program, a varying amount of natural fluoride is found in the water supply on each reserve (Cohoe, 1989).

The Pas	0.31 ppm
Pukatawagan	0.12 ppm
Pelican Rapids	0.16 ppm
Easterville	0.30 ppm (Max.)
Grand Rapids	0.80 ppm (on reserve)
Moose Lake	0.15-0.20 ppm

The minimum level of fluoride that is considered to provide the optimum level of protection against dental caries is 0.7 ppm. (Dean et al., 1942). Only one reserve, Grand Rapids, is above this minimum level.

A chi-square analysis was done to compare the caries rate between reserves. These results are included in section h (Exposure to Fluoride).

d. Prosthetic Status

None of the 6-year-olds required, or were wearing, appliances. No data were recorded in this section.

e. Community Periodontal Treatment Needs Index

This data was not recorded for 6-year-olds.

f. Dentofacial Anomalies and Occlusion

No significant dentofacial anomalies were found. The occlusion was not recorded for 6-year-olds.

g. Conditions Needing Immediate Attention

Table 5 shows the number of 6-year-old SCTC children requiring emergency treatment for relief of existing pain, or treatment of severe carious lesions likely to cause pain or infection. Overall, 44% of the survey population is in need of immediate treatment, primarily for severely decayed teeth. Easterville (73%) and Pukatawagan (64%) have the greatest proportion of children with severely affected teeth. Many of the children have more than one lesion requiring treatment, which is why the total for all the categories exceeds the actual number of children affected. The categories, therefore, are not mutually exclusive.

h. Dental Caries Status and Treatment of Teeth

h.1 Treatment Needs

For SCTC 6-year-olds the codes for each category of decay were added together to get the "d" sum for deciduous teeth. For permanent teeth the codes for each category were added together to comprise the "D" sum. The total number of one-, two-, three-, and more than three-surface restorations required, and the number of extractions required, have been calculated for 6-year-olds (Table 6a). It is apparent that the SCTC 6-year-old population has a large number of deciduous teeth requiring treatment and particularly those children with teeth requiring extensive restorations (crown, pulpotomy, etc.) or extractions.

The first category "BO" (decayed, no treatment) for deciduous teeth was included in the total. This category comprises 27.38% of the total amount of decay in deciduous teeth, but it is unknown what proportion belongs in each of the other categories, i.e., what proportion of "BO's" are one surface, two surface, three surface cavities, etc. Consultation with Dr. Cohoe was done to estimate the proportions.

According to Dr. Cohoe "the deciduous teeth coded 'BO' were teeth which would soon be exfoliating and did not have extensive caries. It is impossible at this point in time to try to accurately estimate what percentage of these were one surface and what percentage were more than one surface". She thought "most would be one or two surface." (Cohoe,1989).

This point was also discussed with Dr. Cooney and he suggested that probably these were anteriors with one or more single-surface cavities, i.e., a "Mesial" and/or a "Distal" and/or a "Facial". It was therefore decided to divide the total number in half, designating 50% as a one-surface cavity, and 50% as involving two surfaces.

The estimated proportion of "decayed teeth, no treatment" (B0), was then added to each of the other two categories of decay for deciduous teeth (Table 6b).

For purposes of analysis the number of teeth requiring treatment were divided into two groups, those requiring one- or two-surface restorations, and those teeth that required more extensive repair or extraction. One-surface restorations are usually simple restorations involving either the occlusal surface or a facial or lingual surface. Two-surface restorations may in fact involve only a proximal surface, but in order to gain access to the proximal surface, the occlusal is restored as well. Both of these types of restorations were considered to involve minimal damage to the tooth. Restorations requiring more than two-surfaces, or extraction, involve considerably more damage to the tooth.

TABLE 5. IMMEDIATE TREATMENT REQUIREMENTS

SCTC 6-year-olds

Reserve	**EV**	**GR**	**ML**	**PK**	**PR**	**TP**	**Total**	**%**
	N=15	N=21	N=15	N=14	N=11	N=32	N=108	
Existing Pain	8	2	3	6	4	8	31	31.0
Future Pain?	10	4	6	9	5	12	46	46.0
Pulp Involved	7	2	3	3	3	5	23	23.0
Other	0	0	0	0	0	0	0	0.0
Children affected								
Total	11	4	6	9	5	12	47	43.52
Percent	73.3	19.0	40.0	64.3	45.5	37.5		

RESERVES:

EV	EASTERVILLE
GR	GRAND RAPIDS
ML	MOOSE LAKE
PK	PUKATAWAGAN
PR	PELICAN RAPIDS
TP	THE PAS

TABLE 6a. TREATMENT NEEDS - SCTC

DECAYED TEETH - 6-year-olds (N = 108)

Treatment Required	Total Teeth Affected Perm.	Decid.	Mean	Codes
Decayed - no treatment	0	132	1.22	(Code BO)
One-surface restoration	38	63	0.94	(Codes B1,D1,E1,11)
Two-surface restoration	20	126	1.35	(Codes B2,D2,E2,12)
Three-surface restoration	2	12	0.13	(Codes B3,D3,E3,13)
>than three-surfaces or crown	1	103	0.96	(Codes B4,B4/9,D4,E4, E4/9, 14)
Extraction Required	1	45	0.43	(Codes B5,B5/9,D5, E5,15)
TOTAL	62	481	5.03	

TABLE 6b. TREATMENT NEEDS - SCTC

DECAYED TEETH - 6-year-olds (N = 108)

Treatment Required	Total Teeth Affected Perm.	Decid.	Mean	Codes
One-surface restoration	38	129	1.55	(Codes B0,B1,D1,E1,11)
Two-surface restoration	20	192	1.96	(Codes B0,B2,D2,E2,12)
Three-surface restoration	2	12	0.13	(Codes B3,D3,E3,13)
>than three-surfaces or crown	1	103	0.96	(Codes B4,B4/9,D4,E4, E4/9,14)
Extraction Required	1	45	0.43	(Codes B5,B5/9,D5, E5,15)
TOTAL	62	481	5.03	

h.2 Decayed, Missing and Filled Teeth

The total number of decayed, missing and filled deciduous (deft) and permanent teeth (DMFT) has been calculated for the 6-year-old group. The sum of the decayed teeth was derived by adding together a total of more than 15 different codes (Table 7a & 7b).

The average numbers are high for the SCTC 6-year-old population for all three categories, decayed, missing and filled. An index was done to show the proportional contribution of the decayed teeth to the overall deft. The d/def index shows that the decayed component is a large proportion (.58) of the total in the SCTC population, while the number of missing (due to caries) and filled teeth comprise a smaller proportion of the total deft.

The deciduous teeth recorded as missing in six-year-olds were primarily Deciduous Maxillary Incisors and Deciduous Molars. These teeth were, therefore, lost due to caries or "other" causes, and not likely due to normal exfoliation or premature eruption of the permanent successors (Trodden, 1982).

An index was also done to show the proportional contribution of the decayed permanent teeth to the overall DMFT. The D/DMF index shows that the decayed component is a very large proportion (.85) of the total in the SCTC 6-year-old population, while the number of missing (due to caries) and filled teeth comprise a very small proportion of the total DMFT. The mean DMFT for 6-year-old children is based on an average of six permanent teeth per child (s.d. 2.03), although some children in the population have as few as three permanent teeth, and a few children have as many as 12. The deft and DMFT were combined to give a total rate of disease due to caries of 8.32 out of a maximum of 24 teeth.

TABLE 7a. Decayed, Missing & Filled Deciduous Teeth

SCTC 6-year-olds (N=108)

	Total	**Mean**	**Codes**
Number of decayed teeth	481	4.45	(Codes BO-B5,D1-D5,E1-E5)
Number of missing teeth	163	1.51	(Codes MO,M9)
Number of filled teeth	180	1.67	(Code CO)
	824	7.63	
d/def INDEX	481/824	.58	

TABLE 7b. Decayed, Missing & Filled Permanent Teeth

SCTC 6-year-olds (N=108)

	Total	**Mean**	**Codes**
Number of decayed teeth	62	0.57	(Codes 11,12,13, 14,15)
Number of missing teeth	0	0.00	(Code 50)
Number of filled teeth	11	0.10	(Code 20)
DMFT	73	0.68	
D/DMF Index	62/73	.85	

h.3 Unerupted, Impacted or Congenitally Missing Teeth

No data was recorded in this section. As all children were not seen prior to their sixth birthday, it was impossible to determine whether any deciduous teeth were congenitally missing. All the teeth missing were presumed to be so as a result of dental caries.

h.4 Dental Caries Status by Reserve

The total sample of 6-year-olds was also divided by reserve, and the deft and DMFT was calculated separately for each reserve (Tables 8a and 8b). The mean "d", "e", "f" and "D", "M", "F" components were also calculated separately for each reserve. The "S" value is the mean number of sound teeth per child for each reserve. The two tables were then combined to give a total picture of the caries experience (deft plus DMFT) for each reserve (Table 8c).

Dr. Cohoe was consulted with regard to the high decay rates in Easterville. She wasn't exactly sure why it was "so much worse than in the other communities". She felt that "It is probably a combination of factors: diet, parental attitudes and nursing bottle caries." (Cohoe,1989).

> "Access to candy stores is about equal on the various reserves. However they do sell candy right in the school in Easterville. In all six communities we often see children eating candy. Attitudes toward dental care may be better among the children in Pelican Rapids than on the other reserves. The school nutritionist there is very involved in improving dental health and she runs the fluoride rinse program and makes sure that all the grades participate in the school brushing program. This active school preventive program may be why the 13 year olds compare more favourably to the other reserves than the six year olds in that community," (Cohoe,1989).

TABLE 8a. MEAN deft BY RESERVE

SCTC 6-year-olds (N = 108)

Reserve	N	S	d	e	f	deft	St.Dev.
Easterville	15	5.13	7.13	2.80	1.67	11.60	3.16
Grand Rapids	21	12.48	2.71	0.62	1.62	4.95	4.13
Moose Lake	15	10.27	3.80	2.67	1.80	8.27	3.92
Pukatawagan	14	8.50	5.93	1.36	1.86	9.14	3.21
Pelican Rapids	11	9.18	5.00	1.27	2.36	8.64	3.01
The Pas	32	12.00	3.84	1.09	1.34	6.28	3.70
All Reserves	108	10.16	4.46	1.51	1.68	7.65	4.15

TABLE 8b. MEAN DMFT BY RESERVE

SCTC 6-year-olds (N = 108)

	N	S	D	M	F	DMFT	St.Dev.
Easterville	15	5.40	0.87	0.00	0.07	0.93	1.22
Grand Rapids	21	4.43	0.48	0.00	0.14	0.62	1.24
Moose Lake	15	3.80	0.93	0.00	0.07	1.00	1.07
Pukatawagan	14	4.22	1.00	0.00	0.14	1.14	1.10
Pelican Rapids	11	5.55	0.36	0.00	0.00	0.36	0.81
The Pas	32	3.78	0.19	0.00	0.13	0.31	0.86
All Reserves	108	4.37	0.57	0.00	0.10	0.67	1.08

TABLE 8c. MEAN COMBINED deft/DMFT BY RESERVE

SCTC 6-year-olds (N = 108)

	N	S	d/D	e/M	f/F	deft/ DMFT	St.Dev.
Easterville	15	10.53	8.00	2.80	1.74	12.53	3.72
Grand Rapids	21	16.91	3.19	0.62	1.76	5.57	5.05
Moose Lake	15	14.07	4.73	2.67	1.87	9.27	4.27
Pukatawagan	14	12.72	6.93	1.36	2.00	10.29	3.75
Pelican Rapids	11	14.73	5.36	1.27	2.36	9.00	3.29
The Pas	32	15.78	4.03	1.09	1.47	6.59	3.88
All Reserves	108	14.53	5.03	1.51	1.78	8.32	4.64

h.5. Exposure to Fluoride

The Chi-Square analysis was done by reserve depending on their exposure to fluoride. Grand Rapids is the only community with an optimum level of natural fluoride in the water supply. Pelican Rapids and The Pas reserves both have a high proportion of the children in the fluoride rinse program. These three reserves were compared to the three other reserves that have a minimal exposure to fluoride, i.e. Grand Rapids was compared to Easterville, Moose Lake and Pukatawagan (Others); Pelican Rapids and The Pas reserves were also compared to Easterville, Moose Lake and Pukatawagan; and Grand Rapids was compared to Pelican Rapids /The Pas.

For 6-year-olds the deft and DMFT were combined as were the number of sound deciduous and permanent teeth. There were highly significant differences between the reserves exposed to fluoride and those that were not. The differences between Grand Rapids (0.8 ppm) and Pelican Rapids (0.16 ppm)/The Pas (0.31 ppm) were also highly significant.

These results clearly show that both natural water fluoridation and the fluoride rinse/brushing program are effective in significantly reducing the rate of dental decay.

TABLE 8d. SCTC 6-year-olds

Chi Square

	Grand Rapids	Other Reserves (EV, ML, PK)	Pelican Rapids and The Pas
def/DMF	117	471	310
Sound	356	548	667

The resulting Chi-Square values are as follows:

Grand Rapids/Others	=	62.46	$p < .0001$	d.f. = 1
P.R. & T.P./ Others	=	44.22	$p < .0001$	d.f. = 1
Grand Rapids/P.R. & T.P.	=	7.50	$p < .0062$	d.f. = 1

2. 13-Year-olds' results

a. General Information

Each child's exact age at examination was calculated by computer from the birthdate and date of examination. Each child was assigned a reference number and coded according to gender and the location of the reserve.

b. Service Utilization

The survey form included a section which asked four questions with regard to utilization of dental service. This section was completed for the 13-year-old group, but not for the 6-year-olds. Tables 9a and 9b list the four questions which were asked, along with the possible answers which were coded and then recorded, and the total number for each response.

These data are not very helpful, as close to 50% of the responses are "Don't Know", for three of the four questions. Dr. Cohoe felt that the value of this information was questionable as it was very difficult to get any type of response from the children. The questions were asked by her assistant, who speaks Cree, so there should not have been a language problem (Cohoe, 1989).

The second question, regarding where dental services were sought, is interesting, however, in that less than half (48/108) of the children went to the dental clinic on the reserve, while almost a third (35/108) went to a dental clinic in a nearby community. The reasons for this are unclear, but perhaps an investigation of the clinic schedule would be worthwhile, to see how much time is spent on each reserve relative to the size of the population, and the frequency of the visits.

TABLE 9a. SERVICE UTILIZATION

SCTC 13-year-olds (N = 108)

How often do you visit the dentist now?			Where do you go to see the dentist?		
Code		**Total**	**Code**		**Total**
1	1 or more times per year	52	1	on reserve	48
2	1 time per 2 years	3	2	nearby community	35
3	1 time per 3 years	0	3	Winnipeg	7
4	1 time per 4 years or more	2	4	other	1
5	don't know	51	5	don't know	17
		108			108

TABLE 9b. SERVICE UTILIZATION

SCTC 13-year-olds (N = 108)

Why do you see the dentist?			Why do you not see the dentist more often?		
Code		**Total**	**Code**		**Total**
1	toothache	12	1	afraid	7
2	examination	16	2	service not available	8
3	cleaning	20	3	nothing wrong	28
4	filling	10	4	don't like	14
5	root canal	0	5	other	2
6	other	4	6	don't know	49
7	don't know	46			
Total		108			108

c. Disorders of Mucosa, Teeth and Bone and other Conditions

Oral Mucosa: - see also section e (Periodontal Treatment Needs).

The gingival tissues were assessed as being either healthy, or showing signs of gingivitis. Only three of the 108 thirteen-year-olds were found to have completely healthy soft tissues, seven showed signs of mild gingivitis, and the remaining 98 had obvious gingivitis requiring preventive treatment.

Defects of Teeth:

Many different conditions were recorded in this section: primarily the occurrence of hypoplasia, abrasion, and retained deciduous teeth or impacted permanent teeth. Hypoplasia and abrasion are not looked at in this report as the number of cases reported was not considered above normal or significant. The number of retained and impacted teeth is considered in section h (Dental Caries Status and Treatment).

Disorders Involving Bone:

There were no significant findings.

Fluorosis:

Only two positive cases of fluorosis were recorded from The Pas Reserve, out of the 108 thirteen-year-olds. Both individuals had resided on The Pas Reserve for 11 to 13 years and were scored as: "1" (questionable).

"The enamel discloses slight aberrations from the translucency of normal enamel, ranging from a few white flecks to occasional white spots. This classification is utilized in those instances where a classification of 'normal' is not justified" (WHO,1979:17).

Optimal Fluoride Exposure:

For 13-year-olds, exposure to fluoride from the age of 3 to 13 years inclusive (less a maximum of 1 year) was considered optimal.

All entries recorded in this column were negative, indicating that none of the children had received optimal exposure to fluoride. According to the written comments under "Location" there were five of the 13-year-old children, however, who had received three or more years fluoride exposure because they had lived in Winnipeg or Brandon; two from Grand Rapids, and three from Pukatawagan. Two of the three children from Pukatawagan had six years exposure to fluoridated water.

In response to the question "Does your child participate in a weekly fluoride rinse/tablet program at school?" there were 25 (24%) positive responses out of 104 responses. Four survey forms were left blank for this question, and three were left blank for the following two questions.

In reply to the question "How many years has he/she participated?" there were 25 responses made by the same individuals as above (Table 10).

The number of years the children had participated in the fluoride rinse program ranged from one to five years, with a mean value of 3.81 years (s.d. of 1.42 years). There were considerable differences between reserves in the proportion of children participating in the program. It is apparent from Table 10 that the children on two reserves, Pelican Rapids and The Pas, receive most of the supplementary fluoride treatment. It was discovered that in Pelican Rapids the children brushed their teeth twice a day in class under the teachers supervision, but this was not done in Easterville. (Redhead, 1989).

In addition to the fluoride supplement program, a varying amount of natural fluoride is found in the water supply on each reserve (see section 1 for 6-year-olds). The minimum level of fluoride which is considered to provide the optimum level of protection against dental caries is 0.7 ppm. Only one reserve, Grand Rapids is above this minimum level.

TABLE 10. PARTICIPATION IN FLUORIDE RINSE PROGRAM

SCTC 13-year-olds (N = 105)

RESERVE	NUMBER	PERCENT	MEAN	RANGE
Easterville	0/14	0.00	0 years	
Grand Rapids	1/14	7.14	4 years	
Moose Lake	2/22	9.09	3 years	1-5 years
Pukatawagan	2/21	9.52	2 years	1-3 years
Pelican Rapids	8/11	72.73	4.75 years	3-5 years
The Pas	12/23	52.17	3.62 years	1-5 years
Total	105			

A chi-square analysis was done to compare the caries rate between reserves for 13-year-olds. These results are included in section h.5 (Exposure to Fluoride).

d. Prosthetic Status

Because of the young age of the survey population, none of the participants was wearing full dentures. One 13-year-old child was wearing a partial upper denture to replace a missing central incisor. One child required a partial upper denture, to replace a missing premolar.

Two 13-year-olds required a partial lower denture to replace, in one case two missing premolars, and in the other case a total of four missing mandibular teeth. Even four children of this age wearing partial dentures in a population of 700-800 children should be considered an exceptionally high percentage.

The cause of the missing teeth in these four children is unknown. The teeth in question could be missing for any number of reasons; congenitally missing (mandibular premolars), caries (premolars), or due to trauma (central incisor).

e. Community Periodontal Index of Treatment Needs (CPITN)

The extent of periodontal disease was assessed by using four codes to evaluate each of the six sextants of the oral cavity:

0 = healthy

1 = bleeding

2 = calculus

3 = a pocket of 4 or 5 mm., black band of calculus partially visible

4 = a pocket ≥ 6 mm., black band of calculus not visible

Table 11a shows the highest (most severe) code recorded for each 13-year-old by reserve. Almost half of the children (46%) did not have obvious calculus present, but their gingivae bled upon instrumentation. Over half of the children had calculus and pocket formation, although none had a pocket greater than 5 mm. At this age many of the children still were undergoing tooth eruption, which could account for the 4 and 5 mm. pocket depths. Calculus removal and oral hygiene instruction is required for almost all of the 13-year-olds in this survey. The children on The Pas and Moose Lake reserves appear to have better oral hygiene, while Pukatawagan and Easterville require the most preventive treatment.

This data was also looked at by dividing each child's dentition into six sextants (Maxillary and Mandibular right posterior, anterior, and left posterior). Table 11b shows the total number of sextants recorded for each periodontal code. By looking at the data by sextant and by child, it can be seen that most of the children were scored a "1" for at least four of the six sextants (71% of sextants). The score of "2" was recorded for 26 children in 90 sextants. Therefore, calculus, if present, was found in several areas of the mouth, including the lower anterior and the maxillary molar areas. The highest score recorded of "3" represents a localized problem for certain children (31 children scored a "3" for 51 sextants).

TABLE 11a. SEVERITY OF PERIODONTAL DISEASE (by child)

SCTC 13-year-olds (N = 108)

Perio Code Max/Child	**EV** N=14	**GR** N=14	**ML** N=24	**PK** N=22	**PR** N=11	**TP** N=23	**Total** N=108	**%**
0	0	0	1	0	0	0	1	0.93
1	3	6	13	7	4	17	50	46.30
2	5	3	7	6	3	2	26	24.07
3	6	5	3	9	4	4	31	28.70
4	0	0	0	0	0	0	0	0.00
Total	14	14	24	22	11	23	108	100.00

TABLE 11b. SEVERITY OF PERIODONTAL DISEASE (by sextant)

SCTC 13-year-olds (N = 108)

Perio Codes /Sextant	**EV** N=14	**GR** N=14	**ML** N=24	**PK** N=22	**PR** N=11	**TP** N=23	**Total** N=108	**%**	**Mean/Child**
0	0	5	14	9	4	14	46	7.10	0.43
1	62	65	108	79	44	103	461	71.14	4.27
2	12	5	17	33	10	13	90	13.89	0.83
3	10	9	5	11	8	8	51	7.87	0.47
4	0	0	0	0	0	0	0	0.00	0.00
Sum							648	100.00	

f. Dentofacial Anomalies and Occlusion

No significant dentofacial anomalies were found. Consequently, nothing was recorded under this section.

Table 12 shows the classification of occlusion for 13-year-olds by reserve. A reasonably high overall proportion (67%), have some crowding of the dentition, and only 60% of the children have a normal Class I molar relationship. Angle's Class I molar relationship is defined as the ideal molar relationship where the mandibular first permanent molar is one cusp width mesial to the maxillary first permanent molar.

The relatively high proportion of children (23%) with a Class II relationship (the maxillary first permanent molar is one cusp width or more mesial to the mandibular first permanent molar) may be the result of premature loss of the maxillary deciduous molars resulting in a loss of maxillary arch length. Many of these children also have an increased (greater than normal) overjet and overbite.

The number of children (16%) with a Class III molar relationship (the mandibular first permanent molar is more than one cusp width mesial to the maxillary first permanent molar) may be the result of premature loss of mandibular deciduous molars. These children would also have a decreased (less than normal) overjet and an increased overbite.

With regard to the high prevalence of Class II and Class III malocclusions, Dr. Cohoe (1989), Dr. Arnold (1989), and myself feel strongly that a large percentage of these are due to space loss as a result of premature extraction of the deciduous molars rather than due to skeletal abnormalities. There is no way of verifying this as studies on occlusion in Manitoba have included a cross section of all Manitoba children, and not specifically Manitoba Native children. McPhail et al. (1972) and Shaw et al. (1987) in studies of Native children in Saskatchewan and Quebec, respectively, found the proportion of children with Class I molar occlusion to be over 75%, and the proportions of Class II and Class III to be approximately equal, and between 10-13%. There is, therefore, a much higher proportion of SCTC children with Class II occlusion than would be expected among Native children.

TABLE 12. CLASSIFICATION OF OCCLUSION

SCTC 13-year-olds (N = 108)

	EV N=14	**GR** N=14	**ML** N=24	**PK** N=22	**PR** N=11	**TP** N=23	**Total** N=108	**%**
Molar Relation								
Class I	8	11	12	12	6	16	65	60.19
Class II	2	2	8	8	2	3	25	23.15
Class III	4	1	4	2	3	4	18	16.66
Overjet								
Normal	3	8	10	7	7	12	47	43.52
Increased	6	4	10	11	3	8	42	38.89
Decreased	5	2	4	4	1	3	19	17.59
Overbite								
Normal	5	7	10	11	5	14	52	48.15
Increased	3	5	8	5	3	6	30	27.78
Decreased	6	2	6	6	3	3	26	24.07
Crowding								
Yes	7	10	19	13	7	17	73	67.59
No	7	4	5	9	4	6	35	32.41

g. Conditions Needing Immediate Attention

Table 13 shows the number of 13-year-old SCTC children requiring emergency treatment for relief of existing pain, or treatment of severe carious lesions likely to cause pain or infection. Overall, 15% of the survey population is in need of immediate treatment, primarily for severely decayed teeth. Pukatawagan (31%) and Easterville (14%) have the greatest proportion of children with severely affected teeth. Many of the children have more than one lesion requiring immediate treatment, which is why the total for all the categories exceeds the actual number of children affected, as each category is not mutually exclusive.

h. Dental Caries Status and Treatment of Teeth

h.1 Treatment Needs

The total number of one-, two-, three-, and more than three-surface restorations required, and the number of extractions required, has been calculated separately for each age group (Table 14). The average number of teeth requiring treatment for SCTC children is 2.07.

As was done for 6-year-olds, the number of teeth requiring treatment were divided into two groups, those requiring one- or two-surface restorations, and those teeth that required more extensive repair (more than a two-surface restoration) or extraction. One- and two-surface restorations are usually involve minimal damage to the tooth. Restorations requiring more than two-surfaces, or extraction, involve considerably more damage to the tooth.

TABLE 13. IMMEDIATE TREATMENT REQUIREMENTS

SCTC 13-year-olds (N = 108)

	EV N=14	GR N=14	ML N=24	PK N=22	PR N=11	TP N=23	Total N=108	%
Existing Pain	1	0	1	4	0	0	6	5.56
Future Pain?	2	1	3	6	1	3	16	14.82
Pulp Involved	0	0	0	1	0	0	1	0.93
Other	0	0	0	1	0	0	1	0.93
Total children affected	2	1	3	7	1	3	17	15.74
Percent	14.3	7.1	12.5	31.8	9.1	13.0		

TABLE 14. DECAYED TEETH

SCTC 13-year-olds (N = 108)

Treatment Required	**Total**	**Mean**	
One-surface restoration	120	1.11	(Codes 11,31,41)
Two-surface restoration	78	0.72	(Codes 12,12/9,32,42)
Three-surface restoration	11	0.10	(Codes 13,33,43)
>than three-surface or crown	2	0.02	(Codes 14,34,44)
Extraction	13	0.12	(Codes 15,35,45)
Total Decayed Teeth	224	2.07	

h.2 Decayed, Missing and Filled Teeth

The total number of decayed, missing and filled teeth has been calculated for the 13-year-old group. The sum of the decayed teeth was derived by adding together a total of more than 15 different codes (Table 15).

The proportion of decayed teeth comprising the total DMFT was also calculated. The D/DMF index (.33) shows that the number of decayed (unrestored) teeth contributes less to the total DMFT than it does in the sample of 6-year-old children (.58), indicating that the 13-year-old group has had more of their treatment needs met than the 6-year-old group.

h.3 Unerupted, Impacted or Congenitally Missing Teeth

Table 16 shows the total number of unerupted, impacted or congenitally missing teeth in the 13-year-old group. At this age, the number of "missing" second molars is very small, possibly indicating an early eruption pattern in this population (Trodden,1982).

However, the children who are "missing" canines, first, or second premolars, (most likely impacted as a result of premature loss of deciduous teeth) will probably show crowding and occlusion problems.

Without x-rays there was no accurate means of telling whether a tooth was unerupted, impacted, or congenitally missing. It was decided that the best answer was to assume they were all unerupted or impacted. The presumption is that these teeth were unable to erupt due to a lack of space (Cohoe, 1989).

TABLE 15. DMFT

SCTC 13-year-olds (N = 108)

		Total	Mean	
Number of decayed teeth	(D)	224	2.07	(Codes 11-15,31-35, 41-45)
Number of missing teeth	(M)	28	0.26	(Codes 50,59)
Number of filled teeth	(F)	419	3.88	(Code 20)
		671	6.21	
D/DMF INDEX =		224/671	.33	

This assumption would not include the second molars which are likely just late (unerupted), or the two missing incisors. The "missing" maxillary and mandibular incisors may be impacted, congenitally missing, or may have been lost due to trauma. Any of these reasons may be correct, although impaction is the least probable. No history was available to answer this question accurately.

h.4 Dental Caries Status by Reserve

The dental caries data were divided by reserve in addition to age in order to see if there were significant differences between reserves. The "S" value is the mean number of sound teeth per child (Table 17).

h.5 Exposure to Fluoride

A Chi-Square analysis was done by reserve depending on their exposure to fluoride. Grand Rapids is the only community with an optimum level of natural fluoride in the water supply. Pelican Rapids and The Pas reserves both have a high proportion of the children in the fluoride rinse program (see Table 10). The children on these three reserves were compared to the three other reserves (Easterville, Moose Lake and Pukatawagan) who have a minimal exposure to fluoride.

For 13-year-olds the total DMFT was calculated as well as the number of sound teeth. The results show that both natural fluoride and the fluoride rinse/brushing program are effective in significantly reducing the rate of dental decay on these three reserves.

TABLE 16. UNERUPTED, IMPACTED, or CONG. MISSING TEETH

SCTC 13-year-olds (N = 108)

Incisors	2	First Premolars	10
Maxillary Canines	8	Second Premolars	36
Mandibular Canines	3	Second molars	24
TOTAL = 83/108	Mean (per child) = .77		

TABLE 17. MEAN DMFT BY RESERVE

SCTC 13-year-olds (N = 108)

	N	S	D	M	F	DMFT	St.Dev.
Easterville	14	18.79	2.86	0.50	5.79	9.14	2.74
Grand Rapids	14	22.07	0.71	0.00	4.07	4.79	4.79
Moose Lake	24	20.79	2.42	0.33	3.67	6.42	2.67
Pukatawagan	22	21.00	3.36	0.36	2.77	6.50	3.56
Pelican Rapids	11	21.00	2.18	0.36	2.91	5.46	3.08
The Pas	23	21.44	0.78	0.04	4.35	5.17	2.57
All Reserves	108	20.89	2.07	0.26	3.88	6.21	3.11

TABLE 18. SCTC 13-year-olds Chi Square			
Teeth	Grand Rapids	Other Reserves (EV, ML, PK)	Pelican Rapids and The Pas
DMF	67	424	179
Sound	309	1224	724

The resulting Chi-Square values are as follows:

Grand Rapids / Others	= 10.42	$p < .0012$	d.f. = 1
Pelican Rapids & The Pas / Others	= 11.27	$p < .0008$	d.f. = 1
Grand Rapids / Pelican Rapids &. The Pas	= 0.69	$p < .4075$	d.f. = 1

For 13-year-olds there were highly significant differences between the children on reserves exposed to fluoride and those who were not. The differences between Grand Rapids and Pelican Rapids/The Pas were not significant for 13-year-olds.

C. MANITOBA CHILDREN'S DENTAL PROGRAM DATA

The data for MCDP was analyzed in the same manner as the data for the SCTC group. Because this data was collected from existing charts, there were two areas of the analysis that could not be done for this group (i.e., Service Utilization and Community Periodontal Index of Treatment Needs).

I. 6-Year-olds' results

a. General Information

Each child's exact age at examination was calculated by computer from the birthdate and date of examination. Each child was assigned a reference number and coded according to gender and the location of the reserve.

b. Service Utilization

This section.was not available for the MCDP data. This program operates very differently, however, than the SCTC program. The clinics are set up in schools and the children are recalled from the classroom on an annual basis. Compliance is therefore very high unless the child is continually absent from school. Consent forms are signed by parents for their children to be seen by the Dental Therapists in the program.

c. Disorders of Mucosa, Teeth and Bone and other Conditions

Oral Mucosa: - see also section e Periodontal Treatment Needs

The gingival tissues were assessed as being either healthy, or as showing signs of gingivitis.

Only 27 of the six-year-olds were found to have completely healthy soft tissues, eight showed signs of mild gingivitis, and the remaining 110 had obvious gingivitis requiring preventive treatment. The oral hygiene status was recorded in a few cases. Six children were noted as having good oral hygiene, eight children were fair, and nine children had poor oral hygiene.

Defects of Teeth:

Very few conditions were recorded in this section: primarily the occurrence of hypoplasia, abrasion, and retained deciduous teeth or impacted permanent teeth. Hypoplasia and abrasion are not looked at in this report as the number of cases reported were not considered above normal or significant. The number of retained and impacted teeth was not considered for 6-year-olds.

Disorders Involving Bone:

There were no significant findings.

Fluorosis:

No cases of fluorosis were recorded for 6-year-olds involving either the deciduous or permanent dentition.

Optimal Fluoride Exposure:

For 6-year-olds, 4 1/2 years exposure was considered optimal. There were no children who had been exposed to water fluoridation for 4 1/2 years. Table 19 shows the number and percentage of children in each community who participated in the school fluoride rinse program.

There were considerable differences between schools in the proportion of children participating in the program. It is apparent from Table 19 that the children in

TABLE 19. PARTICIPATION IN FLUORIDE RINSE PROGRAM - MCDP 6-year-olds (N=137)

SCHOOL	NUMBER	PERCENT
Barrows Junction	6/6	100.00
Berens River	2/43	4.65
Cormorant	12/13	92.31
Julie Lindal	1/3	33.33
Matheson	0/8	00.00
Pikwitonei	0/6	00.00
Pine Dock	0/7	00.00
San Antonio	0/6	00.00
Thicket Portage	7/8	87.50
Wabowden	19/19	100.00
Wanipigow	11/18	61.11

four schools; Barrows Junction and Wabowden (100%), Cormorant (92.31%), and Thicket Portage (87.5%) receive most of the supplementary fluoride treatment. There is no natural fluoride in the water supply in any of these communities.

d. Prosthetic Status

No data were available from the charts to indicate whether any of the 6-year-olds were wearing any appliances, except what was visible on radiographs (space maintainers).

e. Community Periodontal Index of Treatment Needs (CPITN)

No data were available from the charts to make an assessment of the periodontal status of either the 6-year-olds or the 13-year-olds. other than that already noted in section c.

f. Dentofacial Anomalies and Occlusion

No significant dentofacial anomalies were found. Table 20 shows the classification of occlusion for 6-year-olds by school. A reasonably high overall proportion (85.4%), have a normal Class I molar relationship. Crowding of the dentition was recorded in only a small number of cases and it is unknown if this is a true reflection of the actual number of children with crowding. At the age of six years only the permanent mandibular incisors and first molars would be erupted. It is too early to tell whether the permanent dentition will be crowded. Similarly the overbite and overjet were only recorded for a few individuals and at this age they are not an accurate reflection of the final occlusion.

The proportion of children (11.68%) with a Class II relationship may be the result of premature loss of the maxillary deciduous molars resulting in a loss of maxillary arch length, although 11.68% falls within the range quoted by McPhail et al., (1972) and Shaw et al. (1987) of 10-13%. These children may also have an increased (greater than normal) overjet and overbite. Although complete data are not available for Overjet and Overbite, it appears that a high percentage fall outside the range of normal (McPhail et al., 1972; Shaw et al., 1987).

TABLE 20. CLASSIFICATION OF OCCLUSION

MCDP - 6-year-olds (N = 137)

	BA N=6	BR N=43	CO N=13	JL N=3	MA N=8	PK N=6	PD N=7	SA N=6	TP N=8	WA N=19	WN N=18	Total N=137	%
Molar Relation													
Class I	6	40	13	2	7	5	5	6	3	16	14	117	85.40
Class II	0	3	0	0	1	1	2	0	4	3	2	16	11.68
Class III	0	0	0	1	0	0	0	0	1	0	2	4	2.92
Overjet													
Normal	0	6	0	0	1	0	0	1	1	2	0	11	8.03
Increased	1	4	0	0	2	2	1	1	1	0	1	13	9.49
Decreased	0	8	0	2	0	1	1	4	0	2	0	18	13.14
Unknown	5	25	13	1	5	3	5	0	6	15	17	95	69.34
Overbite													
Normal	0	0	0	0	0	0	0	0	1	3	0	4	2.92
Increased	1	8	0	0	1	1	1	3	0	1	1	17	12.41
Decreased	0	10	0	2	1	2	1	3	1	0	0	20	14.60
Unknown	5	25	13	1	6	3	5	0	6	15	17	96	70.07
Crowding													
Yes	0	0	1	0	0	1	0	0	1	0	1	4	2.92
No/Unknown	0	0	0	0	0	0	0	0	0	0	0	133	97.01

The small number of children with a Class III molar relationship (2.92%), may also be the result of premature loss of maxillary deciduous molars. This proportion is very low compared to that quoted by McPhail et al. (1972) and Shaw et al. (1987).

g. Conditions Needing Immediate Attention

Table 21 shows the number of 6-year-old MCDP children requiring emergency treatment for relief of existing pain, or treatment of severe carious lesions likely to cause pain or infection. Overall, 55.47% of the survey population is in need of immediate treatment, primarily for severely decayed teeth. Thicket Portage (75%) and Cormorant (69%) have the greatest proportion of children with severely affected teeth. Many of the children have more than one lesion requiring treatment, which is why the total for all the categories exceeds the actual number of children affected.

h. Dental Caries Status and Treatment of Teeth

h.1 Treatment Needs

For MCDP the codes for each category of decay were added together to get the "d" sum for deciduous teeth. The first category "BO" (decayed, no treatment) was included in the total (Table 22a). This category comprises 11.95% of the total amount of decay, but it is unknown what proportion belongs in each of the other categories i.e. what proportion of "BO's" are one surface, two surface, three surface cavities, etc.

As was done for the SCTC data (Table 6b), an estimate was made by dividing the total number of "BO's" (79) as evenly as possible between the categories for one- and two-surface restorations required (Table 22b).

one surface	148+40	=	188
two surface	218+39	=	257

TABLE 21. IMMEDIATE TREATMENT REQUIREMENTS MCDP - 6-years-olds (N = 137)	BA N=6	BR N=43	CO N=13	JL N=3	MA N=8	PK N=6	PD N=7	SA N=6	TP N=8	WA N=19	WN N=18	Total N=137	%
Existing Pain	2	9	3	1	2	2	1	0	1	5	1	27	19.71
Future Pain?	1	16	6	2	2	2	0	1	5	11	3	49	35.77
Pulp Involved	2	20	8	2	3	3	1	0	5	11	4	59	43.06
Other	2	9	3	0	3	2	3	0	1	5	3	31	22.63
Total children affected	2	24	9	2	5	4	4	1	6	12	7	76	55.47
Percent	33.33	55.81	69.23	66.67	62.5	66.67	57.14	16.66	75.0	63.16	38.89		

For permanent Teeth the codes for each category were added together to comprise the "D" sum = 61 and mean = .5648.

The total number of one-, two-, three-, and more than three-surface restorations required, and the number of extractions required, has been calculated for 6-year-olds (Table 22b). It is apparent that the MCDP population has a large number of deciduous teeth requiring treatment and particularly in those children with teeth requiring extensive restorations (crown, pulpotomy, etc.) or extractions.

For purposes of analysis the number of teeth requiring treatment were divided into two groups, those requiring one- or two-surface restorations, and those teeth that required more extensive repair or extraction. One- and two-surface restorations are usually fairly simple restorations.and were considered to involve minimal damage to the tooth. Restorations requiring more than two-surfaces, or extraction, normally involve more damage to the tooth.

h.2 deft/DMFT

The total number of decayed, missing and filled deciduous teeth was calculated for the 6-year-old group. The sum of the decayed teeth was derived by adding together a total of more than 15 different codes (Table 23a). The DMFT was also calculated for the permanent teeth present (Table 23b).

The average numbers are high for the MCDP population for all three categories. The d/def index shows, however, that the decayed component is a large proportion (70%) of the total in the MCDP population, while the number of teeth missing (due to caries) and filled teeth comprises a much smaller proportion of the total deft.

The teeth recorded as missing in six-year-olds were primarily Deciduous Maxillary Incisors and Deciduous Molars. These teeth were, therefore, lost due to caries or "other" causes, and not likely due to normal exfoliation and advanced eruption of the permanent successors.

TABLE 22a. DECAYED TEETH - 6-year-olds

MCDP (N = 137)

Treatment Required	Total	Mean	
Decayed - no treatment required	79	1.22	(Code BO)
One-surface restoration required	148	1.08	(Codes B1,D1,E1)
Two-surface restoration required	218	1.59	(Codes B2,D2,E2)
Three-surface restoration required	43	0.31	(Codes B3,D3,E3)
>than three-surface or crown required	115	0.84	(Codes B4,D4,E4)
Extraction required	58	0.42	(Codes B5,B5/9,D5, E5)
TOTAL	661	4.825	

TABLE 22b. DECAYED TEETH - 6-year-olds

MCDP (N = 137)

Treatment Required	Total	Mean	
One-surface restoration required	188	1.37	(Codes B0,B1,D1,E1)
Two-surface restoration required	257	1.88	(Codes B0,B2,D2,E2)
Three-surface restoration required	43	0.31	(Codes B3,D3,E3)
>than three-surface or crown required	115	0.84	(Codes B4,D4,E4)
Extraction required	58	0.42	(Codes B5,B5/9,D5, E5)
TOTAL	661	4.82	

TABLE 23a. deft - 6-year-olds

MCDP (N=137)

	Total	Mean	Codes
Number of decayed teeth	661	4.83	(Codes BO-B5,D1-D5,E1-E5)
Number of missing teeth	62	1.51	(Codes MO,M9)
Number of filled teeth	226	1.68	(Code CO)
	949	6.93	
d/def INDEX	661/949	.70	

TABLE 23b. DMFT - 6-year-olds *

MCDP (N=137)

	Total	Mean	Codes
Number of decayed teeth	151	1.10	(Codes 11-15)
Number of missing teeth	0	0.00	(Codes 50)
Number of filled teeth	8	0.58	(Code 20)
	159	1.16	
deft +DMFT		8.09	

* The mean DMFT for 6-year-old children is based on an average of 4.17 permanent teeth per child (s.d. .703), although some children in the population have as many as 8 permanent teeth.

h.3. Unerupted, Impacted or Congenitally Missing Teeth

No data were available for 6-year-olds to indicate whether any deciduous teeth were congenitally missing. It was presumed that all missing teeth were the result of normal exfoliation or dental caries.

h.4 Dental Caries Status by School

The total sample of 6-year-olds was not divided by school as the sample sizes were too variable to give an accurate picture of any differences that might exist.

h.5 Exposure to Fluoride

No analysis was done comparing schools participating in the fluoride rinse program and whose that were not because of the highly variable sample sizes.

2. 13-Year-olds' results

a. General Information

Each child's exact age at examination was calculated by computer using the birthdate and date of examination. Each child was assigned a reference number and coded according to sex and the location of the reserve.

b. Service Utilization

This section was not available for the MCDP data. This program operates very differently, however, than the SCTC program. The clinics are set up in schools and the children are recalled from the classroom on an annual basis. Compliance is therefore very high unless the child is continually absent from school. Consent forms are signed by parents for their children to be seen by the Dental Therapists in the program.

c. Disorders of Mucosa, Teeth and Bone and other Conditions

Oral Mucosa: - see also section e. Periodontal Treatment Needs

The gingival tissues were assessed as being either healthy, or showing signs of gingivitis. Only 15 of the thirteen-year-olds were found to have completely healthy soft tissues, 16 showed signs of mild gingivitis, and the remaining 73 had obvious gingivitis requiring preventive treatment. Of these 73 children, 15 required scaling as well as plaque removal. The oral hygiene status was recorded in some cases. Fifteen children were noted as having good oral hygiene, 16 children were fair, and 23 children had poor oral hygiene.

Defects of Teeth:

Very few conditions were recorded in this section: primarily the occurrence of hypoplasia, abrasion, and retained deciduous teeth or impacted permanent teeth. Hypoplasia and abrasion are not looked at in this report as the number of cases reported were not considered above normal or significant. The number of retained and impacted teeth is considered in section h.3 (Unerupted, Impacted or Congenitally Missing Teeth).

Disorders Involving Bone:

There were no significant findings.

Fluorosis:

No cases of fluorosis were recorded for 13-year-olds.

Optimal Fluoride Exposure:

For 13-year-olds, exposure to fluoride from the age of 3 to 13 years inclusive (less a maximum of 1 year) was considered optimal. Table 24 shows the number of children in each community who participated in the school fluoride rinse program.

There were considerable differences between schools in the proportion of children participating in the program. It is apparent from Table 24 that the children in four schools; Berens River (100%), Cormorant (82.61%), Julie Lindal (42.86%), and Barrows Junction (41.66%), receive most of the supplementary fluoride treatment. There is no natural fluoride in the water supply in any of these communities.

d. Prosthetic Status

No data were available from the charts to indicate whether any of the 13-year-olds were wearing any appliances.

e. Community Periodontal Index of Treatment Needs (CPITN)

No data were available from the charts to make an assessment of the periodontal status of the 13-year-olds other than that already noted in section c.

f. Dentofacial Anomalies

For 13-year-olds no significant dentofacial anomalies were found. Table 25 shows the classification of occlusion for 13-year-olds by school. A reasonably low overall proportion (29.06%), have some crowding of the dentition, and only 59.82% of the children have a Class I molar relationship.

The relatively high proportion of children (26.5%) with a Class II relationship may be the result of premature loss of the maxillary deciduous molars resulting in a loss of maxillary arch length. Many of these children also have an increased (greater than normal) overjet (41.03%) and overbite (51.28%).

TABLE 24. PARTICIPATION IN FLUORIDE RINSE PROGRAM - MCDP 13-year-olds (N=117)

SCHOOL	NUMBER	PERCENT
Barrows Junction	5/12	41.66
Berens River	3/3	100.00
Cormorant	19/23	82.61
Julie Lindal	3/7	42.86
Matheson	0/5	00.00
Pikwitonei	0/1	00.00
Pine Dock	0/4	00.00
San Antonio	0/2	00.00
Thicket Portage	2/7	28.57
Wabowden	3/20	15.00
Wanipigow	0/33	00.00

TABLE 25. CLASSIFICATION OF OCCLUSION

MCDP - 13-year-olds (N = 117)

	BA	BR	CO	JL	MA	PK	PD	SA	TP	WA	WN	Total	%
	N=12	N=3	N=23	N=7	N=5	N=1	N=4	N=2	N=7	N=20	N=33	N=117	
Molar Relation													
Class I	8	3	20	5	3	0	4	1	3	6	17	70	59.82
Class II	4	0	3	2	0	0	0	1	4	11	6	31	26.50
Class III	0	0	0	0	2	1	0	0	0	3	9	15	12.82
Unknown											1	1	0.86
Overjet													
Normal	5	2	6	1	0	0	3	1	3	6	8	35	29.91
Increased	6	0	10	4	1	0	0	1	3	9	14	48	41.03
Decreased	1	0	7	2	4	1	1	0	1	5	11	33	28.20
Unknown		1										1	0.86
Overbite													
Normal	4	0	2	1	0	0	2	0	2	3	6	20	17.09
Increased	6	1	10	5	2	0	1	2	2	15	16	60	51.28
Decreased	2	1	11	1	3	1	1	0	3	2	11	36	30.77
Unknown		1										1	0.86
Crowding													
Yes	3	0	8	3	3	0	1	1	1	7	7	34	29.06
No/Unknown	9	3	15	4	2	1	3	1	6	13	26	83	70.94

The number of children with a Class III molar relationship (12.82%) may be the result of premature loss of mandibular deciduous molars. These children would also have a decreased (less than normal) overjet (28.2%) and an increased overbite (51.28%).

With regard to the high prevalence of Class II malocclusions, a large percentage of these are likely due to space loss as a result of premature extraction of the deciduous molars rather than due to skeletal abnormalities There is no way of verifying this as studies on occlusion in Manitoba have included a cross section of all Manitoba children, and not specifically Manitoba Native children. The prevalence of Class II and Class III malocclusion for Manitoba children is presumed to be similar to the results of McPhail et al. (1972) and Shaw et al. (1987) who found that the proportion of Class II and Class III occlusions were approximately equal and ranged from 10-13%. The MCDP children, therefore, have a much higher proportion of Class II occlusion than would be expected in a Native population.

g. Conditions Needing Immediate Attention

Table 26 shows the number of 13-year-old MCDP children requiring emergency treatment for relief of existing pain, or treatment of severe carious lesions likely to cause pain or infection. Overall, only 12% of the survey population is in need of immediate treatment for pain, primarily for severely decayed teeth. Pine Dock (25%) and Barrows Junction (16.67%) have the greatest proportion of children with severely affected teeth. Only three of the children have more than one lesion requiring immediate treatment.

TABLE 26. IMMEDIATE TREATMENT REQUIREMENTS

MCDP - 13-years-olds (N = 117)

	BA N=12	BR N=3	CO N=23	JL N=7	MA N=5	PK N=1	PD N=4	SA N=2	TP N=7	WA N=20	WN N=33	Total N=117	%
Existing Pain	0	0	0	0	0	0	1	0	0	2	0	3	2.56
Future Pain?	1	0	0	0	0	0	0	0	0	1	2	4	3.42
Pulp Involved	0	0	0	0	0	0	1	0	0	2	0	3	2.56
Other	1	0	3	0	0	0	0	0	1	1	2	8	6.84
Total children affected	2	0	3	0	0	0	1	0	1	3	4	14	11.97
Percent	16.67	0.00	13.04	0.00	0.00	0.00	25.00	0.00	14.29	15.00	12.12		

h. Dental Caries Status and Treatment of Teeth

h.1 Treatment Needs

The total number of one-, two-, three-, and more than three-surface restorations required, and the number of extractions required, has been calculated separately for each age group (Table 27). The average number of teeth requiring treatment for MCDP children is 2.69.

For purposes of analysis the number of teeth requiring treatment were divided into two groups, those requiring one- or two-surface restorations, and those teeth that required more extensive repair or extraction. One- and two-surface restorations are usually simple restorations involving minimal damage to the tooth. Restorations requiring more than two-surfaces, or extraction, involve considerably more damage to the tooth.

h.2 DMFT

The total number of decayed, missing and filled teeth has been calculated for each age group separately. The sum of the decayed teeth was derived by adding together a total of more than 15 different codes for each age group (Table 28).

The D/DMF index shows that, because the MCDP population has an average of fewer restorations per child, the number of decayed (unrestored) teeth contributes more to the total DMFT than for the SCTC population.

h.3 Unerupted, Impacted or Congenitally Missing Teeth

Table 29a shows the total number of unerupted, impacted or congenitally missing teeth in the 13-year-old group. At this age, the number of "missing" second molars is very small (4.7%), possibly indicating an early eruption pattern in this population (Trodden,1982).

TABLE 27. DECAYED TEETH - 13-year-olds

MCDP (N = 117)

	Total	Mean	
One-surface restoration	197	1.68	(Codes 11,31,41)
Two-surface restoration	102	0.87	(Codes 12,32,42)
Three-surface restoration	13	0.11	(Codes 13,33,43)
>than three-surface or crown	3	0.03	(Codes 14,34,44)
Extraction	0	0.00	(Codes 15,35,45)
Total Decayed Teeth	315	2.69	

TABLE 28. DMFT - 13-year-olds

MCDP (N = 117)

		Total	Mean	
Number of decayed teeth	**(D)**	315	2.69	(Codes 11-15,31-35, 41-45)
Number of missing teeth	**(M)**	8	0.00	(Codes 50,59)
Number of filled teeth	**(F)**	597	5.10	(Code 20)
		920	7.79	
D/DMF INDEX =		315/920	.34	

However, the children who are "missing" canines, or second premolars, (most likely impacted as a result of premature loss of deciduous teeth) will probably show crowding and occlusion problems. The presumption is that these teeth were unable to erupt due to a lack of space.

This assumption would not include the second molars or maxillary second premolars which are likely just late (unerupted). The mandibular second premolars could be congenitally missing. No history was available to answer this question accurately. Three children had four or more unerupted teeth, with one of these children having seven unerupted teeth.

There were also thirty three teeth which could not be accounted for, either because no radiographs were taken on the examination appointment, or the teeth could not be seen on the radiographs. Twenty six of these teeth were found in four children, while the remaining "excluded" teeth (Code 90) were not necessarily found in the same children who also had unerupted teeth. A table (Table 29b) is included merely to show that the distribution of these teeth is similar to that of the unerupted teeth. It is possible, therefore, that at least some of them are unerupted or impacted.

h.4 Dental Caries Status by School

The total sample of 13-year-olds was not divided by school as the sample sizes were too variable to give an accurate picture of any differences that might exist.

h.5 Exposure to Fluoride

No analysis was done comparing schools participating in the fluoride rinse program and those that were not because of the highly variable sample sizes. For several schools this information was not consistently recorded and therefore was not considered to be reliable.

TABLE 29a. UNERUPTED, IMPACTED, or CONG. MISSING TEETH

MCDP 13-year-olds (N = 117)

Maxillary Canines	5	Mandibular Canines	0
Max. Second Premolars	4	Mand. Second Premolars	11
Max. Second molars	15	Mand. Second molars	7
TOTAL = 42 /117	Mean (per child) = 0.36		

TABLE 29b. EXCLUDED TEETH

MCDP 13-year-olds (N = 117)

Maxillary Canines	2	Mandibular Canines	1
Max. Second Premolars	4	Mand. Second Premolars	5
Max. Second molars	12	Mand. Second molars	9
TOTAL = 33 /117	Mean = 0.28 (per child)		

D. COMPARISON OF SCTC DATA TO MCDP DATA

1. 6-Year-olds

The data for SCTC 6-year-olds and 13-year-olds were compared to the data for MCDP 6-year-olds and 13-year-olds to see if there was a significant difference between the two populations.

a. Conditions Needing Immediate Attention

A comparison is included in Table 30 showing the number of children in each population requiring immediate treatment for dental lesions either causing pain, or likely to cause pain and which in more than half the cases involved the pulp of the tooth. In each population there were several children who had more than one dental problem and were thus were scored positively in more than one category. The categories, therefore, are not mutually exclusive, which is why the total number of children affected in each population is less than half the total number of categories scored.

Chi-Square Analysis

A Chi-Square analysis was done (Table 31) to see whether there was a significant difference in the number of children requiring immediate treatment between the two populations. The SCTC 6-year-olds were compared to MCDP 6-year-olds. The total number of children was divided into those requiring immediate treatment for any of the categories, and those who did not.

TABLE 30. IMMEDIATE TREATMENT NEEDS - 6-year-olds				
	SCTC (N=108)	**%**	**MCDP** (N=137)	**%**
Existing pain or infection	31	28.70	27	19.71
Lesions likely to cause pain	46	42.59	49	35.77
Pulpally involved teeth	23	21.30	59	43.06
Other	0	0.00	31	22.63
Total children affected	47	43.52	76	55.47

Table 31. Immediate Treatment Needs

Chi-Square

6-year-olds	SCTC	MCDP
Immediate. Tx.	47	76
No immediate. Tx.	61	61

$X^2 = 3.453$ $p < .0631$ d.f. = 1

There is no statistically significant difference between the immediate treatment needs of 6-year-olds in the two populations.

b. Treatment Needs

The total number of one-, two-, three-, and more than three-surface restorations required, and the number of extractions required, for SCTC children is compared to MCDP children aged 6 years (Table 32). The category "B0" (decayed, no treatment required) is left intact in this table to compare data from the two populations.

For purposes of analysis the number of teeth requiring treatment were divided into two groups, those requiring one- or two-surface restorations, and those teeth that required more extensive repair or extraction. The category "B0" was added to the one- and two-surface restorations as was done for Table 6b and Table 22b.

Although the MCDP 6-year-old children have more teeth requiring restorations than the SCTC children, the proportion of one- and two-surface and for more than two-surface restorations are very similar.

Chi-Square Analysis

For purposes of the Chi Square analysis the number of teeth requiring treatment were divided into two groups, those requiring one- or two-surface restorations (simple treatment), and those teeth that required more extensive repair or extraction. One-surface restorations are usually simple restorations involving either the occlusal surface or a facial or lingual surface. Two-surface restorations may in fact involve only a proximal surface, but in order to gain access to the proximal surface, the occlusal is restored as well. Both of these types of restorations were considered to involve minimal damage to the tooth. Restorations requiring more than two-surfaces, or extraction, involve considerably more damage to the tooth. This analysis was concerned primarily with determining whether there was a difference between the two groups in the proportion of simple and extensive treatment required rather than a comparison by individual surfaces of teeth.

For the SCTC population the total number of deciduous teeth requiring a one- or two-surface restoration is 132+64+126 = 322, and the number of permanent teeth requiring a one- or two-surface restoration is 37+20 = 57. The number of deciduous teeth requiring more than a two-surface restoration is 12+103+45 = 160., and the number of permanent teeth requiring more than a two-surface restoration is 2+1+1 = 4 (Table 32).

For the Chi-Square cells the one-or two-surface decay for both deciduous (321) and permanent (58) teeth were added together for a total of 379. More than two-surface is 160+4 = 164.

For MCDP children the "d" sum was calculated in the same fashion. For the Chi-Square cells the one-or two-surface decay for both deciduous (79+147+218), and the permanent (63+74) were added together for a total of 581. The total for more than two-surface is 231.

TABLE 32. DECAYED TEETH - 6-year-olds

	SCTC (N=108)		MCDP (N=137)	
	Decid	**Perm.**	**Decid.**	**Perm.**
Decayed - no treatment required	132	0	79	0
One-surface restoration required	64	37	148	63
Two-surface restoration required	126	20	218	74
Three-surface restoration required	12	2	43	7
>than three-surface or crown required	103	1	115	7
Extraction required	45	1	58	0
TOTAL	482	61	661	151

Table 33. Decayed Teeth

Chi-Square

6-year-olds	SCTC	MCDP
1-2 surfaces	379	581
>two-surfaces	164	231

$X^2 = .485$ $p < .4862$ d.f. = 1

There is no significant difference between the two populations in the number of one-and two surface restorations required. Both populations have a high proportion (>69%) of children requiring relatively simple restorations.

c. deft/DMFT

The total number of decayed, missing and filled deciduous and permanent teeth has been calculated for the 6-year-old groups. The sum of the decayed teeth was derived by adding together a total of more than 15 different codes (Table 34).

For SCTC the total number of decayed deciduous teeth, including "BO", plus the total number of missing and filled teeth were added together to comprise the deft = 7.63. For MCDP children the total number of decayed deciduous teeth, plus the total number of missing and filled teeth were added together to comprise the total deft = 6.93.

For SCTC the total DMFT comprises the sum of all the teeth coded for the "D", plus missing and filled teeth, DMFT = .676. For MCDP the total DMFT comprises the sum of all the teeth coded for the "D", plus missing and filled teeth, DMFT = 1.16. The average number of decayed permanent teeth is relatively low for both groups because most 6-year-olds only have six to eight permanent teeth which are all newly erupted, and, therefore, have only been in the oral cavity a short period of time.

The teeth recorded as missing in six-year-olds were primarily Deciduous Maxillary Incisors and Deciduous Molars. These teeth were, therefore, lost due to caries or "other" causes, and not due to normal exfoliation and advanced eruption of the permanent successors.

The DMFT for 6-year-old SCTC children is based on an average of six permanent teeth per child (s.d. 2.03), although some children in the population have as few as three permanent teeth, and a few children have as many as 12. For MCDP the average number of permanent teeth is four teeth per child (s.d. 0.703), although some children in the population have as many as eight permanent teeth.

Chi-Square Analysis

For both SCTC and MCDP children the decayed and missing deciduous teeth, including "BO", plus the decayed and missing permanent teeth , were compared to the filled component of the deft and DMFT (Table 35). The data was divided in this manner to reflect the number of teeth "unsuccessfully" treated (decayed and missing) as compared to those "successfully" treated (filled).

A series of Chi Square tests was then done comparing only the deciduous teeth between the two groups, and comparing only the permanent teeth between the two groups. There were highly significant differences between groups for both the deciduous teeth ($X^2 = 70.46$, $p < .0001$, d.f. = 2) and permanent teeth ($X^2 = 6.7$, $p < .0096$, d.f. = 1). An additional Chi Square was done comparing only the number of decayed teeth between groups. This test was also highly significant ($X^2 = 12.65$, $p < .0004$, d.f. = 1). The result obtained in Table 35 masks the fact that there is a significant difference between the two groups. This difference lies in the fundamentally different pattern of decayed and missing teeth. The SCTC children have considerably more deciduous teeth missing than do MCDP, while the MCDP children have more permanent teeth decayed.

As a result of these conflicting Chi Square results an unpaired two-group *t* test (ANOVA) was done comparing the deft/DMFT scores for each child. The range of values for the deft/DMFT was between 0 and 19 (Table 36). The two groups were found not to be statistically different.

TABLE 34. deft/DMFT - 6-year-olds

	SCTC (N=108)		MCDP (N=137)	
	Decid	**Perm.**	**Decid.**	**Perm.**
Number of decayed teeth	481	62	661	151
Number of missing teeth	163	0	62	0
Number of filled teeth	180	11	226	8
	824	73	949	159
deft/DMFT	7.630	.676	6.927	1.161

Table 35. deft/DMFT

Chi-Square

6-year-olds	SCTC	MCDP
Decayed (dD)+Missing (eM)	706	874
Filled (fF)	191	234

$X^2 = 0.1$ $p < .9192$ d.f. = 1

There is no significant difference between the two groups with regard to the proportion of decayed and missing teeth (deciduous and permanent teeth combined) compared to the number of filled teeth. See the discussion in the text of further Chi-Square testing which showed that there were significant internal differences.

TABLE 36. deft/DMFT 6-year-olds		
	MCDP	SCTC
deft/DMFT	# of children	# of children
0	10	4
1	4	4
2	7	6
3	6	6
4	5	6
5	12	5
6	8	9
7	6	7
8	12	11
9	7	5
10	11	6
11	13	8
12	11	12
13	6	6
14	13	3
15	2	3
16	2	1
17	1	4
18	0	1
19	1	1
TOTAL	137	108

$t = 1.233$ $p < .2251$ d.f. = 38

d. Summary

The results in both 6-year-old groups are very similar and not statistically significant.The number of children in each population requiring immediate treatment was quite high but there was no statistically significant difference between SCTC and MCDP. The average number of decayed teeth requiring treatment is high, particularly for teeth needing two-surface restorations, while it is low for teeth requiring more complex restorations for both the SCTC and MCDP samples. There was no statistically significant difference found between the two groups for the type of restorations required. Both groups have a high mean deft/DMFT score with the "dD" component being the largest for both groups. There was also no statistically significant difference between the two samples with regard to the proportion of decayed and missing teeth compared to the number of filled teeth.

Because there was no statistically significant difference found in any of the statistical tests performed, the decision that these two groups could be combined to form one Native group of 6-year-olds is justified.

2. 13-Year-olds

a. Conditions Needing Immediate Attention

A comparison is included in Table 37 showing the number of children in each population requiring immediate treatment for dental lesions either causing pain, or likely to cause pain and which in more than half the cases involved the pulp of the tooth. In each population there were some children who had more than one dental problem and were thus were scored positively in more than one category. The categories, therefore, are not mutually exclusive, which is why the total number of children affected in each population is less than the total number of categories scored. For this reason, the categories can not be separated for purposes of chi-square analysis. There are relatively few children in either population of 13-year-olds requiring immediate treatment compared to the 6-year-olds (Table 30).

Chi-Square Analysis

The SCTC 13-year-olds were compared to MCDP 13-years-olds. The total number of children was divided into those requiring immediate treatment for pain, and those who did not.

A Chi-Square analysis was done to see whether there was a significant difference in the number of children requiring immediate treatment between the two populations.

TABLE 37. IMMEDIATE TREATMENT NEEDS - 13-year-olds				
	SCTC (N=108)	**%**	**MCDP** (N=117)	**%**
Existing pain or infection	6	5.55	3	2.56
Lesions likely to cause pain	16	14.81	4	3.42
Pulpally involved teeth	1	0.93	3	2.56
Other	1	0.93	8	6.84
Total children affected	17	15.74	14	11.97

Table 38. Immediate Treatment Needs

Chi-Square

13-year-olds	SCTC	MCDP
Immediate. Tx.	17	14
No immediate. Tx.	91	103

$X^2 = 0.674$ $p < .4118$ d.f. = 1

There is no statistically significant difference between the immediate treatment needs of 13-year-olds in the two populations.

b. Treatment Needs

The total number of decayed teeth (Treatment required) was divided into those teeth requiring one- or two-surface restorations and those requiring more than a two-surface restoration. The total number of one-, two-, three-, and more than three-surface restorations required, and the number of extractions required, has been calculated separately for each group (Table 39).

For purposes of analysis the number of teeth requiring treatment were divided into two groups, those requiring one- or two-surface restorations, and those teeth that required more extensive repair or extraction. One- and two-surface restorations were both considered to involve minimal damage to the tooth. Restorations requiring more than two-surfaces, or extraction, involve considerably more damage to the tooth.

Chi-Square Analysis

A Chi-Square analysis was done to see whether there were significant differences in the types of treatment required between the two populations.

The SCTC 13-year-olds were compared to MCDP children 13-year-olds. The total number of decayed teeth (treatment required) was divided into those teeth requiring one- or two-surface restorations, and those requiring more than a two-surface restoration (Table 40).

Further Chi Square testing was done to see where the major difference was between the two groups. Although there was no statistically significant difference in the pattern of restorations required, there was a significant difference in the number of extractions required between the two groups. (X^2 = 20.49, p< .0004, d.f. = 4). An explanation of this difference may be related to the frequency of dental care received by the two groups. The MCDP children are treated annually in the schools, while the SCTC children receive dental care on a more irregular basis resulting in the teeth being more severely decayed when they do receive treatment, and thus requiring an extraction.

TABLE 39. DECAYED TEETH - 13-year-olds		
	SCTC (N=108)	**MCDP** (N=117)
Decayed - no treatment		
One-surface restoration	120	197
Two-surface restoration	78	102
Three-surface restoration	11	13
>than three-surface or crown	2	3
Extraction	13	0
TOTAL	224	315

Table 40. Decayed Teeth

Chi-Square

13-year-olds	SCTC	MCDP
1-2 surface	198	299
>two-surface	26	16

$X^2 = 7.764$ $p < .0053$ d.f. = 1

There is a highly statistically significant difference between the two populations in the type of treatment required. See the discussion in the text of further Chi-Square testing which showed where significant internal differences were found.

c. DMFT

The dental caries rate for SCTC was compared to that for MCDP 13-year-old children. The "D" and "M" components were added together (no treatment and unsuccessful treatment) and compared to the "F" component (successful treatment).

The total number of decayed, missing and filled teeth has been calculated for each group separately. The sum of the decayed teeth was derived by adding together a total of more than 15 different codes for each age group (Table 41).

Chi-Square Analysis

The SCTC population was compared to MCDP 13-year-old children. The "D" and "M" components were added together (no treatment and unsuccessful treatment), and compared to the "F" component (successful treatment).

A similar problem was found for 13-year-olds as in the 6-year-olds. Additional Chi Square testing was done to see where the difference occurred. There was a highly significant difference in the total DMFT between the two groups ($X^2 = 19.16$,
$p < .0001$, d.f. = 2) and for the number of missing teeth only ($X^2 = 18.99$,
$p < .0001$, d.f. = 1). The major difference was found, therefore, to be in the pattern of extracted teeth which masked the result found in Table 42.

In order to further test these results for a statistical difference between the two groups, an unpaired two-group *t* test (ANOVA) was done comparing the deft/DMFT scores for each child. The range of values for the DMFT was between 0 and 18 (Table 43). The two groups were found not to be statistically different.

TABLE 41. DMFT - 13-year-olds

	SCTC (N=108)	**MCDP** (N=117)
Number of decayed teeth	224	315
Number of missing teeth	28	8
Number of filled teeth	419	597
	671	920
DMFT	6.213	7.863

Table 42. DMFT

Chi-Square

13-year-olds	SCTC	MCDP
Decayed + Missing	252	323
Filled	419	597

$X^2 = 1.007$ $p < .3157$ d.f. = 1

There is no statistically significant difference between the two groups. The "D+M" components comprise approximately 37% of the DMFT for both groups. See the discussion in the text of further Chi-Square testing which showed that there were significant internal differences.

TABLE 43. DMFT 13-year-olds		
	MCDP	SCTC
DMFT	# of children	# of children
0	3	4
1	1	0
2	2	5
3	3	8
4	7	20
5	15	14
6	18	8
7	5	16
8	14	13
9	16	4
10	11	3
11	5	5
12	5	4
13	4	2
14	1	2
15	3	0
16	2	0
17	0	0
18	2	0
TOTAL	117	108

$t = 0.243$ $p < .809$ $d.f. = 36$

d. Summary - 13-year-olds

The results in both 13-year-old groups are very similar and not statistically significant. The percentage of children requiring immediate treatment is very low (12-15%) compared to the 6-year-olds and there is no statistically significant difference between the two groups. The number of decayed teeth requiring extensive treatment is not significantly different between the two groups of children. Both 13-year-old groups have a very high DMFT, but a much larger proportion of teeth are 'filled' compared to the 6-year-olds. There is no statistically significant difference between the two groups. The "filled" component comprise a much larger proportion (62-64%) of the DMFT for both groups compared to the 6-year-olds (19-21%).

Because there was no statistically significant difference found in any of the statistical tests performed, it was decided that these two groups could be combined to form one Native group of 13-year-olds.

CHAPTER IV. ANALYSIS OF RESULTS

CHAPTER IV. ANALYSIS OF RESULTS

A. COMPARISON OF MANITOBA RURAL NATIVE CHILDREN TO MANITOBA RURAL WHITE CHILDREN

The data for rural Native children were compared to the "Dental Health Survey of Manitoba Children, 1976" (Cageorge et al., 1978), in particular rural Manitoba children 5 and 13 years of age. Despite differences in the methodology employed and the difference in investigators, this study, although fairly old, was found to be the only reliable study of Manitoba children. A more recent unpublished study (1982) was felt by Cooney (1989) to be seriously flawed in the methodology.

I. 5-6-Year-olds

The data for 6-year-old rural Native children were compared to the data for 5-year-old Manitoba rural White children (1976) to see if there were significant differences between the two populations.

a. Conditions Needing Immediate Attention

A comparison is included in Table 44 showing the number of children in each population requiring immediate treatment. Many of the children had more than one lesion requiring immediate treatment, which is why the total for all the categories exceeds the actual number of children affected. The categories, therefore, are not mutually exclusive, and cannot be separated for purposes of analysis. No "other"category was included in the Manitoba 1976 data. It was left in for the rural Native sample because it contained a significant number of entries.

This table shows a significantly lower result for Manitoba 1976 rural 5-year-olds compared to rural Native children. According to the 1976 Manitoba survey, the percentages were higher for rural children for all three types of conditions and for all age groups, with the rural children aged nine years in the greatest need of treatment (Cageorge et al.,1978:49).

Chi-Square Analysis

A Chi-Square analysis was done to see whether there was a significant difference in the number of children requiring immediate treatment between the two populations. The rural Native 6-year-olds were compared to Manitoba 1976 rural 5-year-olds (Table 45). The total number of children was divided into those requiring immediate treatment for pain, and those who did not.

b. Treatment Needs

The total number of one-, two-, three-, and more than three-surface restorations required, and the number of extractions required, for rural Native children was compared to Manitoba rural 1976 children aged 5 years (Table 46). Although these results are not truly comparable for permanent teeth, it is apparent that the rural Native population has a greater number of deciduous teeth requiring treatment and particularly those children with teeth requiring extensive restorations (crown, pulpotomy, etc.) or extractions.

For the rural Native population the total number of deciduous teeth included as requiring one- or two-surface restorations is 211+212+344= 767, and the number of permanent teeth is 194. The number of deciduous teeth requiring more than two-surface restorations is 55+218+103 = 376 and for permanent teeth the number is 18. (Table 46).

For Manitoba rural children the "d" sum was calculated from the mean values given in Table III-10 (Cageorge et al.,1978:58). These data do not include a category comparable to "BO". It is presumed that permanent teeth are included in the total given (3.25), because it does not equal the values given in Table III-9 for the "d" category (3.18) (Cageorge et al.,1978:57). The total DMFT for this group is 0.13. The presumption was made that the "D" component is 0.07 (3.25-3.18) and the remaining 0.06 was assigned to the "F" component, as it is highly unlikely that 5-year-olds would have had permanent teeth extracted due to caries ("M").

TABLE 44. IMMEDIATE TREATMENT NEEDS - 5-6-year-olds COMBINED DATA - SCTC and MCDP

	Rural Native (N=245)	%	Man. Rural '76 (N=175)	%
Existing pain or infection	58	23.67	7	4.0
Lesions likely to cause pain	95	38.77	5	2.8
Pulpally involved teeth	82	33.47	18	10.2
Other	31	12.65		
Total children affected	123	50.20	30	17.0

Table 45. Immediate Treatment Needs Chi-Square

5-6-year-olds	Rural Native	Man. Rural '76
Immediate Tx.	123	30
No immediate Tx.	122	145

$X^2 = 48.182$ $p < .0001$ d.f. = 1

There is a highly significant statistical difference between the immediate treatment needs of 5, 6-year-olds in the two populations.

Chi-Square Analysis

For Rural Native children the one- and two-surface decay (including the category "B0") for both deciduous (767) and permanent (194) were added together for a total of 961. The decay for more than two-surfaces is 376+18 = 394.

For the Manitoba 1976 rural children the one- and two-surface decay for both deciduous and permanent is 478, and the total for more than two-surface decay (including extractions required) is 91 (Table 47).

The difference between the two groups was found to be highly statistically significant. Additional Chi Square testing was done to determine where the major difference occurred. All the possible combinations were found to be highly significant, showing that the pattern of treatment required was totally different for the two groups. The Rural Native 6-year-olds required a much greater number of restorations, in all categories, and extractions than the Rural White group.

TABLE 46. DECAYED TEETH - 5-6-year-olds

COMBINED DATA - SCTC and MCDP

	Rural Native (N=245)			Man. Rural '76 (N=175)	
	Decid.	**Perm.**	**Mean**	**Total**	**Mean**
Decayed - no treatment required	211	0	0.86		
One-surface restoration required	212	100	1.27	270	1.54
Two-surface restoration required	344	94	1.79	208	1.19
Three-surface restoration required	55	9	0.26	32	0.18
>than three-surface or crown required	218	8	0.92	26	0.15
Extraction	103	1	0.42	33	0.19
TOTAL		1143	212	5.53	569
3.25					

Table 47. Decayed Teeth

Chi-Square

5-6-year-olds	Rural Native	Man. Rural '76
1-2 surface decay	961	478
>two-surface decay	394	91

$X^2 = 36.389$ $p < .0001$ d.f. = 1

There is a highly significant statistical difference between the two populations in the types of restorations required. The rural Native population has a higher proportion (29.08%) of children requiring more extensive restorations or extractions compared to Manitoba 1976 rural children (15.99%). See the discussion in the text of further Chi-Square testing which showed where the significant internal differences were found.

c. deft/DMFT

The total number of decayed, missing and filled teeth has been calculated for the 6-year-old groups. The sum of the decayed teeth was derived by adding together a total of more than 15 different codes (Table 48).

For rural Native children, the total deft comprises the sum of: the number of decayed teeth including "BO", plus the total number of decayed teeth, plus the total number of filled teeth were added together to comprise the deft = 7.66. For Manitoba rural children the mean values in Table III-9, 1976 were added together to comprise the total deft = 4.22.

For rural Native children, the total DMFT comprises the sum of all the coded for the "D" plus missing and filled DMFT = .67. For Man rural the "D" component is 0.07 of the total DMFT of 0.13 (Table III-9, 1976).

Although these results are not truly comparable for permanent teeth, the average numbers are considerably higher for the rural Native population for all three categories. The d/def index shows, however, that the decayed component is a smaller proportion of the total in the rural Native population, while the number of missing (due to caries) and filled teeth comprise a much larger proportion of the total deft.

Chi-Square Analysis

For both rural Native and Manitoba 1976 rural children, the decayed and missing deciduous teeth, including "BO", plus the decayed and missing permanent teeth , were compared to the filled component of the deft and DMFT (Table 49). No statistically significant difference was found between the two groups.

TABLE 48. deft/DMFT - 5-6-year-olds

COMBINED DATA - SCTC and MCDP

	Rural Native (N=245)			Man. Rural '76 (N=175)	
	Decid	**Perm.**	**Mean**	**Total**	**Mean**
Number of decayed teeth	1143	212	5.53	569	*3.25
Number of missing teeth	225	0	0.91	16	0.09
Number of filled teeth	407	19	1.73	177	0.95
	1775	231		762	
deft/DMFT	7.25	.94	8.2		4.35
d/def Index		0.64			0.75

Table 49. deft/DMFT

Chi-Square

5-6-year-olds	Rural Native	Man. Rural '76
Decayed (dD)+Missing (eM)	1580	585
Filled (fF)	426	177

$X^2 = 1.286$ $p < .2568$ d.f. = 1

There is no significant statistical difference between the two groups with regard to the proportion of decayed and missing teeth (76-78%) compared to the number of filled teeth (21-23%).

d. Summary

In the rural Native 6-year-old group, the average number of decayed teeth requiring treatment is considerably higher than in the Manitoba 1976 rural sample, particularly for teeth needing extensive treatment (crown, pulpotomy, etc.), while it is lower for teeth requiring simple one-surface restorations. The 6-year-olds have a much higher deft rate than rural Manitoba 5-year-olds. Although the "d" component is smaller in the d/def ratio, the proportion of extensive restorations and extractions required is much greater, indicating that these children do not receive treatment until the teeth have been severely damaged.

II. 13-Year-olds

a. Conditions Needing Immediate Attention

A comparison is included in Table 50 showing the number of children in each population requiring immediate treatment. Many of the children had more than one lesion requiring immediate treatment, which is why the total for all the categories exceeds the actual number of children affected. The categories, therefore, are not mutually exclusive, and cannot be separated for purposes of analysis. No "other" category is included in the Manitoba 1976 data. This category was included in the rural Native data as it contains a significant number of cases.

Chi-Square Analysis

The rural Native 13-year-olds were compared to Manitoba 1976 rural 13-years-olds. The total number of children was divided into those requiring immediate treatment for pain, and those who did not.

A Chi-Square analysis was done to see whether there was a significant difference in the number of children requiring immediate treatment between the two populations.

TABLE 50. IMMEDIATE TREATMENT NEEDS - 13-year-olds COMBINED DATA - SCTC and MCDP				
	Rural Native (N=245)	%	Man. Rural '76 (N=175)	%
Existing pain or infection	9	3.67	1	0.6
Lesions likely to cause pain	20	8.16	9	5.1
Pulpally involved teeth	4	1.63	0	0.0
Other	9	3.67		
Total children affected	31	12.65	10	5.7

Table 51. Immediate Treatment Needs Chi-Square		
13-year-olds	Rural Native	Man. Rural '76
Immediate Tx.	31	10
No immediate Tx.	214	165

$X^2 = 5.58$ $p < .0182$ d.f. = 1

There is a significant difference between the immediate treatment needs of 13-year-olds in the two populations. Over 12% of rural Native children require immediate treatment, while only 5.7% of rural White children require immediate treatment.

b. Treatment Needs

The total number of decayed teeth (Treatment required) was divided into those teeth requiring one- or two-surface restorations and those requiring more than a two- surface restoration.

The total number of one-, two-, three-, and more than three-surface restorations required, and the number of extractions required, has been calculated separately for each group (Table 52). The treatment needs of the 13-year-old rural rural Native children are lower in almost all categories compared to the 1976 survey of Manitoba rural and urban children (Cageorge et al., 1978). The average number of teeth requiring treatment for rural Native children is 2.2, while 4.11 teeth required treatment in Manitoba rural children in 1976.

Chi-Square Analysis

The Native 13-year-olds were compared to Manitoba '76 rural 13-year-olds. The total number of decayed teeth (treatment required) was divided into those teeth requiring one-or two-surface restorations, and those requiring more than a two-surface restoration.

A Chi-Square analysis was done to see whether there were significant differences in the types of treatment required between the two populations (Table 53). A highly statistically significant difference was found between the two populations. Additional Chi Square testing was done to determine where the difference was between the two groups. The proportions of the different types of restorations required was not statistically significant, ($X^2 = 2.76$, $p < .431$, d.f. = 3). The major difference was found to be in the number of extractions required, ($X^2 = 26.31$, $p < .0001$, d.f. = 4). Extractions were included in this analysis as an indication of the extent of damage to the teeth.

TABLE 52. DECAYED TEETH - 13-year-olds

COMBINED DATA - SCTC and MCDP

	Rural Native (N=245)		Man. Rural '76 (N=175)	
	Total	**Mean**	**Total**	**Mean**
Decayed - no treatment required				
One-surface restoration required	317	1.29	422	2.41
Two-surface restoration required	180	0.73	194	1.11
Three-surface restoration required	24	0.10	33	0.19
>than three-surface or crown required	5	0.02	5	0.03
Extraction required	13	0.05	65	0.37
TOTAL	539	2.20	719	4.11

Table 53. Decayed Teeth

Chi-Square

13-year-olds	Rural Native	Man. Rural '76
One-or two-surface decay	497	616
>two-surface decay	42	103

X^2 = .12.894 $p < .0003$ d.f. = 1

There is a highly significant statistical difference between the two populations in the type of treatment required. The rural Manitoba 13-year-old children require considerably more extensive restorations or extractions (14.3%) than the rural Native children (7.79%). See the discussion in the text of further Chi-Square testing which showed where significant internal differences were found.

c. DMFT

The caries rates for rural Native children were compared to those for Manitoba 1976 rural 13-year-old children. The "D" and "M" components were added together (no treatment and unsuccessful treatment) and compared to the "F" component (successful treatment).

The total number of decayed, missing and filled teeth has been calculated for each group separately. The sum of the decayed teeth was derived by adding together a total of more than 15 different codes for each age group (Table 54). The D/DMF index shows that, because the rural Native population has an average of more restorations per child, the number of decayed (unrestored) teeth contributes less to the total DMFT than it does in the sample of rural Manitoba children.

*The value for the mean number of decayed teeth in Manitoba rural children in Table 54 (3.85) differs from the "D" value of 4.11 given in Table III-10. (Cageorge et al.,1978:58). The reason for this discrepancy is that the "D" value in Table 54 does not include those teeth requiring extraction. No explanation was given for omitting this category in the 1976 Manitoba survey. The "D" value of 4.11 given in Table III-10 must include deciduous teeth, which most likely require extraction at this age, and therefore are not included in the DMFT value of 3.85.

Chi-Square Analysis

The rural Native population was compared to Manitoba '76 rural 13-year-old children. The "D" and "M" components were added together (no treatment and unsuccessful treatment), and compared to the "F" component (successful treatment). The difference between the two groups is highly significant (Table 55).

TABLE 54. DMFT - 13-year-olds COMBINED DATA - SCTC and MCDP				
	Rural Native (N=245)		**Man. Rural '76** (N=175)	
	Total	**Mean**	**Total**	**Mean**
Number of decayed teeth	539	2.20	674	*3.85
Number of missing teeth	36	0.15	60	0.34
Number of filled teeth	1016	4.15	433	2.47
DMFT	1591	6.49	1167	6.67
D/DMF Index		0.34		0.58

Table 55. DMFT Chi-Square		
13-year-olds	Rural Native	Man. Rural '76
Decayed + Missing	575	734
Filled	1016	433

X^2 = 193.265 $p < .0001$ d.f. = 1

There is a highly significant difference between the two groups. The "D+M" components comprise approximately 36% of the DMFT for the rural Native group while for Manitoba '76 children the "D+M" components comprise approximately 63% of the DMFT.

d. Summary - 13-year-olds

The 13-year-olds in this population compare favourably with rural Manitoba children in 1976. They have fewer decayed teeth needing treatment, and the restorations required are primarily one- and two-surface fillings. The average DMFT is slightly lower, with the number of untreated teeth slightly more than half that of the 1976 sample of rural Manitoba children, but the average number of restorations per child is higher.

However, the percentage of rural Native children who have lesions causing, or likely to cause, pain is almost three times as high as Manitoba rural children. Many of the one- and two-surface restorations required may, therefore, end up being two- and three-surface restorations.

B. COMPARISON OF MANITOBA RURAL NATIVE CHILDREN TO MANITOBA URBAN WHITE CHILDREN

The data for rural Native children were compared to the "Dental Health Survey of Manitoba Children, 1976". This section compares Native rural children to urban Manitoba children 5 and 13 years of age.

1. 6-Year-olds

The data for 6-year-old rural Native children were compared to the data for 5-year-old Manitoba urban White children (1976) to see if there was a significant difference between the two populations.

a. Conditions Needing Immediate Attention

A comparison is included in Table 56 showing the number of children in each population requiring immediate treatment. This table shows a significantly lower result for Manitoba 1976 urban 5-year-olds compared to rural Native children. According to the 1976 Manitoba survey, the percentages were lower for urban children for all three types of conditions and for all age groups, with the urban children aged nine years in the greatest need of treatment (Cageorge et al., 1978:49).

Chi-Square Analysis

A Chi-Square analysis was done to see whether there was a significant difference in the number of children requiring immediate treatment between the two populations. The rural Native 6-year-olds were compared to Manitoba 1976 urban 5-year-olds. The total number of children was divided into those requiring immediate treatment for pain, and those who did not (Table 57).

TABLE 56. IMMEDIATE TREATMENT NEEDS - 5-6-year-olds

COMBINED DATA - SCTC and MCDP

	Rural Native (N=245)	%	Man. Urban '76 (N=125)	%
Existing pain or infection	58	23.67	2	1.6
Lesions likely to cause pain	95	38.77	2	1.6
Pulpally involved teeth	82	33.47	3	2.4
Other	31	12.65		
Total children affected	123	50.20	7	5.6

Table 57. Immediate Treatment Needs

Chi-Square

5-6 year-olds	Rural Native	Man. Urban '76
Immediate. Tx.	123	7
No immediate. Tx.	122	118

$X^2 = 72.256$ $p < .0001$ d.f. = 1

There is a highly significant statistical difference between the immediate treatment needs of 5-6-year-olds in the two populations.

b. Treatment Needs

The total number of one-, two-, three-, and more than three-surface restorations required, and the number of extractions required, for rural Native children was compared to Manitoba 1976 urban children aged 5 years (Table 58). Although these results are not truly comparable for permanent teeth, it is apparent that the rural Native population has a greater number of deciduous teeth requiring treatment and particularly those children with teeth requiring extensive restorations (crown, pulpotomy, etc.) or extractions.

For the rural Native population the total number of deciduous and permanent teeth included as requiring one- or two-surface restorations is 961, and the number of teeth requiring more than a two-surface restoration is 394 (Table 58).

For Manitoba urban children the "d" sum was calculated from the mean values given in Table III-10 (Cageorge et al., 1978:58). These data do not include a category comparable to "BO". It is presumed that permanent teeth are included in the total given, because it does not equal the value for "d" given in Table III-9 which is 1.50 (Cageorge et al., 1978:57). The total DMFT is .07, therefore it is presumed that the "D" component is .02 and the "F" component is .05, as it is highly unlikely that 5-year-olds would have permanent teeth missing as a result of caries.

Chi-Square Analysis

For rural Native children the Chi-Square cells the one-and two-surface decay for both deciduous (767) and permanent (194) were added together for a total of 961. More than two-surface is 394.

For the Manitoba 1976 urban children the one-and two-surface decay for both deciduous and permanent teeth (164) and the total for more than two-surface is 26 (Table 59).

TABLE 58. DECAYED TEETH - 5-6-year-olds

COMBINED DATA - SCTC and MCDP

	Rural Native (N=245)			Man. Urban '76 (N=125)	
	Decid	**Perm.**	**Mean**	**Total**	**Mean**
Decayed - no treatment required	211	0	0.86		
One-surface restoration required	212	100	1.27	87	0.70
Two-surface restoration required	344	94	1.79	77	0.62
Three-surface restoration required	55	9	0.26	6	0.05
>than three-surface or crown required	218	8	0.92	7	0.06
Extraction	103	1	0.02	13	0.10
TOTAL	1143	212	5.12	190	1.52

Table 59. Decayed Teeth

Chi-Square

5-6-year-olds	Rural Native	Man. Urban '76
one-or two-surface	961	164
>two-surface	394	26

$\chi^2 = 19.947$ $p < .0001$ d.f. = 1

There is a highly significant statistical difference between the two populations in the number of one-and two-surface restorations required. The rural Native population has an higher proportion (29.08%) of children requiring more extensive restorations compared to Manitoba 1976 children (13.68%)

A highly statistically significant difference was found between the two populations in the type of treatment required. Additional Chi Square testing was done to determine where the differences occurred. All possible combinations were found to be significant or highly significant, showing that the pattern of restorations required was quite different for all categories, but in particular the Rural Native children required considerably more extensive restorations and extractions than the Urban White children.

c. deft/DMFT

The total number of decayed, missing and filled teeth has been calculated for the 6-year-old groups. The sum of the decayed teeth was derived by adding together a total of more than 15 different codes (Table 60).

For rural Native children, the total deft comprises the sum of: the number of decayed teeth including "BO", plus the total number of decayed teeth, plus the total number of filled teeth were added together to comprise the deft = 7.65. For Manitoba urban children the values are from Table III-9, 1976 (Cageorge et al., 1978)

For rural Native children, the total DMFT comprises the sum of all the codes for the "D" plus missing and filled DMFT = .67. For Manitoba urban children the "D" component equals 0.05 and the "F" component equals 0.02, the total DMFT=.07 (Table III-9, 1976).

Chi-Square Analysis

For both rural Native and Manitoba 1976 urban children the decayed and missing deciduous teeth, including "BO", plus the decayed and missing permanent teeth , were compared to the filled component of the deft and DMFT (Table 61).

TABLE 60. deft/DMFT - 5-6-year-olds

COMBINED DATA - SCTC and MCDP

	Rural Native (N=245)			Man. Urban '76 (N=125)	
	Decid.	Perm.	Mean	Total	Mean
Number of decayed teeth	1143	212	5.53	190	*1.52
Number of missing teeth	225	0	0.92	11	0.09
Number of filled teeth	407	19	1.74	103	0.82
	1775	231		304	
deft/DMFT	7.25	.94	8.2		2.45
d/def Index		0.64			0.63

*The value for the mean number of decayed teeth in Manitoba rural children in Table 60 (1.52) differs from the "d" value of 1.50 given in Table III-10 (Cageorge et al., 1978:58). The reason for this discrepancy is presumed to be due to the presence of decayed permanent teeth which are included in Table III-10. The average numbers are considerably higher for the rural Native population for all three categories. The d/def index shows, however, that the decayed component is a similar proportion of the total deft in both groups.

Table 61. deft/DMFT

Chi-Square

5-6-year-olds	Rural Native	Man. Urban '76
Decayed (dD)+Missing (eM)	1580	201
Filled (fF)	426	103

$X^2 = 23.909$ $p < .0001$ d.f. = 1

There is a highly significant statistical difference between the two groups with regard to the proportion of decayed and missing teeth (78%) compared to the number of filled teeth (21%) for rural Native children while for Manitoba urban children the proportion of decayed and missing teeth is less at 66%. The main difference appears to be in the number of teeth missing due to caries in the rural Native group.

d. Summary

In the rural Native 6-year-old group, the average number of decayed teeth requiring treatment is considerably higher than in the Manitoba 1976 urban sample, particularly for teeth needing extensive treatment (crown, pulpotomy, etc.). Decayed teeth requiring immediate treatment is also significantly higher. The 6-year-olds have a much higher deft rate than urban Manitoba 5-year-olds. The deft/DMFT is almost three times higher in the rural Native group compared to the Manitoba urban group. Although the "d" component is the same in the d/def ratio, the proportion of extensive restorations and extractions required is much greater, indicating that these children do not receive treatment until the teeth have been severely damaged.

2. 13-Year-olds

a. Conditions Needing Immediate Attention

A comparison is included in Table 62 showing the number of children in each population requiring immediate treatment.

Chi-Square Analysis

The rural Native 13-year-olds were compared to Manitoba 1976 urban 13-year-olds. The total number of children was divided into those requiring immediate treatment for pain, and those who did not.

A Chi-Square analysis was done to see whether there was a significant difference in the number of children requiring immediate treatment between the two populations.

TABLE 62. IMMEDIATE TREATMENT NEEDS - 13-year-olds COMBINED DATA - SCTC and MCDP

	Rural Native (N=245)	%	Man. Urban '76 (N=125)	%
Existing pain or infection	9	3.67	0	0.0
Lesions likely to cause pain	20	8.16	3	2.4
Pulpally involved teeth	4	1.63	0	0.0
Other	9	3.67		
Total children affected	31	12.65	3	2.4

Table 63. Immediate Treatment Needs Chi-Square

13-year-olds	Rural Native	Man. Urban '76
Immediate Tx.	31	3
No immediate Tx.	214	122

$\chi^2 = 10.427$ $p < .0012$ d.f. = 1

There is a highly significant statistical difference between the immediate treatment needs of 13-year-olds in the two populations. Over 12.6% of rural Native children require immediate treatment, while only 2.4% of White urban children require immediate treatment.

b. Treatment Needs

The total number of one-, two-, three-, and more than three-surface restorations required, and the number of extractions required, has been calculated separately for each group (Table 64). The treatment needs of the 13-year-old rural Native children are similar in almost all categories compared to the 1976 survey of Manitoba urban children. The average number of teeth requiring treatment for rural Native children is 2.2, while 2.15 teeth required treatment in Manitoba urban children in 1976.

Chi-Square Analysis

The rural Native 13-year-olds were compared to Manitoba 1976 urban 13-year-olds. The total number of decayed teeth (treatment required) was divided into those teeth requiring one- or two-surface restorations, and those requiring more than a two-surface restoration.

A Chi-Square analysis was done to see whether there were significant differences in the types of treatment required between the two populations. No significant difference was found between the two groups in the number of one- and two-surface restorations required (Table 65).

Additional Chi Square testing was done to determine if there was a difference in any one type of restoration required. It was found that a highly significant difference in the number of one-surface restorations required was masked by the other categories. The Manitoba Urban children required significantly more one-surface restorations than the Rural Native children ($X^2 = 16.99$, $p < .0001$, d.f. = 1).

TABLE 64. DECAYED TEETH - 13-year-olds

COMBINED DATA - SCTC and MCDP

	Rural Native (N=245)		Man. Urban '76 (N=125)	
	Total	**Mean**	**Total**	**Mean**
Decayed - no treatment required				
One-surface restoration required	317	1.29	198	1.58
Two-surface restoration required	180	0.73	55	0.44
Three-surface restoration required	24	0.10	4	0.03
>than three-surface or crown required	5	0.02	2	0.02
Extraction required	13	0.05	10	0.08
TOTAL	539	2.20	269	2.15

Table 65. Decayed Teeth

Chi-Square

13-year-olds	Rural Native	Man. Urban '76
One-or two-surface	497	253
>two-surface	42	16

$X^2 = 0.916$ $p < .3385$ d.f. = 1

There is a no significant statistical difference between the two populations in the type of treatment required. Rural Native children require slightly fewer one- or two-surface restorations (92.2%) than Manitoba urban children (94.1%). See the discussion in the text of further Chi-Square testing which showed that there were significant internal differences.

c. DMFT

Rural Native children were compared to Manitoba '76 urban 13-year-old children. The "D" and "M" components were added together (no treatment and unsuccessful treatment) and compared to the "F" component (successful treatment).

The total number of decayed, missing and filled teeth has been calculated for each group separately. The sum of the decayed teeth was derived by adding together a total of more than 15 different codes for each age group (Table 66). The D/DMF index shows that, because the rural Native population has an average of more restorations per child, the number of decayed (unrestored) teeth contributes less to the total DMFT than it does in the sample of urban Manitoba children.

Chi-Square Analysis

The rural Native population was compared to Manitoba 1976 urban 13-year-old children. The "D" and "M" components were added together (no treatment and unsuccessful treatment), and compared to the "F" component (successful treatment) (Table 67). The difference between the two groups is highly significant.

TABLE 66. DMFT - 13-year-olds COMBINED DATA - SCTC and MCDP				
	Rural Native (N=245)		**Man. Urban '76** (N=125)	
	Total	**Mean**	**Total**	**Mean**
Number of decayed teeth (**D**)	539	2.20	259	*2.07
Number of missing teeth (**M**)	36	0.15	11	0.09
Number of filled teeth (**F**)	1016	4.15	296	2.37
DMFT	1591	6.49	566	4.53
D/DMF Index		0.34		0.46

*The value for the mean number of decayed teeth in Manitoba urban children in Table 66 (2.07) differs from the "treatment required" value of 2.15 given in Table III-10. (Cageorge et al., 1978:58). The reason for this discrepancy is that the "D" value in Table III-9 does not include those teeth requiring extraction (.08). No explanation was given for omitting this category in the 1976 Manitoba survey, but it is presumed that they are retained deciduous teeth requiring extraction, and therefore are not included in the DMFT.

Table 67. DMFT

Chi-Square

13-year-olds	Rural Native	Man. Urban '76
Decayed + Missing	575	270
Filled	1016	296

$\chi^2 = 23.423$ $p < .0001$ d.f. = 1

There is a highly significant statistical difference between the two groups. The "D+M" components comprise approximately 36% of the DMFT for the rural Native group while for Manitoba '76 urban children the "D+M" components comprise approximately 48% of the DMFT.

d. Summary - 13-year-olds

The Rural Native 13-year-olds in this population compare favourably with urban Manitoba children in 1976. They have proportionally the same number of decayed teeth needing treatment, and the restorations required are primarily one- and two-surface fillings. The Manitoba Urban children require significantly more one-surface restorations than the Rural Native children, and fewer extensive restorations and extractions. The average DMFT is higher for Rural Native children, but the proportion of untreated teeth is only slightly higher than that of the 1976 sample of Urban Manitoba children. The major difference is that the average number of restorations per child is much higher.

However, the percentage of Rural Native children who have lesions causing, or likely to cause, pain is almost five times as high as Manitoba Urban children. Many of the one- and two-surface restorations required may, therefore, end up being two- and three-surface restorations.

C. COMPARISON OF MANITOBA URBAN CHILDREN TO MANITOBA RURAL WHITE CHILDREN

All data were obtained from the "Dental Health Survey of Manitoba Children, 1976", for children 5 and 13 years of age (Cageorge et al., 1978).

1. 5-Year-olds

The data for Manitoba 5-year-old urban children were compared to the data for 5-year-old Manitoba rural White children (1976) to see if there was a significant difference between the two populations.

a. Conditions Needing Immediate Attention

A comparison is included in Table 68 showing the number of children in each population requiring immediate treatment. This table shows a significantly lower result for Manitoba 1976 urban 5-year-olds compared to rural children. According to the 1976 Manitoba survey, the percentages were higher for rural children for all three types of conditions and for all age groups, with the rural children aged nine years in the greatest need of treatment (Cageorge et al., 1978:49).

A Chi-Square analysis was done to see whether there was a significant difference in the number of children requiring immediate treatment between the two populations. The urban 5-year-olds were compared to rural 5-year-olds. The total number of children was divided into those requiring immediate treatment for pain, and those who did not.

TABLE 68. IMMEDIATE TREATMENT NEEDS - 5-year-olds

	Man. Urban '76 (N=125)	%	Man. Rural '76 (N=175)	%
Existing pain or infection	2	1.6	7	4.0
Lesions likely to cause pain	2	1.6	5	2.8
Pulpally involved teeth	3	2.4	18	10.2
Other				
Total children affected	7	5.6	30	17.0

Table 69. Immediate Treatment Needs

Chi-Square

5-year-olds	Man. Urban '76	Man. Rural '76
Immediate Tx.	7	30
No immediate Tx.	118	145

$X^2 = 8.985$ $p < .0027$ d.f. = 1

There is a highly significant statistical difference between the immediate treatment needs of 5-year-olds in the two populations. More than three times as many rural children require immediate treatment (17.1%) as compared to urban children (5.6%).

b. Treatment Needs

The total number of one-, two-, three-, and more than three-surface restorations required, and the number of extractions required, for urban children was compared to rural children aged 5 years (Table 70). The rural population has a greater number of deciduous teeth requiring treatment and particularly those children with teeth requiring extensive restorations (crown, pulpotomy, etc.) or extractions.

For Manitoba urban and rural children the "d" sum was calculated from the mean values given in Table III-10 (Cageorge et al., 1978:58). It is presumed that permanent teeth are included in the total given, because the total does not equal the values given in Table III-9 (Cageorge et al., 1978:57).

Chi-Square Analysis

For Manitoba Rural children the Chi-Square cells for one-and two-surface decay for both deciduous and permanent is 478 and the total for more than two-surface is 91. For Manitoba Urban children the cells are 164 and 26 respectively.

There were no statistically significant differences in the type of restorations required by the two groups, although the Manitoba Rural children required more than twice as many restorations as the Urban children. Additional Chi Square testing showed no statistically significant differences between any one type of restoration required or in the number of extractions required.

TABLE 70. DECAYED TEETH - 5-year-olds

	Man. Urban '76		Man. Rural '76	
	(N=125)	(N=175)		
	Total	**Mean**	**Total**	**Mean**
Decayed - no treatment				
One-surface restoration	87	0.70	270	1.54
Two-surface restoration	77	0.62	208	1.19
Three-surface restoration	6	0.05	32	0.18
>than three-surface or crown	7	0.06	26	0.15
Extraction	13	0.10	33	0.19
TOTAL		190	1.52	569
3.25				

Table 71. Decayed Teeth

Chi-Square

5-year-olds	Man. Urban '76	Man. Rural '76
1-2 surface	164	478
>two-surface	26	91

$X^2 = .582$ $\quad p < .4454$ $\quad$ d.f. = 1

There is no significant statistical difference between the two populations. Both populations have an equal proportion of children requiring simple and more extensive restorations. See the discussion in the text of further Chi-Square testing which showed that there were also no significant internal differences.

c. deft/DMFT

The total number of decayed, missing and filled teeth has been calculated for the two 5-year-old groups. For Manitoba urban and rural children the mean values in Table III-9, 1976 were added together to comprise the total deft and DMFT.

The average "dD" value is considerably higher for the rural population for the decayed category. The d/def index shows also that the decayed component is a smaller proportion of the total in the urban population, while the number of missing (due to caries) and filled teeth comprise a much larger proportion of the total deft.

Chi-Square Analysis

For both urban and rural children the decayed and missing deciduous teeth, plus the decayed and missing permanent teeth, were compared to the filled component of the deft and DMFT.

d. Summary

More than three times as many Manitoba Rural children have lesions requiring immediate treatment than the Manitoba Urban sample, primarily for pulpally involved teeth.

In the urban 5-year-old group, the average number of decayed teeth requiring treatment is considerably lower in all categories than in the rural sample, particularly for teeth needing extensive treatment (crown, pulpotomy, etc.). The urban 5-year-olds have a much lower deft rate than rural Manitoba 5-year-olds. Although the "d" component is smaller in the d/def ratio, the proportion of filled teeth is much greater, indicating that these children receive dental treatment more frequently than the rural children. Not only do the urban children have a lower rate of decay but their treatment needs have been met to a much greater extent than the rural children.

TABLE 72. deft/DMFT - 5-year-olds				
	Man. Urban '76 (N=125)		Man. Rural '76 (N=175)	
	Total	**Mean**	**Mean**	**Total**
Number of decayed teeth	190	1.52	569	3.25
Number of missing teeth	11	0.09	16	0.09
Number of filled teeth	102	0.82	177	0.95
	304		762	
deft/DMFT		2.45		4.35
d/def Index		0.63		0.75

Table 73. deft/DMFT

Chi-Square

5-year-olds	Man. Urban '76	Man. Rural '76
Decayed (dD)+Missing (eM)	201	585
Filled (fF)	103	177

$X^2 = 12.734$ $p < .0004$ d.f. = 1

There is a highly significant statistical difference between the two groups with regard to the proportion of decayed and missing teeth, urban (66.1%)/rural (76.8%) compared to the number of filled teeth urban (33.9%)/rural (23.2%).

2. 13-Year-olds

a. Conditions Needing Immediate Attention

A comparison is included in Table 74 showing the number of children in each population requiring immediate treatment. Both groups of 13-year-olds have very few children requiring immediate treatment, and only one Rural Manitoba child was found to have existing pain or infection.

Chi-Square Analysis

The urban 13-year-olds were compared to rural 13-years-olds. The total number of children was divided into those requiring immediate treatment for pain, and those who did not.

A Chi-Square analysis was done to see whether there was a significant difference in the number of children requiring immediate treatment between the two populations.

b. Treatment Needs

The total number of one-, two-, three-, and more than three-surface restorations required, and the number of extractions required, has been calculated separately for each group (Table 76).The treatment needs of the 13-year-old urban children are lower in all categories compared to the 1976 survey of Manitoba rural children. The average number of teeth requiring treatment for urban children is 2.15, while 4.11 teeth required treatment in Manitoba rural children in 1976.

Chi-Square Analysis

A Chi-Square analysis was done to see whether there were significant differences in the types of treatment required between the two populations.

TABLE 74. IMMEDIATE TREATMENT NEEDS - 13-year-olds				
	Man. Urban '76 (N=125)	**%**	**Man. Rural '76** (N=175)	**%**
Existing pain or infection	0	0.0	1	0.6
Lesions likely to cause pain	3	2.4	9	5.1
Pulpally involved teeth	0	0.0	0	0.0
Other				
Total children affected	3	2.4	10	5.7

Table 75. Immediate Treatment Needs Chi-Square		
13-year-olds	Man. Urban '76	Man. Rural '76
Immediate Tx.	3	10
No immediate Tx.	122	165

$X^2 = 1.932$ $p < .1645$ d.f. = 1

There is no significant statistical difference between the immediate treatment needs of 13-year-olds in the two populations. On average approximately 2.4% of the urban children require immediate treatment, while 5.7% of Rural children require immediate treatment.

The urban 13-year-olds were compared to rural 13-year-olds. The total number of decayed teeth (treatment required) was divided into those teeth requiring one-and two-surface restorations, and those requiring more than a two-surface restorations (Table 75).

A highly significant difference was found between the two populations in the type of treatment required. Additional Chi Square testing was done to determine where the major difference occurred. It was found that when one-surface restorations were excluded, and when both one- and two-surface restorations were excluded, there was no significant difference between the two groups. When the number of two-surface restorations required was excluded, the significant difference between the groups remained. The major difference between the two groups was, therefore, found to be primarily in the difference between the number of one-surface restorations required.

c. DMFT

Urban 13-year-old children were compared to rural 13-year-old children. The "D" and "M" components were added together (no treatment and unsuccessful treatment) and compared to the "F" component (successful treatment).

The total number of decayed, missing and filled teeth has been calculated for each group separately. The D/DMF index shows that, because the urban population has an average of fewer decayed teeth per child, the number of decayed (unrestored) teeth contributes less to the total DMFT than it does in the sample of rural Manitoba children.

Chi-Square Analysis

The urban 13-year-olds were compared to rural 13-year-old children. The "D" and "M" components were added together (no treatment and unsuccessful treatment), and compared to the "F" component (successful treatment).

TABLE 76. DECAYED TEETH - 13-year-olds

	Man. Urban '76 (N=125)		**Man. Rural '76** (N=175)	
	Total	**Mean**	**Total**	**Mean**
Decayed - no treatment required				
One-surface restoration required	198	1.58	422	2.41
Two-surface restoration required	55	0.44	194	1.11
Three-surface restoration required	4	0.03	33	0.19
>than three-surface or crown required	2	0.02	5	0.03
Extraction required	10	0.08	65	0.37
TOTAL	269	2.15	719	4.11

Table 77. Decayed Teeth

Chi-Square

13-year-olds	Man. Urban '76	Man. Rural '76
1-2 surface	253	616
>two-surface	16	103

$X^2 = 12.969$ $p < .0003$ d.f. = 1

There is a highly significant statistical difference between the two populations in the type of treatment required. Both groups of children require more simple restor-ations than require more extensive restorations, but the urban children require a higher proportion of simple restorations (94.1%) than do rural children (85.7%). See the discussion in the text of further Chi-Square testing which showed that there were significant internal differences.

TABLE 78. DMFT - 13-year-olds

	Man. Urban '76 (N=125)		**Man. Rural '76** (N=175)	
	Total	**Mean**	**Total**	**Mean**
Number of decayed teeth	259	*2.07	674	*3.85
Number of missing teeth	11	0.09	60	0.34
Number of filled teeth	296	2.37	433	2.47
DMFT	566	4.53	1167	6.67
D/DMF Index		0.46		0.58

Table 79. DMFT

Chi-Square

13-year-olds	Man. Urban '76	Man. Rural '76
Decayed + Missing	270	734
Filled	296	433

$\chi^2 = 36.101$ $p < .0001$ d.f. = 1

There is a highly significant statistical difference between the two groups. The "D+M" components comprise approximately 47% of the DMFT for the urban group while for rural children the "D+M" components comprise approximately 63% of the DMFT.

d. Summary - 13-year-olds

The urban 13-year-olds in this population compare favourably with rural Manitoba children in 1976. The percentage of urban children who have lesions causing, or likely to cause, pain is also less than half as high as Manitoba rural children but this difference was not statistically significant. The urban children have almost half as many decayed teeth needing treatment, and the restorations required are primarily one- and two-surface fillings. This difference was found to be highly statistically significant. The average DMFT is lower, with the number of untreated teeth slightly more than half that of the sample of rural Manitoba children, but the average number of restorations per child is very similar. This difference was also found to be highly statistically significant.

CHAPTER 5 DISCUSSION

CHAPTER V. DISCUSSION

This chapter summarizes the results of the analysis done in Chapter IV, and compares the dental health status of the three groups; Rural Native, Rural White and Urban White, for both 6-year-olds and 13-year-olds. For each of the Chi-Square tests the groups are compared and ranked in an attempt to draw conclusions regarding the most severely affected group.

A. COMPARISON OF ALL THREE GROUPS

1. 5-6-year-Olds

Table 80 summarizes the statistical significance of the Chi Square results from Chapter IV for 6-year-olds.

a. Immediate Treatment Required.

Both the Urban and Rural White groups differ significantly from the Rural Native group in that a much smaller percentage of both groups are in need of immediate treatment. In the Rural Native group 50.2% of the children are in need of immediate treatment. In the Rural White group 17.0% of the children are in need of immediate treatment, while only 5.6% of Urban White children are in need of immediate treatment.

b. One- or two-surface Decay

The results for Urban and Rural Whites indicate that both groups are similar in requiring more one-surface restorations than extensive restorations (46% and 47% respectively). The results comparing the Rural Native group to both the White groups indicate that the Native group has significantly more decayed teeth than either White group, and requires significantly more extensive restorations (69.2%) than one-surface restorations.

TABLE 80. 6-year-olds			
	Rural Native/ Rural White	**Rural Native/ Urban White**	**Urban White/ Rural White**
Immediate Treatment	.0001 **	.0001 **	.0027 **
1-2 surface Decay	.0001 **	.0001 **	.4454
deft/DMFT	.2568	.0001 **	.0004 **

*p<.05 ** p<.01

c. deft/DMFT

If the deft or DMFT is compared for each group, the order from highest to lowest would be as follows:

Rural Native 6-year-olds	def+DMF	7.25+0.94	(2006/245)
Rural White 6-year-olds	def+DMF	4.35+1.25	(980/175)
Urban White 6-year-olds	def+DMF	2.45+0.73	(398/125)

The results for Rural Native and Urban White indicate that they are similar in the proportion of the deft/DMFT that is comprised of decayed (dD) and missing (eM) teeth. The Rural White group differs significantly from the Rural Native and Urban White groups in that a smaller proportion of the deft/DMFT is comprised of filled (fF) teeth, that is, less of this group's treatment needs have been met.

For 6-year-olds, the Rural Native group has the greatest number of children in need of immediate treatment, has significantly more decay, and requires more extensive restorations than either White group. They also have the greatest deft/DMFT (8.18). and the greatest proportion of missing teeth. There is very little difference between the other two groups.

2. 13-year-olds

Table 81 summarizes the statistical significance of the Chi Square results from Chapter IV for 13-year-olds.

TABLE 81. 13-year-olds			
	Rural Native/ Rural White	**Rural Native/ Urban White**	**Urban White/ Rural White**
Immediate Treatment	.0182 *	.0012 **	.1645
1-2 surface Decay	.0003 **	.3385	.0003 **
deft/DMFT	.0001 **	.0001 **	.0001 **

*p<.05 ** p<.01

a. Immediate Treatment Required.

Both the Urban and Rural White groups differ significantly from the Rural Native group in that a much smaller percentage of both groups are in need of immediate treatment (Tables 50, 62 and 74). In the Rural Native group 12.6% of the children are in need of immediate treatment. In the Rural White group 5.7% of the children are in need of immediate treatment, while only 2.4% of Urban White children are in need of immediate treatment.

b. One- or two-surface Decay

The results for the Rural Native group and the Urban White group indicate that both groups are similar in requiring more one-and two-surface restorations than extensive restorations (6-8%), and that both groups require fewer extensive restorations than the Rural White group (14%). The results comparing the Rural Native group to both the White groups indicate that the Native group (D=2.20) has significantly fewer decayed teeth than the Rural White group (D=4.11) and is more similar to the Urban White group (D=2.15).

c. DMFT

If the DMFT is compared for each group, the order from highest to lowest would be as follows:

Rural White 13-year-olds	DMF	6.67	(1167/175)
Rural Native 13-year-olds	DMF	6.49	(1591/245)
Urban White 13-year-olds	DMF	4.53	(566/125)

The results for Rural Native and Rural White children indicate that they are very different in the proportion of the DMFT that is comprised of decayed (D) and missing (M) teeth. Both groups have a significantly higher DMFT (6.49-6.67), however, than the Urban White group (4.53). The Rural Native (64%) and Urban White (53%) groups differ significantly from the Rural White group (37%) in that a larger proportion of the DMFT is comprised of filled (fF) teeth, that is, more of these groups treatment needs have been met.

The Rural Native group has the highest percentage of 13-year-old children requiring immediate treatment, however, and, along with the Rural White group, has a significantly higher DMFT than the Urban White group. The Rural White group requires significantly more extensive restorations than either the Rural Native or Urban White group. The fact that the Rural Native group has a much higher proportion of children requiring immediate treatment may mean that many teeth that are decayed will require larger restorations or more than the one- or two-surface restoration which was originally planned.

For 13-year-olds, there is a greater difference between the Rural White children and the other two groups than between Rural Native and Urban White children. The Urban White group have the smallest number of children requiring immediate treatment, requires the smallest percentage of extensive restorations and has the smallest average deft/DMFT (2.45). They also have the largest proportion of their treatment needs met (37%).

3. Indices

The most commonly used index used to indicate unmet treatment needs of a population is the proportion of decayed teeth divided by the total number of decayed, missing and filled teeth (D/DMF or d/def). For Manitoba 1976 children the DMFT for 6-year-olds was not broken down to indicate what proportion were decayed, missing or filled. For this reason only the def was considered for each group of 6-year-olds. If this index is used for each group, the order of greatest need to least need would be as follows:

Rural White 6-year-olds	d/def	.75	(569/762)
Rural Native 6-year-olds	d/def	.64	(1143/1775)
Urban White 6-year-olds	d/def	.63	(190/304)
Rural White 13-year-olds	D/DMF	.58	(674/1167)
Urban White 13-year-olds	D/DMF	.46	(259/566)
Rural Native 13-year-olds	D/DMF	.34	(539/1591)

The Rural White 6-year-old children have a much smaller def/DMF (5.60) than the Rural Native 6-year-old children (8.18), but have the highest ratio of decayed teeth. The Urban White 6-year-old children have the lowest d/def ratio and the lowest def/DMF (3.25). Similarly, the Urban White 13-year-old children have the lowest DMFT (4.53) but have a D/DMF index which is in between the Rural White 13-year-old children (DMFT=6.67) and the Rural Native 13-year-old children (DMFT=6.49)

Because of the relatively high number of teeth missing due to caries in most of these groups, the proportion of decayed and missing teeth divided by the total number of decayed, missing and filled teeth (DM/DMF or de/def) was felt to be a better indication of the true unmet treatment needs and was therefore also looked at for each group. The order of greatest need to least need would be as follows:

Rural White 6-year-olds	dm/def	.78	(579+16/762)
Rural Native 6-year-olds	dm/def	.77	(1143+225/1775)
Urban White 6-year-olds	dm/def	.66	(190+11/304)
Rural White 13-year-olds	DM/DMF	.63	(674+60/1167)
Urban White 13-year-olds	DM/DMF	.48	(259+11/566)
Rural Native 13-year-olds	DM/DMF	.36	(539+36/1591)

The results are identical in sequence to looking at the number of decayed teeth only. The increase in the percentage is fairly minimal (.02 to .05) for all groups except the rural Native 6-year-olds who have the highest proportion of primary teeth missing due to caries (.13).

B. CONCLUSIONS

In general, the results of this study indicate that: first, in most measures of dental health status, there is a significant difference in the quality of dental health of Manitoba children at six and thirteen years of age, that follows a rural-urban, as well as a Native-White distribution. Specifically, when Rural Native children are compared to Rural White children, their treatment needs are significantly greater for 6-year-olds, but are similar for 13-year-olds. The dental health of urban White children is significantly better than that of rural Native and White children for both age groups.

Second, holding constant the status of their dental health, there is a clear urban-rural dichotomy in the extent to which the treatment needs of Manitoba children are being met. The rural White children are only slightly better off than the rural Native children, and both are significantly worse off that are urban White children. There is more of a difference in the 6-year-olds between the urban and rural White children than there is for 13-year-olds. These results are consistent with the results of previous studies in which Native and rural children had significantly greater caries rates and fewer of their treatment needs were met, especially for younger children, 5-6 years of age (McPhail et al., 1972; Titley & Mayhall, 1976; Titley and Bedard, 1986; Shaw et al., 1987; Klooz, 1988; Jones and Schlife, 1990).

Several authors attribute the higher caries rates among Native people to dramatic changes in their diet, from a low sucrose "traditional" diet to a high sucrose "modern" diet (McPhail et al., 1972; Hargreaves & Titley, 1973; Curzon & Curzon, 1979). The morphology of the Inuit and Indian dentition (Mayhall, 1972, 1976) is also a factor in plaque retention and, thus, a high caries rate. Cultural factors, such as differing attitudes toward dental health, also do have an effect (Mayhall & Stamm, 1984), but the problem is more complex than simply one of ethnic neglect.

This study has not attempted to explain all the causal factors associated with the high caries rate found among Native children. It is clear that differences do exist and that much additional work is required to fully explain which factors are the most important.

The implications of this research are that perhaps population distribution is an important parameter of the framework of evaluation of the delivery of dental health care, and perhaps health care in general, at least within Canada, a country in which the rural population is, for the most part, far more removed from the urban centres than is true of virtually any other country. Most of us presume that the general health status of Canadian Indians and Inuit is well below that of the predominantly White population, and that this is part of the overall pattern of neglect that has been accorded historically to Indian and Inuit people. What may no be so clear is the extent to which simple remoteness from urban centres of treatment may be an equally important variable. Certainly, there is evident need to improve the standards of health care for Canada's Native peoples, but this need should be assessed within the broader context of an urban-rural framework, rather than as simply one of ethnic neglect.

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APPENDIX A

Data Recording Sheets

I. GENERAL INFORMATION

Note 1 No codes to be changed   2 Unused sections to be cancelled by diagonal lines

(1) ☐☐ (2) Study No.   (3) ☐☐☐ (5) Registration Number   (6) ☐ Examination Number (for duplicate)

Date ....19...

PERSONAL AND DEMOGRAPHIC INFORMATION

Sex M = 1 F = 2 (7) ☐

Age in Years (8) ☐☐ (9)

Grade (10) ☐

DIAND # (13) ☐☐☐☐☐☐☐☐☐ (21)

Geographic location (11) ☐☐ (12)

Date of Birth ....

Name ....
Surname Given

Other Fed. # (22) ☐☐☐☐☐☐☐☐ (29)

II. SERVICE UTILIZATION

1. How often do you visit the dentist? (30) ☐
2. Why do you see the dentist? (31) ☐
3. Why do you not see the dentist more often? (32) ☐
4. Where do you go to see the dentist now? (33) ☐

III. DISORDERS OF MUCOSA TEETH AND BONE AND OTHER CONDITIONS

Treatment: None
Clinical
Preventive

Oral Mucosa (34) ☐

Specify 1^o ....
2^o ....

Treatment ....

Defect of Teeth (35) ☐

Specify 1^o ....
2^o ....

Treatment ....

Disorders Involving Bone (36) ☐

Specify 1^o ....
2^o ....

Treatment ....

Fluorosis (37) ☐

SUPPLEMENTARY INFORMATION 0 – No, 1 – Yes

1) Optimal fluoride exposure (38) ☐

(a) Places of residence (Identify if they were drinking water from the town water supply) and the length of residency in each location.

LOCATION	LENGTH
i)	
ii)	
iii)	
iv)	
v)	
vi)	
vii)	
viii)	

(b) Does your child participate in a weekly fluoride rinse/tablet program at school? If yes, go to part (c) (39) ☐

(c) Consent for rinse/tablet program (40) ☐

(d) How many years has he/she participated? (41) ☐

IV. PROSTHETIC STATUS

Responses: 0 – No denture
1 – Denture wearing
2 – Denture not wearing

UPPER JAW: (42) ☐ full (43) ☐ partial
LOWER JAW: (44) ☐ full (45) ☐ partial

DENTURE REQUIREMENTS

Responses: 0 – Nil
1 – Denture required
2 – Repair, reline or remodel

LOWER JAW: (46) ☐ full (47) ☐ partial
UPPER JAW: (48) ☐ full (49) ☐ partial

V. COMMUNITY PERIODONTAL TREATMENT NEEDS INDEX

CODES:
- 0 = healthy
- 1 = bleeding
- 2 = calculus
- 3 = pocket 4 or 5 mm black band partially visible
- 4 = pocket $\geq$ 6 mm black band not visible

	17/16	11	26/27	
		(51)		
(50)				(52)
(53)				(55)
	47/46	31	36/37	
		(54)		

There must be 2 or more teeth present and not indicated for extraction in a sextant.

VI. DENTOFACIAL ANOMALIES

CODES:
- 0 = absent
- 1 = present
- 2 = treatment required

(56) ☐

Molar relationship	(57)	☐
Overjet	(58)	☐
Overbite	(59)	☐
Crowding	(60)	☐

VII. CONDITIONS NEEDING IMMEDIATE ATTENTION

CODES:
- 0 – absent
- 1 – present

Relief of existing pain or infection (61) ☐

Treatment for lesions likely to cause pain or infection in the immediate future (62) ☐

Treatment of pulpally involved teeth (63) ☐

Other (specify) .... (64) ☐

VIII DENTAL CARIES STATUS AND TREATMENT OF TEETH

					55	54	53	52	51	61	62	63	64	65					
		18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28		
CARIES	(13)																	(28)	CARIES
TREATMENT	(29)																	(44)	TREATMENT

					85	84	83	82	81	71	72	73	74	75					
		48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38		
CARIES	(45)																	(60)	CARIES
TREATMENT	(61)																	(76)	TREATMENT

DENTAL CARIES	PRIMARY	PERM
Sound	A	0
Decayed	B	1
Filled and Caries Free	C	2
Filled with primary decay	D	3
Filled with secondary decay	E	4
Primary teeth missing due caries < 9 years	M	–
Permanent teeth missing due caries (under 30 years only)	–	5
Permanent teeth missing any reason other than caries (under 30 years only)	–	6
Permanent teeth missing any reason (30 years and older)	–	7
Unerupted tooth	–	8
Excluded tooth	X	9

TREATMENT	
NONE	0
RESTORATIONS	
1 surface	1
2 surface	2
3 surface	3
>3 surface or crown	4
EXTRACTION FOR	
caries	5
periodontal disease	6
dentures	7
other reason	8
OTHER (specify)	9

Manitoba
Health
Dental Health

APPENDIX B

Original Data

SCTC - 6-Year-olds

No.	Reserve	Sex	D.O.B.	Init. Exam	Init. Age	34	Specify	Treatment	35
1	ML	2	5/8/82	4/27/88	5.9713				
2	ML	2	4/16/82	4/27/88	6.0315	2	gingivitis	preventive	1
3	ML	2	1/28/82	4/27/88	6.2450				
12	TP	2	10/13/81	4/29/88	6.5435				
13	TP	2	7/31/81	4/29/88	6.7461				
14	TP	2	8/26/81	4/29/88	6.6749				
15	TP	2	7/3/81	4/29/88	6.8227				
16	TP	1	1/5/82	4/29/88	6.3135				
17	TP	1	11/5/81	4/29/88	6.4805				
18	TP	2	9/3/81	4/29/88	6.6530				
19	TP	2	10/9/81	4/29/88	6.5544				
20	TP	2	6/16/81	4/29/88	6.8693				
21	TP	2	9/23/81	4/29/88	6.5982				
24	TP	2	1/7/82	5/2/88	6.3162				
25	TP	2	1/15/82	5/2/88	6.2943				
28	TP	2	2/25/82	5/2/88	6.1821				
29	TP	2	2/25/82	5/2/88	6.1821				
30	TP	1	1/30/82	5/2/88	6.2533				2
31	TP	2	2/1/82	5/2/88	6.2478				
32	TP	1	3/9/82	5/2/88	6.1492				
33	TP	1	2/15/82	5/2/88	6.2094				
34	TP	1	2/4/82	5/2/88	6.2396				
35	TP	2	3/18/82	5/2/88	6.1246				
36	TP	2	5/31/82	5/2/88	5.9220				
37	TP	2	5/30/82	5/2/88	5.9247				
38	TP	1	2/23/82	5/2/88	6.1875				
41	TP	2	5/9/82	5/2/88	5.9822				
43	TP	2	3/28/82	5/2/88	6.0972				

No.	Reserve	Sex	D.O.B.	Init. Exam	Init. Age	34	Specify	Treatment	35
44	TP	1	3/15/82	5/3/88	6.1355				
45	TP	1	12/24/81	5/3/88	6.3573				
46	ML	1	3/9/82	5/4/88	6.1547				
47	ML	1	5/12/82	5/4/88	5.9795				
48	ML	1	3/15/82	5/4/88	6.1383				
49	ML	1	1/22/82	5/4/88	6.2806				
50	ML	1	2/20/82	5/4/88	6.2012				
51	ML	1	10/3/81	5/4/88	6.5845				
52	ML	2	9/10/81	5/4/88	6.6475				
53	ML	2	9/25/81	5/4/88	6.6064				
54	ML	1	2/2/82	5/4/88	6.2505				
55	ML	1	10/2/81	5/4/88	6.5873				
64	ML	1	8/10/81	5/4/88	6.7324				
65	ML	1	4/12/82	5/4/88	6.0616				
82	EV	2	7/22/81	5/9/88	6.7981				
83	EV	1	7/28/81	5/9/88	6.7817				
84	EV	1	11/10/81	5/9/88	6.4942				
85	EV	2	7/15/81	5/9/88	6.8172				
86	EV	1	8/18/81	5/9/88	6.7242				
94	EV	1	3/16/82	5/10/88	6.1520				
95	EV	1	5/30/82	5/10/88	5.9466				
96	EV	1	12/26/81	5/10/88	6.3710				
98	EV	2	7/12/81	5/10/88	6.8282				
99	EV	2	9/24/81	5/10/88	6.6256				
100	EV	1	1/29/82	5/10/88	6.2779				
101	EV	1	11/15/81	5/10/88	6.4832				
102	EV	2	3/14/82	5/10/88	6.1574				
103	EV	2	10/4/81	5/10/88	6.5982				

No.	Reserve	Sex	D.O.B.	Init. Exam	Init. Age	34	Specify	Treatment	35
109	EV	2	5/12/82	5/10/88	5.9959				
112	GR	2	8/17/81	5/11/88	6.7324				
113	GR	2	6/30/81	5/11/88	6.8638				
114	GR	2	8/11/81	5/11/88	6.7488				
115	GR	1	9/29/81	5/11/88	6.6146				
116	GR	2	10/24/81	5/11/88	6.5462				
117	GR	2	11/5/81	5/11/88	6.5133				
118	GR	2	9/11/81	5/11/88	6.6639				
119	GR	1	8/31/81	5/11/88	6.6940				
120	GR	1	8/24/81	5/11/88	6.7132				
121	GR	1	6/20/81	5/11/88	6.8912				
122	GR	2	2/18/82	5/11/88	6.2259				
123	GR	1	2/10/82	5/11/88	6.2478				
124	GR	1	5/3/82	5/11/88	6.0233				
125	GR	2	4/27/82	5/11/88	6.0397				
129	GR	1	12/24/81	5/11/88	6.3792				
130	GR	1	7/20/81	5/11/88	6.8090				
140	GR	2	10/27/81	5/11/88	6.5380				
141	GR	1	5/13/82	5/12/88	5.9986				
142	GR	1	1/19/82	5/12/88	6.3107				
143	GR	2	1/5/82	5/12/88	6.3491				
146	GR	2	6/27/81	5/12/88	6.8747				
150	PR	2	2/20/82	5/17/88	6.2368				
151	PR	2	2/22/82	5/17/88	6.2313				
152	PR	1	2/3/82	5/17/88	6.2834				
153	PR	1	9/2/81	5/17/88	6.7050				
155	PR	1	10/22/81	5/17/88	6.5681				
156	PR	1	6/19/81	5/17/88	6.9103				

No.	Reserve	Sex	D.O.B.	Init. Exam	Init. Age	34	Specify	Treatment	35
157	PR	1	6/27/81	5/17/88	6.8884				
158	PR	2	10/31/81	5/17/88	6.5435				
159	PR	1	10/27/81	5/17/88	6.5544				
160	PR	1	12/31/81	5/17/88	6.3765				
168	PR	1	12/25/81	5/17/88	6.3929				
171	TP	2	12/7/81	5/19/88	6.4476				
172	TP	1	11/18/81	5/19/88	6.4997				
173	TP	2	6/23/81	5/19/88	6.9049				
174	TP	1	11/8/81	5/19/88	6.5270				
175	TP	1	3/27/82	5/19/88	6.1465				
191	PK	2	2/4/82	5/30/88	6.3162				
192	PK	2	2/3/82	5/30/88	6.3190				
193	PK	1	1/23/82	5/30/88	6.3491				
194	PK	1	1/2/82	5/30/88	6.4066				
195	PK	1	6/21/81	5/30/88	6.9405				
196	PK	1	10/8/81	5/30/88	6.6420				
197	PK	1	8/19/81	5/30/88	6.7789				
198	PK	1	6/5/81	5/30/88	6.9843				
212	PK	2	12/24/81	5/31/88	6.4339				
213	PK	1	10/6/81	5/31/88	6.6502				
214	PK	1	2/15/82	5/31/88	6.2888				
221	PK	1	5/18/82	5/31/88	6.0370				
222	PK	2	1/25/82	5/31/88	6.3463				
225	PK	1	6/3/81	6/2/88	6.9979				

No.	Specify	TX.	36	61	62	63	64	X-rays	18	17	16	15,55	14,54
1				0	1	0	0		80	80	OO	D1	AO
2			1	0	0	0	0		80	80	OO	AO	AO
3				0	0	0	0		80	80	OO	AO	AO
12				0	0	0	0		80	80	OO	AO	AO
13				1	1	0	0		80	80	OO	B1	B4
14				0	0	0	0		80	80	OO	CO	CO
15				1	1	0	0		80	80	OO	B2	AO
16				0	0	0	0		80	80	OO	CO	CO
17				0	0	0	0		80	80	80	CO	CO
18				0	0	0	0		80	80	OO	CO	CO
19				0	0	0	0		80	80	OO	B2	MO
20				0	0	0	0		80	80	OO	CO	AO
21				0	0	0	0		80	80	80	AO	AO
24				1	1	1	0		80	80	80	B4	B2
25				0	1	0	0		80	80	OO	B4	B4
28				0	0	0	0		80	80	80	B2	AO
29				1	1	0	0		80	80	OO	AO	AO
30	supernum. Mand. prim. inc.	none		1	1	1	0		80	80	80	B2	B4
31				0	0	0	0		80	80	OO	AO	AO
32				0	0	0	0		80	80	OO	B2	B1
33				0	0	0	0		80	80	80	AO	AO
34				0	0	0	0		80	80	AO	CO	CO
35				1	1	1	0		80	80	OO	B2	MO
36				1	1	1	0		80	80	80	B2	AO
37				1	1	1	0		80	80	80	B4/9	B1
38				0	0	0	0		80	80	80	AO	AO
41				0	0	0	0		80	80	80	AO	AO
43				0	0	0	0		80	80	OO	AO	AO

No.	Specify	TX.	36	61	62	63	64	X-rays	18	17	16	15,55	14,54
44				0	1	0	0		80	80	OO	B2	AO
45				0	1	0	0		80	80	OO	AO	AO
46				0	1	0	0		80	80	80	AO	AO
47				0	0	0	0		80	80	OO	AO	AO
48				0	1	0	0		80	80	OO	B2	B4
49				0	0	0	0		80	80	11	MO	MO
50				1	1	1	0		80	80	OO	B2	B5/9
51				1	1	1	0		80	80	12	AO	AO
52				0	0	0	0		80	80	11	MO	CO
53				0	0	0	0		80	80	OO	CO	CO
54				0	0	0	0		80	80	OO	AO	B2
55				0	0	0	0		80	80	OO	CO	CO
64				1	1	1	0		80	80	80	B4	B4
65				0	0	0	0		80	80	OO	CO	CO
82				1	0	0	0		80	80	OO	CO	AO
83				0	0	0	0		80	80	OO	CO	OO
84				0	0	0	0		80	80	20	CO	M9
85				0	1	0	0		80	80	OO	B2	AO
86				0	0	0	0		80	80	OO	CO	AO
94				1	1	1	0		80	80	12	B5	B5
95				0	1	0	0		80	80	80	B4	MO
96				1	1	1	0		80	80	OO	B5	B5
98				1	1	1	0		80	80	OO	B4	AO
99				1	1	1	0		80	80	OO	AO	MO
100				0	1	1	0		80	80	OO	CO	AO
101				1	1	1	0		80	80	OO	B4/9	B4
102				1	1	0	0		80	80	80	B1	AO
103				1	1	1	0		80	80	80	B2	B5

No.	Specify	TX.	36	61	62	63	64	X-rays	18	17	16	15,55	14,54
109				0	0	0	0		80	80	11	CO	MO
112				0	0	0	0		80	80	OO	CO	AO
113				1	1	1	0		80	80	11	B4	B4
114				0	0	0	0		80	80	OO	AO	AO
115				0	0	0	0		80	80	OO	CO	CO
116				0	0	0	0		80	80	OO	CO	CO
117				1	1	1	0		80	80	OO	B4	AO
118				0	0	0	0		80	80	OO	AO	AO
119				0	0	0	0		80	80	80	AO	AO
120				0	0	0	0		80	80	OO	AO	CO
121				0	0	0	0		80	80	OO	B2	AO
122				0	1	0	0		80	80	OO	AO	AO
123				0	0	0	0		80	80	80	AO	AO
124				0	1	0	0		80	80	80	B2	B4
125				0	0	0	0		80	80	OO	B2	AO
129				0	0	0	0		80	80	OO	AO	AO
130				0	0	0	0		80	80	80	AO	AO
140				0	0	0	0		80	80	12	MO	MO
141				0	0	0	0		80	80	80	B2	AO
142				0	0	0	0		80	80	80	AO	AO
143				0	0	0	0		80	80	80	B2	B2
146				0	0	0	0		80	80	OO	CO	AO
150				0	1	0	0		80	80	OO	B1	B4
151				0	0	0	0		80	80	OO	B2	AO
152				1	1	1	0		80	80	11	B2	M9
153				0	0	0	0		80	80	OO	AO	AO
155				1	1	1	0		80	80	OO	B5	B4
156				0	0	0	0		80	80	OO	AO	AO

No.	Specify	TX.	36	61	62	63	64	X-rays	18	17	16	15,55	14,54
157				0	0	0	0		80	80	OO	CO	MO
158				1	1	1	0		80	80	OO	CO	AO
159				1	1	0	0		80	80	80	AO	AO
160				0	0	0	0		80	80	OO	B1	AO
168				0	0	0	0		80	80	OO	CO	M9
171				0	0	0	0		80	80	OO	B2	AO
172				0	0	0	0		80	80	OO	B2	AO
173				0	0	0	0		80	80	20	CO	MO
174				0	0	0	0		80	80	OO	AO	AO
175				0	1	0	0		80	80	80	B2	AO
191				0	0	0	0		80	80	OO	AO	AO
192				0	0	0	0		80	80	OO	B2	AO
193				0	0	0	0		80	80	OO	CO	CO
194				1	1	1	0		80	80	11	M9	B4/9
195				0	1	0	0		80	80	12	CO	CO
196				0	0	0	0		80	80	OO	CO	CO
197				0	1	0	0		80	80	OO	AO	B4
198				1	1	0	0		80	80	OO	B1	B2
212				1	1	0	0		80	80	OO	B4	B5
213				1	1	1	0		80	80	OO	B1	AO
214				1	1	0	0		80	80	11	B1	B5
221				0	1	0	0		80	80	OO	B2	AO
222				0	0	0	0		80	80	20	CO	M9
225				1	1	1	0		80	80	80	B2	B4

No.	13,53	12,52	11,51	21,61	22,62	23,63	24,64	25,65	26	27	28	48	47	46	45,85
1	AO	MO	MO	MO	MO	AO	AO	CO	OO	80	80	80	80	OO	AO
2	AO	AO	BO	BO	AO	AO	AO	AO	OO	80	80	80	80	12	B1
3	AO	AO	BO	BO	AO	AO	MO	B1	OO	80	80	80	80	80	CO
12	AO	AO	AO	BO	AO	AO	AO	B1	OO	80	80	80	80	OO	B1
13	AO	AO	B5	B5	BO	AO	B4	B2	OO	80	80	80	80	OO	MO
14	AO	BO	OO	OO	80	AO	MO	MO	OO	80	80	80	80	11	CO
15	AO	AO	B5	BO	AO	AO	AO	B2	OO	80	80	80	80	OO	B4
16	AO	AO	BO	AO	AO	AO	AO	CO	80	80	80	80	80	OO	CO
17	B1	AO	BO	BO	BO	AO	CO	CO	80	80	80	80	80	80	M9
18	AO	AO	AO	AO	AO	MO	CO	AO	OO	80	80	80	80	OO	CO
19	MO	MO	MO	MO	MO	MO	MO	D2	OO	80	80	80	80	OO	AO
20	AO	AO	AO	MO	AO	AO	AO	AO	OO	80	80	80	80	11	CO
21	AO	80	OO	OO	AO	AO	AO	AO	OO	80	80	80	80	OO	MO
24	B1	AO	AO	AO	AO	AO	B2	B4	80	80	80	80	80	80	B4/9
25	AO	AO	BO	AO	AO	AO	B4	B2	OO	80	80	80	80	OO	AO
28	AO	AO	AO	AO	AO	AO	AO	B1	80	80	80	80	80	80	AO
29	AO	BO	BO	BO	BO	AO	AO	B1	OO	80	80	80	80	OO	B4
30	B1	BO	BO	B5	BO	AO	B1	B2	80	80	80	80	80	80	B2
31	AO	AO	BO	BO	AO	AO	AO	AO	OO	80	80	80	80	OO	AO
32	AO	BO	BO	BO	AO	B2	B2	B2	80	80	80	80	80	80	B2
33	AO	MO	MO	MO	MO	AO	AO	AO	80	80	80	80	80	80	AO
34	AO	BO	BO	BO	BO	AO	AO	CO	OO	80	80	80	80	OO	CO
35	AO	MO	MO	MO	MO	AO	MO	B2	OO	80	80	80	80	OO	AO
36	AO	AO	BO	AO	AO	AO	AO	B1	80	80	80	80	80	80	B4
37	B2	AO	BO	AO	AO	AO	B4	AO	80	80	80	80	80	80	AO
38	AO	AO	AO	AO	AO	AO	AO	AO	80	80	80	80	80	80	AO
41	B2	BO	BO	BO	AO	AO	AO	B2	80	80	80	80	80	80	B1
43	AO	AO	AO	AO	AO	AO	AO	AO	OO	80	80	80	80	80	AO

No.	13,53	12,52	11,51	21,61	22,62	23,63	24,64	25,65	26	27	28	48	47	46	45,85
44	AO	AO	AO	AO	AO	AO	AO	B2	12	80	80	80	80	OO	B2
45	AO	AO	AO	BO	AO	AO	B1	AO	OO	80	80	80	80	80	AO
46	AO	AO	AO	AO	AO	AO	B2	AO	80	80	80	80	80	OO	AO
47	AO	AO	BO	MO	AO	AO	AO	AO	80	80	80	80	80	80	B1
48	AO	AO	AO	AO	AO	AO	B4	B2	OO	80	80	80	80	OO	AO
49	MO	MO	MO	MO	MO	MO	MO	MO	11	80	80	80	80	11	B2
50	AO	AO	MO	MO	AO	AO	B5	B4	OO	80	80	80	80	12	B4
51	AO	AO	OO	B5	AO	AO	AO	B2	12	80	80	80	80	OO	B4
52	CO	MO	OO	OO/80	MO	CO	CO	MO	OO	80	80	80	80	OO	MO
53	AO	MO	MO	MO	MO	AO	MO	CO	OO	80	80	80	80	OO	CO
54	AO	AO	BO	BO	AO	AO	AO	AO	OO	80	80	80	80	OO	B2
55	AO	BO	AO	AO	BO	B1	CO	CO	CO	80	80	80	80	20	CO
64	AO	AO	AO	BO	BO	AO	B4/9	B2	OO	80	80	80	80	OO	B4
65	MO	MO	MO	MO	MO	AO	MO	CO	OO	80	80	80	80	11	MO
82	AO	AO	BO	BO	AO	B1	AO	AO	OO	80	80	80	80	OO	CO
83	MO	MO	OO	OO	AO	CO	MO	CO	OO	80	80	80	80	OO	CO
84	B1	BO	BO	BO	BO	CO	CO	CO	OO	80	80	80	80	OO	CO
85	B4	BO	BO	BO	BO	B3	AO	B2	OO	80	80	80	80	12	M9
86	AO	BO	BO	MO	MO	CO	CO	CO	OO	80	80	80	80	OO	CO
94	B5	80	B5/OO	B5/OO	80	B3	B5	B5	13	80	80	80	80	12	B5
95	MO	MO	MO	MO	MO	MO	MO	MO	OO	80	80	80	80	11	MO
96	B4	80	OO	OO	80	B4	B5	B5	OO	80	80	80	80	OO	B4
98	AO	80	OO	OO	AO	AO	AO	M9	OO	80	80	80	80	OO	B4/9
99	AO	MO	MO	MO	MO	B2	MO	B1	OO	80	80	80	80	OO	B4
100	AO	AO	BO	BO	AO	AO	AO	B1	OO	80	80	80	80	OO	B4/9
101	B2	BO	MO	BO	BO	B3	B4	B4	OO	80	80	80	80	OO	CO
102	AO	BO	BO	BO	B5	AO	B2	B2	80	80	80	80	80	80	B5/9
103	AO	AO	BO	BO	BO	AO	B5	B3	80	80	80	80	80	80	B2

No.	13,53	12,52	11,51	21,61	22,62	23,63	24,64	25,65	26	27	28	48	47	46	45,85
109	AO	MO	MO	MO	MO	AO	MO	CO	OO	80	80	80	80	11	MO
112	AO	BO	BO	BO	BO	AO	AO	CO	OO	80	80	80	80	OO	CO
113	B2	AO	OO	OO	AO	B2	B1	B2	14	80	80	80	80	12	B2
114	AO	AO	AO	AO	AO	AO	AO	AO	OO	80	80	80	80	OO	AO
115	AO	AO	AO	AO	CO	CO	MO	CO	OO	80	80	80	80	OO	CO
116	AO	80	OO	OO	80	AO	CO	CO	OO	80	80	80	80	OO	CO
117	AO	BO	AO	AO	AO	AO	AO	B1	80	80	80	80	80	OO	B4
118	AO	AO	BO	BO	AO	AO	AO	AO	80	80	80	80	80	OO	AO
119	AO	AO	AO	AO	AO	AO	AO	AO	80	80	80	80	80	OO	AO
120	AO	BO	BO	BO	AO	AO	CO	CO	OO	80	80	80	80	11	CO
121	AO	BO	O5/80	O5/80	80	AO	AO	AO	OO	80	80	80	80	OO	CO
122	AO	BO	AO	AO	AO	AO	AO	AO	OO	80	80	80	80	OO	AO
123	AO	AO	AO	AO	AO	AO	AO	AO	OO	80	80	80	80	OO	B1
124	AO	AO	AO	AO	AO	AO	B2	B2	80	80	80	80	80	80	B2
125	AO	AO	AO	AO	AO	AO	AO	B2	OO	80	80	80	80	OO	AO
129	AO	AO	AO	AO	AO	AO	AO	AO	OO	80	80	80	80	OO	B1
130	AO	AO	AO	AO	AO/AO	AO	AO	AO	80	80	80	80	80	80	AO
140	MO	MO	OO	80	MO	CO	OO	MO	20	80	80	80	80	20	CO
141	AO	AO	AO	AO	AO	AO	AO	B2	80	80	80	80	80	80	B2
142	AO	AO	AO	AO	AO	AO	AO	AO	80	80	80	80	80	80	AO
143	AO	AO	AO	AO	AO	AO	AO	AO	OO	80	80	80	80	OO	AO
146	AO	BO	BO	BO	BO	AO	AO	CO	OO	80	80	80	80	OO	AO
150	AO	AO	AO	BO	AO	AO	B1	B2	OO	80	80	80	80	OO	B2
151	AO	AO	BO	AO	AO	AO	AO	AO	OO	80	80	80	80	OO	AO
152	AO	MO	MO	MO	MO	AO	AO	B1	OO	80	80	80	80	OO	AO
153	AO	BO	MO	BO	BO	AO	AO	AO	OO	80	80	80	80	OO	B1
155	B2	AO	BO	BO	BO	AO	B2	B4	OO	80	80	80	80	OO	CO
156	AO	AO	OO	OO	AO	AO	AO	AO	OO	80	80	80	80	OO	CO

No.	13,53	12,52	11,51	21,61	22,62	23,63	24,64	25,65	26	27	28	48	47	46	45,85
157	AO	AO	AO	BO	BO	AO	CO	CO	00	80	80	80	80	00	MO
158	B2	AO	MO	MO	BO	AO	B1	E4/9	00	80	80	80	80	00	B1
159	AO	B5	B5	B1	AO	AO	B4	AO	80	80	80	80	80	00	B4
160	AO	BO	BO	BO	AO	AO	CO	CO	00	80	80	80	80	11	CO
168	CO	BO	BO	BO	BO	AO	CO	CO	00	80	80	80	80	00	CO
171	AO	AO	AO	AO	AO	AO	AO	AO	00	80	80	80	80	00	AO
172	AO	AO	BO	AO	AO	AO	AO	AO	00	80	80	80	80	00	AO
173	AO	AO	AO	80	AO	AO	CO	CO	20	80	80	80	80	20	MO
174	AO	AO	BO	AO	AO	AO	AO	AO	00	80	80	80	80	00	AO
175	AO	BO	AO	AO	AO	AO	B2	AO	00	80	80	80	80	80	B1
191	AO	AO	BO	BO	AO	AO	AO	AO	00	80	80	80	80	00	B2
192	AO	AO	BO	BO	AO	AO	AO	AO	13	80	80	80	80	00	M9
193	AO	AO	BO	AO	AO	AO	CO	CO	00	80	80	80	80	00	CO
194	AO	AO	MO	MO	BO	AO	E2	CO	00	80	80	80	80	00	M9
195	CO	AO	AO	AO	AO	AO	CO	CO	00	80	80	80	80	12	B4
196	AO	MO	MO	MO	MO	AO	AO	AO	00	80	80	80	80	12	M9
197	AO	BO	BO	BO	BO	AO	B2	B4	80	80	80	80	80	80	AO
198	B2	AO	AO	80	AO	AO	B1	AO	00	80	80	80	80	00	B4
212	AO	AO	AO	AO	AO	AO	B5	B4	11	80	80	80	80	00	B4
213	AO	BO	BO	BO	BO	AO/AO	AO	AO	00	80	80	80	80	11	AO
214	B2	BO	BO	MO	BO	B1	B4	B4	11	80	80	80	80	80	D2
221	AO	BO	BO	BO	AO	AO	AO	B4	00	80	80	80	80	80	AO
222	AO	MO	MO	MO	MO	AO	M9	CO	20	80	80	80	80	00	CO
225	BO	B5	BO	BO	AO	AO	B4	AO	80	80	80	80	80	00	B5

No.	44,84	43,83	42,82	41,81	31,71	32,72	33,73	34,74	35,75	36	37	38
1	AO	AO	AO	OO	OO	AO	AO	B4	B1	OO	80	80
2	AO	AO	80	OO	OO	AO	AO	D4	B1	12	80	80
3	CO	AO	AO	OO	OO	AO	AO	CO	CO	80	80	80
12	AO	AO	AO	OO	OO	AO	AO	AO	B1	OO	80	80
13	MO	AO	OO	OO	OO	OO	AO	B4	B2	OO	80	80
14	CO	AO	OO	OO	OO	OO	AO	CO	CO	11	80	80
15	AO	AO	AO	AO	AO	AO	AO	AO	B2	OO	80	80
16	CO	AO	AO	OO	OO	AO	AO	CO	CO	OO	80	80
17	CO	AO	AO	AO	AO	AO	AO	B4	M9	OO	80	80
18	CO	AO	AO	OO	OO	AO	AO	AO	AO	OO	80	80
19	D2	AO	80	OO	OO	80	AO	MO	CO	OO	80	80
20	MO	AO	AO	OO	OO	AO	AO	AO	B1	11	80	80
21	MO	B1	OO	OO	OO	OO	CO	CO	CO	OO	80	80
24	AO	AO	AO	80	OO	AO	AO	B2	CO	OO	80	80
25	B1	AO	AO	AO	OO	AO	AO	AO	AO	OO	80	80
28	AO	AO	AO	AO	AO	AO	AO	AO	AO	80	80	80
29	AO	AO	AO	OO	OO	AO	AO	AO	B5/9	OO	80	80
30	B2	AO	AO	AO	AO	AO	AO	B4	B4/9	80	80	80
31	AO	AO	AO	AO	OO	AO	AO	AO	AO	OO	80	80
32	B2	AO	AO	AO	AO	AO	AO	B2	M9	80	80	80
33	AO	AO	AO	AO	AO	AO	AO	AO	AO	80	80	80
34	M9	AO	AO	AO	AO	AO	AO	CO	CO	OO	80	80
35	B1	AO	AO	OO	OO	AO	AO	B4/9	AO	OO	80	80
36	AO	AO	AO	AO	AO	AO	AO	AO	B4/9	80	80	80
37	AO	AO	AO	AO	AO	AO	AO	AO	B1	80	80	80
38	AO	AO	AO	OO	OO	AO	AO	AO	AO	80	80	80
41	AO	AO	AO	AO	AO	AO	AO	AO	AO	80	80	80
43	AO	AO	AO	OO	OO	AO	AO	B2	AO	80	80	80

No.	44,84	43,83	42,82	41,81	31,71	32,72	33,73	34,74	35,75	36	37	38
44	B4	AO	OO	OO	OO	AO	AO	B2	B1	11	80	80
45	AO	AO	AO	OO	AO	AO	AO	B4	AO	80	80	80
46	B4	AO	AO	AO	AO	AO	AO	AO	AO	OO	80	80
47	B2	AO	AO	AO	AO	AO	AO	B2	AO	80	80	80
48	AO	AO	AO	AO	AO	AO	AO	AO	AO	OO	80	80
49	MO	AO	AO	AO	AO	AO	AO	MO	B1	OO	80	80
50	B4/9	AO	AO	OO	OO	AO	AO	AO	B2	11	80	80
51	AO	AO	AO	OO	OO	AO	B2	B4	AO	11	80	80
52	AO	AO	OO	OO	OO	OO	AO	D1	MO	OO	80	80
53	D2	AO	AO	AO	AO	AO	AO	MO	CO	CO	80	80
54	AO	AO	AO	OO	OO	AO	AO	AO	AO	11	80	80
55	CO	AO	AO	OO	OO	AO	AO	CO	CO	OO	80	80
64	B5	AO	AO	AO	AO	AO	B1	B4	B5	11	80	80
65	MO	AO	AO	OO	OO	AO	AO	D2	B2	OO	80	80
82	B5	AO	OO	OO	OO	AO	AO	AO	B1	OO	80	80
83	AO	AO	OO	OO	OO	OO	AO	AO	AO	OO	80	80
84	M9	AO	80	OO	OO	OO	AO	MO	CO	OO	80	80
85	B4	AO	OO	OO	OO	OO	B1	B4	M9	11	80	80
86	CO	AO	AO	OO	OO	AO	AO	CO	CO	OO	80	80
94	B4	B3	OO	OO	OO	OO	B3	B4/9	B5	15	80	80
95	MO	B3	AO	OO	OO	AO	B1	MO	MO	OO	80	80
96	B4/9	B3	BO	OO	OO	BO	B4	B4/9	B5	OO	80	80
98	B2	B2	OO	OO	OO	OO	AO	AO	B4	11	80	80
99	CO	AO	AO	OO	OO	AO	AO	B2	B4/9	OO	80	80
100	B4/9	B2	AO	OO	OO	AO	B2	AO	M9	11	80	80
101	M9	AO	BO	OO	OO	AO	B3	B5	B5	11	80	80
102	B2	AO	AO	AO	AO	AO	AO	B2	B4	OO	80	80
103	B2	AO	AO	AO	AO	AO	AO	B1	B4/9	80	80	80

No.	44,84	43,83	42,82	41,81	31,71	32,72	33,73	34,74	35,75	36	37	38
109	E2	AO	AO	OO	OO	AO	AO	MO	MO	11	80	80
112	AO	AO	80	OO	OO	AO	AO	CO	CO	20	80	80
113	B4/9	B3	OO	OO	OO	OO	B3	B4	B4/9	12	80	80
114	AO	AO	AO	OO	OO	AO	AO	AO	AO	OO	80	80
115	MO	AO	80	OO	OO	80	AO	MO	CO	OO	80	80
116	CO	AO	OO	OO	OO	OO	AO	CO	CO	OO	80	80
117	B2	AO	AO	OO	OO	AO	AO	AO	B4/9	OO	80	80
118	AO	AO	AO	OO	OO	AO	AO	AO	AO	80	80	80
119	AO	AO	AO	AO	AO	AO	AO	AO	AO	OO	80	80
120	CO	AO	OO	OO	OO	OO	AO	CO	CO	11	80	80
121	MO	AO	OO	OO	OO	AO	AO	AO	AO	OO	80	80
122	AO	AO	AO	OO	OO	AO	AO	B4	AO	12	80	80
123	AO	AO	AO	AO	AO	AO	AO	AO	B1	11	80	80
124	B2	AO	AO	AO	AO	AO	AO	B2	B2	80	80	80
125	AO	AO	OO	OO	OO	AO	AO	AO	B1	OO	80	80
129	AO	AO	AO	AO	AO	AO	AO	AO	AO	OO	80	80
130	AO	AO	AO	OO	OO	AO	AO	E4	B2	OO	80	80
140	MO	CO	80	OO	OO	OO	MO	MO	CO	11	80	80
141	AO	AO	AO	AO	AO	AO	AO	AO	B1	80	80	80
142	AO	AO	AO	AO	AO	AO	AO	AO	AO	OO	80	80
143	AO	AO	AO	AO	AO	AO	AO	AO	AO	OO	80	80
146	AO	AO	AO	OO	OO	AO	AO	AO	AO	OO	80	80
150	B4	AO	AO	AO	AO	AO	AO	B2	B2	OO	80	80
151	AO	AO	OO	OO	OO	OO	AO	B2	AO	OO	80	80
152	AO	AO	AO	AO	OO	AO	AO	B4/9	B2	12	80	80
153	B2	AO	AO	BO	OO	AO	AO	B2	AO	OO	80	80
155	CO	AO	AO	OO	OO	80	AO	B5	B4	OO	80	80
156	CO	AO	AO	OO	OO	AO	CO	CO	CO	OO	80	80

No.	44,84	43,83	42,82	41,81	31,71	32,72	33,73	34,74	35,75	36	37	38
157	MO	AO	OO	OO	OO	OO	AO	MO	MO	OO	80	80
158	AO	AO	AO	OO	OO	OO	AO	B2	AO	OO	80	80
159	B4	AO	AO	AO	AO	AO	AO	AO	AO	OO	80	80
160	CO	AO	AO	OO	OO	AO	CO	CO	CO	11	80	80
168	CO	AO	AO	OO	OO	AO	AO	CO	CO	OO	80	80
171	AO	AO	AO	OO	OO	AO	AO	AO	AO	OO	80	80
172	AO	AO	AO	OO	AO	AO	AO	CO	CO	11	80	80
173	CO	AO	OO	OO	OO	OO	AO	CO	MO	20	80	80
174	AO	AO	OO	OO	OO	AO	AO	AO	AO	OO	80	80
175	AO	AO	AO	AO	AO	AO	AO	AO	AO	80	80	80
191	AO	AO	AO	AO	AO/OO	AO	AO	AO	AO	80	80	80
192	AO	AO	AO	OO	OO	AO	AO	CO	D2	12	80	80
193	CO	AO	AO	OO	OO	AO	AO	CO	CO	OO	80	80
194	E2	AO	AO	OO	OO	AO	AO	B5	B5	12	80	80
195	B4	AO	AO	OO	OO	AO	AO	B4	B4	12	80	80
196	CO	AO	AO	OO	OO	AO	AO	CO	CO	11	80	80
197	B2	AO	AO	OO	OO	AO	AO	AO	AO	80	80	80
198	M9	B2	OO	OO	OO	OO	AO	B2	B4	OO	80	80
212	B2	AO	OO	OO	OO	OO	AO	B2	B4	OO	80	80
213	B5	AO	AO	OO	OO	AO	AO	B4/9	B2	11	80	80
214	B2	AO	BO	BO	OO	BO	AO	M9	B3	80	80	80
221	B1	AO	80	OO	OO	80	AO	AO	B1	80	80	80
222	CO	AO	AO	OO	OO	AO	AO	CO	CO	OO	80	80
225	B5	AO	AO	AO	OO	OO	AO	AO	B4/9	B5	80	80

APPENDIX C

Original Data

SCTC - 13-year-olds

No.	Reserve	Sex	D.O.B.	Init. Exam	Init. Age	30	31	32	33	34	Specify
4	ML	1	5/23/74	4/27/88	13.9302	5	2	3	1	2	gingivitis
5	ML	1	3/4/75	4/27/88	13.1499	1	2	4	1	2	gingivitis
6	TP	2	2/20/75	4/28/88	13.1855	5	2	6	1	2	gingivitis
7	TP	1	10/28/74	4/28/88	13.5003	1	2	5	1	1	
8	TP	1	11/25/74	4/29/88	13.4264	1	7	4	2	2	gingivitis
9	TP	1	6/30/74	4/29/88	13.8316	1	2	6	2	2	gingivitis
10	TP	1	8/16/74	4/29/88	13.7029	1	7	6	1	2	gingivitis
22	TP	1	5/13/75	4/29/88	12.9637	1	7	3	1	2	gingivitis
23	TP	2	1/31/75	4/29/88	13.2430	4	3	3	2	2	gingivitis
42	TP	1	10/6/74	5/2/88	13.5715	1	7	1	1	2	gingivitis
56	ML	1	2/21/75	5/4/88	13.1992	5	7	6	1	2	gingivitis
57	ML	1	4/22/75	5/4/88	13.0349	5	7	3	2	2	gingivitis
58	ML	1	4/2/75	5/4/88	13.0897	5	3	4	1	2	gingivitis
59	ML	1	10/2/74	5/4/88	13.5880	1	7	1	1	2	gingivitis
60	ML	2	11/20/74	5/4/88	13.4538	5	6	6	5	2	gingivitis
61	ML	2	11/11/74	5/4/88	13.4784	1	1	6	2	2	gingivitis
62	ML	1	2/13/75	5/4/88	13.2211	1	4	3	2	2	gingivitis
63	ML	1	5/24/75	5/4/88	12.9473	5	1	4	2	2	gingivitis
66	ML	1	7/6/74	5/5/88	13.8316	1	4	6	2	2	gingivitis
67	ML	1	1/30/75	5/5/88	13.2621	1	7	6	1	2	gingivitis
68	ML	1	1/21/75	5/5/88	13.2868	1	2	6	1	2	gingivitis
69	ML	2	4/9/75	5/5/88	13.0732	1	3	3	2	1	
70	ML	2	11/11/74	5/5/88	13.4812	1	7	2	1	2	gingivitis
71	ML	1	6/29/74	5/5/88	13.8508	1	4	1	5	2	gingivitis
72	ML	1	8/7/74	5/5/88	13.7440	5	1	6	1	2	gingivitis
73	ML	1	3/21/75	5/5/88	13.1253	1	3	2	5	2	gingivitis
74	ML	1	8/7/74	5/5/88	13.7440	1	7	3	1	2	gingivitis
75	ML	2	3/29/75	5/5/88	13.1034	1	4	3	2	2	gingivitis

No.	Reserve	Sex	D.O.B.	Init. Exam	Init. Age	30	31	32	33	34	Specify
76	ML	1	1/1/75	5/5/88	13.3415	1	7	6	1	2	gingivitis
77	ML	2	1/26/75	5/5/88	13.2731	1	2	2	1	1	
79	ML	2	3/6/75	5/5/88	13.1663	5	7	1	5	2	gingivitis
80	ML	2	12/25/74	5/5/88	13.3607	1	7	6	5	2	gingivitis
87	EV	2	1/31/75	5/9/88	13.2704	5	3	3	1	2	gingivitis
88	EV	2	7/12/74	5/9/88	13.8261	5	7	6	5	2	gingivitis
89	EV	1	9/9/74	5/9/88	13.6646	1	1	4	1	2	gingivitis
90	EV	1	5/26/75	5/9/88	12.9555	1	7	4	1	2	gingivitis
91	EV	1	9/3/74	5/9/88	13.6810	1	6	4	1	2	gingivitis
92	EV	2	11/28/74	5/9/88	13.4456	5	3	6	1	2	gingivitis
93	EV	1	9/8/74	5/9/88	13.6674	5	7	6	1	2	gingivitis
104	EV	2	10/29/74	5/10/88	13.5305	5	7	6	5	2	gingivitis
105	EV	2	3/24/75	5/10/88	13.1307	5	1	6	1	2	gingivitis
106	EV	2	12/28/74	5/10/88	13.3662	5	7	6	5	2	gingivitis
107	EV	2	1/9/75	5/10/88	13.3333	2	3	6	5	2	gingivitis
108	EV	1	7/31/74	5/10/88	13.7769	1	3	2	1	2	gingivitis
110	EV	2	4/8/75	5/10/88	13.0897	1	7	6	3	2	gingivitis
111	EV	1	8/30/74	5/10/88	13.6947	5	4	6	5	2	gingivitis
126	GR	2	11/28/74	5/11/88	13.4511	5	7	6	2	2	gingivitis
127	GR	1	3/11/75	5/11/88	13.1691	1	2	3	3	2	gingivitis
128	GR	1	7/7/74	5/11/88	13.8453	1	7	6	2	2	gingivitis
131	GR	1	3/2/75	5/11/88	13.1937	5	7	4	2	2	gingivitis
132	GR	1	1/4/75	5/11/88	13.3498	5	7	2	2	2	gingivitis
133	GR	2	12/10/74	5/11/88	13.4182	1	1	6	2	2	gingivitis
134	GR	2	11/12/74	5/11/88	13.4949	5	1	6	5	2	gingivitis
135	GR	1	2/13/75	5/11/88	13.2402	4	7	3	2	2	gingivitis
136	GR	2	6/25/74	5/11/88	13.8782	5	4	3	2	2	gingivitis
137	GR	2	12/19/74	5/11/88	13.3936	5	1	1	2	2	gingivitis

No.	Reserve	Sex	D.O.B.	Init. Exam	Init. Age	30	31	32	33	34	Specify
138	GR	1	9/16/74	5/11/88	13.6509	5	1	5	3	2	gingivitis
139	GR	2	12/13/74	5/11/88	13.4100	5	3	3	3	2	gingivitis
147	GR	2	8/16/74	5/12/88	13.7385	1	6	6	2	2	gingivitis
148	GR	1	4/17/75	5/12/88	13.0705	2	7	6	2	2	gingivitis
149	PR	2	11/8/74	5/13/88	13.5113	1	2	6	3	2	gingivitis
161	PR	2	5/23/75	5/17/88	12.9856	5	1	6	1	2	gingivitis
162	PR	2	3/20/75	5/17/88	13.1608	5	7	6	2	2	gingivitis
163	PR	1	2/9/75	5/17/88	13.2676	5	7	6	5	2	gingivitis
164	PR	1	11/8/74	5/17/88	13.5222	5	7	3	1	2	gingivitis
165	PR	2	1/23/75	5/17/88	13.3142	5	7	3	1	2	gingivitis
166	PR	2	1/17/75	5/17/88	13.3306	5	7	3	1	2	gingivitis
167	PR	1	9/28/74	5/17/88	13.6345	5	2	3	1	2	gingivitis
169	PR	2	3/29/75	5/17/88	13.1362	1	3	3	2	2	gingivitis
170	PR	2	3/13/75	5/17/88	13.1800	5	7	3	2	2	gingivitis
176	TP	2	3/3/75	5/19/88	13.2129	5	7	3	1	2	gingivitis
177	TP	2	2/21/75	5/19/88	13.2402	5	3	4	2	2	gingivitis
178	TP	1	2/20/75	5/26/88	13.2621	1	2	3	2	2	gingivitis
179	TP	2	8/2/74	5/26/88	13.8152	5	3	6	2	2	gingivitis
180	TP	2	10/23/74	5/26/88	13.5907	5	7	3	1	2	gingivitis
181	TP	1	12/15/74	5/26/88	13.4456	5	7	4	2	2	gingivitis (mild)
182	TP	2	11/24/74	5/26/88	13.5031	5	4	4	2	2	gingivitis
183	TP	2	11/9/74	5/26/88	13.5441	1	3	6	2	2	gingivitis
184	TP	1	6/6/74	5/27/88	13.9740	5	7	6	1	2	gingivitis
185	TP	1	1/12/75	5/27/88	13.3717	1	2	6	2	2	gingivitis
186	TP	2	10/27/74	5/27/88	13.5825	1	2	4	2	2	gingivitis (mild)
187	TP	1	9/11/74	5/27/88	13.7084	5	3	6	1	2	gingivitis
188	TP	1	9/7/74	5/27/88	13.7194	1	7	4	5	2	gingivitis (mild)
189	TP	2	2/12/75	5/27/88	13.2868	5	3	2	2	2	gingivitis (mild)

No.	Reserve	Sex	D.O.B.	Init. Exam	Init. Age	30	31	32	33	34	Specify
190	TP	1	5/18/75	5/27/88	13.0267	5	7	6	5	2	gingivitis (mild)
199	PK	1	7/11/74	5/30/88	13.8864	5	7	4	5	2	gingivitis
200	PK	1	3/7/75	5/30/88	13.2320	2	3	3	1	2	gingivitis
201	PK	2	1/24/75	5/30/88	13.3470	1	3	1	2	2	gingivitis
202	PK	1	9/25/74	5/30/88	13.6783	1	7	6	5	2	gingivitis
203	PK	1	10/11/74	5/30/88	13.6345	1	3	6	1	2	gingivitis
204	PK	2	12/11/74	5/30/88	13.4675	1	7	3	1	2	gingivitis
205	PK	2	12/28/74	5/30/88	13.4209	5	4	6	1	2	gingivitis
206	PK	1	3/13/75	5/30/88	13.2156	1	2	1	1	2	gingivitis
207	PK	2	3/3/75	5/30/88	13.2430	5	7	6	1	2	gingivitis
208	PK	2	8/15/74	5/30/88	13.7906	5	7	6	1	2	gingivitis (mild)
209	PR	2	10/12/74	5/30/88	13.6318	5	1	6	2	2	gingivitis
210	PK	2	1/18/75	5/31/88	13.3662	1	2	2	2	2	gingivitis
211	PK	1	9/17/74	5/31/88	13.7029	1	7	2	1	2	gingivitis
215	PK	2	8/11/74	5/31/88	13.8042	1	6	6	3	2	gingivitis
216	PK	2	1/10/75	5/31/88	13.3881	1	2	6	1	2	gingivitis
217	PK	2	4/11/75	5/31/88	13.1389	5	1	3	1	2	gingivitis
218	PK	1	6/27/74	5/31/88	13.9274	1	4	6	1	2	gingivitis
219	PK	1	7/29/74	5/31/88	13.8398	1	4	3	1	2	gingivitis
220	PK	1	12/24/74	5/31/88	13.4346	5	7	3	5	2	gingivitis
223	PK	2	3/2/75	5/31/88	13.2485	5	3	6	4	2	gingivitis
224	PK	2	11/21/74	6/2/88	13.5305	1	3	6	3	2	gingivitis
226	PK	2	8/1/74	6/2/88	13.8371	1	7	6	1	2	gingivitis
227	PK	1	12/15/74	6/2/88	13.4648	1	7	3	1	2	gingivitis/mild

No.	Treatment	35	Specify	Treatment	36	37	38	Location	Time
4		1			1	0	0	Moose Lake	13
5		1			1	0	0	Moose Lake	13
6	preventive	2	abrasion	preventive	1	0	0	The Pas Reserve	11
7		1			1	0	0	The Pas Reserve	1
8	preventive	2			1	0	0	The Pas Reserve	13
9	preventive	1			1	0	0	The Pas Reserve	13
10	preventive	1		none	1	0	0	Brochet	5,6
22	preventive	2			1	0	0	The Pas Reserve	13
23	preventive	1			1	0	0	The Pas Reserve	13
42	preventive	2	hypoplasia on 12, 21	none	1	0	0	The Pas Reserve	13
56	preventive	2			1	0	0	Moose Lake	13
57	preventive	2	impacted 23, 35	clinical	1	0	0	Moose Lake	13
58	preventive	2	hypoplasia 11	none	1	0	0	Moose Lake	13
59	preventive	2	peg lateral 12	none	1	0	0	Moose Lake	13
60	preventive	1	hypoplasia 21, 42,	none	1	0	0	Moose Lake	13
61	preventive	2	fractured incisor #11	none	1	0	0	Moose Lake	13
62	preventive	1			1	0	0	The Pas (town)	9
63	preventive	1			1	0	0	Moose Lake	12
66	preventive	1			1	0	0	Moose Lake	13
67	preventive	1			1	0	0	Moose Lake	13
68	preventive	1			1	0	0	Moose Lake	13
69		1			1	0	0	Moose Lake	13
70	preventive	2	hypoplasia 42, 32, 36	none	1	0	0	Moose Lake	13
71	preventive	1			1	0	0	Moose Lake	13
72	preventive	2	23 hypoplasia; 45 fractured	none/clinical	1	0	0	Moose Lake	13
73	preventive	1			1	0	0	Moose Lake	13
74	preventive	2	11 & 21 hypoplasia	none	1	0	0	Moose Lake	13
75	preventive	2	25 hypoplasia	none	1	0	0	Moose Lake	13

No.	Treatment	35	Specify	Treatment	36	37	38	Location	Time
76	preventive	2	21 fractured; 24 hypoplasia	clinical/none	1	0	0	Moose Lake	13
77		1			1	0	0	Winnipeg	2
79	preventive	2			1	0	0	Moose Lake	10
80		2			1	0	0	Wan less	1
87	preventive	2	hypoplasia 13	none	1	0	0	Easterville	13
88	preventive	1			1	0	0	Easterville	13
89	preventive	1			1	0	0	Easterville	13
90	preventive	2	labial erosion		1	0	0	Easterville	13
91	preventive	1			1	0	0	Easterville	13
92	preventive	2	hypoplasia 35,15,41	none	1	0	0	Easterville	13
93	preventive	1			1	0	0	Easterville	13
104	preventive	1			1	0	0	Easterville	6
105	preventive	2	hypoplasia 31	none	1	0	0	Easterville	5
106	preventive	2	incisal 1mm fract. enamel	none	1	0	0	Easterville	13
107	preventive	1			1	0	0	Easterville	13
108	preventive	2	hypoplasia 11	none	1	0	0	Easterville	13
110	preventive	2	hypoplasia 15,11,24,45	none	1	0	0	Easterville	13
111	preventive	2	abrasion of all teeth esp. 32,22	preventive	1	0	0	Easterville	13
126	preventive	1	ang. chelitis		1	0	0	Grand Rapids	2
127	preventive	2			1	0	0	Grand Rapids	13
128	preventive	2	abrasion 12, 42	none	1	0	0	Grand Rapids	13
131	preventive	1	hypoplasia 24,25	none	1	0	0	Grand Rapids	2
132	preventive	1	mild abr.13,23,33,43	preventive	1	0	0	Grand Rapids	13
133		1	abrasion 11,12,13,14 & Md. inc.	preventive	1	0	0	Grand Rapids	13
134		2			1	0	0	Grand Rapids	10
135	preventive	1			1	0	0	Grand Rapids	7
136	preventive	1			1	0	0	Grand Rapids	13
137	preventive	2			1	0	0	Grand Rapids	10

No.	Treatment	35	Specify	Treatment	36	37	38	Location	Time
138	preventive	2	abrasion (slight) anteriors	none	1	0	0	Grand Rapids	12
139	preventive	2	abrasion 23,33,13,43	preventive	1	0	0	Grand Rapids	11
147	preventive	2	abrasion 13,23,33,43	preventive	1	0	0	Grand Rapids	12
148		2	11 MI, fracture in enamel	clinical	1	0	0	Grand Rapids	9
149	preventive	2	hypoplasia 11	none	1	0	0	Grand Rapids	13
161	preventive	2			1	0	0	Pelican Rapids	10
162	preventive	2	hypoplasia 36,46	none	1	0	0	Pelican Rapids	13
163		2	hypoplasia 17,27,37,47,14		1	0	0	Pelican Rapids	13
164	preventive	2	hypopl.47-45,37-35,17-15,27-25	none	1	0	0	Pelican Rapids	13
165	preventive	1			1	0	0	Pelican Rapids	13
166	preventive	2	hypoplasia 46		1	0	0	Pelican Rapids	8
167	preventive	1			1	0	0	Pelican Rapids	13
169	preventive	2	24,25 hypoplasia	none	1	0	0	Pelican Rapids	11
170	preventive	2	hypoplasia 12	none	1	0	0	Pelican Rapids	13
176	preventive	2	hypoplasia 12,11,21,22,13,16,36	none	1	0	0	The Pas Reserve	13
177	preventive	1			1	0	0	The Pas Reserve	13
178	preventive	2	hypoplasia 17,14,13,11,27	none	1	1	0	The Pas Reserve	11
179	preventive	2	hypoplasia 11,21,22,15	none	1	0	0	The Pas Reserve	11
180	preventive	1			1	0	0	The Pas	13
181	preventive	1			1	0	0	The Pas - Umperville	3
182	preventive	2			1	0	0	The Pas (Big Eddy)	13
183	preventive	1			1	0	0	The Pas (Big Eddy)	13
184	preventive	2			1	0	0	The Pas	12
185	preventive	1			1	0	0	The Pas Reserve	11
186		2	hypoplasia 42,23,24	none	1	0	0	The Pas Reserve	13
187	preventive	1			1	1	0	The Pas Reserve	13
188	preventive	1			1	0	0	The Pas	13
189		2			1	0	0	The Pas	13

No.	Treatment	35	Specify	Treatment	36	37	38	Location	Time
190	preventive	2			1	0	0	The Pas Reserve	13
199	preventive	1			1	0	0	Pukatawagan	13
200	preventive	1			1	0	0	Pukatawagan	13
201	preventive	1			1	0	0	Pukatawagan	13
202	preventive	1			1	0	0	Pukatawagan	13
203	preventive	2	hypoplasia 23,12,13,11,21,22,24	none	1	0	0	Pukatawagan	13
204	preventive	2	hypoplasia 24	none	1	0	0	Pukatawagan	13
205	preventive	2	hypoplasia 46 and 26	none	1	0	0	Pukatawagan	7
206	preventive	2	hypoplasia 24	none	1	0	0	Pukatawagan	13
207	preventive	1			1	0	0	Pukatawagan	13
208	preventive	2	hypoplasia 14	none	1	0	0	Pukatawagan	13
209	preventive	2	hypoplasia 45, 22	none	1	0	0	Pukatawagan	9
210	preventive	1			1	0	0	Pukatawagan	12
211	preventive	1			1	0	0	Pukatawagan	10
215	preventive	1			1	0	0	Pukatawagan	13
216	preventive	1			1	0	0	Pukatawagan	13
217	preventive	2	12, 22 peg lateral	none	1	0	0	Pukatawagan	13
218	preventive	1			1	0	0	Pukatawagan	11
219	preventive	1			1	0	0	Pukatawagan	12
220	preventive	2			1	0	0	Pukatawagan	13
223	preventive	1			1	0	0	Pukatawagan	13
224	preventive	2			1	0	0	Pukatawagan	12.5
226	preventive	2			1	0	0	Pukatawagan	13
227	preventive	1			1	0	0	Easterville	6

No.	Location	Time	Location	Time	Location	Time	39	40	41	PUD	PUD
4							0	1	5		
5									1		
6	Flin Flon	6 mon.	Moose Lake	6 mon.	Winnipeg	1	0	0	5		
7	Cumberland	1	Easterville	1	The Pas Reserve	10	0				
8							0				
9							0				
10	Umperville Settlem't	1	The Pas Reserve	8			0				
22							1		5		
23							1		1		
42							0				
56							0				
57							0				
58							0				
59							0				
60	The Pas (Reserve)	0.12					0				
61							0				
62	Moose Lake	3	Brandon	1			0				
63	Nova Scotia	1					0				
66							0				
67							0				
68							0				
69							0				
70							0				
71							0				
72							0				
73	The Pas	0.6					0				
74							0				
75							0				

No.	Location	Time	Location	Time	Location	Time	39	40	41	PUD	PUD
76							0				
77	Brandon	2	Moose Lake	9			0				
79	The Pas (Town)	2					0				
80	The Pas Reserve	1	Moose Lake	11			0				
87							0				
88							0				
89							0				
90							0				
91							0				
92							0				
93							0				
104	Grand Rapids	6					0				
105	Grand Rapids	8					0				
106							0				
107							0				
108							0				
110							0				
111							0				
126	The Pas Reserve	11					0				
127							1	1	4		
128							0				
131	Easterville	11					0				
132							0				
133							0				
134	Winnipeg	3					0				
135	The Pas	4	Brandon	2			0				
136							0				
137	Winnipeg	3					0				

No.	Location	Time	Location	Time	Location	Time	39	40	41	PUD	PUD
138	Winnipeg	1					0				
139	Jenpeg	2					0				
147	Thompson	1					0				
148	Easterville	4					0				
149							0				
161	Bluff Road	3					1	1	5		
162							1	1	5		
163							1	1	5		
164							1	1	5		
165							1	1	3		
166	Thompson	0.08	Wadowen	5			1	1	5		
167							1	1	5		
169	Flin Flon	2	The Pas/Young Point	0.25			1	1	5		
170							0				
176							0				
177							1	1	3		
178	Lac La Biche Alta.	2					1	1	2	1	
179	Brackem Dam	2					0				
180							0				
181	The Pas Town	3	The Pas Reserve	7			1	1	5		
182							1	1	3		
183							1	1	5		
184	Cumberland	1	Bowsman	0.5			0				
185	Winnipeg	2					1	1	3		
186							1	1	2		
187							1	1	5		
188							0				
189							1	1	5		

No.	Location	Time	Location	Time	Location	Time	39	40	41	PUD	PUD
190							1	1	3		
199							0				
200							1	0	3		
201							0				
202							0				
203							1	1	1		
204							0				
205	Winnipeg	6					0				
206							0				
207							0				
208							0				
209	Thompson	2	Brandon	1.5	Grouard, AB	1	0				
210	The Pas	1					0				
211	Brandon	3					0				
215							0				
216							0				
217							0				
218	Thompson	2					0				
219	Hollow River	1					0				
220							0				
223							0				
224	Winnipeg	0.5					0				
226							0				
227	Winnipeg	6	The Pas	1	Pukatawagan	0.16	0				

No.	PLDR	PUDR	50	51	52	53	54	55	56	Dentofacial Anomalies
4			1	1	1	1	1	1	0	
5			1	1	1	1	1	1	0	
6			1	1	1	1	1	1	0	
7			1	1	1	1	1	1	0	
8			1	1	1	1	1	1	0	impacted premolars
9			2	3	2	1	2	1	0	
10			1	1	1	1	1	1	0	
22			1	1	1	1	1	1	0	lingual version 15
23			1	1	1	1	1	1	0	
42			1	1	2	1	2	1	0	
56			1	1	1	1	1	1	0	55 retained; impacted 35 & 45 & 15?
57			3	1	2	2	1	1	0	
58			0	1	1	1	1	1	0	
59	1		1	1	1	1	1	1	0	submerged 45 & 25
60			0	1	0	1	0	0	0	submerged 46; abr. lower ant.'s
61			1	1	1	1	1	1	0	
62			1	1	1	1	1	1	0	
63			1	1	1	1	1	1	0	
66			1	1	1	1	2	1	0	
67			2	1	2	1	2	1	0	
68			1	1	1	1	2	1	0	
69			1	0	1	0	0	1	0	
70			1	1	1	1	1	1	0	
71			1	1	2	1	3	1	0	
72			2	1	2	1	2	1	0	abr. lower ant.'s
73			2	1	2	1	2	1	0	
74			1	1	2	1	1	1	0	35 submerged insufficient space
75			1	1	1	1	1	1	0	44 impacted

No.	PLDR	PUDR	50	51	52	53	54	55	56	Dentofacial Anomalies
76			3	3	3	1	2	1	0	15 linguoversion; 25 impacted
77			0	0	0	0	0	0	0	
79			1	1	2	1	1	1	0	15 rotated 180 degrees
80			1	1	1	1	1	1	0	impacted 11
87			3	3	3	1	1	1	0	labial version 23
88			1	3	1	1	1	1	0	
89			1	1	1	1	2	1	0	
90			1	3	2	1	1	1	0	
91			1	1	1	1	1	1	0	
92			1	1	2	1	1	1	0	
93			1	1	2	1	2	1	0	
104			1	1	1	1	1	1	0	
105			3	1	3	1	1	1	0	
106			1	1	1	1	1	1	0	
107			2	1	1	1	2	1	0	
108			1	1	1	1	2	1	0	
110			2	3	2	1	2	1	0	25 submerg. insuff. space to erupt
111	1		1	3	3	2	1	1	0	
126			1	3	1	1	1	1	0	
127			3	1	1	3	1	1	0	retn'd e's, cong. miss. or unerupt. 5's
128			2	1	1	1	1	1	0	impacted 15 due to lack of space
131			2	3	2	1	3	1	0	
132			1	0	1	1	2	0	0	retained 75 & 85 missing 45 & 35
133			3	1	3	1	3	1	0	
134			1	1	1	1	1	1	0	impacted or missing 13,25
135			1	1	1	1	1	1	0	
136			1	0	1	1	1	1	0	
137			1	1	2	1	1	1	0	33,43 impacted or missing

No.	PLDR	PUDR	50	51	52	53	54	55	56	Dentofacial Anomalies
138			1	1	1	1	0	1	0	
139			1	0	1	1	1	1	0	
147			1	1	1	1	1	1	0	
148			3	1	1	1	1	1	0	
149			1	1	1	1	1	1	0	
161			3	1	1	1	1	1	0	cong. missing/impacted 15,25,45
162			1	1	1	1	2	1	0	
163			3	3	3	3	3	1	0	
164			2	1	2	2	2	2	0	
165			1	1	1	1	1	0	0	
166			1	0	1	1	1	1	0	
167			1	3	1	1	1	1	0	
169			3	1	2	1	2	1	0	
170			1	1	2	2	1	1	0	retained 55
176			1	1	1	1	1	1	0	miss.45; retn'd 65 abs.; unerupt'd.25
177			1	1	1	1	1	1	0	
178			3	1	2	1	2	1	0	
179			2	3	2	2	3	2	0	
180			0	0	1	0	1	0	0	
181			0	1	0	1	1	1	0	
182			1	1	1	1	1	1	0	35 and 45 submerg. due to insuff space
183			1	1	1	1	2	2	0	
184			1	1	1	1	1	1	0	retn'd 63, 23erupt'd mes. to 63; 22 linguover
185			1	1	1	1	1	1	0	
186			1	0	1	1	1	1	0	
187			3	3	3	3	1	1	0	
188			0	0	0	1	1	1	0	
189			1	1	1	1	1	0	0	retained 55; 15 impacted or missing

No.	PLDR	PUDR	50	51	52	53	54	55	56	Dentofacial Anomalies
190			0	1	0	1	1	0	0	retained 19 molars and 63
199			2	2	2	1	2	2	0	
200			2	1	2	2	2	2	0	
201			2	1	2	2	2	2	0	
202			2	3	2	1	1	1	0	
203			2	3	1	1	1	1	0	
204			2	3	2	2	2	2	0	
205			1	1	1	1	2	1	0	impacted 23 no space
206			1	3	2	1	1	1	0	submerged 45/insuff space
207			1	3	1	1	1	1	0	
208			0	0	0	1	0	1	0	
209		1	0	1	1	1	0	1	0	
210			1	3	1	1	1	1	0	
211			1	1	1	1	1	1	0	45 linguoversion; 35 submerged
215			2	1	2	2	1	2	0	
216			1	1	1	1	1	1	0	
217			1	1	1	1	1	1	0	35 submerged/insuff space
218			2	1	2	1	1	1	0	
219			1	3	1	1	3	1	0	
220			1	3	1	1	1	1	0	retained 65 impacted 25
223			1	1	1	1	1	1	0	
224			2	3	3	1	1	2	0	13 linguoversion; retained 53,54,55
226			1	0	1	0	0	1	0	retained 53
227			1	1	1	0	1	0	0	

No.	Molars	O.J.	O.B.	Crowd.	61	62	63	64	X-rays	18	17	16	15or55	14or54	13or53
4	1	3	3	0	0	0	0	0	1	80	00	20	00	00	00
5	2	2	1	1	0	0	0	0		80	00	11	00	00	00
6	1	2	2	1	0	0	0	0		80	00	20	00	00	A0/89
7	1	1	1	0	0	1	0	0		80	00	42	00	00	00
8	3	1	1	1	0	0	0	0		80	00	20	C0	00	00
9	2	2	1	1	0	1	0	0		80	00	20	00	00	00
10	1	1	1	0	0	0	0	0		80	00	00	00	00	00
22	2	1	1	1	0	0	0	0		80	00	20	08	00	00
23	1	2	2	1	0	0	0	0		80	00	00	00	00	98
42	1	1	1	0	0	0	0	0		80	00	12	00	00	00
56	3	1	1	1	0	0	0	0		80	11	20	C8/88	00	00
57	3	3	3	1	1	1	0	0		80	80	15	B5/00	00	00
58	2	2	2	1	0	0	0	0		80	00	20	00	00	00
59	2	2	3	1	0	0	0	0		80	00	20	00	00	00
60	3	3	3	1	0	0	0	0		80	00	50	00	00	00
61	1	1	1	1	0	0	0	0		80	20	20	00	00	00
62	2	2	2	1	0	0	0	0		80	00	20	00	00	00
63	1	2	3	1	0	0	0	0		80	00	20	00	00	00
66	1	1	2	0	0	0	0	0		80	00	00	00	00	00
67	2	2	2	0	0	0	0	0		80	20	20	20	20	00
68	1	1	1	0	0	0	0	0		80	80	20	00	00	00
69	2	3	1	1	0	0	0	0		80	00	20	20	00	00
70	1	1	1	0	0	0	0	0		80	00	42	00	00	00
71	1	1	1	1	0	0	0	0		80	00	00	00	00	00
72	2	1	2	1	0	1	0	0		80	12	12	00	11	00
73	1	2	2	1	0	0	0	0		80	00	41	00	00	00
74	1	2	2	1	0	0	0	0		80	00	20	00	00	00
75	3	2	2	1	0	0	0	0		80	11	20	00	11	00

No.	Molars	O.J.	O.B.	Crowd.	61	62	63	64	X-rays	18	17	16	15or55	14or54	13or53
76	1	1	1	1	0	1	0	0		80	12	20	08	00	00
77	1	1	1	1	0	0	0	0		80	00	20	00	00	00
79	1	1	1	1	0	0	0	0		80	00	20	00	00	00
80		2	3	1	0	0	0	0		80	11	12	00	00	00
87	1	2	1	1	0	1	0	0		80	11	20	00	00	11
88	3	3	3	1	0	0	0	0		80	00	20	00	00	00
89	1	3	3	1	0	0	0	0		80	11	20	00	20	00
90	3	3	3	1	0	0	0	0		80	00	31	00	00	00
91	1	1	1	0	0	0	0	0		80	00	20	00	00	00
92	3	3	3	0	0	0	0	0		80	50	11	00	00	00
93	1	1	1	0	0	0	0	0		80	00	20	00	00	00
104	1	1	1	0	0	0	0	0		80	12	20	20	20	00
105	1	2	2	0	0	0	0	0		80	00	20	00	00	00
106	3	3	3	0	0	0	0	0		80	00	20	00	11	00
107	2	2	2	1	0	0	0	0		80	11	20	00	00	00
108	2	2	2	1	1	1	0	0		80	00	12/9	00	11	00
110	1	2	1	1	0	0	0	0		80	00	20	14	00	00
111	1	2	3	0	0	0	0	0		80	00	20	20	20	20
126	1	1	1	1	0	0	0	0		80	00	20	00	00	00
127	1	2	2	1	0	0	0	0		80	80	20	CO	00	00
128	1	2	2	1	0	0	0	0		80	00	20	89	00	00
131	3	3	3	1	0	0	0	0		80	00	20	00	00	00
132	1	1	1	1	0	0	0	0		80	00	20	00	00	00
133	1	3	3	0	0	0	0	0		80	20	20	00	00	00
134	2	1	2	1	0	0	0	0		80	00	20	00	00	80
135	1	1	1	0	0	0	0	0		80	00	42	00	00	00
136	1	1	1	1	0	0	0	0		80	20	20	00	00	80
137	1	1	1	1	0	1	0	0		80	00	20	00	00	00

No.	Molars	O.J.	O.B.	Crowd.	61	62	63	64	X-rays	18	17	16	15or55	14or54	13or53
138	1	2	1	1	0	0	0	0		80	00	20	00	00	00
139	1	1	1	0	0	0	0	0		80	00	00	00	00	00
147	1	1	2	1	0	0	0	0		80	00	20	00	00	00
148	2	2	0	0	0	0	0	0		80	00	20	00	00	00
149	2	2	2	1	0	0	0	0		80	80	20	00	80	00
161	3	1	1	1	0	0	0	0		80	00	20	80	00	00
162	3	1	2	1	0	0	0	0		80	11	50	00	00	00
163	2	2	3	1	0	0	0	0		80	12	31	00	00	00
164	1	1	1	1	0	1	0	0		80	11	20	00	00	00
165	1	1	1	0	0	0	0	0		80	80	00	CO	00	00
166	1	1	2	1	0	0	0	0		80	00	20	00	20	00
167	1	2	3	0	0	0	0	0		80	00	00	00	00	00
169	1	1	1	0	0	0	0	0		80	00	00	00	00	00
170	3	3	3	1	0	0	0	0		80	00	00	A8/80	00	00
176	1	2	1	1	0	0	0	0		80	12	20	00	00	00
177	1	1	3	1	0	0	0	0		80	20	00	00	00	00
178	1	3	3	1	0	0	0	0		80	00	20	00	00	00
179	1	3	1	1	0	0	0	0		80	20	20	00	00	00
180	1	1	1	0	0	0	0	0		80	20	20	00	00	00
181	1	1	1	0	0	0	0	0		80	00	20	00	00	00
182	3	2	2	1	0	0	0	0		80	00	20	00	00	00
183	2	2	2	1	0	0	0	0		80	20	20	00	00	00
184	3	3	1	1	0	0	0	0		80	80	00	00	00	00
185	1	2	1	1	0	0	0	0		80	00	20	00	00	00
186	1	1	1	1	0	0	0	0		80	41	20	00	00	00
187	2	1	3	1	0	0	0	0		80	00	20	00	80	00
188	1	1	1	0	0	0	0	0		80	00	00	00	00	00
189	1	2	2	1	0	0	0	0		80	80	00	B8/80	00	00

No.	Molars	O.J.	O.B.	Crowd.	61	62	63	64	X-rays	18	17	16	15or55	14or54	13or53
190	1	1	2	1	0	1	0	0		80	80	20	E8/80	B8/80	00
199	1	3	3	0	0	0	0	0		80	11	20	00	00	00
200	2	2	1	1	0	0	0	0		80	00	00	00	00	00
201	2	2	2	1	0	0	0	0		80	00	11	00	00	00
202	2	2	1	1	0	0	0	0		80	00	20	00	00	A0/80
203	1	2	3	1	0	0	0	0		80	00	20	00	00	00
204	1	1	3	1	0	0	0	0		80	00	00	00	00	00
205	2	1	1	1	0	0	0	0		80	00	42	00	00	00
206	2	1	2	1	0	0	0	0		80	00	20	00	00	00
207	1	3	3	0	1	1	1	0		80	00	15	00	00	00
208	1	1	1	0	0	0	0	0		80	12	20	41	20	00
209	1	1	1	0	0	0	0	0		80	00	11	00	00	00
210	1	3	3	0	1	1	0	0		80	12	12	00	11	00
211	2	2	2	1	0	1	0	0		80	11	20	13	00	00
215	1	2	1	1	1	0	0	0		80	11	20	00	00	00
216	1	1	1	0	0	0	0	0		80	11	20	00	00	00
217	1	2	1	1	0	0	0	0		80	00	20	00	20	00
218	1	2	1	0	0	1	0	1		80	20	13	00	00	00
219	1	1	1	0	0	0	0	0		80	00	31	00	00	00
220	2	2	3	1	0	0	0	0		80	00	20	00	00	00
223	3	3	2	1	1	1	0	0		80	11	45	20	00	00
224	3	2	1	1	0	0	0	0		80	80	00	A5/80	A8/80	A8/09
226	2	2	2	0	0	1	0	0		80	00	20	00	00	A8/00
227	1	1	1	0	0	0	0	0		80	00	20	00	00	00

No.	12or52	11or51	21or61	22or62	23or63	24or64	25or65	26	27	28	48	47	46	45or85
4	00	00	00	00	00	11	00	20	11	80	80	11	12	00
5	00	00	00	11	00	00	00	20	00	80	80	11	20	00
6	00	00	00	00	00	00	00	20	00	80	80	00	00	00
7	00	00	00	00	00	00	00	20	00	80	80	41	20	20
8	00	00	00	00	00	00	80	20	00	80	80	31	20	80
9	00	00	00	00	00	00	00	00	00	80	80	11	42	00
10	00	00	00	00	00	00	00	00	00	80	80	00	00	00
22	00	00	00	00	00	00	00	20	00	80	80	00	00	00
23	00	00	00	00	98	00	00	00	00	80	80	11	20	00
42	00	00	00	00	00	00	00	20	00	80	80	00	20	00
56	00	00	00	00	00	00	00	20	11	80	80	20	20	80
57	00	00	13	11	89	08	00	15	80	80	80	80	15	00
58	00	20	00	00	00	00	00	20	00	80	80	12	20	00
59	00	20	00	00	00	00	00	20	00	80	80	00	20	00
60	20	00	00	20	00	00	00	20	00	80	80	00	20	00
61	00	00	00	00	00	00	00	20	20	80	80	20	20	00
62	00	00	00	00	00	00	00	20	00	80	80	00	20	00
63	00	00	00	00	00	00	00	20	00	80	80	00	20	00
66	00	00	59	00	00	00	00	20	00	80	80	00	20	00
67	20	00	00	11	00	00	00	20	31	80	80	11	20	00
68	00	00	00	00	00	00	00	20	80	80	80	00	00	00
69	20	00	00	20	00	00	00	20	00	80	80	00	20	00
70	00	00	00	20	00	00	00	20	00	80	80	11	43	00
71	00	00	00	00	A8/00	00	00	00	00	80	80	00	00	00
72	11	11	00	11	00	00	00	12	12	80	80	12	50	12
73	00	00	00	00	00	00	00	20	00	80	80	00	20	00
74	00	12	12	00	00	00	00	00	00	80	80	00	20	00
75	00	00	00	00	00	00	00	20	00	80	80	12	31	00

No.	12or52	11or51	21or61	22or62	23or63	24or64	25or65	26	27	28	48	47	46	45or85
76	00	00	98	11	00	00	88	20	11	80	80	11	20	00
77	00	00	00	00	00	00	00	20	00	80	80	20	20	00
79	00	20	00	00	00	00	00	00	00	80	80	00	00	00
80	00	89	00	00	00	00	00	00	12	80	80	00	12	00
87	11	11	11	00	00	00	20	20	12	80	80	12	20	00
88	00	00	00	00	00	20	20	20	00	80	80	00	20	00
89	00	00	00	00	00	20	20	20	00	80	80	12	20	00
90	00	00	00	00	00	00	00	20	00	80	80	00	20	00
91	00	00	00	00	00	00	00	20	00	80	80	20	20	20
92	00	00	00	00	11	00	20	20	20	80	80	20	20	00
93	00	00	00	00	00	00	00	20	00	80	80	00	20	00
104	00	00	00	00	00	00	11	12	11	80	80	12	12	00
105	00	00	00	00	00	00	00	11	11	80	80	11	20	00
106	00	00	00	00	00	00	00	20	11	80	80	12	20	00
107	20	00	00	00	00	00	00	20	20	80	80	00	20	00
108	00	00	00	00	00	00	00	15	12	80	80	20	50	20
110	00	00	00	00	00	00	12	20	00	80	80	12	20	13
111	00	00	00	00	00	00	20	50	00	80	80	00	20	00
126	00	00	00	00	00	00	00	20	00	80	80	11	20	00
127	00	00	00	00	80	00	AO	00	80	80	80	00	20	CO
128	00	00	00	00	00	00	00	20	00	80	80	00	20	00
131	00	00	00	00	00	20	00	20	00	80	80	00	20	00
132	00	00	00	00	00	00	00	20	00	80	80	00	20	CO
133	00	00	11	00	00	00	00	20	11	80	80	20	20	00
134	00	00	00	00	00	00	80	20	00	80	80	00	20	00
135	00	00	00	00	00	00	00	00	00	80	80	00	20	00
136	00	00	00	00	80	00	00	00	20	80	80	00	20	00
137	00	00	00	00	00	00	11	20	00	80	80	12	20	20

No.	12or52	11or51	21or61	22or62	23or63	24or64	25or65	26	27	28	48	47	46	45or85
138	00	00	00	00	00	00	00	20	00	80	80	20	20	00
139	00	00	00	00	00	00	00	00	00	80	80	00	00	00
147	00	00	00	00	00	00	00	20	20	80	80	00	20	00
148	00	00	00	00	00	00	00	20	00	80	80	00	20	00
149	00	00	00	00	00	00	00	20	00	80	80	00	20	00
161	00	00	00	00	00	20	80	20	80	80	80	00	20	80
162	00	00	00	00	00	00	00	50	11	80	80	00	20	00
163	00	00	00	00	00	00	20	20	00	80	80	12	20	00
164	00	00	00	11	00	00	13	13	11	80	80	31	32	11
165	00	00	00	00	00	00	B2	20	80	80	80	80	20	AO
166	00	00	00	00	00	00	00	20	00	80	80	11	20	00
167	00	00	00	00	00	00	00	00	00	80	80	00	31	00
169	00	00	00	00	00	00	00	42	00	80	80	20	20	00
170	00	00	00	00	00	00	00	00	00	80	80	00	00	00
176	20	00	00	20	20	20	C8/80	20	00	80	80	12	20	88
177	00	00	00	00	00	20	00	20	20	80	80	20	20	00
178	00	00	50	00	00	20	00	00	00	80	80	00	20	00
179	00	00	00	00	00	20	00	20	20	80	80	20	20	00
180	00	00	00	00	00	00	00	20	20	80	80	20	20	00
181	00	00	00	00	00	00	00	20	00	80	80	20	20	00
182	00	00	00	00	00	00	00	20	00	80	80	11	20	09
183	00	00	00	00	00	00	00	20	00	80	80	00	20	00
184	00	00	00	00	AO/00	00	00	20	00	80	80	00	20	00
185	00	00	00	00	00	00	00	20	00	80	80	00	20	00
186	00	00	00	00	00	00	00	20	20	80	80	20	20	00
187	00	00	00	00	00	80	00	20	00	80	80	00	20	00
188	00	00	00	00	00	00	00	20	00	80	80	11	20	00
189	00	00	00	00	00	00	00	00	80	80	80	00	20	00

No.	12or52	11or51	21or61	22or62	23or63	24or64	25or65	26	27	28	48	47	46	45or85
190	00	00	00	00	A8/00	B8/00	C8/80	20	80	80	80	80	20	A8/80
199	00	00	00	00	00	00	00	20	00	80	80	00	11	00
200	00	00	00	00	00	11	00	00	00	80	80	11	00	00
201	00	00	00	00	00	00	00	11	00	80	80	00	20	00
202	00	00	00	00	00	00	00	11	00	80	80	00	50	11
203	00	00	00	00	00	00	00	20	00	80	80	12	50	00
204	00	00	00	00	00	00	00	00	11	80	80	11	00	00
205	00	00	00	00	80	00	00	00	00	80	80	12	00	00
206	00	00	00	00	00	00	00	20	00	80	80	00	20	00
207	11	13	12	00	00	00	00	15	00	80	80	12	20	00
208	00	00	00	00	00	20	20	20	12	80	80	20	20	00
209	00	00	00	00	00	59	00	00	11	80	80	20	20	00
210	11	00	12	13	00	13	15	15	12	80	80	12	15	00
211	00	00	00	00	00	00	00	00	00	80	80	00	20	00
215	11	00	00	00	00	00	00	20	12	80	80	20	12	20
216	00	00	00	00	00	00	00	20	00	80	80	12	20	00
217	00	00	00	00	00	00	00	11	11	80	80	11	20	00
218	00	00	00	00	00	00	00	13	00	80	80	00	20	00
219	00	11	11	00	00	00	00	20	00	80	80	00	20	00
220	00	00	00	00	00	00	A8/80	00	00	80	80	80	00	00
223	00	00	12	12	00	00	20	50	11	80	80	11	50	00
224	00	00	00	00	00	00	00	00	00	80	80	00	00	00
226	00	00	00	00	00	00	00	20	00	80	80	11	12	00
227	00	00	00	00	00	00	00	20	20	80	80	20	20	00

No.	44or84	43or83	42or82	41or81	31or71	32or72	33or73	34or74	35or75	36	37	38
4	00	00	00	00	00	00	00	00	00	12	11	80
5	00	00	00	00	00	00	00	00	00	20	11	80
6	00	00	00	00	00	00	00	00	00	00	00	80
7	00	00	00	00	00	00	00	00	00	20	31	80
8	00	00	00	00	00	00	00	00	80	20	12	80
9	00	00	00	00	00	00	00	00	A8	20	11	80
10	00	00	00	00	00	00	00	00	00	00	00	80
22	00	00	00	00	00	00	00	00	00	20	00	80
23	00	00	00	00	00	00	00	00	00	20	00	80
42	00	00	00	00	00	00	00	00	00	20	00	80
56	00	00	80	00	00	00	00	00	80	20	20	80
57	00	00	00	00	00	00	00	00	80	15	11	80
58	00	00	00	00	00	00	00	00	00	20	11	80
59	00	00	00	00	00	00	00	59	59	20	00	80
60	00	00	00	00	00	00	00	00	00	50	20	80
61	00	00	00	00	00	00	00	20	00	50	20	80
62	00	00	00	00	00	00	00	00	00	20	00	80
63	00	00	00	00	00	00	00	00	00	20	11	80
66	00	00	00	00	00	00	00	00	00	20	00	80
67	00	00	00	00	00	00	00	00	00	20	11	80
68	00	00	00	00	00	00	00	00	00	20	00	80
69	00	00	00	00	00	00	00	00	00	20	00	80
70	00	00	00	00	00	00	00	00	00	20	11	80
71	00	00	00	00	00	00	00	00	00	20	20	80
72	00	00	00	00	00	00	00	00	00	50	12	80
73	00	00	00	00	00	00	00	00	00	20	00	80
74	00	00	00	00	00	00	00	00	00	00	00	80
75	80	00	00	00	00	00	00	11	00	20	00	80

No.	44or84	43or83	42or82	41or81	31or71	32or72	33or73	34or74	35or75	36	37	38
76	00	00	00	00	00	00	00	00	00	20	00	80
77	00	00	00	00	00	00	00	00	00	20	00	80
79	00	00	00	00	00	00	00	00	00	20	12	80
80	00	00	00	00	00	00	00	00	00	00	00	80
87	00	00	00	00	00	00	00	00	20	20	12	80
88	00	00	00	00	00	00	00	20	20	20	00	80
89	00	00	00	00	00	00	00	00	00	20	20	80
90	00	00	00	00	00	00	00	00	00	20	12	80
91	20	00	00	00	00	00	00	20	20	20	20	80
92	00	00	00	00	00	00	00	00	20	20	20	80
93	00	00	00	00	00	00	00	00	00	20	11	80
104	00	00	00	00	00	00	00	20	20	20	20	80
105	00	00	00	00	00	00	00	00	00	20	11	80
106	00	00	00	00	00	00	00	00	00	20	12	80
107	00	00	00	00	00	00	00	00	00	20	00	80
108	00	00	00	00	00	00	00	00	00	12	12	80
110	00	00	00	00	00	00	00	00	00	20	20	80
111	00	80	50	00	50	00	00	50	20	50	00	80
126	00	00	00	00	00	00	00	00	00	20	00	80
127	00	00	00	00	00	00	00	00	CO	20	00	80
128	00	00	00	00	00	00	00	00	00	20	00	80
131	00	00	00	00	00	00	00	00	00	42	00	80
132	00	00	00	00	00	00	00	00	AO	20	00	80
133	00	00	00	00	00	00	00	20	20	20	20	80
134	00	00	00	00	00	00	00	00	00	20	00	80
135	00	00	00	00	00	00	00	00	00	20	00	80
136	00	00	00	00	00	00	00	00	00	00	11	80
137	00	80	00	00	00	00	80	00	00	12	12	80

No.	44or84	43or83	42or82	41or81	31or71	32or72	33or73	34or74	35or75	36	37	38
138	00	00	00	00	00	00	00	00	00	20	00	80
139	00	00	00	00	00	00	00	00	00	00	00	80
147	00	00	00	00	00	00	00	00	00	20	20	80
148	00	00	00	00	00	00	00	00	00	20	00	80
149	80	00	00	00	00	00	00	00	00	20	00	80
161	00	00	00	00	00	00	00	00	80	31	00	80
162	00	00	00	00	00	00	00	00	00	20	20	80
163	00	00	00	00	00	00	00	00	00	50	12	80
164	00	00	00	00	00	00	00	00	00	20	31	80
165	00	00	00	00	00	00	00	00	B2	20	80	80
166	00	00	00	00	00	00	00	00	00	20	11	80
167	00	00	00	00	00	00	00	00	00	20	12	80
169	00	00	00	00	00	00	00	00	00	20	00	80
170	00	00	00	00	00	00	00	00	00	00	00	80
176	00	00	00	00	00	00	00	00	00	20	20	80
177	00	00	00	00	00	00	00	00	00	20	20	80
178	00	00	00	00	00	00	00	00	00	20	20	80
179	00	00	00	00	00	00	00	00	00	20	20	80
180	00	00	00	00	00	00	00	00	00	20	20	80
181	00	00	00	00	00	00	00	00	00	20	20	80
182	00	00	00	00	00	00	00	00	00	20	11	80
183	00	00	00	00	00	00	00	00	00	41	00	80
184	00	00	00	00	00	00	00	00	00	20	00	80
185	00	00	00	00	00	00	00	00	00	20	00	80
186	00	00	00	00	00	00	00	00	00	20	20	80
187	00	00	00	00	00	00	00	00	00	20	00	80
188	00	00	00	00	00	00	00	00	00	20	11	80
189	00	00	00	00	00	00	00	00	00	20	80	80

No.	44or84	43or83	42or82	41or81	31or71	32or72	33or73	34or74	35or75	36	37	38
190	A8/80	00	00	00	00	00	00	A8/80	A8/80	20	80	80
199	00	00	00	00	00	00	00	00	00	20	00	80
200	00	00	00	00	00	00	00	00	00	00	00	80
201	00	00	00	00	00	00	00	00	20	42	00	80
202	00	00	00	00	00	00	00	00	11	50	11	80
203	00	00	00	00	00	00	00	00	00	20	20	80
204	00	00	00	00	00	00	00	00	00	20	11	80
205	00	00	00	00	00	00	00	00	00	20	12	80
206	00	00	00	00	00	00	00	80	00	20	80	80
207	11	00	00	00	00	00	00	00	00	14	12	80
208	00	00	00	00	00	00	00	00	00	50	12	80
209	00	00	00	00	00	00	00	00	20	20	12	80
210	00	00	00	00	00	00	00	00	00	50	12	80
211	00	00	00	00	00	00	00	00	00	00	00	80
215	20	00	00	00	00	00	00	00	00	11	12	80
216	00	00	00	00	00	00	00	00	00	20	20	80
217	00	00	00	00	00	00	00	00	00	20	20	80
218	00	00	00	00	00	00	00	00	00	50	20	80
219	00	00	00	00	00	00	00	00	00	20	11	80
220	00	00	00	00	00	00	00	00	00	20	00	80
223	00	00	00	00	00	00	00	00	00	15	15	80
224	00	00	00	00	00	00	00	00	00	00	00	80
226	00	00	00	00	00	00	00	00	00	20	11	80
227	00	00	00	00	00	00	00	00	00	20	20	80

APPENDIX D

Original Data

MCDP - 6-year-olds

No.	School	Sex	D.O.B.	Init.Exam	Init.Age	34	Specify	Treatment	35	Specify	Tx.
701	BA	F	9/3/81	3/18/88	6.5380	2		preventive	1	fluorosis	
702	BA	F	12/22/81	3/24/88	6.2533	2		preventive			
703	BA	M	9/6/81	3/18/88	6.5298	2		preventive			
704	BR	F	12/31/81	9/29/87	5.7440	0	O.H. good	-			
705	BR	M	11/26/81	10/24/88	6.9103	2		preventive			
706	BR	M	11/3/81	10/14/87	5.9439	2		preventive			
707	BR	M	9/15/81	10/13/87	6.0753	2		preventive			
708	BR	F	3/16/81	10/14/87	6.5791	2		preventive			
709	BR	M	2/7/81	10/14/87	6.6804	2		preventive			
710	BR	M	10/25/81	10/14/87	5.9685	2		preventive			
711	BR	F	1/13/81	3/3/87	6.1328	2		preventive			
712	BR	F	12/5/81	10/13/87	5.8535	0		-	1	16,26 Hypoplastic	
713	BR	M	11/12/81	9/23/88	6.8638	2		preventive			
714	BR	M	7/8/81	10/14/87	6.2669	2		preventive			
715	BR	M	5/31/81	4/8/88	6.8556	0		-			
716	BR	F	10/3/81	10/13/87	6.0260	0		-			
717	BR	F	12/28/81	10/13/87	5.7906	2		preventive			
718	BR	F	1/19/81	10/13/87	6.7296	2		preventive			
719	BR	F	5/23/81	10/15/87	6.3956	2		preventive			
720	BR	M	3/18/81	10/14/87	6.5736	2		preventive			
721	BR	M	2/12/81	10/14/87	6.6667	2		preventive			
722	CO	F	6/25/81	10/13/87	6.2998	0					
723	CO	M	7/9/81	10/28/87	6.3025	2		preventive			
724	CO	F	3/2/81	10/29/87	6.6585	2		preventive			
725	CO	M	9/8/81	9/23/88	7.0418	2		preventive			
726	CO	M	9/9/81	10/27/87	6.1300	2		preventive			
727	CO	M	8/16/81	10/27/87	6.1958	2		preventive			
728	CO	F	7/6/81	10/28/87	6.3107	2		preventive			
729	JL	M	1/27/81	1/18/88	6.9733	2		preventive			

No.	School	Sex	D.O.B.	Init.Exam	Init.Age	34	Specify	Treatment	35	Specify	Tx.
730	MA	F	2/7/81	9/9/87	6.5845	2	O.H. poor	preventive			
731	MA	M	4/9/81	9/9/87	6.4175	0	O.H. poor	-			
732	MA	M	10/2/80	9/3/86	5.9192	0	O.H. good	-			
733	MA	M	1/1/81	9/9/87	6.6858	0	O.H. fair	-			
734	PD	M	9/29/81	9/9/87	5.9439	2	O.H. good	preventive			
735	PD	M	7/10/81	9/9/87	6.1656	0	O.H. good	-			
736	PD	M	11/27/81	9/9/87	5.7823	0	O.H. fair	-			
737	SA	F	9/29/81	9/20/88	6.9760	2		preventive			
738	SA	M	5/12/81	9/15/87	6.3436	2	O.H. good	preventive			
739	SA	M	1/20/81	9/15/87	6.6502	2	O.H.good	preventive			
740	TP	M	2/12/81	1/22/88	6.9405	2		preventive			
741	TP	F	12/7/81	1/22/88	6.1246	2		preventive			
742	TP	M	6/20/81	1/22/88	6.5900	2		preventive			
743	TP	M	2/17/81	1/22/88	6.9268	2		preventive			
744	TP	F	2/8/81	1/22/88	6.9514	2		preventive			
745	WA	M	5/17/81	2/17/88	6.7543	2	O.H. fair	preventive			
746	WA	F	11/17/81	2/17/88	6.2505	2	O.H. fair	preventive			
747	WA	F	7/3/81	2/17/88	6.6256	2	O.H. poor	preventive			
748	WA	F	5/2/81	2/17/88	6.7953	2		preventive			
749	WA	M	10/3/81	2/17/88	6.3737	2	O.H. poor	preventive			
750	WA	M	8/11/81	2/17/88	6.5188	2	O.H.poor	preventive			
751	WA	M	2/25/81	2/17/88	6.9760	2	O.H. poor	preventive			
752	WN	M	7/10/81	9/23/87	6.2040	2	O.H. fair	preventive			
753	WN	F	5/5/81	9/14/87	6.3600	2		preventive			
754	WN	M	11/4/81	9/23/87	5.8836	2	O.H. poor	preventive			
755	WN	F	5/25/81	9/14/87	6.3053	2	OH. poor	preventive			
756	WN	M	1/16/81	9/14/87	6.6585	2	O.H. fair	preventive	1	Geminat'n-Cong. Miss.	
757	WN	M	3/26/81	9/29/87	6.5106	2	O.H. fair	preventive			

No.	School	Sex	D.O.B.	Init.Exam	Init.Age	34	Specify	Treatment	35	Specify	Tx.
801	BA	F	1/6/82	2/21/89	7.1266	2		preventive	1	6's hypoplastic	
802	BA	F	9/7/82	5/10/89	6.6721	2		preventive			
803	BA	F	8/13/82	4/26/89	6.7023	2		preventive	1	36 hypoplastic	
804	BR	M	1/10/82	1/25/89	7.0418	2		preventive			
805	BR	F	3/12/82	1/25/89	6.8747	2		preventive			
806	BR	F	7/4/82	9/22/88	6.2204	2		preventive			
807	BR	F	7/8/82	9/23/88	6.2122	2		preventive			
808	BR	M	9/22/82	9/23/88	6.0041	2		preventive			
809	BR	M	3/16/82	9/22/88	6.5216	2		preventive			
810	BR	M	2/16/82	9/23/88	6.6010	0		-			
811	BR	F	12/30/82	10/24/88	5.8179	0		-			
812	BR	M	10/10/82	9/23/88	5.9548	2		preventive			
813	BR	M	4/29/82	9/23/88	6.4038	2		preventive			
814	BR	F	9/25/82	9/22/88	5.9932	2		preventive			
815	BR	M	12/1/82	9/23/88	5.8125	2		preventive			
816	BR	M	12/24/82	9/23/88	5.7495	0		-			
817	BR	F	12/24/82	9/23/88	5.7495	0		-			
818	BR	M	5/10/82	10/24/88	6.4586	0		-			
819	BR	F	11/13/82	10/24/88	5.9466	2		preventive			
820	BR	F	8/20/82	9/23/88	6.0945	2		preventive			
821	BR	F	6/18/82	9/22/88	6.2642	2		preventive			
822	BR	F	2/27/82	9/23/88	6.5708	2		preventive			
823	BR	F	1/23/82	10/24/88	6.7515	2		preventive			
824	BR	M	10/1/82	9/23/88	5.9795	2		preventive			
825	BR	F	9/9/82	10/26/88	6.1300	2		preventive			
826	BR	M	11/3/82	11/6/89	7.0089	2		preventive			
827	BR	F	7/24/82	9/23/88	6.1684	2		preventive			
828	BR	M	12/11/82	9/23/88	5.7851	2		preventive			
829	CO	M	6/22/82	9/22/88	6.2533	2		preventive			

No.	School	Sex	D.O.B.	Init.Exam	Init.Age	34	Specify	Treatment	35	Specify	Tx.
830	CO	M	2/24/82	9/22/88	6.5763	2		preventive			
831	CO	F	3/25/82	12/2/88	6.6913	0		-			
832	CO	M	2/14/82	9/22/88	6.6037	2		preventive			
833	CO	M	6/9/82	9/22/88	6.2888	2		preventive			
834	CO	M	1/29/82	9/23/88	6.6502	2		preventive			
835	JL	M	2/1/82	1/23/89	6.9760	2		preventive			
836	JL	M	2/22/82	1/23/89	6.9185	2		preventive			
837	MA	F	6/3/82	8/25/88	6.2286	2		preventive			
838	PD	F	9/29/82	8/25/88	5.9055	2		preventive			
839	PD	M	1/28/82	8/25/88	6.5736	2		preventive			
840	PK	M	7/8/82	1/25/89	6.5517	2		preventive			
841	PK	F	3/17/82	1/24/89	6.8583	2		preventive			
842	PK	M	2/26/82	1/24/89	6.9103	2		preventive			
843	PK	M	5/24/82	1/25/89	6.6749	2		preventive			
844	SA	M	8/3/82	9/20/88	6.1328	2		preventive			
845	SA	M	3/16/82	9/20/88	6.5161	2		preventive			
846	SA	M	4/13/82	9/20/88	6.4394	2		preventive			
847	TP	M	4/10/82	1/27/89	6.8008	2		preventive			
848	TP	F	7/7/82	1/27/89	6.5599	2		preventive			
849	TP	M	10/27/82	1/27/89	6.2533	2		preventive			
850	WA	F	7/8/82	2/21/89	6.6256	2		preventive			
851	WA	F	9/7/82	2/21/89	6.4586	2		preventive			
852	WA	M	4/4/82	2/21/89	6.8857	2		preventive			
853	WA	F	3/13/82	2/22/89	6.9487	2	O.H. poor	preventive			
854	WA	M	1/25/82	2/21/89	7.0746	2		preventive			
855	WA	F	5/3/82	2/21/89	6.8063	2		preventive	1	gen. mottling	
856	WA	M	12/7/82	2/21/89	6.2094	2		preventive			
857	WA	F	1/24/82	2/21/89	7.0773	2		preventive			
858	WA	F	2/17/82	2/21/89	7.0116	2		preventive			

No.	School	Sex	D.O.B.	Init.Exam	Init.Age	34	Specify	Treatment	35	Specify	Tx.
859	WA	F	6/12/82	2/21/89	6.6968	2		preventive			
860	WA	M	9/22/82	2/22/89	6.4203	2	O.H. fair	preventive			
861	WA	F	6/29/82	2/21/89	6.6502	2		preventive			
862	WN	M	3/10/82	9/30/88	6.5599	0		-	1	Supernum.11-21	ext'n
863	WN	M	3/23/82	9/9/88	6.4668	2		preventive	1	Supernum.11-21	ext'n
864	WN	M	9/20/82	9/20/89	7.0007	0		-			
865	WN	M	10/2/82	9/30/88	5.9959	2		preventive			
866	WN	F	7/18/82	9/13/88	6.1574	0		-			
867	WN	M	10/9/82	9/20/89	6.9487	2		preventive			
868	WN	F	10/14/82	9/9/88	5.9055	2		preventive			
869	WN	F	9/6/82	9/13/88	6.0205	0		-			
870	WN	M	8/21/82	9/20/89	7.0828	2		preventive			
871	WN	M	12/5/82	9/20/89	6.7926	0		-			
872	WN	M	10/20/82	9/9/88	5.8891	0		-			
873	WN	F	6/18/82	9/9/88	6.2286	0		-			
901	MA	F	3/17/84	6/14/90	6.2423	2		preventive			
902	MA	M	1/15/84	6/14/90	6.4120	2		preventive			
903	MA	M	4/3/84	6/14/90	6.1958	0		-			
904	PD	F	9/1/83	5/2/90	6.6667	0		-			
905	PD	M	10/3/83	5/2/90	6.5791	0		-	1	severe hypocalc'n	rest've
906	PK	M	4/22/83	1/26/90	6.7652	2		preventive			
907	PK	M	12/31/83	1/26/90	6.0726	0		-			

No.	36	Specify	Tx.	37	FI	PUD	PUD	PLDR	PUDR	56	Dentofacial Anomalies
701					1					1	32 linguoversion
702					1					0	
703					1				1	0	
704										0	
705										0	
706										0	
707								1		0	
708										0	
709										0	
710										0	
711										0	
712							1	1		0	
713										0	Ant. openbite
714										1	Midline shift 4 mm.R
715								2		0	
716										0	
717										0	
718								1	1	2	16/46 x-bite; space loss
719								1	1	1	Midline shift 3mm. R
720										0	
721										0	
722					1					0	
723					1					0	
724					1					0	
725					1					0	
726										1	Ant. crowding
727					1			1	1	0	
728					1					0	
729					1					0	

No.	36	Specify	Tx.	37	FI	PUD	PUD	PLDR	PUDR	56	Dentofacial Anomalies
730								1	1	1	Space loss 54, 55
731							1	1		1	x-bite 52/82, 62/72
732										0	
733										0	
734										0	
735										0	
736									1	0	
737										1	11-21 diastema 3 mm.
738										1	Ant. openbite
739										0	
740					1					1	Ant.openbite, crowd.low.ant's
741					1					0	
742					1					2	16 x-bite
743										0	
744					1					0	
745					1					0	
746					1					0	
747					1					0	
748					1					1	Space loss 54, 64
749					1					2	36 x-bite
750					1					0	
751					1					1	Space loss
752					0			1		1	Space loss-75,85
753					1					1	Thumb sucking habit
754					1				1	0	
755										0	
756										1	31,32,41,42 Cong. Missing
757										2	x-bite 63/73,52-85

No.	36	Specify	Tx.	37	FI	PUD	PUD	PLDR	PUDR	56	Dentofacial Anomalies
801					1			1		0	
802					1					0	
803					1					0	
804										0	
805								1	1	0	
806										0	
807								1	1	0	
808										0	
809										0	
810										0	
811					1					0	
812										0	
813										0	
814										0	
815										0	
816								1		2	Post. R. x-bite
817										0	
818										0	
819						1		1	1	0	
820										0	
821										0	
822						1				0	
823								1		0	
824										0	
825					1			1		0	
826										1	Space loss U.L.
827								1		0	
828										0	
829					1					0	

No.	36	Specify	Tx.	37	FI	PUD	PUD	PLDR	PUDR	56	Dentofacial Anomalies
830					1				1	0	
831					1					0	
832					1					0	
833					1					0	
834					1					0	
835										2	x-bite-55-51,61,62
836										0	
837								1		0	
838										2	x-bite 53-55,65; Ant openbit
839										0	
840										0	
841										0	
842								1	1	1	11-21 diastema 3 mm.
843								1		1	Slight crowding lower ant.'s
844										0	
845										0	
846										0	Ant. spacing
847					1					0	
848					1					1	Space loss-64
849					1					2	Space loss-54,64,74,84
850					1					0	
851					1					1	53/83 x-bite, 54/84 edge-ed
852					1			1	1	1	Midline shift 3 mm. R
853					1					1	Ant. edge-edge
854					1					2	51 ext'n-11/82 x-bite
855					1					1	No Space-12,22 ('89 Cong mi
856					1					0	
857					1					0	
858					1				1	1	Space loss 24

No.	36	Specify	Tx.	37	FI	PUD	PUD	PLDR	PUDR	56	Dentofacial Anomalies
859					1					0	
860					1					0	
861					1					0	
862					1					0	
863										0	
864					1			1		0	
865					1					0	
866										0	
867					1					0	
868					1					1	11 erupting labially
869					1					1	L. ant. crowding
870					1					0	
871					1					0	
872					1					1	Ant. x-bite 52-63
873										0	
901							1			0	
902										0	
903										0	
904								1		0	
905										0	
906										0	Physio. spacing
907										0	

No.	Molars	O.J.	O.B.	Crowd.	61	62	63	64	X-rays	18	17	16	15,55	14,54
701	1	-	-		0	0	0	0	1	80	80	00	A0	A0
702	1	2	2		0	0	0	0	1	80	80	80	A0	A0
703	1	-	-		1	0	1	1	1	80	80	11	B2	B2
704	1	-	-		0	1	1	0	1	80	80	80	A0	A0
705	1	-	-		1	0	1	0	1	80	80	12	B4	A0
706	1	-	-		0	0	0	0	1	80	80	80	A0	A0
707	1	-	-		1	0	1	0	1	80	80	80	A0	A0
708	1	-	-		1	0	1	0	1	80	80	00	A0	A0
709	1	-	-		0	0	0	0	1	80	80	80	B2	B2
710	1	2	3		1	1	1	0	1	80	80	80	B4	A0
711	1	-	-		0	0	0	0	1	80	80	12	B2	A0
712	1	-	-		0	1	1	1	1	80	80	14	C4	C4
713	1	3	3		0	0	0	0	1	80	80	00	C4	A0
714	1	1	3		0	1	1	0	1	80	80	80	B2	B2
715	-	-	-		1	0	1	0	1	80	80	11	C4	C4
716	1	-	-		1	1	1	0	1	80	80	80	B4	B4
717	1	-	-		0	0	0	0	1	80	80	00	C1	A0
718	1	-	-		0	1	0	1	1	80	80	12	C4	M9
719	1	-	-		1	1	1	1	1	80	80	12	B4	M9
720	2	-	-		0	1	1	0	1	80	80	11	B2	A0
721	1	-	-		0	1	1	0	1	80	80	80	B2	B4
722	1	-	-		1	1	1	0	1	80	80	80	B2	A0
723	1	-	-		1	0	1	1	1	80	80	00	B5	A0
724	1	-	-		0	0	0	0	1	80	80	11	B2	B4
725	1	-	-		0	1	1	0	1	80	80	12	B4	B3
726	1	-	-	1	0	1	1	0	1	80	80	80	B3	B2
727	1	-	-		1	0	1	1	1	80	80	80	B2	M9
728	1	-	-		0	0	0	0	1	80	80	80	A0	A0
729	1	3	3		0	1	1	0	1	80	80	00	B2	B4

No.	Molars	O.J.	O.B.	Crowd.	61	62	63	64	X-rays	18	17	16	15,55	14,54
730	1	-	-		0	1	1	1	0	80	80	00	M9	M9
731	2	2	-		1	0	1	1	1	80	80	80	B4	B4
732	1	1	3		0	0	0	0	1	80	80	00	B1	B2
733	1	-	-		1	0	1	0	1	80	80	00	B2	B3
734	1	3	3		0	0	0	0	1	80	80	00	A0	A0
735	1	-	-		0	0	0	0	1	80	80	00	B1	B2
736	1	2	2		0	0	0	1	0	80	80	90	B1	M9
737	1	3	2		0	0	0	0	1	80	80	00	A0	A0
738	1	1	3		0	0	0	0	1	80	80	80	A0	A0
739	1	3	3		0	1	0	0	1	80	80	00	B2	A0
740	2	2	1	1	0	1	1	0	1	80	80	14	B4	B1
741	-	-	-		0	1	1	0	0	80	80	11	A0	A0
742	1	-	-		0	0	0	0	1	80	80	00	C4	C4
743	3	-	-		0	0	0	0	1	80	80	12	C4	C4
744	1	1	3		1	1	1	0	1	80	80	12	B3	B1
745	1	-	-		0	1	1	0	1	80	80	80	B2	B3
746	1	-	-		1	1	1	1	1	80	80	00	B1	B1
747	1	-	-		0	1	1	0	1	80	80	00	B2	B2
748	2	-	-		0	0	0	0	1	80	80	00	E4	M0
749	1	-	-		0	1	1	0	1	80	80	11	B3	A0
750	1	-	-		0	1	1	0	1	80	80	00	B2	B2
751	1	3	2		0	1	1	1	1	80	80	11	B5	B5
752	1	-	-		0	0	0	1	1	80	80	11	C2	A0
753	3	-	-		0	1	1	0	1	80	80	00	A0	B2
754	1	-	-		0	0	0	1	1	80	80	80	C2	M9
755	1	-	-		0	0	0	0	1	80	80	11	C3	C2
756	1	-	-		0	0	0	0	1	80	80	00	A0	A0
757	1	-	-		0	0	0	0	1	80	80	80	C3	B2

No.	Molars	O.J.	O.B.	Crowd.	61	62	63	64	X-rays	18	17	16	15,55	14,54
801	1	-	-		1	1	1	1	1	80	80	14	B1	B5
802	1	-	-		0	0	0	0	1	80	80	00	B1	A0
803	1	-	-		0	0	0	0	1	80	80	00	A0	B1
804	1	-	-		0	0	0	0	1	80	80	00	B0	A0
805	1	-	-		0	1	1	1	0	80	80	12	E5	M9
806	1	3	3		0	0	0	0	1	80	80	12	E3	C2
807	1	3	3		0	0	0	0	1	80	80	12	E2	B5
808	1	-	-		0	1	1	0	1	80	80	80	C4	B2
809	1	1	3		0	1	1	0	1	80	80	00	B4	B2
810	2	2	2		0	0	0	0	1	80	80	12	A0	A0
811	1	-	-		0	0	0	0	1	80	80	80	B1	A0
812	2	-	-		0	0	0	0	1	80	80	11	C4	C4
813	1	3	3		0	0	0	0	1	80	80	00	A0	A0
814	1	3	2		0	1	1	0	1	80	80	00	B2	A0
815	1	3	2		0	0	0	0	1	80	80	80	B3	C2
816	1	2	3		1	0	1	1	1	80	80	80	B1	B4
817	1	1	3		0	1	1	0	1	80	80	80	A0	A0
818	1	-	-		0	1	1	0	1	80	80	80	B4	B3
819	1	-	-		0	0	0	1	1	80	80	11	C4	M0
820	1	1	2		0	0	0	0	1	80	80	80	A0	A0
821	1	3	2		0	0	0	0	1	80	80	00	B2	A0
822	1	1	2		0	0	0	0	1	80	80	12	C2	B4
823	1	1	2		0	0	0	1	1	80	80	11	B2	M0
824	1	3	3		0	0	0	0	1	80	80	80	A0	A0
825	1	-	-		1	1	1	1	1	80	80	80	B4	A0
826	1	-	-		0	0	0	0	1	80	80	12	C4	C4
827	1	2	2		0	0	0	1	1	80	80	00	B2	A0
828	1	-	-		0	0	0	0	1	80	80	80	B1	A0
829	1	-	-		0	1	1	0	1	80	80	00	B2	A0

No.	Molars	O.J.	O.B.	Crowd.	61	62	63	64	X-rays	18	17	16	15,55	14,54
830	1	-	-		0	0	0	1	1	80	80	80	B2	M9
831	1	-	-		0	1	1	0	0	80	80	12	B2	B2
832	1	-	-		0	1	1	0	1	80	80	12	B1	A0
833	1	-	-		0	0	0	0	1	80	80	80	B2	A0
834	1	-	-		0	0	0	0	1	80	80	80	D2	C1
835	3	3	3		1	1	1	0	1	80	80	00	B1	B5
836	1	-	-		0	0	0	0	1	80	80	00	B1	B1
837	1	2	2		0	0	0	1	1	80	80	00	B2	B1
838	2	-	-		0	0	0	1	1	80	80	80	A0	A0
839	1	-	-		0	0	0	0	1	80	80	00	B1	A0
840	1	2	2		0	1	1	0	1	80	80	80	A0	A0
841	1	-	-		0	0	0	1	1	80	80	00	C2	C3
842	1	3	3		1	1	1	0	1	80	80	00	B3	B5
843	2	2	3	1	1	0	1	1	1	80	80	11	C2	C3
844	1	3	2		0	0	0	0	1	80	80	80	A0	B2
845	1	2	2		0	0	0	0	1	80	80	00	A0	A0
846	1	3	3		0	0	0	0	1	80	80	00	B1	A0
847	2	-	-		0	1	1	0	1	80	80	12	B1	A0
848	2	-	-		0	0	0	1	1	80	80	00	E4	E4
849	2	-	-		0	1	1	0	1	80	80	80	C4	M0
850	1	-	-		0	0	0	0	1	80	80	00	B1	B2
851	1	-	-		0	0	0	0	1	80	80	00	A0	A0
852	1	1	1		1	1	1	1	1	80	80	11	B5	B5
853	1	-	-		0	0	0	0	1	80	80	00	C4	C4
854	1	-	-		1	1	1	1	1	80	80	00	B4	B4
855	1	-	-		0	0	0	0	1	80	80	00	A0	A0
856	1	1	1		0	1	1	0	1	80	80	80	C1	D2
857	1	-	-		1	1	1	0	1	80	80	80	B1	B2
858	2	-	-		0	0	0	1	1	80	80	00	E2	M9

No.	Molars	O.J.	O.B.	Crowd.	61	62	63	64	X-rays	18	17	16	15,55	14,54
859	1	3	1		0	0	0	0	1	80	80	80	A0	A0
860	2	-	-		1	1	1	0	1	80	80	00	B4	B2
861	1	-	-		0	0	0	0	1	80	80	80	B2	A0
862	1	-	-		0	0	0	0	1	80	80	12	C2	C4
863	1	-	-		0	0	0	0	1	80	80	00	A0	B2
864	2	2	2		0	0	0	1	1	80	80	11	C4	C4
865	-	-	-		0	0	0	0	1	80	80	80	B1	A0
866	1	-	-		0	0	0	0	1	80	80	00	C4	B3
867	1	-	-		0	0	0	0	1	80	80	00	A0	A0
868	1	-	-		1	0	1	0	1	80	80	80	B2	A0
869	3	-	-	1	0	0	0	0	1	80	80	00	B1	A0
870	-	-	-		0	0	0	0	0	80	80	00	A0	A0
871	-	-	-		0	1	1	0	1	80	80	00	B1	A0
872	1	-	-		0	1	1	0	1	80	80	80	B2	B4
873	2	-	-		0	0	0	0	1	80	80	00	B1	A0
901	1	-	-		0	0	0	0	0	80	80	90	B1	B1
902	1	-	-		0	1	0	0	0	80	80	90	B2	A0
903	1	-	-		0	0	0	0	0	80	80	90	B1	A0
904	1	-	-		1	0	1	0	1	80	80	80	B3	B2
905	2	-	-		0	0	0	1	1	80	80	00	A0	A0
906	1	-	-		0	0	0	0	1	80	80	11	A0	A0
907	-	-	-		0	0	0	0	1	80	80	00	C1	C2

No.	13,53	12,52	11,51	21,61	22,62	23,63	24,64	25,65	26	27	28	48	47	46
701	A0	A0	X0	X0	A0	A0	A0	A0	00	80	80	80	80	00
702	A0	X0	X0	X0	X0	A0	A0	A0	80	80	80	80	80	80
703	A0	B0	X0	X0	B0	C1	E5	C2	11	80	80	80	80	11
704	A0	B1	B0	B0	A0	A0	A0	A0	80	80	80	80	80	80
705	A0	A0	X0	X0	A0	A0	A0	D2	13	80	80	80	80	12
706	A0	A0	X0	X0	A0	A0	A0	A0	80	80	80	80	80	80
707	B2	A0	M0	A0	A0	B1	A0	B2	80	80	80	80	80	00
708	B4	A0	80	80	B5	A0	B2	B1	11	80	80	80	80	80
709	A0	A0	X0	X0	A0	A0	B2	B1	80	80	80	80	80	80
710	A0	A0	B0	B0	B0	B2	B4	B4	80	80	80	80	80	80
711	A0	X0	X0	X0	X0	A0	B2	A0	00	80	80	80	80	00
712	X0	X0	X0	X0	X0	A0	C4	C4	11	80	80	80	80	00
713	A0	X0	X0	X0	A0	A0	C2	C4	00	80	80	80	80	00
714	A0	M0	B1	B2	B1	A0	B2	B2	80	80	80	80	80	80
715	X0	X0	X0	X0	X0	C1	C4	C2	11	80	80	80	80	12
716	A0	B0	B5	B5	B0	B1	B4	B4	80	80	80	80	80	80
717	A0	X0	X0	X0	X0	A0	A0	B1	11	80	80	80	80	00
718	A0	X0	X0	X0	X0	M9	M9	C4	12	80	80	80	80	12
719	A0	B0	X0	X0	A0	A0	B4	B4	12	80	80	80	80	11
720	A0	X0	X0	X0	X0	A0	B4	B3	11	80	80	80	80	12
721	B2	B0	B0	B0	B0	B1	B4	B2	80	80	80	80	80	12
722	A0	A0	B5	A0	A0	A0	A0	A0	80	80	80	80	80	00
723	A0	A0	X0	X0	A0	A0	B2	B2	00	80	80	80	80	00
724	B1	X0	X0	X0	X0	B1	B4	B2	12	80	80	80	80	12
725	B2	B0	B0	B0	A0	A0	C2	C3	21	80	80	80	80	12
726	A0	A0	B0	B0	B0	A0	B2	B2	80	80	80	80	80	80
727	A0	X0	X0	X0	X0	A0	M9	B2	80	80	80	80	80	80
728	A0	A0	A0	A0	A0	A0	A0	A0	80	80	80	80	80	80
729	A0	A0	X0	X0	A0	A0	B4	B2	00	80	80	80	80	11

No.	13,53	12,52	11,51	21,61	22,62	23,63	24,64	25,65	26	27	28	48	47	46
730	B4	A0	X0	X0	A0	B2	M9	B2	00	80	80	80	80	12
731	A0	A0	A0	B5	A0	B2	B4	B3	80	80	80	80	80	12
732	A0	A0	X0	X0	A0	A0	A0	A0	80	80	80	80	80	00
733	A0	A0	X0	X0	B1	A0	B3	B5	00	80	80	80	80	12
734	A0	X0	X0	X0	X0	A0	A0	A0	00	80	80	80	80	00
735	A0	X0	X0	X0	X0	A0	A0	B1	00	80	80	80	80	00
736	B1	A0	B0	B0	B0	B1	M9	A0	90	80	80	80	80	90
737	A0	X0	X0	X0	X0	A0	A0	A0	00	80	80	80	80	00
738	A0	A0	B0	B0	A0	A0	A0	A0	80	80	80	80	80	80
739	A0	A0	X0	X0	A0	A0	A0	A0	00	80	80	80	80	80
740	A0	A0	X0	X0	A0	A0	B2	B4	14	80	80	80	80	00
741	A0	A0	A0	A0	A0	A0	A0	A0	90	80	80	80	80	90
742	A0	A0	X0	A0	A0	A0	C4	C4	00	80	80	80	80	00
743	A0	X0	X0	X0	X0	A0	C4	C4	13	80	80	80	80	11
744	A0	X0	X0	X0	X0	A0	B2	B2	12	80	80	80	80	12
745	A0	A0	A0	A0	A0	A0	A0	B2	80	80	80	80	80	00
746	A0	A0	X0	X0	A0	B2	B2	B2	80	80	80	80	80	00
747	A0	A0	A0	A0	A0	A0	B2	B2	00	80	80	80	80	00
748	A0	A0	A0	A0	A0	A0	M0	E4	00	80	80	80	80	00
749	A0	X0	X0	X0	X0	B3	A0	B3	00	80	80	80	80	11
750	A0	X0	X0	X0	X0	A0	B2	B2	00	80	80	80	80	00
751	A0	X0	X0	X0	X0	B5	00	B5	11	80	80	80	80	12
752	C4	A0	X0	X0	A0	B1	C4	C2	00	80	80	80	80	11
753	A0	X0	X0	X0	X0	A0	B2	B2	00	80	80	80	80	00
754	C4	X0	X0	X0	X0	M9	M9	C2	80	80	80	80	80	80
755	C2	X0	X0	X0	X0	A0	C2	C3	22	80	80	80	80	21
756	A0	A0	A0	B0	A0	A0	A0	A0	00	80	80	80	80	00
757	A0	A0	X0	X0	A0	A0	A0	C4	80	80	80	80	80	80

No.	13,53	12,52	11,51	21,61	22,62	23,63	24,64	25,65	26	27	28	48	47	46
801	A0	A0	X0	X0	A0	A0	B5	B1	14	80	80	80	80	12
802	A0	A0	B0	A0	A0	A0	A0	A0	00	80	80	80	80	00
803	A0	X0	X0	X0	X0	B1	B2	A0	00	80	80	80	80	11
804	A0	X0	X0	X0	X0	A0	C4	C1	00	80	80	80	80	00
805	C4	X0	X0	X0	X0	A0	C4	C4	12	80	80	80	80	00
806	A0	X0	B0	B0	X0	A0	C2	E3	13	80	80	80	80	13
807	A0	B0	X0	X0	X0	A0	B2	B2	00	80	80	80	80	00
808	C1	C4	X0	X0	C4	B4	B1	B1	80	80	80	80	80	80
809	A0	X0	X0	X0	X0	A0	A0	B4	00	80	80	80	80	00
810	A0	A0	X0	X0	A0	A0	A0	A0	12	80	80	80	80	00
811	A0	A0	A0	X0	A0	B1	A0	A0	80	80	80	80	80	00
812	C1	X0	X0	X0	X0	C4	C4	E4	00	80	80	80	80	11
813	A0	A0	X0	X0	A0	A0	A0	A0	00	80	80	80	80	00
814	A0	B0	B0	B0	B0	A0	B3	B2	80	80	80	80	80	00
815	A0	A0	A0	A0	A0	A0	A0	B2	80	80	80	80	80	80
816	A0	A0	B0	B0	A0	A0	B4	B3	80	80	80	80	80	80
817	B1	B0	B0	A0	B0	B1	B0	B2	80	80	80	80	80	00
818	B2	B0	B0	B0	B0	A0	B3	B2	80	80	80	80	80	80
819	A0	X0	X0	X0	X0	A0	M9	C1	12	80	80	80	80	12
820	A0	A0	A0	A0	A0	A0	A0	A0	80	80	80	80	80	80
821	A0	A0	X0	X0	A0	A0	B1	B2	00	80	80	80	80	12
822	C1	X0	X0	X0	X0	C2	M0	E4	12	80	80	80	80	12
823	A0	X0	X0	X0	X0	A0	C1	M0	11	80	80	80	80	12
824	A0	A0	A0	A0	A0	A0	A0	B1	80	80	80	80	80	00
825	A0	X0	X0	X0	X0	A0	A0	A0	80	80	80	80	80	00
826	C1	X0	X0	X0	X0	B1	C4	M0	12	80	80	80	80	12
827	A0	A0	X0	X0	A0	A0	A0	B2	00	80	80	80	80	11
828	A0	A0	X0	X0	A0	A0	C1	E2	80	80	80	80	80	80
829	A0	A0	A0	A0	A0	A0	B2	B4	00	80	80	80	80	12

No.	13,53	12,52	11,51	21,61	22,62	23,63	24,64	25,65	26	27	28	48	47	46
830	A0	B0	B0	B0	B0	A0	B2	B2	80	80	80	80	80	80
831	A0	X0	X0	X0	X0	A0	B4	A0	12	80	80	80	80	11
832	A0	A0	X0	A0	A0	A0	B1	C4	12	80	80	80	80	12
833	A0	A0	A0	A0	A0	A0	A0	B2	80	80	80	80	80	80
834	A0	X0	X0	X0	X0	A0	A0	C2	80	80	80	80	80	80
835	A0	B0	B0	B0	B0	A0	A0	B4	11	80	80	80	80	00
836	A0	A0	X0	X0	A0	A0	A0	A0	00	80	80	80	80	00
837	A0	A0	A0	A0	A0	A0	A0	A0	00	80	80	80	80	11
838	A0	X0	X0	X0	X0	A0	A0	A0	80	80	80	80	80	80
839	A0	X0	X0	X0	X0	A0	A0	B1	00	80	80	80	80	00
840	A0	A0	A0	A0	A0	A0	A0	A0	80	80	80	80	80	00
841	A0	80	80	80	80	A0	A0	C2	00	80	80	80	80	00
842	B1	B0	00	00	B0	B1	B1	B3	00	80	80	80	80	12
843	B1	B0	B0	B0	B0	B1	E2	C2	00	80	80	80	80	11
844	A0	A0	A0	A0	A0	A0	B2	A0	80	80	80	80	80	80
845	A0	X0	X0	X0	X0	A0	A0	B2	00	80	80	80	80	00
846	A0	X0	X0	X0	X0	A0	A0	A0	00	80	80	80	80	00
847	A0	B0	B0	B0	B0	A0	B2	B3	12	80	80	80	80	12
848	A0	80	80	80	80	C1	M0	E3	00	80	80	80	80	00
849	C4	X0	X0	X0	X0	A0	M0	C4	80	80	80	80	80	80
850	A0	A0	A0	A0	A0	A0	B2	B2	00	80	80	80	80	00
851	A0	A0	X0	X0	A0	A0	A0	A0	00	80	80	80	80	11
852	A0	X0	X0	X0	X0	A0	B5	B2	00	80	80	80	80	00
853	C3	X0	X0	X0	X0	C4	C4	C4	00	80	80	80	80	00
854	A0	A0	B9	B5	A0	B4	B4	B4	00	80	80	80	80	00
855	A0	X0	X0	X0	X0	A0	A0	A0	00	80	80	80	80	00
856	A0	A0	A0	A0	A0	A0	B2	E2	80	80	80	80	80	80
857	A0	A0	B0	B0	A0	A0	A0	B4	80	80	80	80	80	00
858	M0	X0	X0	X0	X0	B1	M9	E1	00	80	80	80	80	00

No.	13,53	12,52	11,51	21,61	22,62	23,63	24,64	25,65	26	27	28	48	47	46
859	A0	A0	A0	A0	A0	A0	A0	A0	80	80	80	80	80	80
860	A0	A0	X0	X0	A0	A0	B5	B1	00	80	80	80	80	11
861	A0	X0	X0	X0	X0	A0	A0	B1	80	80	80	80	80	11
862	B1	80	80	80	80	A0	C2	C4	12	80	80	80	80	00
863	A0	A0	80	80	A0	A0	B2	B2	00	80	80	80	80	00
864	C4	X0	X0	X0	X0	C4	00	C4	00	80	80	80	80	22
865	A0	A0	A0	A0	A0	A0	A0	A0	80	80	80	80	80	80
866	B1	X0	X0	X0	X0	C1	C4	C4	00	80	80	80	80	00
867	A0	A0	A0	A0	A0	A0	A0	A0	00	80	80	80	80	00
868	A0	A0	A8	B5	A0	A0	B2	B1	80	80	80	80	80	80
869	A0	A0	X0	X0	A0	A0	B2	B3	00	80	80	80	80	00
870	A0	A0	X0	X0	X0	A0	A0	A0	00	80	80	80	80	00
871	A0	A0	A0	A0	A0	A0	A0	B1	12	80	80	80	80	00
872	A0	A0	B0	B0	A0	A0	B4	B2	80	80	80	80	80	80
873	A0	X0	X0	X0	X0	A0	A0	A0	00	80	80	80	80	00
901	A0	B0	B0	A0	B0	A0	A0	C1	90	80	80	80	80	90
902	B1	B0	B0	B0	B0	B1	B2	A0	90	80	80	80	80	90
903	B1	A0	A0	A0	A0	A0	B2	A0	90	80	80	80	80	90
904	A0	A0	A0	A0	A0	A0	B1	B3	00	80	80	80	80	11
905	A0	A0	A0	A0	A0	A0	A0	A0	13	80	80	80	80	00
906	A0	A0	A0	A0	A0	A0	A0	A0	11	80	80	80	80	11
907	A0	A0	A0	X0	A0	A0	C4	C1	00	80	80	80	80	00

No.	45,85	44,84	43,83	42,82	41,81	31,71	32,72	33,73	34,74	35,75	36	37	38
701	A0	A0	A0	A0	X0	X0	X0	A0	A0	A0	00	80	80
702	A0	A0	A0	X0	X0	X0	X0	A0	A0	A0	80	80	80
703	C4	C4	A0	X0	X0	X0	X0	C1	C4	C1	11	80	80
704	B4	B2	A0	A0	X0	A0	A0	A0	A0	B4	80	80	80
705	B5	A0	A0	X0	X0	X0	X0	A0	B2	B2	12	80	80
706	A0	A0	A0	X0	X0	X0	X0	A0	A0	A0	80	80	80
707	B4	B4	A0	X0	X0	X0	X0	A0	M9	M9	11	80	80
708	B1	A0	B2	A0	X0	X0	A0	A0	A0	B1	80	80	80
709	A0	A0	A0	A0	X0	X0	A0	A0	A0	A0	80	80	80
710	B4	B2	B1	A0	X0	X0	A0	A0	E5	B2	80	80	80
711	C1	B1	A8	A0	00	00	80	A8	A0	C1	11	80	80
712	C4	M9	A0	X0	X0	X0	X0	A0	M9	C4	11	80	80
713	C4	C4	A0	X0	X0	X0	X0	A0	C4	C4	11	80	80
714	B4	B4	A0	X0	X0	X0	X0	A0	C4	C3	80	80	80
715	E5	M9	A0	X0	X0	X0	X0	A0	C4	C4	12	80	80
716	B4	B4	A0	X0	X0	X0	X0	B1	E3	C1	80	80	80
717	B1	A0	A0	X0	X0	X0	X0	A0	A0	A0	00	80	80
718	M9	M9	M9	X0	X0	X0	X0	A0	M9	M9	12	80	80
719	M9	B4	B1	X0	X0	X0	X0	B1	B4	B5	11	80	80
720	B1	A0	A0	X0	X0	X0	X0	A0	A0	B2	12	80	80
721	B3	B4	A0	X0	X0	X0	X0	B1	B4	B3	12	80	80
722	B4	B2	A0	A0	A0	A0	A0	A0	A0	B4	00	80	80
723	B1	A0	A0	X0	X0	X0	X0	A0	B2	B5	00	80	80
724	B2	B4	A8	X0	X0	X0	X0	A8	B4	B2	12	80	80
725	B2	B4	A0	A0	X0	X0	A0	A0	B4	B4	00	80	80
726	B1	B4	B1	A0	X0	X0	A0	B2	B4	B3	80	80	80
727	A0	M9	B1	A0	X0	X0	B0	B1	M9	E5	80	80	80
728	A0	A0	A0	A0	X0	X0	A0	A0	A0	A0	80	80	80
729	B4	B2	A0	X0	X0	X0	X0	A0	B4	B2	11	80	80

No.	45,85	44,84	43,83	42,82	41,81	31,71	32,72	33,73	34,74	35,75	36	37	38
730	B2	B4	B1	A0	X0	X0	X0	A0	B2	B1	12	80	80
731	C4	M0	A0	A0	X0	X0	A0	A0	B5	C4	12	80	80
732	B2	B2	A0	A0	X0	X0	A0	A0	A0	A0	00	80	80
733	B4	B2	A0	X0	X0	X0	X0	A0	B2	B1	00	80	80
734	B2	B2	A0	X0	X0	X0	X0	A0	B2	A0	00	80	80
735	B2	A0	A0	X0	X0	X0	X0	A0	A0	A0	00	80	80
736	A0	A0	A0	X0	X0	A0	X0	A0	A0	A0	90	80	80
737	A0	A0	A0	X0	X0	X0	X0	A0	A0	A0	00	80	80
738	A0	A0	A0	A0	X0	X0	A0	A0	A0	A0	80	80	80
739	A0	A0	A0	A0	X0	X0	A0	A0	B2	B2	00	80	80
740	B4	B4	A0	X0	X0	X0	X0	A0	B2	B4	14	80	80
741	D2	E2	A0	X0	X0	X0	X0	A0	A0	A0	90	80	80
742	C4	C4	A0	A0	X0	X0	A0	A0	C4	C4	00	80	80
743	E4	C4	A0	X0	X0	X0	X0	A0	C4	C3	00	80	80
744	B4	B4	A0	X0	X0	X0	X0	A0	B5	B4	12	80	80
745	B4	B2	A0	A0	X0	X0	A0	A0	A0	A0	00	80	80
746	B5	B4	A0	X0	X0	X0	X0	A0	B4	B4	80	80	80
747	B1	B4	A0	X0	X0	X0	X0	A0	B4	B4	00	80	80
748	C4	C4	B1	A0	X0	X0	A0	C4	C4	C4	00	80	80
749	B2	B2	A0	X0	X0	X0	X0	A0	B2	B3	12	80	80
750	B2	B4	A0	X0	X0	X0	X0	A0	B4	B2	00	80	80
751	B5	B5	B5	X0	X0	X0	X0	B5	B5	B5	12	80	80
752	M9	C4	C1	A0	X0	X0	A0	C1	C2	M9	00	80	80
753	B1	A0	A0	X0	X0	X0	X0	A0	A0	B1	00	80	80
754	C2	C4	A0	X0	X0	X0	X0	A0	C4	C2	80	80	80
755	C3	C4	A0	X0	X0	X0	X0	A0	C4	C4	22	80	80
756	A0	B2	A0	A0	A0	A0	A0	A0	A0	A0	00	80	80
757	C2	A0	A0	X0	X0	X0	X0	A0	A0	C2	80	80	80

No.	45,85	44,84	43,83	42,82	41,81	31,71	32,72	33,73	34,74	35,75	36	37	38
801	B1	B4	A0	X0	X0	X0	X0	A0	B4	B5	14	80	80
802	A0	A0	A0	A0	X0	X0	A0	A0	A0	A0	00	80	80
803	C1	C1	A0	X0	X0	X0	X0	A0	E2	A0	12	80	80
804	D2	C4	A0	X0	X0	X0	X0	A0	C2	C1	00	80	80
805	C4	C4	A0	X0	X0	X0	X0	A0	C4	M9	12	80	80
806	C4	C2	A0	X0	X0	X0	X0	A0	E2	E2	13	80	80
807	B2	B1	A0	X0	X0	X0	X0	A0	A0	B5	00	80	80
808	C4	B2	C1	A0	X0	X0	A0	A0	B2	C4	80	80	80
809	B4	A0	A0	X0	X0	X0	X0	A0	E2	C4	11	80	80
810	A0	A0	A0	X0	X0	X0	X0	A0	A0	A0	00	80	80
811	B1	B1	A0	A0	X0	X0	A0	A0	A0	B2	80	80	80
812	C4	C4	B1	X0	X0	X0	X0	C1	C4	C4	00	80	80
813	A0	A0	A0	X0	X0	X0	X0	A0	A0	A0	00	80	80
814	B3	B2	A0	X0	X0	X0	X0	B1	B2	B4	00	80	80
815	A0	B1	A0	A0	X0	X0	A0	A0	A0	B1	80	80	80
816	B5	M9	A0	A0	X0	X0	A0	B1	M9	B2	80	80	80
817	B4	B4	B1	X0	X0	X0	X0	A0	B4	B4	00	80	80
818	B4	B2	A0	A0	X0	X0	A0	A0	B2	B3	12	80	80
819	C4	C4	A0	A0	X0	X0	A0	A0	C2	M9	12	80	80
820	B1	A0	A0	A0	X0	X0	X0	A0	A0	B1	00	80	80
821	B2	B1	A0	X0	X0	X0	X0	A0	B2	B3	11	80	80
822	C4	C4	A0	X0	X0	X0	X0	A0	C4	C4	12	80	80
823	M9	M9	A0	X0	X0	X0	X0	A0	C2	C4	12	80	80
824	A0	A0	A0	A0	X0	X0	A0	A0	A0	A0	00	80	80
825	B5	A0	A0	X0	X0	X0	X0	A0	A0	B1	00	80	80
826	C4	C4	A0	X0	X0	X0	X0	A0	C4	C4	12	80	80
827	M9	B2	A0	X0	X0	X0	X0	A0	E2	D3	21	80	80
828	C1	C1	A0	A0	X0	X0	A0	A0	A0	C1	80	80	80
829	B1	B4	A0	A0	X0	A0	A0	A0	B2	B1	00	80	80

No.	45,85	44,84	43,83	42,82	41,81	31,71	32,72	33,73	34,74	35,75	36	37	38
830	B2	B1	B1	A0	X0	X0	A0	B2	B2	B2	80	80	80
831	A0	B2	A0	A0	X0	X0	A0	A0	C3	C2	11	80	80
832	B3	B3	A0	A0	X0	X0	A0	A0	B3	B4	12	80	80
833	B1	B2	A0	A0	X0	X0	A0	A0	B2	B2	80	80	80
834	C1	E1	A0	X0	X0	X0	X0	A0	D2	E1	00	80	80
835	A0	A0	A0	X0	X0	X0	X0	A0	A0	B1	12	80	80
836	B1	A0	A0	X0	X0	X0	X0	A0	A0	A0	00	80	80
837	B1	A0	A0	A0	A0	A0	A0	A0	A0	M9	00	80	80
838	A0	A0	A0	X0	X0	X0	X0	A0	A0	A0	80	80	80
839	A0	A0	A0	X0	X0	X0	X0	A0	B2	B1	11	80	80
840	A0	B2	A0	A0	X0	A0	A0	A0	B2	A0	00	80	80
841	C1	C1	A0	X0	X0	X0	X0	A0	C1	C2	00	80	80
842	B5	B5	B1	X0	X0	X0	X0	B1	B5	B5	11	80	80
843	E5	E4	B1	X0	X0	X0	X0	B0	E5	E5	11	80	80
844	B1	B2	A0	A0	A0	A0	A0	A0	B2	A0	80	80	80
845	A0	A0	A0	X0	X0	X0	X0	A0	A0	A0	00	80	80
846	A0	B2	A0	X0	X0	X0	X0	A0	A0	A0	00	80	80
847	B2	A0	A0	X0	X0	X0	X0	A0	B2	B2	11	80	80
848	E4	E4	C1	X0	X0	X0	X0	C2	C4	B1	00	80	80
849	B4	M0	B1	A0	X0	X0	A0	D2	M0	C4	80	80	80
850	B1	A0	A0	A0	X0	X0	A0	A0	A0	B1	00	80	80
851	A0	A0	A0	X0	X0	X0	X0	A0	A0	A0	00	80	80
852	B5	B5	A0	X0	X0	X0	X0	A0	B4	B5	11	80	80
853	C4	C4	A0	X0	X0	X0	X0	C2	C4	C4	00	80	80
854	B2	B4	A0	X0	X0	X0	X0	A0	B4	B4	00	80	80
855	A0	A0	A0	X0	X0	X0	X0	A0	A0	A0	00	80	80
856	E2	D2	A0	A0	X0	X0	A0	A0	E3	E4	80	80	80
857	B5	B4	B1	A0	X0	X0	A0	B1	B3	B5	11	80	80
858	B2	A0	A0	B0	X0	X0	B0	A0	B3	A0	00	80	80

No.	45,85	44,84	43,83	42,82	41,81	31,71	32,72	33,73	34,74	35,75	36	37	38
859	A0	A0	A0	A0	X0	X0	X0	A0	A0	A0	80	80	80
860	B2	B3	B1	X0	X0	X0	X0	A0	B2	B1	11	80	80
861	C2	C1	A0	X0	X0	X0	X0	A0	A0	A0	00	80	80
862	C1	C4	A0	X0	X0	X0	A0	A0	C4	C1	00	80	80
863	A0	A0	A0	X0	X0	X0	X0	A0	B2	B2	11	80	80
864	M9	M9	C1	A0	X0	X0	A0	C1	D3	C4	11	80	80
865	B2	B2	A0	X0	X0	X0	X0	A0	B2	B1	80	80	80
866	C2	C2	A0	X0	X0	X0	X0	A0	C2	C2	21	80	80
867	A0	A0	A0	X0	X0	X0	X0	A0	A0	A0	00	80	80
868	B1	B1	A0	A0	X0	A0	A0	A0	B1	B2	80	80	80
869	B1	A0	A0	A0	X0	X0	A0	A0	B2	B1	00	80	80
870	A0	A0	A0	X0	X0	X0	X0	A0	A0	A0	21	80	80
871	B2	A0	A0	A0	A0	A0	A0	A0	A0	B2	00	80	80
872	A0	B2	A0	X0	X0	X0	X0	A0	B2	A0	80	80	80
873	B2	A0	A0	X0	X0	X0	X0	A0	A0	B1	00	80	80
901	C1	M0	A0	A0	A0	B0	A0	A0	M0	C1	90	80	80
902	B5	B2	A0	A0	X0	X0	B5	B1	C2	C2	90	80	80
903	B1	B1	A0	A0	A0	A0	A0	A0	A0	B1	90	80	80
904	B5	B2	A0	A0	X0	X0	A0	A0	B2	B2	12	80	80
905	B1	A0	A0	A0	X0	X0	A0	A0	A0	B1	13	80	80
906	B2	B2	A0	A8	X0	X0	X0	A0	B2	A0	11	80	80
907	C4	C4	A0	A0	A0	A0	A0	C4	C4	C4	00	80	80

APPENDIX E

Original Data

MCDP - 13-year-olds

No.	School	Sex	D.O.B.	Init. Exam	Init. Age	34	Specify	Treatment	35
401	B A	M	12/27/74	3/18/88	13.2238	0	OH poor		
402	B A	F	7/31/74	3/18/88	13.6318	2	OH fair	P&F	
403	B A	M	4/16/74	3/24/87	12.9363	2	OH poor	P&F	1
404	B A	F	7/28/74	3/18/88	13.6400	2	OH good	P&F, OHI	
405	B A	F	6/1/74	3/18/88	13.7960	1	OH fair	P&F, scale	
406	B A	F	11/10/74	3/18/88	13.3525	2	OH fair	P&F, OHI	1
407	C O	F	11/7/74	10/28/87	12.9719	0		Incomplete	
408	C O	F	11/7/74	10/29/87	12.9747	2		P&F, OHI	
409	C O	F	10/15/74	10/28/87	13.0349	0		Incomplete	
410	C O	M	9/18/74	10/28/87	13.1088	2		P&F, OHI	
411	C O	M	4/26/74	10/28/87	13.5058	2		P&F, OHI	
412	C O	F	11/20/74	9/23/88	13.8426	2		P&F, OHI	
413	C O	F	6/18/74	10/28/87	13.3607	2		FI	
414	J L	M	10/9/74	1/18/88	13.2758	2		P&F, OHI	
415	J L	M	4/21/74	1/18/88	13.7440	2		P&F, OHI	
416	J L	F	9/27/74	1/18/88	13.3087	2		P&F, OHI	
417	J L	F	9/11/74	1/18/88	13.3525	2		P&F, OHI	
418	M A	M	5/2/74	9/9/87	13.3552	0	OH fair (gingivitis)	-	1
419	M A	F	7/10/74	9/9/87	13.1663	0	OH good	-	
420	M A	M	6/22/74	9/9/87	13.2156	0	OH poor (gingivitis)	-	
421	M A	M	5/7/74	9/9/87	13.3415	0	OH fair	-	
422	P D	F	9/27/74	8/31/88	13.9274	2		FI.	
423	T P	M	1/18/74	1/28/87	13.0267	1		scaling	
424	T P	F	11/21/74	1/22/88	13.1691	1		P&F OHI, scale	
425	T P	F	12/6/74	1/26/88	13.1389	0		-	
426	T P	F	9/9/74	1/22/88	13.3689	2		P&F, OHI	
427	W B	M	9/10/74	2/16/88	13.4346	2	OH poor, gingivitis	P&F, OHI	
428	W B	F	4/2/74	2/16/88	13.8754	2	OH fair	P&F, OHI	
429	W B	M	7/27/74	2/16/88	13.5578	2	OH poor	P&F, OHI	

No.	School	Sex	D.O.B.	Init. Exam	Init. Age	34	Specify	Treatment	35
430	W B	F	5/6/74	2/16/88	13.7823	2	OH poor	P&F, OHI	
431	W B	M	5/6/74	2/16/88	13.7823	2	OH poor	P&F, OHI	
432	W B	M	2/21/74	2/16/88	13.9849	2	OH fair	P&F, OHI	1
433	W B	M	5/8/74	2/16/88	13.7769	2	OH fair, gingivitis	P&F, OHI	
434	W B	M	3/15/74	2/16/88	13.9247	2	ging., tongue tied, 31,41 sev. rec'n	P&F, OHI	
435	W B	F	9/26/74	2/16/88	13.3908	2	OH fair	P&F, OHI	
436	W N	M	12/21/74	9/13/88	13.7303	0	OH fair	-	
437	W N	M	11/16/74	9/9/88	13.8152	1	OH poor	scaling	
438	W N	M	12/7/74	9/13/88	13.7687	0	OH poor	-	
439	W N	F	4/22/74	9/11/87	13.3881	0	OH poor	-	
440	W N	F	6/27/74	9/15/87	13.2183	0	OH good	-	1
441	W N	M	9/10/74	9/29/87	13.0513	1	OH poor	P&F,OHI,scale	
442	W N	M	7/6/74	9/11/87	13.1828	0	OH poor	-	
443	W N	M	10/2/74	9/9/88	13.9384	2		P&F, OHI	
444	W N	M	2/1/74	9/15/87	13.6181	0	OH poor	-	
445	W N	M	12/6/74	9/8/88	13.7577	2		P&F, OHI	
446	W N	F	9/9/74	9/9/88	14.0014	0	OH good	-	
447	W N	M	5/8/74	9/15/87	13.3552	0	OH poor	-	
501	B A	M	10/9/75	4/27/89	13.5496	2	OH good	P&F, OHI	
502	B A	M	9/16/75	4/27/89	13.6126	2		P&F, OHI	
503	B A	M	2/19/75	3/18/88	13.0760	0	OH good	-	
504	B A	F	2/18/75	3/23/88	13.0924	2		P&F, OHI	
505	B A	M	9/18/75	4/27/89	13.6071	0	OH poor	-	
506	B A	M	6/26/75	4/27/89	13.8371	1		P&F,OHI,scale	
507	B R	M	6/9/75	1/26/89	13.6345	2		P&F, OHI	1
508	B R	M	7/14/75	10/26/88	13.2868	0		-	
509	B R	F	4/22/75	10/26/88	13.5140	2		P&F, OHI	
510	C O	M	9/17/75	9/23/88	13.0185	2		P&F, OHI	

No.	School	Sex	D.O.B.	Init. Exam	Init. Age	34	Specify	Treatment	35
511	C O	M	4/24/75	9/23/88	13.4182	2		P&F, OHI	
512	C O	F	7/22/75	9/23/88	13.1745	1		P&F,OHI,scale	
513	C O	M	3/25/75	9/23/88	13.5003	2		OHI, Fl.	
514	C O	M	7/14/75	11/8/88	13.3224	0		-	1
515	C O	F	7/5/75	9/23/88	13.2211	0		-	
516	C O	F	10/13/75	9/23/88	12.9473	2		OHI, Fl.	
517	C O	F	2/14/75	12/20/88	13.8480	2		OHI, Fl.	
518	C O	M	7/21/75	9/13/88	13.1499	2		OHI, Fl.	1
519	C O	M	11/4/75	11/8/88	13.0130	2		P&F,OHI	1
520	C O	F	7/23/75	11/8/88	13.2977	2		OHI, Fl.	
521	C O	F	11/25/75	9/23/88	12.8296	2		P&F,OHI	
522	C O	F	11/2/75	9/23/88	12.8925	2		OHI, Fl.	
523	C O	F	7/19/75	9/23/88	13.1828	1		P&F,OHI,scale	
524	C O	F	10/5/75	9/23/88	12.9692	2		OHI, Fl.	
525	C O	M	12/25/75	9/23/88	12.7474	2		P&F, OHI	
526	J L	M	4/1/75	1/23/89	13.8152	1		P&F,OHI,scale	
527	J L	F	10/15/75	1/23/89	13.2758	1		scale, P&F	1
528	J L	M	11/8/75	1/23/89	13.2101	1		scale, P&F	1
529	M A	M	7/21/75	8/25/88	13.0979	2		OHI	
530	P K	F	4/4/75	1/25/89	13.8125	2		Fl., OHI	
531	P D	F	9/18/75	8/31/88	12.9528	0		-	
532	P D	F	4/8/75	8/25/88	13.3826	2		OHI	
533	P D	F	3/17/75	8/25/88	13.4428	2		OHI, P&F	
534	S A	M	10/16/75	9/26/89	13.9466	2		P&F	
535	S A	M	4/22/75	9/20/88	13.4155	0	OH good	-	
536	T P	F	7/30/75	1/27/89	13.4976	0		-	
537	T P	M	9/8/75	1/27/89	13.3881	1		scale, P&F	
538	T P	F	5/9/75	1/27/89	13.7221	0		-	
539	W B	F	6/25/75	2/22/89	13.6646	2	OH poor, marg. ging.	P&F, OHI	

No.	School	Sex	D.O.B.	Init. Exam	Init. Age	34	Specify	Treatment	35
540	W B	F	10/7/75	2/27/89	13.3936	2	OH poor	P&F, OHI	
541	W B	M	9/3/75	2/22/89	13.4730	2	OH poor	P&F, OHI	
542	W B	M	4/25/75	4/14/89	13.9713	2	OH poor	P&F, OHI	
543	W B	M	8/20/75	2/22/89	13.5113	2	Marg. ging. Mx. ant. OH fair	P&F, OHI	
544	W B	F	3/8/75	2/16/88	12.9446	0	OH fair	-	
545	W B	F	4/3/75	2/22/89	13.8919	2	OH good	P&F, OHI	
546	W B	F	2/21/75	2/16/88	12.9856	0	OH good	-	
547	W B	M	5/7/75	2/22/89	13.7988	0	OH good	-	1
548	W B	F	8/1/75	2/22/89	13.5633	2	OH fair, marg. ging. ant.	P&F, OHI	
549	W B	F	4/4/75	2/22/89	13.8891	2	OH fair	OHI, Fl.	
550	W N	F	9/18/75	9/20/89	14.0068	0		-	
551	W N	M	8/5/75	9/8/88	13.0951	2	OH good	P&F, OHI	
552	W N	M	9/27/75	9/20/89	13.9822	0		-	
553	W N	M	3/24/75	9/8/88	13.4620	0		-	
554	W N	F	4/18/75	9/8/88	13.3936	1		scaling	
555	W N	F	12/12/75	9/7/89	13.7385	0		-	1
556	W N	M	10/18/75	9/7/89	13.8891	0	OH good	-	
557	W N	F	12/13/75	9/20/89	13.7714	0	OH good	-	
558	W N	M	5/30/75	9/8/88	13.2786	0	OH good	-	
559	W N	M	8/27/75	9/8/88	13.0349	2	Dilantin Hyper. OH poor	P&F, OHI	
560	W N	F	11/6/75	9/7/89	13.8371	1	OH poor	P&F,OHI,scale	
561	W N	M	3/23/75	4/27/89	14.0972		OH poor	-	
562	W N	F	6/23/75	4/27/89	13.8453		OH fair	-	
563	W N	M	11/27/75	4/27/89	13.4155			-	
564	W N	F	5/16/75	4/27/89	13.9493		OH fair	-	
565	W N	M	5/12/75	4/27/89	13.9603		OH good	-	
566	W N	F	9/9/75	4/27/89	13.6318			-	
567	W N	M	7/22/75	4/27/89	13.7659			-	
568	W N	F	2/6/75	4/27/89	14.2204		OH poor	-	

No.	Specify	TX.	36	Specify	TX.	37	38	FI	40	41	56	D. F. Anom.
401											0	
402											0	Diastema 11-21 (1mm.)
403	14 deformed										0	
404											0	Crowding 41/42
405											0	
406	15,25 cong. absent										0	15,25 Cong. Missing,32 Linguoversion
407								?			0	
408								1			0	
409								1			0	
410								1			0	
411											0	
412								1			0	
413								1			0	45 missing-ext'n 1982
414											0	Midline shift 3 mm. L
415											0	Cl I left, Cl II right
416											2	12, 16/26 x-bite, Ortho consult req'd
417											0	
418	35B hypocalc'n										0	Crowding lower ant's
419											1	Midline shift 2 mm. R, Cl III tendency
420											1	11,41,22,32 x-bite, Cl I L. Cl III R.
421											2	Midline shift 2mm.R
422											0	
423											0	Cl. II
424											1	12 edge/edge, Cl. I L. Cl. II R., 15 missing
425											1	Midline shift 2mm.R, Ant. openbite
426											2	26/36 x-bite, Ant. open bite
427											0	Max. ant. spacing
428											1	Midline shift 3mm.R, Cl. I L. Cl. II R.
429											2	22/32 x-bite, Max. ant. crowding

No.	Specify	TX.	36	Specify	TX.	37	38	FI	40	41	56	D. F. Anom.
430											0	Midline shift 2mm. R, Cl. II
431											0	Crowding Md. ant's, Cl. II
432	33 hypocalc.										1	Midline shift 2 mm. R, Cl.III L. Cl. II R.
433											2	13, 23 impacted
434											0	
435											1	14 ext'd, 25 to be ext'd, Cl. II
436											2	Ortho Tx
437											1	12,22,23,42,43 x-bite
438											0	
439											1	13/43 x-bite, Cl. III
440	25 hypocalc.(bu&li)										1	Mid. shift 2mm.L; 25/35,45 x-bite, Cl.II
441											0	
442											0	Crowding Max. ant's
443											1	Midline shift 2mm.L
444											1	35 & 45 part. blocked, crowding Max. ant's
445											1	Ant. openbite, crowding Max & Md.
446											2	Ortho Tx. Cl. II
447											1	15 x-bite, Cl. III
501								1			2	Ortho-15 x-bite
502								1			0	
503								1			1	Ant. openbite-tongue thrust, Cl. II
504											1	Ant. openbite-thumb sucking, Cl. II
505								1			1	Midline shift 1mm.R
506								1			0	
507	14 hypoplastic							1			0	
508								1			0	
509								1			2	Ortho Tx. complete post x-bite
510								1			1	Midline shift 2mm.R

No.	Specify	TX.	36	Specify	TX.	37	38	FI	40	41	56	D. F. Anom.
511								1			1	Midline shift 4 mm., 46 mes. drift
512								1			1	Midline shift 4 mm.R
513	22 hypoplastic							1			1	Ant. openbite 3mm.
514								1			2	Ortho consult-ant. crowding
515								1			0	
516								1			0	
517											0	
518	21supernum.ext.'82							1			1	15 ectopic erupt'n, gen. crowding
519	26MB hypoplastic							1			0	
520								1			0	
521								1			0	
522								1			0	
523								1			0	
524								1			0	
525								1			1	O.J. 6mm. O.B. 100%
526								1			2	Ortho consult-7mm. OJ
527	23 supernum.							1			2	Ortho consult-13 x-bite
528	12,22 supernum.							1			0	
529											1	Midline shift 2mm.L, Max. ant. spacing
530											2	Midline shift 3mm.L;22,23 x-bite
531											0	
532											2	Ortho Tx. L ant. crowding, Cl.III tend.
533											0	
534											2	Ortho consult-11/21 overlapped
535											0	
536								1			0	
537											2	Ortho consult 8mm. O.J.
538								1			2	Midline shift 2mm.L, 14,15,17,25 x-bite
539								1			1	Midline shift 2mm.L

No.	Specify	TX.	36	Specify	TX.	37	38	FI	40	41	56	D. F. Anom.
540											2	Ortho consult - crowding
541								1			0	Cl. III tendency
542											2	O.J. 12 mm., Cl. II
543								1			0	Cl. III tendency
544											0	
545											2	Ortho Tx.,12,15,16 x-bite;13,23 Cong.miss.
546											0	
547	32 supernum.										1	Midline shift 2 mm.R, Cl.I L. Cl. II R.
548											1	O.J. 6 mm., Cl. II L. Cl. I R.
549											0	Cl. I L. Cl. II R.
550											1	bilateral x-bite
551											2	Ortho Tx. 12,22 x-bite
552											1	Midline shift 2mm.L
553											1	15 x-bite
554											0	
555	15 hypocalc.										1	Midline shift 2 mm.R
556											0	
557											0	
558											1	Cl. III
559											0	
560											0	
561											1	Midline shift 2 mm.
562											2	Ortho Tx. Midline shift 3mm.R
563											2	Ortho Tx. 10mm. O.J.
564											1	Ortho consult -13 labioversion
565											0	
566											1	O.J. 6mm. O.B. 80%
567											0	
568											1	Midline shift 4mm.L; 45 impacted

No.	Molars	O.J.	O.B.	Crowd.	61	62	63	64	X-rays	18	17	16	15,55	14,54	13,53	12,52
401	1	1	1		0	0	0	0	1	80	00	21	00	00	00	00
402	2	2	2		0	0	0	0	1	80	00	22	00	00	00	00
403	1	2	2		0	1	0	0	0	80	00	00	00	33	00	00
404	1	1	2	1	0	0	0	0	1	80	00	12	00	21	00	11
405	1	2	2		0	0	0	0	1	80	11	00	00	00	00	00
406	1	1	2	1	0	0	0	0	1	80	21	22	69	00	00	00
407	1	1	3		0	0	0	0	0	80	11	22	00	00	00	00
408	1	3	3		0	0	0	0	0	80	00	00	00	00	00	00
409	2	2	3		0	0	0	0	0	80	22	22	00	11	00	21
410	1	3	3	1	0	0	0	0	1	80	11	43	11	00	00	00
411	1	1	3		0	0	0	0	1	80	21	23	23	22	00	11
412	1	1	1		0	0	0	0	1	80	21	23	00	21	00	21
413	1	3	3	1	0	0	0	0	0	80	11	21	00	00	00	00
414	1	3	2	0	0	0	0	0	0	80	00	21	00	00	00	00
415	2	2	2		0	0	0	0	1	80	21	22	00	00	00	00
416	1	3	3	1	0	0	0	0	1	80	80	23	00	00	00	00
417	1	1	1		0	0	0	0	1	80	11	22	00	12	00	42
418	1	3	3	1	0	0	0	0	0	80	00	23	00	00	00	21
419	3	3	3	1	0	0	0	0	0	80	00	22	00	00	00	21
420	3	3	3	1	0	0	0	0	1	80	00	22	00	00	00	22
421	1	2	2		0	0	0	0	1	80	12	22	00	21	00	11
422	1	1	1		0	0	0	0	1	80	12	22	00	00	00	00
423	2	2	2		0	0	0	0	1	80	00	00	00	00	00	00
424	2	1	3		0	0	0	0	1	80	21	22	68	00	00	00
425	1	1	1		0	0	0	0	0	80	00	21	00	00	00	00
426	2	2	3		0	0	0	0	1	80	00	00	00	00	00	00
427	1	1	1	1	0	0	0	0	1	80	80	21	00	00	00	00
428	2	2	2	1	0	0	0	0	1	80	22	21	00	21	00	00
429	1	1	2		0	0	0	0	1	80	11	22	00	21	21	31

No.	Molars	O.J.	O.B.	Crowd.	61	62	63	64	X-rays	18	17	16	15,55	14,54	13,53	12,52
430	2	2	2		0	0	0	0	1	80	22	21	00	00	00	11
431	2	2	3	1	0	0	0	0	1	80	21	24	00	00	00	00
432	2	1	2		0	0	0	0	1	80	11	21	00	00	00	21
433	2	1	2	1	1	0	1	0	1	80	00	21	00	00	80	00
434	1	2	2		0	0	0	0	1	80	22	22	00	00	00	00
435	2	1	2	1	0	0	0	1	1	80	11	22	21	68	00	00
436	-	2	2	1	0	0	0	0	0	80	00	00	00	68	00	00
437	1	3	2		0	0	0	1	1	80	00	22	21	68	00	21
438	1	3	1		0	0	0	0	1	80	00	21	00	00	00	00
439	3	3	3		0	0	0	0	0	80	21	21	00	00	00	00
440	2	2	2		0	0	0	0	0	80	00	21	21	00	00	00
441	1	2	1		0	0	0	0	0	80	00	22	00	00	00	00
442	1	3	3	1	0	1	0	0	0	80	00	21	00	00	00	11
443	1	1	2		0	0	0	0	1	80	00	22	00	00	00	00
444	1	2	3	1	0	0	0	0	0	80	00	23	23	00	00	00
445	1	2	3	1	0	0	0	0	1	80	21	22	00	00	00	00
446	2	2	2		0	0	0	0	1	80	00	00	00	00	00	00
447	3	2	3	0	0	0	0	0	0	80	90	23	11	00	00	00
501	1	1	1		0	0	0	0	1	80	80	21	00	00	00	00
502	2	3	3		0	0	0	0	1	80	00	22	00	68	00	00
503	2	2	1		0	0	0	0	1	80	11	22	22	00	00	00
504	2	2	3		0	0	0	0	1	80	11	12	80	00	00	00
505	1	2	2		0	0	0	1	1	80	11	22	00	00	80	11
506	1	1	1	1	0	0	0	0	1	80	00	21	00	00	00	00
507	1	1	3		0	0	0	0	1	80	22	22	00	23	00	00
508	1	1	2		0	0	0	0	1	80	80	22	13	12	00	00
509	1	-	-		0	0	0	0	1	80	00	23	00	68	00	12
510	1	2	2		0	0	0	0	1	80	12	22	00	00	00	00

No.	Molars	O.J.	O.B.	Crowd.	61	62	63	64	X-rays	18	17	16	15,55	14,54	13,53	12,52
511	1	2	2	1	0	0	0	0	1	80	22	22	00	00	00	00
512	1	2	2		0	0	0	0	1	80	11	42	13	12	00	00
513	1	1	3		0	0	0	0	0	80	90	22	90	00	90	00
514	1	2	2	1	0	0	0	1	1	80	80	42	00	11	00	21
515	1	3	2		0	0	0	1	1	80	12	23	43	00	00	00
516	1	3	3		0	0	0	0	1	80	32	23	33	32	00	21
517	1	1	2		0	0	0	0	1	80	31	21	00	00	00	00
518	1	2	2	1	0	0	0	0	1	80	23	42	32	22	11	21
519	1	2	3		0	0	0	0	1	80	11	32	00	00	00	31
520	2	2	1	1	0	0	0	0	1	80	22	22	00	00	00	00
521	1	3	3		0	0	0	0	1	80	12	32	00	00	00	00
522	1	3	3	1	0	0	0	0	1	80	22	22	43	12	00	21
523	1	1	2		0	0	0	0	1	80	12	22	00	00	00	00
524	2	2	2		0	0	0	0	0	80	90	23	00	00	00	00
525	1	2	2	1	0	0	0	0	0	80	90	41	11	00	00	00
526	1	2	2	1	0	0	0	0	1	80	00	00	00	00	00	00
527	2	2	2		0	0	0	0	1	80	11	22	00	11	00	00
528	1	2	2	1	0	0	0	0	1	80	00	00	00	68	00	00
529	1	3	2		0	0	0	0	1	80	00	22	00	00	00	00
530	3	3	3		0	0	0	0	1	80	21	21	00	00	00	00
531	1	3	3		0	0	0	0	1	80	11	50	00	00	00	00
532	1	1	2	1	0	0	0	0	1	80	00	23	00	00	00	21
533	1	1	1		1	0	1	0	1	80	11	31	00	00	00	00
534	2	2	2	1	0	0	0	0	1	80	00	21	00	00	00	00
535	1	1	2		0	0	0	0	0	80	00	21	00	00	00	00
536	1	1	1	1	0	0	0	1	1	80	11	22	00	00	00	21
537	2	2	3		0	0	0	0	1	80	11	21	00	41	00	00
538	1	3	2		0	0	0	0	1	80	22	50	00	00	00	00
539	3	3	1		0	0	0	0	1	80	00	22	00	00	00	00

No.	Molars	O.J.	O.B.	Crowd.	61	62	63	64	X-rays	18	17	16	15,55	14,54	13,53	12,52
540	1	2	2	1	0	0	0	0	1	80	11	11	00	00	00	00
541	3	3	1	0	0	0	0	0	1	80	80	22	00	00	00	21
542	2	2	2		1	1	1	0	0	80	11	21	11	21	00	41
543	1	2	3		0	0	0	0	1	80	00	22	00	00	80	21
544	1	2	2		0	0	0	0	1	80	22	21	00	00	00	00
545	2	3	2		0	0	0	0	1	80	21	21	00	00	69	00
546	3	3	2		0	0	0	0	1	80	00	21	00	00	00	00
547	2	1	2		0	0	0	0	0	80	90	22	90	00	00	00
548	2	2	2	1	0	0	0	0	1	80	00	00	00	00	00	00
549	2	3	2		0	0	0	0	1	80	21	22	21	00	00	00
550	1	3	3		0	0	0	0	1	80	43	42	00	00	00	00
551	2	2	3	1	0	0	0	0	1	80	00	23	00	08	00	00
552	1	1	1		0	0	0	0	1	80	80	32	80	00	80	11
553	3	3	2		0	0	0	0	1	80	00	21	00	00	00	00
554	1	1	2		0	0	0	0	1	80	00	00	00	00	00	00
555	2	1	2		0	0	0	0	1	80	21	22	22	00	00	00
556	1	3	1		0	0	0	0	1	80	21	23	00	00	00	21
557	1	2	2		0	0	0	0	1	80	00	00	00	00	00	00
558	3	3	2		0	0	0	0	1	80	00	21	00	00	00	00
559	1	2	3		0	0	0	0	1	80	11	22	00	00	00	00
560	3	3	3	1	0	0	0	0	1	80	00	22	00	21	11	21
561	3	3	3		0	0	0	0	1	80	00	00	00	00	00	00
562	2	1	2	0	0	0	0	1	1	80	21	24	00	68	00	00
563	3	2	2		0	0	0	0	1	80	21	22	00	00	00	00
564	2	1	2		0	0	0	0	1	80	22	23	22	21	00	00
565	1	1	2		0	0	0	0	1	80	21	21	00	00	00	00
566	1	2	2		0	0	0	0	1	80	00	21	00	00	00	00
567	3	1	1		0	0	0	0	1	80	00	21	00	00	00	00
568	1	2	2		0	0	0	1	1	80	21	21	00	00	00	21

No.	11,51	21,61	22,62	23,63	24,64	25,65	26	27	28	48	47	46	45,85	44,84	43,83
401	00	00	00	00	00	00	21	00	80	80	21	21	00	00	00
402	00	00	00	00	00	00	21	00	80	80	11	22	00	00	00
403	00	00	00	00	00	00	11	00	80	80	21	22	00	00	00
404	00	00	11	00	12	00	00	12	80	80	00	22	21	11	00
405	00	00	00	00	00	00	00	00	80	80	21	22	00	00	00
406	00	00	00	00	00	69	22	12	80	80	22	22	21	00	00
407	22	00	00	00	00	00	22	80	80	80	00	22	00	00	00
408	00	00	00	00	21	00	21	00	80	80	00	22	00	00	00
409	00	00	21	00	11	11	22	12	80	80	11	42	00	00	00
410	21	21	00	00	00	00	31	11	80	80	00	22	00	00	00
411	00	00	00	00	12	43	22	21	80	80	22	23	32	12	00
412	00	00	00	00	21	00	50	12	80	80	21	22	00	00	00
413	00	00	00	00	00	00	22	00	80	80	00	22	50	00	00
414	00	00	00	00	00	00	11	00	80	80	00	11	00	00	00
415	00	00	00	00	00	00	22	21	80	80	12	11	00	00	00
416	00	00	00	00	00	00	21	80	80	80	00	21	C9	00	00
417	42	22	21	00	21	22	32	11	80	80	22	22	21	00	00
418	00	00	00	00	22	00	23	00	80	80	21	22	00	00	00
419	00	11	21	00	00	00	21	80	80	80	00	21	00	00	00
420	21	21	21	00	00	00	22	00	80	80	12	22	00	00	00
421	11	00	00	00	11	00	22	12	80	80	22	21	00	00	00
422	11	11	00	00	00	00	22	11	80	80	12	11	00	00	00
423	00	00	00	00	00	00	00	00	80	80	11	21	00	00	00
424	00	22	22	00	00	21	22	11	80	80	22	22	11	00	00
425	00	00	00	00	00	00	11	00	80	80	11	22	00	00	00
426	00	00	00	00	00	00	22	00	80	80	12	21	00	00	00
427	00	00	21	00	00	00	21	00	80	80	11	22	00	00	00
428	11	21	00	00	32	00	21	21	80	80	21	22	21	21	00
429	21	00	21	11	00	00	22	00	80	80	31	23	00	00	00

No.	11,51	21,61	22,62	23,63	24,64	25,65	26	27	28	48	47	46	45,85	44,84	43,83
430	00	00	11	00	00	00	21	21	80	80	22	23	00	00	00
431	00	00	00	00	00	00	32	21	80	80	21	50	00	00	00
432	22	21	21	21	00	00	00	00	80	80	80	22	00	00	00
433	00	00	00	80	00	00	31	00	80	80	00	22	12	00	00
434	00	00	00	00	00	21	22	21	80	80	21	22	12	21	00
435	00	00	00	00	00	08	22	11	80	80	00	22	00	00	00
436	00	00	00	00	68	00	00	00	80	80	00	00	68	00	00
437	00	00	21	00	68	00	22	00	80	80	21	23	00	08	00
438	00	00	00	00	00	00	21	00	80	80	00	21	00	00	00
439	00	00	00	00	00	00	21	21	80	80	21	21	00	00	00
440	00	00	00	00	68	00	22	00	80	80	12	21	00	00	00
441	00	00	00	00	00	00	22	00	80	80	11	21	00	00	00
442	11	11	11	00	00	00	22	00	80	80	11	22	00	00	00
443	00	00	00	00	00	00	22	00	80	80	00	00	00	00	00
444	00	00	00	00	21	22	23	00	80	80	22	22	00	00	00
445	00	00	00	00	00	11	44	12	80	80	12	22	00	21	00
446	00	00	00	00	00	00	21	21	80	80	00	21	00	00	00
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504	00	00	00	11	68	00	12	11	80	80	11	11	00	00	00
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506	00	00	00	00	00	00	22	00	80	80	11	22	00	00	00
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No.	11,51	21,61	22,62	23,63	24,64	25,65	26	27	28	48	47	46	45,85	44,84	43,83
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521	00	00	00	00	00	00	21	12	80	80	11	32	00	00	00
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No.	11,51	21,61	22,62	23,63	24,64	25,65	26	27	28	48	47	46	45,85	44,84	43,83
540	00	00	00	00	00	00	11	11	80	80	11	12	00	00	00
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545	00	00	00	69	00	00	22	21	80	80	21	22	00	00	00
546	00	00	00	00	00	00	21	00	80	80	11	22	00	00	00
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567	00	00	00	00	00	00	22	00	80	80	22	22	00	00	00
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No.	42,82	41,81	31,71	32,72	33,73	34,74	35,75	36	37	38
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No.	42,82	41,81	31,71	32,72	33,73	34,74	35,75	36	37	38
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No.	42,82	41,81	31,71	32,72	33,73	34,74	35,75	36	37	38
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No.	42,82	41,81	31,71	32,72	33,73	34,74	35,75	36	37	38
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551	00	00	00	00	00	68	00	22	21	80
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