Journal
OF THE CANADIAN DENTAL ASSOCIATION
DE L'ASSOCIATION DENTAIRE CANADIENNE

July 1969 Juillet
Volume 35 N° 7

the Yukon school dental care experiment

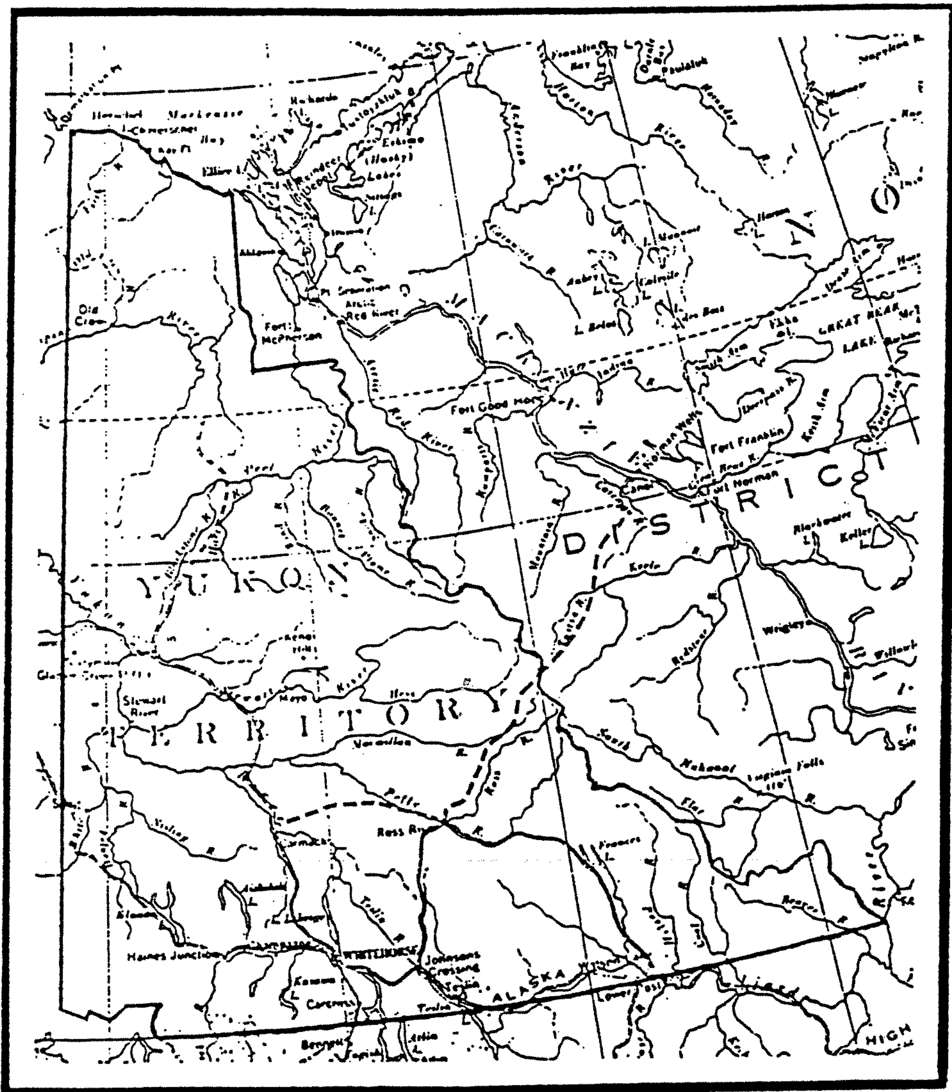
YUKON
TERRITORY
DISTRICT
Old Crow
Fort McPherson
Aklavik
Fort Good Hope
Fort Franklin
Fort Norman
GREAT BEAR
LAKE
Wrigley
Stewart River
Mayo
Ross River
Carmacks
Haines Junction
WHITEHORSE
Johnsons Crossing
Teslin
Carcross
ALASKA
HIGH

FIGURE 1 Above, Miss Elizabeth Oldham at Christ the King School, Whitehorse. Below, Miss Freda Nye at Whitehorse Elementary School. Both dental nurses are using Kerr Electrotorque Units.

C. R. Pugh, DDS,
Whitehorse,
Yukon

In 1962 the Indian and Northern Health Services Directorate of the Department of National Health and Welfare appointed Dr. Gordon Butler as the new zone medical director for the Yukon Zone. Dr. Butler was anxious to improve all health facilities in the Territory. Very early in his tenure he consulted us about ways of improving overall dental health in the Yukon at a reasonable cost. He made it clear that he wanted results that would endure. At that time there were only two dentists in the Territory, Dr. E. M. Banks and myself. Our recommendations were based on a review of current literature and our previous experience in the Gurdon Robert MacKay Dental Clinic at Shelburne, Nova Scotia. We proposed that the territorial government employ a dental hygienist to work under our direction in the schools. She would provide topical stannous fluoride applications, teach dental health, and refer any child requiring treatment to a dentist. The dentists would provide any necessary treatment and would be compensated on a capitation basis. The program would start in Grade 1

and expand by the addition of a new Grade 1 each year. We asked that the program be limited to the Whitehorse area initially.

This early proposal was subsequently modified because we could not recruit a dental hygienist. At the time, however, a New Zealand trained dental nurse resided in Whitehorse. She was willing to work as a dental hygienist and was accordingly employed by the territorial government. Our plan was further modified in that the participating dentists were to be paid on a fee-for-service basis.

We began in 1963 with 300 Grade 1 pupils in all Whitehorse schools. Almost immediately we were in trouble because treatment needs far exceeded our estimates. Moreover, the publicity engendered by the start of the project nearly doubled the normal demands for service. As quickly as possible we recruited a third dentist, Dr. J. M. MacIntosh, who helped to ease our task. Nevertheless, we were still unable to absorb all demands for treatment. The school year ended with nearly 60 children whose treatment was unfinished.

FIGURE 2 Miss Oldham at Watson Lake Elementary School. The dental nurse accompanies the dentist during his regular visit to this community of 1,500 residents about 300 miles from Whitehorse.

We reviewed the project during the summer and recommended further modifications which led to the plan we have followed in the past four years. According to this scheme, a dentist examines each child annually. The results are recorded on a chart along with instructions for necessary treatment. The dentist determines the services which fall within the capability of the dental nurse, namely simple restorations, extraction of deciduous teeth and topical fluoride applications. These are delegated to her in the orders on the chart. All other treatments and further examinations are a charge upon the dentist who retains full responsibility for the care rendered to each patient.

This arrangement has worked smoothly since its inception in the Whitehorse area. The only disruptions have resulted from loss of staff; one simply cannot recruit efficiently when replacements must come from sources eight or nine thousand miles distant. We were fortunate in retaining the original dental nurse, Mrs. Selby, for two years. For the past three years we have had two dental nurses on staff. They come from the United Kingdom or New Zealand and rarely stay longer than a year. We have had six dental nurses so far. Each one has exhibited a high degree of skill and all have been productive workers.

The project was gradually extended to the outlying areas of the Territory, but not without difficulty. Though we tried to secure the most suitable space for the dental nurse (Figures 1 and 2), in most rural schools she was compelled to work in coffee rooms, kitchens, business offices or classrooms. The inadequacies of space were partly compensated by the warm welcome extended by teachers and local residents. The dental nurses' high standard of service and productivity under these circumstances certainly attest to the adaptability of young people who are dedicated to their work.

Caries control

Evaluation of the project is difficult because we recorded less detail on our

TABLE 1 Dental caries findings in 78 Whitehorse Grade 1 school children examined in 1963–64.

School	Enrolment	Caries-free children	Missing permanent teeth	Carious permanent teeth	Carious permanent tooth surfaces	Carious deciduous teeth	Carious deciduous tooth surfaces	Carious teeth requiring extraction
Whitehorse Elementary	33	0	0	59	75	115	203	22
Selkirk St. Elementary	22	4	0	18	22	48	64	1
Christ the King	23	2	0	30	32	86	129	14
Total	78	6	0	107	129	249	396	37

charts during 1963-64 than in subsequent years. Moreover, our educational efforts had to be curtailed that year in order to deal with the most pressing treatment needs. A further complication arises from the rapid turnover of population. Of the nearly 300 pupils we originally examined in Whitehorse, only 78 remained after four years.

Table 1 shows the dental caries findings in these 78 pupils at age six in 1963-64. Table 2 depicts similar findings in the same children four years later (1967-68). By this time caries in permanent teeth were largely confined to single surfaces and consisted mainly of incipient lesions in pits and fissures. Table 3 shows the dental caries findings in another group of 78 six year old pupils examined in 1967-68. These children were selected in alphabetic sequence from class lists in the same schools. There is a distinct difference between the requirements of this group and those examined in 1963-64. We attribute the improved status of the 1967-68 group to the special summer pre-school clinics which we began a few years ago and the city's water which has been fluoridated since 1961. The pre-school clinics are conducted at the Whitehorse General Hospital. Attendance is purely voluntary. No publicity is directed at adults and no pressure is exerted on parents to bring their children. Nevertheless, about half the eligible children within a 100 mile radius of Whitehorse have enrolled each summer. We therefore regard these clinics as an unqualified success.

Overall, the data indicate a trend toward better dental health. Fluoridated water, which now reaches about one-third of the population of the Yukon, and our systematic educational and treatment

TABLE 2 Dental caries findings in 78 Whitehorse Grade 5 school children examined in 1967–68. These are the same as the children whose findings are recorded in Table 1.

School	Enrolment	Caries-free children	Missing permanent teeth	Carious permanent teeth	Carious permanent tooth surfaces	Carious deciduous teeth	Carious deciduous tooth surfaces	Carious teeth requiring extraction
Whitehorse Elementary	33	0	4	11	14	4	7	3
Selkirk St. Elementary	22	4	0	4	4	4	4	6
Christ the King	23	0	0	14	18	3	4	2
Total:	78	4	4	29	36	11	15	11

TABLE 3 Dental caries findings in 78 Whitehorse Grade 1 school children examined in 1967–68.

School	Enrolment	Caries-free children	Missing permanent teeth	Carious permanent teeth	Carious permanent tooth surfaces	Carious deciduous teeth	Carious deciduous tooth surfaces	Carious teeth requiring extraction
Whitehorse Elementary	33	9	14	11	14	54	158	28
Selkirk St. Elementary	22	9	0	3	5	53	83	2
Christ the King	23	11	4	3	4	26	36	12
Total	78	29	18	17	23	133	277	42

program have no doubt contributed to this improvement. The relatively modest requirements for maintenance care (Table 2) are particularly encouraging. Clearly, the sooner the battle is joined, the more easily is it won.

Public relations

Keenly aware of the importance of good relations in a public service, we had previously instituted several innovations to increase the availability of dental service. The added fact that this new venture was initiated jointly by the dental profession and the government was not lost on the public. To be sure, there were initial misgivings that the project, manned by a staff with divided loyalties, might drift helplessly or founder in a torrent of paperwork. But none of these fears materialized. We have, of course, had our share of arguments and differences of opinion. But all the participants placed the success of the project ahead of personal considerations. Indeed, most of the arguments have been over how best to further the project's aims.

Complaints about professional services have been few and far between. They are handled by the dentists who are also responsible for the day-to-day arrangements of the project. The zone medical director is our contact with higher levels of government. He is responsible for the availability of all health services throughout the Territory.

Discussion

We embarked on this project in response to a call from officials of the territorial government. Had we rejected their invitation, there is no doubt that some other plan would have materialized without the benefit of professional guidance. Such a scheme might well have been undesirable for the public as well as the profession.

We recognized from the start that our project might not attain its objectives. We were convinced, though, that something of value could be gleaned regardless of the outcome. Moreover, our participation would show that practising dentists can and will cooperate with others in the community in seeking the best ways of delivering dental health care. This question gains added significance as the increasing longevity of natural teeth generates a greater need and demand for specialized services such as orthodontic and periodontic treatment. Some way must therefore be found to redistribute the general practitioner's mounting burden.

Our approach was two-pronged — by preventing dental caries and by giving the dentist another pair of hands. But there are limits to the latter reinforcement because the dentist must be reasonably familiar with each patient regardless of who performs the treatment.

In our project the dental nurse is responsible to the dentist who retains full control over the patients' treatment. He orders their treatment and they put their

trust in him even though the dental nurse performs much of the care. This relationship is analogous to that existing between the physician and the nurse in a hospital. Like her hospital counterpart, the dental nurse can always reach her superior by telephone whenever she encounters a problem which she cannot resolve by herself.

It is, of course, too early to assess our project. Nevertheless, two benefits can be expected to accrue from a 10 year program of systematic education, fluoridation, topical fluoride applications and dental care for school children. First, the reduction of dental caries to more manageable proportion will permit dentists to pay more attention to malocclusion and periodontic disease. Secondly, such a program facilitates an accurate estimation of the cost of maintenance care, information that is essential for any dental health insurance scheme.

P.O. Box 1171