A PLAN FOR THE ADMINISTRATION
OF HEALTH SERVICES IN THE SCHOOLS OF
BRITISH COLUMBIA

by

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of
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# A Plan for the Administration of Health Services in the Schools of British Columbia

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- Meaning and place in the curriculum.

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INTRODUCTION
INTRODUCTION

One of the most significant developments in educational theory and practice is concerned with health service. Suffice it to say that the initial experimental stage has been passed and the value of the service has been proven.

While the necessity for such service is universal, each locality has its own particular health problem which must be met in a particular way. In this regard, British Columbia is no exception. The purpose of this thesis is to present a plan for the more efficient administration of health services in the schools.

This thesis refrains from discussing too many ramifications and avoids technical terms as much as possible. Those terms which occur most frequently are defined. The term "health" offers the greatest difficulty in definition. It has become one of those words that we use quite freely today without always having a clear conception of what it connotes. To avoid confusion, recognized authorities in Public Health Administration begin by defining their terms. It would be presumptuous to formulate new definitions in this treatise. The authorities are quoted and an interpretation is suggested in some cases.

HEALTH

Health is the "state of being hale, sound, or whole in body, mind or soul; well being; especially state of
being free from physical disease or pain."

"Health is that quality of life that enables the individual to live most and serve best."

"Health is that condition of the body which exists when the body is meeting adequately (and without pain or damage) the demands of the moment".

Health then, is the normal functioning of the human body as it enables an individual to fit in the complicated organization called society, efficiently, adequately and comfortably.

HYGIENE

"Hygiene is all science and art relating to the adjustments of the body to the demands of the environment."

The key word is "adjustment". Hygiene is the training or adjustment designed to promote health. With health as a goal, hygiene gives direction to our efforts.

4. Ibid.
HEALTH ADMINISTRATION

"Health Administration is the science and art of putting into actual operation so much of Public Health as may be carried out governmentally, under existing sociological conditions."

It is a method of providing a planned health programme in circumstances as they exist.

HEALTH INSPECTION

"Health inspection is a brief, careful, but not exhaustive observation for evidence of departures from normal physical structure or health status of the individual."

HEALTH EXAMINATION

"Health examination is the procedure of a physician, using the necessary methods of search to determine the nature, extent and significance of all departures from the normal. He must be able to determine which conditions are remediable."

The distinction made in these two definitions is obvious. The former is "careful but not exhaustive" while the latter is thorough.

No system of health administration is unique, all systems have certain considerations in common. With this

1. Ibid.


3. Ibid.
in mind the method has been to gain an impression of what services are being given in several other countries and to consolidate the ground that has been gained. To present the detailed material on which the interpretations are based would serve no purpose. They are the details of specific cases. A partial exception to this method has been made in the case of United States and New Zealand since their problem more nearly parallels ours in British Columbia. On the basis of such studies and with an outline of the present health services in the schools of British Columbia the writer has suggested what services should be given.

The plan for the administration of these health services is presented. Perhaps it should be called a plan, for no one person can possibly possess the knowledge and experience to encompass so broad a field in an adequate manner. In no sense is this thesis to say, "This is the light and the way". The reader may feel that some special activity has been dealt with insufficiently. It is obviously difficult to elaborate fully in so wide a field. For this reason, the writer has confined himself to a plan of administration which is basically a study of method. The subject matter content of "health lessons" properly belongs in a study of curricula. In British Columbia the Course of Studies outlines health lessons in detail and is the work of those most capable.
Objection may be raised to the personnel, their training and the budget proposed. There is no defense, save this, governmental funds are limited. As the service becomes established revision will be necessary, but the writer believes the figures can be justified for an initial minimum proposal.

It is a pleasure to acknowledge here the information, counsel and suggestions received that have made this thesis possible. Particularly to express gratitude to Professor C. B. Wood, M. A., for his constant and friendly guidance throughout this investigation; J. A. Sampson, D. D. S., for his valuable information on matters of his department; Van P. Copeland, B. A., for his critical reading and care in typewriting and arranging charts.

Also the writer takes this opportunity to acknowledge the kindness of Mr. V. Z. Manning, Inspector of Schools; and Dr. E. J. Curtis in granting interviews. And finally the writer takes the opportunity to thank R. E. Belshaw, Director Department of Physical Education for Men, University of Washington, Seattle; W. H. Brown, M. D., Professor of Hygiene, Stanford University, California; A. G. Paterson, Director Division of School Hygiene, Wellington, N. Z.; Allon Peebles, Ph. D., Chairman, Health Insurance Commission, Victoria, B. C.; Anne Whitney, Director of Joint Committee of Health Problems in Education of the National Education
Association and American Medical Association, Washington, D. C.; H. E. Young, M. D., Provincial Health Officer, Provincial Board of Health, Victoria, B. C.; The Secretary, Royal Society of Teachers, 47 Bedford Square, London, England, for information through correspondence.

J. C.
Any plan for the administration of health services assumes that health is worth safeguarding. "As we value, so we protect." Few will deny that health is a great asset in any undertaking, yet we are reluctant to estimate its value until we are threatened with its loss.

Health is man's natural estate. Therefore the subject of health, how to maintain it, or how to regain it has intrigued the ages. Plato said, "The purpose of education is to give to the body and to the soul all the beauty and all the perfection of which they are capable." Locke coined the phrase, "A sound mind in a sound body." Surely then if the value of health has been so clearly recognized in the past it is not our place to neglect it now.

But in the past, it will be noted, because of the

1. So great is our concern over health that enormous sums are devoted to it. In 1929 the American people spent $5,656,000,000,000, exclusive of the cost of hospitalization of communicable cases, for all forms of medical service, including services purchased indirectly through taxes and other community funds. For the year involved, this enormous sum exceeded the expenditure on education and amounted to approximately four per cent of the entire income of the nation.

short distances travelled and the little contact with fellow men, health had value only to an individual. Today we find a very different situation; transportation is rapid and many people are transients. The health of an individual concerns not only himself but the group in which he moves. And so today we find that the state enacts legislation to safeguard the health of its citizens. Further, the state attempts to teach its citizens how to prevent disease. Herein the school plays a part, and the task of the school in health matters is not an easy one. The school cannot supplant the home in health training but it can and should support and supplement it. Thus in British Columbia, the state, through the Department of Education, prescribes what health lessons shall be taught in each grade, in order that sound health habits which will carry into adult life may be developed in the child. The state is vitally interested in the health of its future citizens.

A discussion of the value of health involves important financial aspects. Here we must face the facts. Pupils are coming to school with remediable defects and with little or no health training. In a later chapter tables will be given showing the frequency of defect but for our purpose here we shall reflect only on the significance of defect as it concerns the educational loss to the child and the financial loss to the state.
Defect may result in illness and this in turn may result in retardation. This statement is made after consulting the medical cards and office records of pupils in a school of approximately 700 enrolment. A check on 25 of the best students (academic record) shows the following:

(School in session 168 days)

Table I. Attendance and defects of 25 "A" pupils, Robson-Howay School, New Westminster, B.C.

<table>
<thead>
<tr>
<th>Case</th>
<th>Absent</th>
<th>Medical record</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1-1/2 days</td>
<td>normal</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>nutrition fair</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>teeth</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>teeth</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>normal</td>
</tr>
<tr>
<td>6</td>
<td>1-1/2</td>
<td>normal</td>
</tr>
<tr>
<td>7</td>
<td>4-1/2</td>
<td>teeth</td>
</tr>
<tr>
<td>8</td>
<td>3-1/2</td>
<td>normal</td>
</tr>
<tr>
<td>9</td>
<td>11</td>
<td>normal</td>
</tr>
<tr>
<td>10</td>
<td>0</td>
<td>teeth</td>
</tr>
<tr>
<td>11</td>
<td>0</td>
<td>teeth</td>
</tr>
<tr>
<td>12</td>
<td>1-1/2</td>
<td>adenoids, tonsils, glands</td>
</tr>
<tr>
<td>13</td>
<td>10-1/2</td>
<td>teeth</td>
</tr>
<tr>
<td>14</td>
<td>4</td>
<td>teeth</td>
</tr>
<tr>
<td>15</td>
<td>2</td>
<td>tonsils, teeth</td>
</tr>
</tbody>
</table>

1. John Robson Junior High and F. W. Howay Elementary, New Westminster, B.C.
<table>
<thead>
<tr>
<th>Case</th>
<th>Absent</th>
<th>Medical record</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>3 days</td>
<td>normal</td>
</tr>
<tr>
<td>17</td>
<td>0 &quot;</td>
<td>normal</td>
</tr>
<tr>
<td>18</td>
<td>0 &quot;</td>
<td>teeth</td>
</tr>
<tr>
<td>19</td>
<td>5-1/2 &quot;</td>
<td>normal</td>
</tr>
<tr>
<td>20</td>
<td>0 &quot;</td>
<td>teeth</td>
</tr>
<tr>
<td>21</td>
<td>0 &quot;</td>
<td>glands</td>
</tr>
<tr>
<td>22</td>
<td>4 &quot;</td>
<td>tonsils, teeth, adenoids</td>
</tr>
<tr>
<td>23</td>
<td>0 &quot;</td>
<td>normal</td>
</tr>
<tr>
<td>24</td>
<td>0 &quot;</td>
<td>teeth</td>
</tr>
<tr>
<td>25</td>
<td>1 &quot;</td>
<td>normal</td>
</tr>
</tbody>
</table>

In contrast is this table, the result of a check on 25 "repeaters". No claim is made that absence was entirely due to the defect indicated. It is reasonable to assume, however, that the pupil fell behind in his school work and later used some slight excuse for further absence.

**Table II. Attendance and defects of 25 repeaters, Robson-Howay School, New Westminster, B. C.**

<table>
<thead>
<tr>
<th>Case</th>
<th>Absent</th>
<th>Medical record</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>44 days</td>
<td>teeth</td>
</tr>
<tr>
<td>2</td>
<td>12 &quot;</td>
<td>teeth</td>
</tr>
<tr>
<td>3</td>
<td>29 &quot;</td>
<td>teeth</td>
</tr>
<tr>
<td>4</td>
<td>22-1/2 &quot;</td>
<td>teeth</td>
</tr>
<tr>
<td>5</td>
<td>7-1/2 &quot;</td>
<td>tonsils, teeth, glands</td>
</tr>
<tr>
<td>Case</td>
<td>Absent</td>
<td>Medical record</td>
</tr>
<tr>
<td>------</td>
<td>---------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>6</td>
<td>47 days</td>
<td>teeth</td>
</tr>
<tr>
<td>7</td>
<td>65-1/2 &quot;</td>
<td>tonsils, teeth</td>
</tr>
<tr>
<td>8</td>
<td>14 &quot;</td>
<td>teeth</td>
</tr>
<tr>
<td>9</td>
<td>11-1/2 &quot;</td>
<td>glands</td>
</tr>
<tr>
<td>10</td>
<td>10 &quot;</td>
<td>teeth</td>
</tr>
<tr>
<td>11</td>
<td>22-1/2 &quot;</td>
<td>teeth</td>
</tr>
<tr>
<td>12</td>
<td>8 &quot;</td>
<td>eyes, tonsils</td>
</tr>
<tr>
<td>13</td>
<td>13-1/2 &quot;</td>
<td>teeth, glands</td>
</tr>
<tr>
<td>14</td>
<td>12 &quot;</td>
<td>tonsils, eyes</td>
</tr>
<tr>
<td>15</td>
<td>41-1/2 &quot;</td>
<td>teeth</td>
</tr>
<tr>
<td>16</td>
<td>33 &quot;</td>
<td>tonsils</td>
</tr>
<tr>
<td>17</td>
<td>37-1/2 &quot;</td>
<td>eyes, adenoids, tonsils, teeth</td>
</tr>
<tr>
<td>18</td>
<td>17 &quot;</td>
<td>teeth</td>
</tr>
<tr>
<td>19</td>
<td>20-1/2 &quot;</td>
<td>teeth, adenoids</td>
</tr>
<tr>
<td>20</td>
<td>25-1/2 &quot;</td>
<td>teeth, glands</td>
</tr>
<tr>
<td>21</td>
<td>31 &quot;</td>
<td>eyes, teeth, glands</td>
</tr>
<tr>
<td>22</td>
<td>15 &quot;</td>
<td>teeth</td>
</tr>
<tr>
<td>23</td>
<td>42 &quot;</td>
<td>adenoids, teeth, glands</td>
</tr>
<tr>
<td>24</td>
<td>18 &quot;</td>
<td>orthopedaedic defect</td>
</tr>
<tr>
<td>25</td>
<td>24 &quot;</td>
<td>teeth</td>
</tr>
</tbody>
</table>

This is not a complete list of the retardation but it is reasonable to assume that illness was a prominently contributing factor. A survey made in one of the large
cities of California estimates that 59.6% of all absences were due to illness, and a further statement that a school of 1200 may be expected to lose nearly $5,000 a year because of absence through illness. A survey made in nine High Schools in British Columbia in 1924 shows that 152 pupils were repeating grade IX and that 27 cases, or 17%, were attributed to illness. The figures are not presented to show that we have a school population composed of students who are not "physically fit"—that is least intended—but they are given to form the basis of a further computation. In 1935-36 the cost of education for 116,722 pupils in British Columbia was $8,295,173.72 or $71.07 per pupil. If 10% of these repeat it does not follow that all repetition is financial loss. Instead repetition may result in saving if it prevents further repetition. But if some of those retarted repeat on account of illness that could have been prevented, for each case there is a financial loss. To be more specific,

1. Oakland.
if such cases total even 10% of those retarded, $82,951.73 is lost. It is dangerous to estimate the causes and cost of retardation but there is sufficient validity in the above statements to make them far from fictitious. Any measure to reduce this sum is well worth while. It is a duty in fact, to the child and to the state.

The frequency of dental defect is worthy of some further consideration. Retardation as a result of dental abnormality is a subject of considerable scope but little reliable evidence is available. However, no one will dispute the fact that a large number of children become ill owing to lowered vitality resulting from abscessed or infected teeth. Dr. J. A. Sampson, Dental Clinician, New Westminster, B. C., has estimated that 40% of those retarded suffer from ailments of dental origin. Dr. George W. Snyder, Director of School Hygiene, St. Paul, Minnesota, says,

"We are frequently asked about the relationship between good scholarship and a healthy mouth, and we made a study on these lines with the aid of three school principals. The schools covered were widely separated and of different social environment. The study included 1042 children in grades from kindergarten through the eighth grade. It was interesting to find that only 50 per cent of "A" pupils needed dental work, as compared with 90 per cent of "E" pupils needing it. In other words, the per cent needing dental work increases, as the scholarship record decreases.

1. Conversation with writer.
Carrying the comparison further, none of the pupils doing excellent work had teeth in very bad condition, while the pupils who were failures in school work were in the classification of those having teeth in extremely bad condition.  

Finally, something must be said concerning mental health. Annual reports of our mental institutions in British Columbia show that the number of inmates has increased from 16 in 1872 to 3,180 in 1935-36 and that the average per capita cost in 1935-36 ranged from $326.72 in one institution to $375.18 in another. Contrast this with the annual per pupil cost of education $71.07. This is not to say that the system of education is to be blamed for the increases of inmates in our mental institutions. Authorities agree, however, that the basis of neurosis is anxiety, and as the school recognizes this, it strives to establish definite studies in teacher-child relationships and to provide a happy, healthy environment.


CHAPTER II.
A PANORAMA OF HEALTH PROGRAMMES IN POLAND, SCOTLAND, JAPAN, CITY OF BUDAPEST, UNITED STATES AND NEW ZEALAND.

In this era of intense nationalism there is this in common; all countries have an abounding faith in education. All over the world, wherever reorganization in education is taking place, it is on the premise that the school plays an important role in the reconstruction of society. "The children of today are the citizens of tomorrow." The argument follows that the schools must educate for the type of citizenship desired. The curriculum must be constructed to include not only the intellectual but the emotional and physical make-up of the pupil. There is a shift in emphasis in education from subject matter to the "whole child".

We lay aside the philosophical implications of educating the whole child, for they are of little concern in this thesis. However, it is evident that any consideration of the whole child involves his health. So we find that all over the world there are efforts to improve the health of school children through the schools. Further, it should be noted, that while each nation has a system of education to promote its ideal of citizenship, there is general agreement on what minimum health work is essential. So universal is the conception that health is a primary objective in education that world health
conferences are held almost annually. Admitted, each country has developed a special technique to deal with its own particular problem of school health and that it is impossible to transfer a system of the administration of health services, in toto, from one country to another. On the other hand, it would be foolhardy, to say the least, to ignore what health service is being given in the schools of other countries. A plan for the administration of health services in the schools of British Columbia should rightly include the best features of other plans. For this purpose, out of the wealth of material available, a brief outline of the school health situation in the following places will be given:

Poland, because of the plan for health education and health service administration that has been built up in the past eighteen years.

Scotland, because of its "education areas". The tendency in our own province is toward "administrative units".


2. The recently proposed plan for Health Insurance in British Columbia is based on the plan in operation in Great Britain with modifications for conditions in British Columbia.
These are comparable.

Japan, because of the emphasis on the physical side of the programme. The need of a wider programme will be discovered.

City of Budapest, comparable in size to Vancouver, suggests a plan for urban administration. This city received considerable assistance from the Rockefeller Foundation. Vancouver receives funds for health work from the same source. The city is divided into "school districts" comparable to the "health units" in Vancouver.

United States, because we are influenced by the educational practices of that country, probably more than any other.

New Zealand, because of the national awareness of, and perhaps eagerness for effective social legislation.

POLAND

In medical hygienic care, Poland today occupies the foremost place in Europe, if not in the world. The first school doctor in Poland was appointed in 1805. He was probably one of the first in Europe. In the century that followed, Poland saw many troublesome years and the health movement grew slowly. In 1918, however, Poland recovered her autonomy and immediately began to set a comprehensive health plan in motion. Today, nearly 97% of the academic schools and 93% of the vocational schools have their own
school doctors, 70% receive dental care and 40% have their own dental equipment. The doctor in most schools, but in some schools the doctor and dentist together, must devote two and one-half hours a day to school practice. The work of the school doctor is more than medical inspection. It is an integral part of the school system. Some of his duties are: examining pupils, conferences with the principal on the hygiene of the child's timetable, checking pupil's physical activities, keeping himself informed on the hygiene of the child's living quarters, giving the adult education programme, checking and helping with posture during the class lesson. In Poland the authorities in charge of school health are under the administration of the Department of Education and not the Health Department, though they co-operate of course. The school physician is specially trained for the position and he is not encouraged to carry a private practice as well.

SUMMARY

The major part of the health programme falls on the school physician. He is responsible for all matters of school health. This includes sanitation and timetable construction as far as it affects school health. He is

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a member of the school staff in an advisory capacity.

SCOTLAND

Scotland is represented in the British Parliament, but in matters of school administration and health, is autonomous. There are thirty-seven education areas, comprised of four large cities and thirty-three counties. Each area must submit its education scheme for the year to the Scottish Education Department. This must include the system of medical examination of children.

Each area has its chief school Medical Officer. He is aided in his work by Assistant School Medical Health Officers, part-time practitioners and nurses. Great emphasis is placed on the health of the pre-school child and the present tendency is to have medical superintendence from before birth to the end of the school period. The system is thorough; diseases and defects are searched out by expert medical men and women but the onus for the correction of defects falls on the parents, unless they are indigent, in which case clinics are provided. Negligence is liable to prosecution and punishment. The teachers are trained in examining eyes, ears, glands, posture, etc., to supplement the work of the experts.

SUMMARY

The Public Health Authorities of the county are united under the County Council. The system is thorough
and the school medical officers have almost superintendent's powers. The aim is to fit the child to profit to the greatest possible extent by the education offered.

JAPAN

Japan has made great progress in recent years in matters of school hygiene. Before the Imperial Ordinance of 1929, school doctors were not considered seriously and consequently were to be found only in a few schools. The work of these doctors, though, had the inevitable result of educating the public in regard to the value of health, with the result that more and more schools demanded doctors. The Imperial Ordinance of 1929 made it obligatory for all state, public and private schools and kindergartens to have doctors. The same act made it compulsory for these schools to have the services of a school dentist available. This law appears to be very drastic.


"Local Education Authorities make almost complete provision for regular medical inspection of children attending public elementary schools, and almost all Local Education Authorities have a school dental service. One hundred twenty-five of 146 authorities make similar provision in the case of higher education. There are special schools for mentally and physically defective children and some 15,000 scholars are accommodated in open-air schools. Of 1,729,000 pupils medically examined in 1935, 303,000 were found to require treatment. This is quite apart from the 1,474,000 who were treated by the school dentists."
yet the fact is, that so well had the school doctor established himself that only about 10% of the schools required any change.

In 1920 there were one hundred school nurses in Japan; in 1928 the number had grown to 1,199. So far clinics have not developed to any great extent. There is so much clinical work to be done that to provide adequate facilities would, at present, be too expensive. However, a start has been made; a report of 1926 shows 870 clinics established.

The health programme of Japan stresses physical education; in fact, in every urban and rural district there is a physical training specialist. It is the duty of the Section of School Hygiene, a part of the Department of Education, to appoint these specialists for the administration of physical culture and sports.

SUMMARY

The Government of Japan is determined to spare no effort to build up a virile people. The objective is physical fitness rather than a way of living or an outlook on life.

The public school population is approximately 83,000. (There are also some private schools but they do not enter into this plan.) The city is divided into "sanitary districts" with the enrolment as nearly equal as possible. Each district averages about 1,350 pupils. Each district has a full-time doctor and nurse. (In districts where there is a middle school for girls, a woman doctor is employed.) This service is organized and controlled by the Department of Education but directed by the Chief Health Officer of the city.

It is the general belief that the backbone of the school health service is the doctor. He is highly trained in medicine and pedagogy. His work consists of a complete medical examination for all "new" pupils (the parents are asked to attend and about 90% of them do), advising the physical education department, checking adjustment of seats, supervising school sanitation, giving occupational advice and teaching hygiene.

The school nurse is the means of contact between home and school. She visits homes, checks absentees, renders first aid and co-operates with the doctor.

**SUMMARY**

The medical department is a definite part of the school organization. The health work is distinctly preventive.
The American Constitution gives to each State authority to deal with its own health organization and administration. The result is lack of uniformity in state procedure. Further confusion arises from the fact that some states place health supervision under the Department of Education and some under the Board of Health. There is similarity, however, in that all states are expanding their health programmes. It is difficult, therefore, to form an accurate picture of the school health situation in the United States as a whole. In recent years an effort has been made to establish a central Department of Education at Washington. Whether or not health should become a federal department is an issue that conflicts with "state rights". Nevertheless, there should be a center to organize and administer a health programme. States are no longer isolated, the rapidity and ease of transportation, the mobility of population, have made health problems the concern of the whole country.

A great impetus was given the centralization movement by President Hoover when he initiated "The White House Conferences on Child Health and Welfare". A tabulation of surveys presented in 1930 at the White House Conference lists the following facts concerning the 45,000,000 children in the United States:
"3,000,000 with impaired hearing, 17,000 of whom are deaf. 65,000 visually handicapped children of whom 15,000 are blind and 50,000 partially seeing. 1,000,000 with defective speech. 300,000 crippled children. 400,000 tuberculosis children and 850,000 suspected cases of tuberculosis. 450,000 children with damaged hearts. 2,500,000 children with well-marked behavior difficulties, including the more serious mental and nervous disorders. 6,500,000 children who are mentally deficient, 850,000 of whom are definitely feeble minded and 5,650,000 of whom are intellectually subnormal. 150,000 epileptic children.

On the other side of the ledger are 1,500,000 children recognized as specially gifted in whom lies the potential leadership of the Nation. Schools are equipped to give special care and guidance to only a small number of these." 1

Speaking to this point Mr. Hoover says, "Our growth of town life unendingly imposes such problems as milk and food supplies, for we have shifted these children from a diet of ten thousand years standing." 2

The philosophy behind American education today is that the child must be seen as a whole. The child is considered as a unit in himself. The trend is, therefore, no longer to consider health as a special departmentalized subject but rather to integrate it into the curriculum


so that the health of the child becomes the obligation of all concerned all the time. This means that the home and community must be brought into co-operation with the school.

**SUMMARY**

Health work in the United States is very young. The initial meeting of the American Public Health Association was held in 1873. There is a great variety of plans. Some town and rural communities have advanced far in the development of practical procedures in the health work in the schools. There are many localities that have done little as yet in this vitally important field.

**NEW ZEALAND**

School medical work in New Zealand is carried out by the Division of School Hygiene, which is responsible for the supervision of all measures for safeguarding the health of school children and ensuring a satisfactory environment at school.

Previous to 1921 School Medical Officers were officers of the Education Department but in that year the service was transferred to the Health Department. There are approximately 210,000 children in the primary schools under a permanent staff consisting of a Director, 10 School Medical Officers, and 27 school nurses. In addition, there are three part-time Medical Officers. Secondary schools
and Church schools are examined by School Medical Officers in accordance with request. In this connection it is interesting to note that arrangements are made for complete medical examination for those secondary school pupils who wish to enter the teaching profession. This usually takes place during the last year of secondary school life so that those applicants found unsuitable may qualify for some other profession.

The School Medical Service aims at securing for each child three complete physical examinations during his school life. In some sections, for instance where goitre is prevalent, more frequent examination is necessary. Those suffering from defect are kept under observation until the necessary treatment is obtained. In recent years increased attention has been given to the development of health camps and the subject of nutrition.

An attempt is made to correlate the work of the School Medical Officers with that of the Physical Instructors with regard to a physical education programme for each child.

The work of the Service is also extended to include the pre-school child; and in the near future, when it is hoped finances will permit, it will include all students in secondary schools.

The work of the Service is essentially preventive and educational. Many pamphlets, appropriate to age and
grade, are distributed; many lectures and visual aids are used to impress the teachers, parents and children with the principles of correct living.

For some years New Zealand has realized that goitre is unduly prevalent. Preventive and curative treatment has been inaugurated and the treatment found beneficial.

An idea of the thoroughness with which the work is carried on may be gained from the following extract:

Table III. New Zealand. Some statistics.

"FIGURES RELATING TO WORK ACCOMPLISHED IN 1935"

The following summary serves to indicate the extent of work accomplished during the school period, February to December, 1935.

Schools inspected--
  Of roll under 100  936
  Of roll 100 to 500  329
  Of roll over 500   104

Children examined--
  Complete examinations 64,397
  Partial examinations 35,761

Number of notifications sent to parents 41,807
Number of addresses to school-children 446
Number of parents interviewed 11,121
Number of lectures or addresses to parents 25

The figures for the work of the Schools Nurses are as follows:
Number of days assisted Medical Officer
  in schools              1,559\frac{1}{3}
Number of children examined for medical
  schedule (H. School 14)  94,842
Number of days engaged wholly in clerical work 909
Number of children re-examined after Medical Officer's inspection 31,855
Number of children examined by special request 9,541
Number of visits to homes in:
  Large towns 5,964
  Small country towns 1,598
  Scattered districts 1,835 9,397
Number of children taken personally to hospital, & c. 615
Number of children taken personally to dental clinic 151
Number of health talks given 823

Table IV. New Zealand.

SUMMARY OF COMPLETE EXAMINATIONS

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of children examined</td>
<td>58,279</td>
</tr>
<tr>
<td>Percentage found to have defects</td>
<td>75.38</td>
</tr>
<tr>
<td>Percentage with defects other than dental</td>
<td>55.76</td>
</tr>
<tr>
<td>Percentage of children showing evidence of:</td>
<td></td>
</tr>
<tr>
<td>Subnormal nutrition</td>
<td>6.65</td>
</tr>
<tr>
<td>Pediculosis</td>
<td>0.61</td>
</tr>
<tr>
<td>Uncleanliness</td>
<td>1.33</td>
</tr>
<tr>
<td>Skin—</td>
<td></td>
</tr>
<tr>
<td>Impetigo</td>
<td>0.97</td>
</tr>
<tr>
<td>Scabies</td>
<td>0.78</td>
</tr>
<tr>
<td>Ringworm</td>
<td>0.13</td>
</tr>
<tr>
<td>Other skin-diseases</td>
<td>1.70</td>
</tr>
<tr>
<td>Heart—</td>
<td></td>
</tr>
<tr>
<td>Organic disease</td>
<td>0.69</td>
</tr>
<tr>
<td>Functional disturbance</td>
<td>1.06</td>
</tr>
<tr>
<td>Respiratory disease</td>
<td>1.10</td>
</tr>
<tr>
<td>Total physical deformities</td>
<td>12.17</td>
</tr>
<tr>
<td>Mouth—</td>
<td></td>
</tr>
<tr>
<td>Deformities of jaw or palate, including irregularity</td>
<td>4.25</td>
</tr>
</tbody>
</table>

Dental caries 36.17
Extractions of permanent teeth 7.00
Fillings 52.21
Perfect sets of teeth 2.60
Nose and throat--
Nasal obstruction 3.51
Enlarged tonsils 16.00
Enlarged glands 9.02
Goitre--
All degrees 19.86
Incipient 16.34
Small 3.13
Medium 0.35
Large 0.04
Eye--
External eye-disease 1.68
Total defective vision 4.23
Corrected 2.23
Uncorrected 2.00
Ear--
Otorrhoea 0.21
Defective hearing 0.65
Defective speech 0.73
Mental--
Feeble-mindedness 0.33
Epilepsy 0.05
Other nervous defects 0.29
Tuberculosis--
Total 0.06
Pulmonary 0.01
Other tissues 0.05 1

SUMMARY

No better summary of the work of the School Medical Service in New Zealand could be given than to reiterate a statement from Mr. A. G. Paterson, Director, Division of School Hygiene for New Zealand, to the writer. It follows:

"The effect of the work of the Service is to be noted in--

(a) Decreased incidence of dirt diseases--ringworm,

1. Ibid. p. 2.
itch, verminous condition, etc.

(b) Decreased incidence of remediable and neglected physical defect--adenoids, defective eyesight, postural deformities, etc.

(c) Improvement in general nutrition and growth of New Zealand school children. The New Zealand school child of today is taller and heavier than British or American children of the same age.

(d) School absenteeism has decreased 5% since 1920. (Average attendance 1920--87%, 1930--92.2%.) This must be attributed largely to improved health of school child and better supervision of defects and incapacitating illness.

(e) Tuberculosis death rate is steadily declining.

(f) Mortality rate of children of school age is declining.

(g) The hygiene of the school has improved. (Credit for this must be shared with the Department of Education.)

(h) There is a widely increased public knowledge of the essentials for right living for which the health instruction received in the schools during the last twenty years is to a great extent responsible.

It is to be noted that an increasing number of mothers attend medical examination of the children. Owing to shortness of staff we do not find it possible to send individual invitations to parents other than those of primary children, but these attend in increasing numbers. It is to be stressed that the work of the Service is largely of a preventive nature and therefore its educational aspect is an important one."

CONCLUSION

The development of health work in schools is one of the outstanding features in the present forward movement
in education. All early attempts in school health work were directed to the prevention of the spread of disease, but the work has grown until today health education has as its aim the building of sound bodies, alert, well-ordered minds, training in health habits and poise, and community responsibility. In achieving this end the following universal tendencies are noted:

1. Articulation of the programme. Pre-natal advice is given to mothers; the child's history is recorded and finally he is given vocational instruction and advice from the health standpoint on leaving school.

2. "The Summer Round-up." More and more countries are giving those boys and girls who are about to begin school life a thorough examination (not inspection) before school opens. In many countries the parents are present at this time and are advised of defects so that these may be attended to before school opens.

3. More thorough examinations. Much of the work in the past has been mere medical inspection, just a "once over", due to lack of time. To examine more thoroughly, without much added expense there is a tendency toward the alternate grade plan, that is, examination before beginning school and then in grades 3, 5, 7, etc.

4. More thorough training of teachers in health work.

The impetus of the whole health programme is the efficiency
of the class-room teacher.

5. The school should do nothing that parents can do for the child. That is, the school health service should not attempt remedial work. In cases where the parents cannot afford treatment a clinic is advised.

6. Correlation of the health programme. Health education is not the sole task of any one teacher, physical education instructor, health officer, or nurse. It is the concern of all.

In this chapter no attempt at comparison is made, there are too many variable factors. The purpose has been, not a comparative study, but rather to discover the universal trends in order that they may form the basis of the plan for the administration of health services to be presented.
CHAPTER III.

THE PRESENT HEALTH ADMINISTRATION IN B. C.

WHAT DEPARTMENT SHOULD HAVE ADMINISTRATIVE CONTROL
OF SCHOOL HEALTH SERVICES?

The health service programmes of several countries have been outlined in the previous chapter. What is the present situation in regard to school health service in British Columbia? Health administration in B. C. is undergoing a thorough revision. There is no point therefore in presenting in detailed outline the health service system as it exists. Instead, it will be sufficient to indicate something of actual conditions and to determine a basis for a more efficient administrative control.

Health work in British Columbia is under two Departments; the Department of Education and the Provincial Board of Health. The latter is responsible to the Provincial Secretary. Fortunately, at present, the work is correlated under Dr. G. M. Weir, Minister of Education and Provincial Secretary.

The Public Schools Act, Sections 163 to 176 inclusive, relates specifically to the medical inspection of schools, and Section 46 of the Health Act of British Columbia makes provision for the union of two or more municipalities into one district to organize and maintain a Union Board of Health. The outcome of this legislation has been to attempt to provide medical inspection for each
pupil at least once a year. In the school year ending June 30th, 1936, 158 physicians inspected 100,960 pupils. A tabulation of findings follows. (See table V.)

The statistics shown do present a picture but unfortunately it is far from true. In fairness to the Health Authorities it must be said that they have done their best under existing conditions. What more than a cursory inspection can be expected when in a city like New Westminster for instance, the health of 2,974 pupils (report quoted) is the responsibility of one full-time nurse and a physician who carries on a private practice? (If the physician were to be employed full time he could not give more than twenty minutes per pupil per year.) This city has not been singled out as an extreme case, and it is important to repeat, no criticism is attached in the example. Similar instances may be found almost at random in the report. How is it that Fernie, reported as the "hardest hit city in the province" with the majority of citizens on relief, lists only three cases of malnutrition in 530 pupils while Kelowna reported as a prosperous city in a farming community and with a high per cent of paid up taxes, lists 72 cases in 659 pupils?

Further, the report shows a wide range of health inspection procedures. In many localities the Medical Inspector is unassisted. In other localities school nurses,
Table V. SUMMARY OF DEFECTS

<table>
<thead>
<tr>
<th></th>
<th>Normal Schools</th>
<th>High Schools</th>
<th>Junior High Schools</th>
<th>Graded City Schools</th>
<th>Rural Municipal Schools</th>
<th>Rural and Assisted Schools</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malnutrition</td>
<td>1</td>
<td>297</td>
<td>908</td>
<td>4,833</td>
<td>750</td>
<td>791</td>
<td>7,580</td>
</tr>
<tr>
<td>Defective mentality</td>
<td>3</td>
<td>1</td>
<td>5</td>
<td>133</td>
<td>163</td>
<td>223</td>
<td>525</td>
</tr>
<tr>
<td>Defective vision</td>
<td>27</td>
<td>990</td>
<td>359</td>
<td>1,997</td>
<td>926</td>
<td>1,871</td>
<td>6,170</td>
</tr>
<tr>
<td>Defective hearing</td>
<td>5</td>
<td>62</td>
<td>42</td>
<td>236</td>
<td>115</td>
<td>225</td>
<td>685</td>
</tr>
<tr>
<td>Defective nasal breathing</td>
<td>3</td>
<td>80</td>
<td>23</td>
<td>614</td>
<td>556</td>
<td>1,263</td>
<td>2,539</td>
</tr>
<tr>
<td>Adenoids</td>
<td>9</td>
<td>151</td>
<td>67</td>
<td>1,715</td>
<td>1,071</td>
<td>2,515</td>
<td>5,526</td>
</tr>
<tr>
<td>Enlarged tonsils</td>
<td>11</td>
<td>956</td>
<td>386</td>
<td>6,091</td>
<td>3,351</td>
<td>5,046</td>
<td>15,841</td>
</tr>
<tr>
<td>Defective teeth</td>
<td>24</td>
<td>3,579</td>
<td>1,429</td>
<td>10,520</td>
<td>5,493</td>
<td>6,752</td>
<td>27,797</td>
</tr>
<tr>
<td>Enlarged glands</td>
<td>4</td>
<td>489</td>
<td>143</td>
<td>2,480</td>
<td>1,733</td>
<td>2,578</td>
<td>7,427</td>
</tr>
<tr>
<td>Goitre</td>
<td>12</td>
<td>577</td>
<td>187</td>
<td>1,527</td>
<td>931</td>
<td>2,114</td>
<td>5,148</td>
</tr>
<tr>
<td>Other conditions</td>
<td>68</td>
<td>385</td>
<td>117</td>
<td>1,111</td>
<td>555</td>
<td>1,154</td>
<td>3,390</td>
</tr>
<tr>
<td>Totals</td>
<td>164</td>
<td>7,567</td>
<td>3,666</td>
<td>51,055</td>
<td>15,644</td>
<td>24,532</td>
<td>82,628</td>
</tr>
<tr>
<td>No. of pupils enrolled</td>
<td>276</td>
<td>16,985</td>
<td>5,911</td>
<td>48,535</td>
<td>19,232</td>
<td>21,869</td>
<td>112,808</td>
</tr>
<tr>
<td>No. of pupils examined</td>
<td>276</td>
<td>15,591</td>
<td>5,064</td>
<td>41,235</td>
<td>17,783</td>
<td>21,011</td>
<td>100,960</td>
</tr>
</tbody>
</table>

1. Twenty-fifth Report of the Medical Inspection of Schools for the year ended June 30th, 1936. Province of British Columbia, Victoria, B. C.
dentists and tuberculosis clinics have been added to aid and further the work of the Medical inspectors. In still other localities Health Units have been established. Thus in one district a pupil receives the cursory inspection of an all too busy practitioner who "does the school" once a year. In other districts the nurse augments this service by frequent inspection, recognizing and instantly isolating cases of communicable disease. In other districts, in addition to the services indicated, a pupil may have the service of a dental clinic and tuberculosis clinic. In the Health Unit all these services are available not only for the school but for the home. Thus a line drawn on a map, marking the boundaries of adjacent municipalities may decide what type of health programme a pupil will receive. Does the health of a pupil vary with the district in which he lives? It may be true that in certain urban and industrial sections of the Province there is a greater menace to good health than in rural or more isolated districts. But as yet no section of the province is confronted with a serious health problem arising from either density of population or industrialization. More equitable health facilities must be provided, but first, we must determine what authority should administer the school health service.

Historically, health instruction began with "temperance" lessons, frankly propagandistic in character. As the aims
and content became enlarged various agencies entered the field with inevitable result that considerable overlapping of services is prevalent. Five of these agencies will be mentioned:

1. Volunteer, private organization.
2. Commercial interests.
3. Board of Health. (Provincial)
4. Department of Education.
5. Board of Health and Department of Education.

**VOLUNTEER, PRIVATE ORGANIZATIONS**

Under this heading fall those heavily endowed or publicly supported organizations, such as the Red Cross, Victorian Order of Nurses, Hygienic Institute and Welfare Federation. Much of the work done is highly commendable. Many of these agencies have arisen from a great social urge to do something for the welfare of mankind. They have arisen, in many instances, not to usurp the responsibility of the government, but because the government is slow to assume its responsibility. The criticism of them is that in the school their programme leads to confusion, contradiction, inaccuracy, lack of psychological soundness and a failure to fit harmoniously into the school situation.

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1. In 1937, 41 agencies were affiliated with Vancouver Welfare Federation. These agencies expended $291,263. Eight of these, Children's Aid Society, Family Welfare Bureau, Greater Vancouver Health League, Vancouver Central
They place too much emphasis on certain phases of their work because by their very nature they are interested in special projects. Their activities are related more directly to public welfare than to public health. Often friction arises between these agencies and the health officer. The wise health officer however will avoid this and seek to use all the resources of his community. He will realize that the voluntary health agency is a powerful force and a helpful one, if properly directed.

COMMERCIAL INTERESTS

The school should be free from commercial interests. The reason for this is that a commercial interest is tempted to use propaganda to sell its wares. Several commercial interests have discovered the advertising value of the "health appeal" and have used this to spread information, sometimes sound and unsound in many instances. But sound or not, this commercial health instruction has always been practical, directed toward modifying the immediate behavior of the group appealed to. The reader or listener is presumably allowed to form his own conclusions but is invariably trapped into the conclusion of the

Clothing Committee, Vancouver Council Social Agencies, Vancouver Day Nursery Association, Vancouver Red Cross Society, and Victorian Order of Nurses, are attempting to do something in their particular field for children. The school health department operates in addition to them.
advertiser. Commercial interests are adequately financed and command wide attention, but with few exceptions, of which the Metropolitan Life Insurance Company and the Life Extension Institute are worthy ones, they should be allowed no place in health administration.

BOARD OF HEALTH (PROVINCIAL)

If there is one justification for health administration being under the Board of Health, it is this, that the health of a child influences the whole community in which he lives. But the Board of Health is too far removed from the child, and even in those instances where child welfare is the concern, the interests of this department are much broader than are necessary in school practice. To make this clearer perhaps the following outline may be of value:

"Major functions of the Board of Health:

2. Communicable disease control, including tuberculosis and venereal disease.
3. Child Hygiene in all its phases, including prenatal and maternity work, infant and preschool hygiene, school hygiene, etc.
4. Sanitation, including general sanitation, food and milk control, and all allied subjects.
5. Public Health Laboratory.
6. Health Education."
Minor functions relate chiefly to the field of adult hygiene and include cancer control, control of heart disease and the general group of degenerative diseases, industrial hygiene prevention of accidents, control of organic and function nervous diseases, etc.  

It cannot be repeated too often that health work in the schools is primarily and essentially educational, and while health education is listed as a major function of the Board of Health, that department is not in a position to correlate its work with the school programme. Finally, the Board of Health must operate within a budget laid down by the legislature. In times of financial stringency, therefore, the Board of Health is tempted to curtail health work in the schools, in order to carry on the services considered more vital to other departments. "It is always a mistake for schools to be organized so that agencies other than a board of education are responsible for the administration of vital and indispensable services in the schools."  

THE DEPARTMENT OF EDUCATION  

The state through the Department of Education formulates a constructive policy for the development of the

education of the people of the state. It modifies this policy from time to time as necessity dictates. A few years ago the major portion of this Department's work pertained to the organizing and regulating of the three R's, reading, writing and arithmetic. But with the continuous growth of a more complex society, the scope of this Department broadens, so that today many related educational agencies come under its administration. To mention a few of these we may include libraries, health, vocational, visual, physical and adult education. The present shift is from subject matter, as such, to the child as a living organism. Education is viewed as the development of the whole child and the intent is to seek ways of providing a richer and fuller life. This is the basis for any argument in favor of health administration under the Department of Education. "Authority should accompany responsibility" is a sound principle, and since the Department of Education is responsible for the educational programme it follows that it should have the authority to administer it. Williams and Brownell, recognized authorities in this field, outline the arguments as follows:

"1. Arguments favoring board of health control: Boards of health possess legal power which is not delegated to the school (control of communicable disease). The board of health serves the individual during his pre-school life and after school is ended. This service should not
be interrupted for the period he is in school. Moreover, the board of health employs a personnel and provides facilities which should not be duplicated. In short, school authorities should co-operate with the board of health instead of instituting a service which parallels one already in existence.

2. Arguments favoring board of education control:

School health supervision is primarily educational in scope. In such matters school authorities should have control, since they are in a better position than any other group to determine existing needs and satisfactory procedures. The control of communicable diseases is but a small part of the entire school health programme, which embraces many activities, such as periodic health examinations, follow-up for the correction of remediable defects, health supervision of plant and equipment, health instruction and like service. Better co-operation may be secured from homes because parents are accustomed to dealing with the school; whereas the board of health is looked upon as a police agency. That teachers co-operate better with school health authorities is proved by experience, since such authority places all under the same directing influence. Schools are conducted primarily for the education of children, a fact which implies the development of a child's physical potentialities as well as his mental aptitudes.1

The weight of argument in favor of supervision by the Department of Education increases as health work in schools receives proper emphasis. A questionnaire submitted in United States to cities geographically distributed so that all sections were represented brought the

In 1922 Dr. Ellwood P. Cubberley, an outstanding authority on matters of school administration, wrote:

"Medical inspection everywhere began as an extension of the work of boards of health, but in something over three-fourths of the cities of the United States now supporting health work in the schools the service has since been placed under the control of the board of education. This must now be regarded as its proper place, because the work is essentially an educational service. Boards of health tend too much to emphasize the mere prevention of disease; the interest of teachers and school officers is not usually enlisted to any great extent by such service; and the board of health physicians do not generally see the larger educational relationships, and in consequence of this and of their lack of both knowledge and authority they cannot prescribe the adjustments in educational processes which are often necessary to promote the health and growing needs of the pupils." 1

The White House Conference on Child Health and Protection, 1932, lays down the following principle for administrative control: "As far and as rapidly as local conditions permit, the entire school health programme, including health service, should be brought under the administration of the board of education." 2

BOARD OF HEALTH AND DEPARTMENT OF EDUCATION

The evidence presented is intended to prove that


certain health services are so important educationally that they should be administered exclusively by the schools. The school is the only institution which sees the child as a whole. Those health services which are carried on solely for curative or reparative purposes and to protect the community from the spread of disease should be administered and performed by some other agency than the school. Thus joint control, as at present in British Columbia, has come about. Why not joint control? Is not the school primarily and fundamentally concerned with the health education of the child while the physician, the hospital, the clinic, or the board of health primarily interested in the cure or repair of a defect? The answer is that it is impossible to delineate just how far each should go, and hence overlapping of services results. Further such a joint plan merely establishes another agency to do a work that the school is already established to do. The plan leaves the door open for innumerable misunderstandings between officials of the two departments. In all such cases the child suffers since it is his welfare that is at stake. The plan naturally is more costly, more confusing to the public and less efficient. In this regard, Dr. Thomas D. Wood wrote as follows:

"...the large work of health examination and care in schools is primarily and essentially an educational interest and task. It must
finally, logically, and inevitably be controlled and directed by the educational authorities, but in cooperation with the local health authorities. The exercise of authority in the schools, in relation to all aspects of health inspection, by the board of health is not, and cannot be, satisfactory to the community. Dual control by the board of health and board of education has proved confusing and ineffective." 1

CHAPTER IV.

THE SCOPE OF THE SCHOOL HEALTH SERVICE

Before considering any plan of Health Administration we should settle first, what type of service should be provided, and second, how far these services should go.

In British Columbia, no more authoritative statement could be quoted than that of Dr. H. E. Young, Provincial Health Officer. He says, "The work of our Department has one solid foundation which we preach from day to day and from year to year, that is the prevention of disease. We do not in our Department undertake the management of individual cases or attempt to cure disease. Our mission is broader and more far reaching in its effect in regard to the improvement of health of the people and the diminution of disease by the prevention of disease.......

...Prevention is our keynote." In a pamphlet "Health Inspection of School Children" a "Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association" writes as follows:

"Every child should receive a health examination periodically by a competent physician. These examinations should begin at birth and should continue at regular intervals throughout infancy and the pre-school period. It is

altogether unfair to the thousands of children who enter school for the first time each year to expect them to derive the greatest good from the educational facilities provided unless they bring with them at the beginning of their educational life the best possible health condition and further, unless this optimum health condition is safeguarded by recognized and adequate measures throughout the school years. All remediable impairments of health should be corrected wherever possible but it should be recognized that some irremediable health defects are not incompatible with a high degree of mental capacity and personal efficiency." 1

Today, the health examination is an essential feature in education. It has three purposes:

1. To learn as accurately as possible the condition of health of each individual child in order that the possibilities of healthful development may be understood, and that appropriate remedial and curative measures may be applied as needed.

2. To detect cases of communicable diseases in order that proper precautions may be taken.

3. To furnish an effective occasion for health instruction of a personal and practical nature.

The optimum programme involves a thorough pre-school examination of every child, followed by an examination once a year thereafter. The type of examination just indicated

requires at least twenty minutes. It should include all aspects of mental, emotional and physical health; not in the detail of a specialist but rather in the thoroughness of a general practitioner. Much of the clerical work, height-weight charts, eye tests and skin tests can be done by the nurse or teacher. The examination should include eyes, ears, nose, throat, teeth, heart, lungs, feet, abdomen, back, extremities, skin, glands, mental and emotional state and general body tonus. Individual and cumulative health records, showing mental ability, scholastic attainment, family history and health examination information should be kept for the child's entire school career.

Because of the growing incidence of dental defects, each child should have a complete dental examination twice annually. Such a programme is apt to prove a financial burden, hence a "screening" process is suggested. By this, all cases needing special attention are referred to the family dentist, or to the dental clinic if the family is unable to provide the necessary care. Another statement from Dr. Young's report is fitting at this time. "There is one item in connection with the health of the people which has been neglected more than any other, through ignorance, and through entire absence of the knowledge of what will happen to them in after-life if they continue
to neglect the teeth. We have used every effort to impress upon the people that, if the teeth are neglected, the child will suffer from chronic diseases as they grow to manhood or womanhood."

The purpose of the health examination is to discover the health status of the child. It is important that the follow up programme be effective. It is not sufficient to provide the child with a "slip" to be taken to his or her parents indicating the defect. The school must see to it that the defects are attended to as soon as possible.

The school should provide for emergency treatment. In small schools a teacher trained in first aid methods often suffices, but in the larger schools, the more active programme, the more congested traffic and the more strenuous athletics, make it imperative that a nurse or doctor be readily available.

The school is justified in carrying on certain corrective activities. For instance, exercises for flat feet and postural defects of a minor nature may well be included. Sight conservation classes, classes for the mentally deficient and open air classes are examples of justifiable corrective activities. A certain stigma is apt to be placed on any class of a corrective nature.

This is the result of too fine a screening. As a general rule no child should be segregated unless it be beneficial to the child and to the rest of the class from which he is separated.

Probably the most important function of the health service of the school lies in its relation to attendance. Obviously neither the physician nor the nurse will be able to inspect every child every day. Another plan will be necessary. The home room teacher, at the beginning of each day should be on the alert for certain significant symptoms which indicate a deviation from normal health. All such cases should be referred to the nurse for further investigation and, if necessary, exclusion. The parents should be notified that the school has made no final diagnosis but that a consultation with the family physician is recommended. Re-admission to school after all cases of illness, whether of the pupil or of the family, should be accompanied by approval of the nurse, school doctor, or family physician. The schools cannot control communicable disease; but they can do a great deal to educate the parents to inspect their children before sending them to school, to indicate how various diseases spread, to evaluate the importance of vaccination and to stress the need for simple principles of

1. In no case should the teacher attempt to diagnose with finality.
diet, fresh air and rest. When all those concerned with the health of the child co-operate, much needless absence is avoided. The school is no place for a sick child, but many pupils stay away on the slightest pretext. Simply that he has been exposed to a disease is reason enough in many instances. It is enlightening to notice that in those areas where a fuller co-operative service has been given, average attendance has gained as much as eleven per cent.

The statement that, "the school authorities should provide a healthful environment for the child while he attends school", has become axiomatic. Dr. H. E. Young phrases this so aptly that at the risk of too frequent quotation we lift this section from his report:

"In addition, we have by teaching health and hygienic modes of living brought about a decided change in the physical surroundings of children. The school environment must conform to the improvement in the pupils, and in order to do this every school should be a model as to cleanliness, heating, ventilation, lighting and means of recreation. No child is permitted to be unclean. The children from a school, properly conducted as to health-giving conditions, form healthy habits


2. Similar results in New Zealand. See (d) page 24.
which stay with them through life. School hygiene is of immediate and vital interest to every community. It is part of the great business of every community in the way of making and keeping the people well. The school should be a model for the community in cleanliness and health-giving conditions."

It is the duty of the Health Authorities to see that the statement is implemented. Nothing is more futile than to attempt to build into a child the fundamental principles of health in a poorly lighted and poorly equipped building. Such a practice is a waste of teachers' time and taxpayers' money.

There is need for advisory help from the health authorities in the formulation of the school time-table. Principals, or those responsible for time-table construction, will be reluctant to seek such advice. Their primary interest, of course, is in arranging a time-table to cover a prescribed course in an allotted time. But the school official who wishes to give broader consideration to his pupils realizes it is essential that the time-table


2. A letter from A. G. Paterson, Director Division of School Hygiene, January 13, 1937, in reference to the situation in New Zealand. "The School Medical Service co-operates with the Education Department in the supervision of school buildings and sanitation. Though all newer schools make provision for ventilation there has been in recent years a strong movement in favour of open air schools and many of the recently erected buildings are of that type."

be so arranged that the physical, mental, emotional and social health of the pupils be protected and improved if necessary. He arranges his time-table after giving careful consideration to the sequence of subjects during the day and the length of recess, noon and study periods. "Any arrangement of the school day must be regarded as unhygienic if it overtaxes children either mentally or physically, or fails to provide personal satisfaction by a proper balance between work, play, rest and the taking of nourishment." The hygiene of instruction necessitates the co-operative supervision of the health authorities.

Finally, the School Health Service should contribute to the health education programme. A "health lesson" a week has some value, but it is not enough. Each time the nurse visits a class, an avenue to a pertinent health situation opens. A case of communicable disease offers great possibilities for a vital programme of health education. The educational value of the physical examination cannot be over emphasized and this value is increased immeasurably if the parent, or parents, can be present at that time.

At this point the reader may feel that he would like more information on some of the suggestions outlined. In a later chapter we shall consider the personnel and it would seem that then is the logical time to outline the duties of each member.
CHAPTER V.

ORGANIZATION AND ADMINISTRATION

The Health Service must be a full-time service if it is to be efficient and economical. At once, therefore, we are confronted with the problem of how large an area should be to justify the full-time services of those concerned. The answer cannot be readily given; the major concern is not the size of the area but the health of the child. It is obvious then that any plan will be on the basis of the number of pupils who can be effectively given the necessary health services by a full-time personnel. Many estimates have been made in an attempt to answer how many pupils the doctor, the dentist and the nurse can adequately supervise. Each estimate has arisen from a local situation. In the province of British Columbia where the density of school population varies greatly, these estimates will be of little value except in the case of urban areas. We have only to consider that approximately one half of the total school population resides in the combined areas of Greater Vancouver, North Vancouver City and District, Burnaby and Richmond; and that the other half is scattered over the remainder of

Note: In September 1935 an experiment in Health Administration, known as the Peace River Health Unit, was begun. On October 1st, the plan for a Metropolitan Health Department for the Greater Vancouver Area, as proposed by Dr. G. F. Amyot, was put into operation. Both of these plans will be found outlined at the end of this chapter.
the province, to appreciate the futility of any attempt at inclusive estimates. However, the consensus of opinion is to the effect that in any urban area a physician could probably care for from 7,000 to 9,000 pupils, depending on the amount of re-examination necessary; in rural areas the number of pupils cared for will be many less and determined largely by the facilities of transportation. The number of pupils to each school nurse varies similarly to the physicians. The average assignment for cities of different sizes is reported in the "Public Health Nurse" as follows:

Table VII. "Number of Pupils Per School Nurse.

<table>
<thead>
<tr>
<th>Population of city</th>
<th>Average number of pupils per school nurse</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Cities</td>
<td>2820</td>
</tr>
<tr>
<td>700,000 or more</td>
<td>2507</td>
</tr>
<tr>
<td>200,000 to 700,000</td>
<td>2623</td>
</tr>
<tr>
<td>100,000 to 200,000</td>
<td>2392</td>
</tr>
<tr>
<td>50,000 to 100,000</td>
<td>2886</td>
</tr>
<tr>
<td>25,000 to 50,000</td>
<td>3325</td>
</tr>
<tr>
<td>10,000 to 25,000</td>
<td>3105</td>
</tr>
<tr>
<td>Less than 10,000</td>
<td>1755</td>
</tr>
</tbody>
</table>

In recent years dental hygiene has received wide attention. This service has met a real need and has been a great educational force. The number of pupils per dentist will be determined largely by the dental service provided. To be more specific, if the dentist is to

follow up cases referred to him by the school physician we shall need no more dentists than physicians. If on the other hand, dental examinations are conducted in the same manner as other examinations, and if the service is to include (as it rightly should) such basic services as

(a) nutritional education,
(b) frequent dental examinations to determine early defects in dentition,
(c) correction of defects in early stages,
(d) education in cleanly mouth habits,

then, on account of the follow-up work necessary, there should be at least two dentists for the pupils under the care of one physician. These three, the physician, the nurse and the dentist, together with the teacher, constitute the nucleus of the health service, and later in the chapter consideration will be given to their duties.

On the basis of the argument presented so far, the Province would be divided into Health Units or Districts or Centers. The name is immaterial. If, however, one name must be selected, it will be more fitting for the programme to be outlined to call them Health Centers. In the beginning the Province would be divided into twenty Health Centers, exclusive of Vancouver City. The City of Vancouver offers a unique situation that can be more favorably administered under the plan proposed in
the "Report of the Proposed Metropolitan Health Department for the Greater Vancouver Area" by C. F. Amyot, M. D., D. P. H., Assistant to the Provincial Health Officer, 1936.

In his plan Dr. Amyot suggests at least six Health Units for Vancouver City. Dr. Amyot, in his report states that "the School Medical Service is a large well developed organization". On such authority we feel justified in excluding Vancouver City from our immediate considerations.

These twenty Health Centers are suggested:

1. Victoria (including Esquimalt, Oak Bay and Saanich).
2. The West Coast of Vancouver Island—Port Alberni Center.
3. Vancouver Island (excluding #1 and #2).
4. North Vancouver City and District.
5. Southern Coast—Powell River Center.
7. New Westminster (including Burnaby, Port Moody, Coquitlam).
9. Lower South Fraser Valley (including White Rock and Delta—Gloverdale Center).
10. South Fraser Valley (excluding #9)—Abbotsford Center.
11. Fraser Canyon—Chilliwack Center.
15. Lower Okanagan Lake—Penticton Center.
17. West Kootenay—Nelson Center.
19. Prince George and District.
20. Peace River District.

These centers must not be taken too literally. They are suggested to substantiate the claim that at least twenty centers are possible. Re-organization will be necessary periodically. This can easily be determined by the school inspectors now covering the territory. These men, and they alone perhaps, have the information necessary to actually decide the areas. They can, from actual experience, decide an issue that endless map study would not solve.

Each center should have, as a minimum staff, one physician, three nurses and two dentists, all full-time employees. The center itself provides a focal point for administration besides having the distinct advantage of a central place for the larger or more expensive pieces of clinical equipment. From this center the personnel starts out as a travelling clinic. This procedure takes the clinic to the child, studies his condition and advises
treatment. Where a more complete examination is required, the child is asked to report at the Health Center, or better still perhaps, is transported to it. It is not sound practice to allow a child to travel alone. Further, the parent may often find the travelling expense is prohibitive. Taking the clinic to the child has this admirable advantage, it affords the parent an opportunity to be present at the examination. The value of such procedure cannot be over-estimated. Not only does the parent receive authentic information of an educational nature but he has an opportunity to see the defects (if any) and to arrange means for their remedy. In contrast with this method, consider the present attempt to secure treatment by sending home a "slip" with the pupil. If the slip arrives home at all, the parent usually procrastinates, either unintentionally or because the child appears well now and because the parents have no knowledge of probable consequences.

The Health Center organization then, may be represented as being made up of units (see charts I. and II.). The central health offices are located in Unit B. From this point all health service radiates. The physician and dentists will carry out their services in units A, B and C as they decide. Since they are responsible for the whole center some system must be instituted. They may,
for instance, decide to examine all beginners in the three units each year and to conduct subsequent examinations on a staggered basis. To elucidate a little more, all pupils
in unit A may have been examined last year, this year unit B will be examined and next year unit C. During the intervening years the pupils in each of the excluded two units may be inspected, if time permits; or the nurse may call attention to particular cases. A nurse is located in each unit. She is responsible for her unit only. Such a plan minimizes the travelling time and obviously provides the nurse with more opportunity to make a thorough study of the health aspects of her unit. The nurse functions efficiently only in as far as she knows the total history of each child under her care.

We have discussed in some detail the organization of a Health Center. Let us now consider its relation to the organized departments of the government. (See chart III.) A brief review of the administration may be necessary. (Chart III.) The Minister of Education is in charge of all phases of education. Immediately responsible to him are two Deputy Superintendents, one whose duties are not our present concern and the other who would be directly in charge of the administration of Health Centers, to be called the Deputy Superintendent of Health Service. This official would decide the number of Centers, their personnel, and re-organize them from time to time as occasion demands. The physicians in charge of the Health Centers would report and be
directly responsible to the Deputy Superintendent of Health Service. The relationship between the dentists and nurses to the physician in each Health Center has been sufficiently outlined.

Now let us consider the inter-relationships between the Health Centers and the school authorities. There is a
tendency to establish "Administrative Areas" under the direction of an "official trustee who is the Director of Education". The appointment is made by the Council of Public Instruction. Where such a plan has become effective, the Director, acting for the Department of Education, has sole charge of almost all educational affairs within his area. Teachers are appointed in the area by the Council of Public Instruction. Where such areas are established health service is greatly facilitated, but as has been previously noted, the inspector and the medical authorities are not responsible ultimately to the same official. In a Health Center organization where the inspector and the physician work as a team under the direction of the one department head much more could be accomplished. (See chart IV.)

In many localities however, and particularly those classed as cities, there is to be found a body of elected citizens known as the Board of School Trustees, the general powers and duties of which are stated in the Public Schools Act. Section 133 sub-section 4 deals specifically with the appointment by the Board of School Trustees of school-health nurses.

"For the purpose of providing for the health of pupils in the public schools of a school district,

1. See Section 159, Public Schools Act."
the Board of School Trustees may, subject to the approval of the Council of Public Instruction, appoint one or more persons with qualifications approved by the Provincial Board of Health as school-health nurses and fix their salaries; and the Board may, in its discretion, dismiss from its service any person so appointed. In like manner, the Boards of School Trustees of two or more adjoining rural school districts may, with the approval of the qualified voters of the respective districts, jointly appoint one or more persons with qualifications approved by the Provincial Board of Health as school-health nurses to perform the duties assigned to them by the respective Boards; and each Board shall pay such proportion of the salary of every nurse so appointed as may be agreed on from time to time between the respective Boards and the nurse. All moneys necessary to be expended in providing school-health nurses pursuant to this section shall form part of the ordinary expenses of the respective Boards of School Trustees."

The important point is that there is no compulsion in the act in regard to the appointment of school-health nurses,
nor is any mention made of the number of pupils per nurse. Note contrast to definiteness with which minimum teacher-pupil load is stated in the same act.

Sections 163 to 176, inclusive, deal with health inspection of schools. To quote in full would be of little avail here, but several of the more pertinent points are noted to substantiate a conclusion.

"1. In districts where school enrolment exceeds two thousand five hundred a School Health Inspector shall be appointed by the Board of School Trustees.

2. In districts where the school enrolment is less than two thousand five hundred the Board of School Trustees may appoint one or more persons to act as School Health Inspector and assign to each Inspector the schools to be inspected by him.

3. The Provincial Board of Health appoints the School Health Inspector in community and rural school districts.

4. Each School Health Inspector shall make a thorough examination at least once a year as to the general health of all pupils attending the schools assigned to him. (Teachers and janitors are included also.)

5. The School Health Inspector shall have supervision over all physical exercises of pupils attending school.

6. An annual report shall be made to the Provincial Board of Health.

7. The duty of the Board of School Trustees to enforce the "Health Act".

8. The act does not make the appointment of dental surgeons compulsory but states the method of appointment and their duties." 2

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1. See Sections 12 and 145, Public Schools Act.

2. Passim.
Herein it will be noted that as was the case with school nurses, no mention is made of the number of pupils allocated to each physician. No mention is made of the qualification of the School Health Inspector. And most important, no mention is made of what shall constitute an acceptable health examination.

The Health Centers, as previously outlined cover these seeming discrepancies. The problem that now arises is, how shall we integrate the possible services of a Health Center with the school programme in those areas under a Board of School Trustees? The problem is not entirely free from difficulty. In the first place a Health Center may be a composite of adjoining areas under the jurisdiction of different boards. This should in no way serve as an impediment. While it is true that at present educational facilities exist in a varying degree in neighboring municipalities, all parts of the province follow the same basic philosophy of education. Differences that do exist in adjoining municipalities may be classed as economic rather than philosophic. A Board of School Trustees desires to adopt a budget that is acceptable to the taxpayers. Because of this, many educational facilities are curtailed. The fallacy of such procedure is obvious, especially when it relates to the health status of the pupil. A little later, when we consider the cost
of the health service, we shall point out that it is essential that the health service be financed entirely from the provincial treasury. Such a step would eliminate entirely the arguments which may arise between neighboring boards in regard to sharing of costs. Again, health service is far too important to be subjected to the untrained management of a local board. The Board of School Trustees would as representatives of the people, co-operate with the personnel of the Health Center and officials of the Department of Education.

Chart V. Diagram of Health Organization in areas with a Board of School Trustees. (Boundary of municipality is not limit of nurse's district.)

```
Minister of Education

Supt. of Education

Dep. Superintendent

Inspector

Teachers

Schools of Municipality

Schools of Municipality

Schools of Municipality

Dep. Superintendent

Physician

Nurses
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So far we have been concerned with the larger aspects of administration. From now on we shall bring the administration down to the pupil. This is a most important step otherwise the whole plan of administration becomes meaningless. The whole purpose of the plan is to render more adequate health service to the pupil.

At the outset it is well to repeat that the health of the child is the direct concern of all who come in contact with him. There is a current tendency to consider health as the special concern of some teacher or supervisor. Apart from the fact that teachers are not qualified to supervise health (except in as far as habits and subject matter are concerned), the practice of allocating this subject to one teacher has the vicious tendency of developing a "laissez-faire" attitude among the other members of the staff. The situation doubtless arose from the association of health with physical education and from the assumption that both were partners of an inseparable team, whereas it readily appears that physical education is only one phase of health education. The whole health programme is a co-operative one; it is a joint responsibility, the concern of parent, teacher, physician, nurse and administrator. The control of communicable disease should begin in the home, but because the home does not in all cases do what it ought to do in this regard, the responsibility
has been shifted to the school. The teacher is in contact with the child at some time during the day, and because of this fact the teacher should be thoroughly acquainted with the health needs of the child and the agencies through which she can work to meet these needs. In rural situations where health service is not always at hand it is particularly imperative that the teacher be alert to symptoms of defect. It must be repeatedly emphasized that it is not the function of the teacher to make diagnosis. The health programme considers the whole child in his environment and the effectiveness of any programme will depend on the relationships that exist among all concerned. Mutual understanding and planning are the bases of this relationship. The personnel in health service is ready and willing to furnish information for the guidance of teachers. School nurses are perhaps the most important link in this relationship. However carried out, there must be an intimate exchange of information between teachers and the personnel engaged in health service if the programme is to function. (See chart VI.)

From the charts and discussion presented it will be seen clearly that no one person or agency can work alone in a child health programme. The keynote of a successful service is the rapport of the personnel concerned. Throughout the whole plan there is one primary concern, that is
the health of the child. This cannot be achieved by forced correlation. Neither can healthful living be assured through health lessons, for while they may impart health knowledge successfully they do not necessarily instil health habits. It is, regrettably, quite possible for a child to be familiar with all the ordinary rules of hygiene without putting a single one into practice.

The plan that is outlined attempts to consider the child as a dynamic whole. In the past we have attacked the problem of child health as specialists. We have been specialists in the narrow sense. Each specialist has
been interested in a certain phase of child health and tended to disregard all others. The true specialist of today considers his particular field in relation to that larger background in which it occurs. So with the health service of the school, its purpose is an important specialized aspect of a larger educational programme. It will take time for any plan to establish itself, but we must not be impatient. We have gone a long way to realize that health service is fundamentally bound up with the quality and integrity of general education. It is with this concept in mind that a plan of unified authoritative control, branching out through the various special agencies and converging on the pupil, has been advocated.
PEACE RIVER HEALTH UNIT

(The following outline is from the report of J. S. Cull, M. D., D. P. H., Director, Peace River Health Unit. The full report is found in the Twenty-fourth Report of the Medical Inspection of Schools for the year ended June 30th, 1935. Province of British Columbia, Victoria, B. C.)

"The Peace River Health Unit was organized during the summer of 1935 and started work on September 1st, 1935. The population served is estimated as 9,000, with a school population of approximately 1,300.

"The personnel of the Unit consists of a Director, who is Health Officer and School Medical Inspector for the Peace River District; four full-time Public Health Nurses, who carry out a generalized public health nursing programme, including school-nursing. No routine bedside nursing is carried on by the Health Unit staff. In addition to this there are three part-time co-operating nurses, located in the more isolated parts of the district, who take charge of the school nursing in these areas.

"The organization here differs somewhat from the usual Health Unit, in that it is closely related to and linked up with the Department of Education. The Inspector of Schools, who is the representative of the Department of Education and also the Official Trustee for the schools under the Consolidated Scheme, acts as Business Administrator for the Health Unit.

1. Director of Education.
"The annual budget is approximately $13,000, one-quarter of which is furnished by a grant from the Rockefeller Foundation. A considerable sum of money was saved by the consolidation of schools under the Official Trustee, and this has been turned over to the Unit budget by the Department of Education. In addition to this there is the usual grant towards the nurses' salaries from the Department of Education, the rest of the budget being supplied by the Provincial Board of Health."

The fields of health service covered are: vital statistics, infant and child welfare, food control, sanitation, clinics, laboratory services.

"School. This part of the programme takes up a great deal of the time of the personnel.

Visits to schools 340
Physical examinations 514
Average per cent of parents present 63
Children inspected by nurses 2,722
Notes to parents 66
Home-school visits 203
Quick inspection for contagion 763
Exclusions 57
Examined at office 62
Class room talks 123
Consultations with school officials 248"
METROPOLITAN HEALTH DEPARTMENT
FOR THE GREATER VANCOUVER AREA

(The following outline is from the report of G. F. Amyot, M. D., D. P. H., Assistant to the Provincial Health Officer. The full report is entitled, "Report of the Proposed Metropolitan Health Department for the Greater Vancouver Area." Authority to organize a Union or Metropolitan Health Board is found in Section 46 of the Health Act of British Columbia and Section 174 of the Public Schools Act. The plan became effective October 1st, 1936.)

The Metropolitan Health Board consists of representatives as follows:

- **Vancouver**
  - City Council: 4 members
  - School Board: 4 "

- **Burnaby**
  - Council: 2 "
  - School Board: 2 "

- **North Vancouver**
  - Council: 1 member
  - School Board: 1 "

- **Richmond**
  - Council: 1 "
  - School Board: 1 "

- **University Area**
  - Board of Governors, U. B. C. Provincial Health Officer: 1 "

- **D. L. 172**
  - Provincial Health Officer: 1 "

The area served has a population (1931 census) of 294,512, school population 50,626, area 210.47 square miles.

The personnel of the Metropolitan Health Board includes the Senior Medical Health Officer, Assistant Medical Health
Officer, Director of School Medical Services, Director of Public Health Nurses.

The Senior Medical Health Officer has the following advisory committees, Voluntary agencies, from professional agencies (medical, dental, nursing,), technical—experts in some specialized branch of Public Health service—.

The Metropolitan Health Area is divided into Health Units (6 at present). The function of each Health Unit will be to provide in the area under its respective jurisdiction a complete local health programme including those services usually performed by the School Medical Department and the varied programme of a Municipal Health Department. Special problems requiring services of personnel not included in the Health Unit staff will be referred to one of the Divisions of the Metropolitan Health Department central office or of the Provincial Board of Health.

Each Health Unit has a director who shall act as local Health Officer and School Medical Inspector in his area and Public Health Nurses who shall perform in their respective area all phases of Public Health and School Nursing. In addition there shall be Sanitary Inspectors and a clerk. The estimations of the number of personnel have been calculated as follows:

Public Health Nurses---1 nurse to 4,000 population

Unit Directors (rural)---1 director up to 25,000 population
Unit Directors (city)—1 director up to 40,000 population

The plan is financed by substantial grants from the Rockefeller Foundation, the Provincial Board of Health and the Department of Education. The annual operating cost of the Metropolitan Health plan calls for a budget of $195,651.50.
Chart VII. Administrative Outline of Greater Vancouver. (After Amyot)
CHAPTER VI.

THE TRAINING OF PERSONNEL

The success or failure of any plan that may be proposed will depend, in great part, on the leadership of the personnel that is appointed to carry on the work. It is now recognized by most health authorities that a well-trained competent personnel is a primary requisite for the proper administration of a comprehensive and effective health programme. The rapid growth of health service has necessitated the employment of a staff that was willing and available and, without reflection on the services rendered, the staff was not always competent. In most cases they did the best as they saw it, but they achieved their training "on the ground", almost as in an apprenticeship system. During the past few years many schools have been developed to give suitable technical training to those wishing to enter the field of health service. At this point, many of those holding to the belief that health and physical education are an inseparable team, disagree on whether the emphasis should be on "matter" or "method" in the training schools. The claim is advanced that improved professional training leads to specialization, which in turn neglects to consider the child as a whole. "Sometimes specialization has assumed such proportions that teachers, school physicians and nurses, executives and administrators have failed to grasp the
conception of unity of the child and of educating the whole child, and have concerned themselves only with the activities and responsibilities of their own narrow field." We challenge such statements. Are not the authors of these and similar statements specialists? Further, in its final analysis, physical education is a method and although it is claimed (by them) that "rich experience may constitute a substitute for advanced scholastic attainments", the experience is rich only as it is based on matter or academic knowledge. In all such arguments we see some danger of under-estimating the importance of sound training in health. It is true that a detailed knowledge of health is useless unless the individual knows how to train and instruct children. Competent knowledge without any ability in teaching is of little value. On the other hand it is worse than unavailing to teach things which are not so. Both knowledge of subject and knowledge of educational method are indispensable. Thus we maintain, good health work is secured through stimulating leadership and a competent, enthusiastic personnel.

There are two main categories of activity in health work.

(a) administrative

(b) technical

Under the former would fall the Deputy Superintendent of Education in charge of Health Service. He is dealing constantly with physicians therefore it is essential that he hold a medical degree. Since his work is primarily related to the field of education it is essential that he has training in approved teaching methods or have experience in school administration and since his work is of a very social nature he should hold a D. P. H. from a recognized school of Public Health.

THE PHYSICIAN

The changed status of the physician in the plan advanced demands a radical change in the type of physician employed. No longer is it sufficient to inspect pupils, "when time permits", and to disregard the two great fields of health education and preventive health measures. The physician is responsible for all health service, as designated by his superintendent, in his allocated center. Apart from the medical examination given all pupils in his particular Health Center, the physician has the task of distributing the load of pupils among his nursing staff, of co-ordinating his work with that of physicians in the other centers as prescribed by the Deputy Superintendent; and as important perhaps, of conducting a health campaign in his area. He must be ready to study his own work and be prepared to train his nurses and teachers. There is a very real lack of such physicians. This may be due to the
fact that the importance of a broader health programme is only now becoming evident. Europe has demanded higher qualifications for school physicians for some years but it is interesting to note that in 1935 only one state (New York State) in United States had made any requirements in the way of special education of school physicians.

"We need to develop in American public School education a school medical service to which are recruited men and women who will make a study of their professional problems, who will develop standardized procedures in the examination and classification of defects, and who will bring to their school work the professional spirit that we expect among good teachers. The present practice of using part-time physicians whose chief interest in the work is to supplement income until private practice warrants withdrawal from the schools, or physicians who are unsuccessful in private practice and who use the school work as a mere job, are responsible for the inefficiency in this service. There are other types of physicians in school work, but the prevailing defect in the service of the part-time physician is his failure to study the school problem, to develop a professional attitude toward it, and to realize for the children the full possibilities inherent in this service." 1

In the light of the plan presented and in keeping with the broader concept of health service, it is essential that the physician be not only a graduate in medicine but that he should also have some training in public health

and in educational philosophy and methods. We make no mention of clerical methods. Already too much of this valuable official’s time is wasted weighing pupils and making charts and records that could be done equally well by a minor official. What is maintained is that the training in educational method and philosophy is imperative. To mention one instance only, the health examination presents a strategic opportunity to teach health and it is important, too, in this connection, that the physician be able to interpret his findings to teachers and to parents. "The conduct of a school medical service is an art and an art well worth studying."

**THE DENTIST**

The difficulty of securing adequate dental service from dentists has led some authorities to substitute dental hygienists. This latter service is so limited in its scope that the present tendency is to eliminate it. The inclusion of an adequate dental programme needs no justification. An adequate programme is to a large extent educational. The old slogan, "A clean tooth never decays", is colorful but not truthful. Today we realize that good nutrition is the keynote of proper dental hygiene. We are increasingly aware of the fact that if a child has been properly nourished during his entire developmental period, from the time of conception onward through infancy and early childhood, he will have good dentition.
The dentist must have "a way with children". This may be called personality or any other name that is synonymous. His work lies almost wholly in the early stages of childhood, not because the older children would not be benefited by the dental service, but because it is believed that maximum results, both educational and corrective are secured in younger children. The dentist must be able, not only to extract, but also

(a) to make frequent dental examinations to determine early defects in dentition;
(b) to correct defects in their early stages;
(c) to educate pupils in oral hygiene habits;
(d) to educate parents to care for their children's teeth, particularly deciduous teeth;
(e) to co-operate with those who may seek his advice.

Such a practice demands that dentists have considerably more training than is at present accepted. Little attention has been given the training of personnel for this most important field, but a beginning must be made. Two alternative outlines of training are suggested:

A.
1. D. D. S. or D. M. D. degree from recognized class
   A University or Dental College.
2. Provincial or State Council examination.
3. Post Graduate work in Pedodontia with special reference to D. P. H. phases.
4. Courses in educational philosophy and methods.

B.
2. Provincial or State Council examination.
3. Courses in educational philosophy and methods.

The relationship between dentistry and nutrition has been stated although the view is growing that a good nutritionist is an indispensable part of a school health programme. We have no argument against this view, in fact the time may be near at hand when a nutritionist, a psychiatrist and a mental hygienist will be essential to the school health service. For the present, we believe there is more justification for the inclusion of these services in the work of the existing personnel.

THE SCHOOL NURSE

The school nurse is the keystone of the whole health service. In contrast to physicians and dentists, there are ample facilities for training school nurses at several strategic centers. In this province, the University of British Columbia provides an excellent curriculum for training in this field. It is generally agreed that a specialized technique is required for school health nursing. Dr. Amyot lists the following qualifications:

"Training: These nurses must be graduates of a
recognized School of Nursing and must be registered and have at least the following training in Public Health.

1. The degree of B. A. Sc. in Public Health Nursing from the University of British Columbia or its equivalent.

2. When nurses with this degree are not available, a diploma showing at least one academic year of special study in Public Health in the University of British Columbia or the equivalent course from any recognized School of Public Health Nursing as approved by the Provincial Health Officer. (In this plan, Deputy Superintendent of Health Service.)

3. It is recommended that every nurse...be recognized to take a Post Graduate course in Public Health not less than two months every three or four years.

4. That all new nurses should be under the age of 35 years."

Dr. Amyot in his report, further states that "all nurses in an area (or center) should meet at least once a month to discuss their problems. The attendance at these meetings to be compulsory."

THE TEACHER

The crux of the whole health plan lies with the teacher. She is the one person who sees all the pupils in her class every day. She must be taught not only to teach health but realize the value of health to herself and to her pupils.

1. Report of the Proposed Metropolitan Health Department for the Greater Vancouver Area. G. F. Amyot, M. D., D. P. H.
To many teachers, health is physiology, that is what they are taught and that is what they teach. The actual condition of the pupil "lectured at" is given scant attention or even disregarded. There is need for a new concept of the health problem at our teacher training schools. The following is a recommendation from the conference upon health education for teachers-in-training.

"Health education in training schools for teachers should include three factors, namely:
(a) A student health service
(b) Healthful surroundings
(c) Content course or courses.

The student-teacher health service should include:
(a) A complete health examination and such subsequent examinations as may be necessary.
(b) Health advice and supervision of students throughout course.
(c) The correction of remediable health defects.
(d) The maintenance of healthful regime of living.
(e) As far as practicable, the student's attitude and conduct in regard to the above points shall be a basis for recommendation for a professional position.

Second: Healthful surroundings. It is recommended that the administration of teachers' training schools should make provision for and control of the living and working conditions of students, irrespective of whether the students live in dormitories or elsewhere.

Third: Suggested topics. The following subject matter topics are suggested in order that the teachers may have an appreciation of community health instruction to the best advantage. It is important that there be adaptation of these principles to the problems of urban and rural schools, and it is further suggested that the best practicable distribution of time and relative emphasis be given these topics according to local conditions.
The fundamental subject matter should be derived from the following fields:
(a) Personal hygiene
(b) Nutrition
(c) Community hygiene
(d) Social hygiene
(e) Mental hygiene
(f) Health and care of infants and young children
(g) Health and care of childhood and adolescence
(h) First aid
(i) Hygiene of worker
(j) Home nursing and care of the sick
(k) School hygiene
(l) Physical education
(m) Principles of health education and practice of teaching; practice of teaching to include practice in all types of contact with children incident to health work in the school.
(n) Attention to physical defects in student and teacher. 1

The state of Utah outlines the following courses, or equivalent, as required for the certification of teachers:

"Hygiene 108a. The Health Program in the Schools. Physical growth and development of normal children, and of common abnormalities, their recognition and significance. The school health program as a whole, with some attention to the objectives and materials of health education. Prerequisite, a college course in personal hygiene.

"Hygiene 108b. An introduction to Public Health. A consideration of organized social effort in the interest of health and the security of life. The evolution of the public health movement--its organization and present status--and a review of certain knowledge on which its practices are based. Current health problems and social trends in the field of health." 2


We suggest that biology be required of all prospective teachers and in order that a more effective health education may ensue that the following courses be a part of the teacher-training curriculum. (Not in order of emphasis.)

(a) Social psychology or educational sociology.
   (A study of human behavior from the standpoint of educational factors affecting it. A study of normal children, character and personality. The relation of the child to the group.)

(b) Social hygiene. Problems of the individual, social and racial health as they are influenced by sex--temperance--mental hygiene.

(c) Community hygiene. A study of environment, lighting, sanitation, epidemics, etc.

(d) Health education. Methods of presentation, interpretation of medical cards, sources of material, relation to physical education.

(e) Symptoms of defect. Training in recognizing common defects, eyes, ears, malnutrition, nervous system and symptoms of communicable disease.

(f) First aid and safety education.

We should like to add that no student be admitted to a teacher-training school who is not in excellent health and good physical condition.
OTHER PERSONNEL

Many promising health plans have been ruined in the initial stages by the addition of specialists; psychiatrists, pediatricians, health supervisors, health counselors, visiting teachers, etc. It has been said that "the specialist takes the child apart and the teacher puts him together again". The writer is convinced that with the physician, dentist, nurse, teacher and parents working harmoniously in the interest of the child a solid foundation for adequate super-structure is assured.
CHAPTER VII.

THE BUDGET

It is essential that the financial administration of health service be conducted on sound scientific principles since the cost is met from taxation. Hence the budget. The budget is not a "cure-all" for financial difficulties. In fact, the budget plan has its limitations. For example, a budget is for a limited time. It presupposes that all costs are known and fixed in that period. In spite of these limitations, a budget is a most valuable document for an administrator. It enables him to plan his work for a definite period and at the same time to utilize his resources to the greatest advantage.

The duty of compiling the budget rests on the Deputy Superintendent of Health Service, who through the Superintendent of Education submits it to the Legislature. This routine necessitates on the part of the designated authority:

1. Responsibility and administrative ability,
2. Complete information from all health centers,
3. A concise budgetary system.

The budget is for an annual period, to conform with the government fiscal year. The following principles should be observed in developing the budget system:

1. Probable appropriation from the Legislature,
2. Strict adherence to the budgetary plan,
3. Constant checking as to seasonal and district demands,
4. A small sinking fund to provide for unforeseen emergencies.

The budget for health service presents a most difficult problem. It is well-nigh impossible to determine the cost of a good programme because of the difficulty of isolating the health service from the whole educational fabric. However, if one considers the cost of the administrative and supervisory personnel, plus the cost of the programme of health service, and excludes the cost of health education other than that given by the service staff, it is possible to reach an approximate budget. Various surveys have been made, but because of the indefiniteness of the basis of classification they are not of great value. The surveys bearing most closely on our discussion are those joining health with physical education. A Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association presents the following charts. (See charts VIII., IX., X. and table VIII.)

1. In British Columbia the cost of medical inspection (does not include physical education) per pupil in 1934-35 was 71 cents and in 1935-36 was 67 cents. Twenty-fifth Report of the Medical Inspection of Schools for the year ended June 30th, 1936, Victoria, B. C.
Chart VIII. Median Cost of Health Supervision and Physical Education per Child According to Size of Cities

<table>
<thead>
<tr>
<th>Size of Cities</th>
<th>Median Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 10,000</td>
<td>$1.74</td>
</tr>
<tr>
<td>10,000 to 25,000</td>
<td>$1.39</td>
</tr>
<tr>
<td>25,000 to 50,000</td>
<td>$1.24</td>
</tr>
<tr>
<td>100,000 and Over</td>
<td>$1.24</td>
</tr>
</tbody>
</table>

(Extremes range from 15 cities reporting annual cost $.00-.24 to one city reporting annual cost $8.00-8.24.)

Chart IX. Average Cost Per Pupil for Health Supervision and Physical Education in Cities According to Region

<table>
<thead>
<tr>
<th>Region</th>
<th>Average Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western</td>
<td>$2.54</td>
</tr>
<tr>
<td>Agricultural</td>
<td>$1.87</td>
</tr>
<tr>
<td>Eastern</td>
<td>$1.69</td>
</tr>
<tr>
<td>Great Lakes</td>
<td>$1.65</td>
</tr>
<tr>
<td>All Cities</td>
<td>$1.65</td>
</tr>
<tr>
<td>Southern</td>
<td>$0.96</td>
</tr>
</tbody>
</table>

Chart X. Average Percentage of Total Expenditures for Education Spent for Health Supervision and Physical Education According to Region

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Lakes</td>
<td>2.56</td>
</tr>
<tr>
<td>Western</td>
<td>2.47</td>
</tr>
<tr>
<td>Agricultural</td>
<td>2.37</td>
</tr>
<tr>
<td>All Cities</td>
<td>2.32</td>
</tr>
<tr>
<td>Eastern</td>
<td>2.3</td>
</tr>
<tr>
<td>Southern</td>
<td>1.93</td>
</tr>
</tbody>
</table>

1. Ibid. p. 9.
2. Ibid. p. 12.
Table VIII. Percentage of Total Expenditure for Education spent for Health Supervision and Physical Education According to Size of Cities

<table>
<thead>
<tr>
<th>Percentage</th>
<th>All Cities</th>
<th>Under 10,000</th>
<th>10,000 to 25,000</th>
<th>25,000 to 50,000</th>
<th>50,000 to 100,000</th>
<th>100,000 and over</th>
</tr>
</thead>
<tbody>
<tr>
<td>.0-.4</td>
<td>18</td>
<td>1</td>
<td>12</td>
<td>4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>.5-.9</td>
<td>15</td>
<td>2</td>
<td>17</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>1.0-1.4</td>
<td>44</td>
<td>1</td>
<td>23</td>
<td>12</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>1.5-1.9</td>
<td>39</td>
<td>1</td>
<td>27</td>
<td>5</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>2.0-2.4</td>
<td>41</td>
<td>2</td>
<td>20</td>
<td>6</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>2.5-2.9</td>
<td>30</td>
<td>1</td>
<td>18</td>
<td>5</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>3.0-3.4</td>
<td>24</td>
<td>1</td>
<td>15</td>
<td>4</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>3.5-3.9</td>
<td>12</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>4.0-4.4</td>
<td>18</td>
<td>1</td>
<td>6</td>
<td>8</td>
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<td>1</td>
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<tr>
<td>4.5-4.9</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5.0-5.4</td>
<td>11</td>
<td>1</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5.5-5.9</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>6.0-6.4</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>6.5-6.9</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>7.0-7.4</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>7.5-7.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.0-8.4</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>265</td>
<td>9</td>
<td>145</td>
<td>57</td>
<td>25</td>
<td>29</td>
</tr>
<tr>
<td>Median</td>
<td>2.1</td>
<td>2.9</td>
<td>2.0</td>
<td>2.21</td>
<td>2.4</td>
<td>2.0</td>
</tr>
</tbody>
</table>

The wide discrepancies in per-pupil costs depicted in the foregoing charts show the fallacy in using per-

1. Ibid. p. 10.

2. Various surveys have arrived at radically different cost figures because of the indefiniteness of the cost basis, but recent studies indicate that two to three dollars annually for each pupil should supply adequate health service and supervision of health instruction. This is exclusive of health education
health center plan since, as has been pointed out, the centers are determined not on an equal distribution of pupils, but on the number of pupils a full time personnel can accommodate under existing conditions. At first glance it appears that the health centers would operate with a wide range of costs. Such is not necessarily the case. The largest item of expenditure will be for salaries which is constant in the centers. The variable items are travel and supplies, but these will tend to balance; i.e., in urban centers less will be spent on travel and more on supplies, and in rural areas more on travel and less on supplies. The health center will be taken as the basis for the suggested budget and from this the total cost for the province may be computed.

("The Canadian Medical Association in co-operation with the Commissioner of Income Tax has drawn up the following to aid doctors in making out income tax returns:

A. Depreciation on motor cars on cost;
   Twenty per cent 1st year
   Twenty per cent 2nd year
   Twenty per cent 3rd year
   Twenty per cent 5th year.

by the regular teaching staff and such services as are furnished by cafeterias and lunchrooms.
The Administration of the School Health Program.
The allowance is restricted to the car used in the professional practice and does not apply to cars for personal use.

B. Automobile expense; (one car)
This account will include cost of license, oil, gasoline, grease, insurance, washing, garage charges and repairs.

C. Alternative to A. and B.
In lieu of all the foregoing expenses, including depreciation there may be allowed a charge of 8 cents a mile for mileage covered in the performance of professional duties.

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HEALTH CENTER BUDGET. PERIOD 1 YEAR.

By function and activity

Physician, salary and travel———$3,600
Office costs, supplies-------------- 400
Dentists(2), salary and travel—— 5,000
Nurses(3), salary and travel——— 3,750
Contingent------------------------ 250
$13,000

By character

Salaries--------------------------$9,750
Travel-------------------------- 2,600
Supplies------------------------- 400
$12,750
Contingent------------------------ 250
$13,000

---

1. The Canadian Doctor, Gardenvale, Que.
March, 1937. p. 22.

2. On basis of 8 cents per mile. (See C, above) The
By item

Physician, salary-----------------$2,600
Physician, travel-----------------1,000
Dentists, salary--2 x $2,000-----4,000
Dentists, travel--2 x $500-------1,000
Nurses, salary-----3 x $1,050----3,150
Nurses, travel-----3 x $200-------600
Supplies---------------------------400
Contingent------------------------250

$13,000

travelling expenses (including travel, upkeep of cars, etc.) of 27 school inspectors totalled $26,143.83, or an average of $968.29. The range in this expense list is from $231.64 to $1,920.94. (This latter figure is for the Peace River Area where transportation is most difficult. Also the figure may include travel outside the area on business of an administrative nature.) The next highest figure is $1,251.46. Some travelling expenses listed are as follows: East Kootenay, $868.15; Prince George, $755.16; Victoria City $420. Public Accounts for the Fiscal Year ended 31st March, 1937. Victoria, B. C. p. EE62.

1. Salaries of physicians at Provincial Mental Hospital, Essondale range from $1,958.38 to $3,018.84 on a 12 month basis. Ibid. p. EE158.
2. Salaries of Field Workers (Nurses) in the Health and Welfare Service average $1,200 on a 12 month basis. Ibid. p. EE158. (Public Schools are closed for July and August—hence $1,050 suggested. Further, approximately 40% of the teachers of the province receive this salary or less. Period of training is comparable.)  Sixty-fifth Annual Report of the Public Schools of the Province of British Columbia, 1935-36. Victoria, B. C. p. H21.
Much justifiable criticism may be aimed at this budget, but it is presented as a minimum basis. Some of the objections anticipated are:

1. no provision for secretary.
2. no provision for original outlay for cars.
3. cost of supplies too high or too low.

A secretary present in the administration office during hours would be an admirable addition. Her duty would be to answer phone calls, provide a method for keeping in touch with the personnel, perform clerical work and generally carry out office routine. A secretary would add to the budget no more than $900. The reason for the omission of a secretary is that the central administration office may be located in a central school or preferably in a central administration office for all educational purposes. However if the services of a secretary are found necessary, one should be employed.

The original outlay for cars is omitted on the obvious ground that such a cost would appear in the first year only.

The cost of supplies has been referred to previously as variable expenditure. The practicability of the sum ($400) will depend upon what services are provided. If, for example, dental service is expanded to include all types of restoration, this sum would need to be substantially
increased. It is well for the present, to confine ourselves to educational and preventive measures and to do more than we are doing in these fields. When some form of state medicine is realized a different attack will be conceded.

On the basis of $13,000 per health center the total cost for the 20 centers outlined (page 53) would amount to $260,000. To this must be added the salary of the Deputy Superintendent of Health Service and the expenditures of his office, so that the total budget approximates $267,000.

How will these activities be financed? Obviously, by taxation. But since protection and promotion of health are basic and primary functions of government, that Legislature must assume the cost in toto. Municipalities have varying sources and methods of taxation; this, and the fact that when the service is close to the taxpayer he is apt to demand immediate returns of which health service is incapable, make local taxation highly unsatisfactory. A great many pupils in the province are transient and as

1. The "Peace River Health Unit", at present in operation, has an annual budget of $13,000. The service is extensive, that is it reaches out in to the community, though as yet no full time dentists on an annual salary are employed. (See page 68.) It is the writer's belief that an intensive service carried on in the schools and permeating the community by personnel contact is of equal value.
such, constitute a burden a municipality is reluctant to assume. And yet they are part of the state. The state therefore must provide for the health service by a method of taxation which it sees fit to devise.

Inasmuch as the success of the school health programme is in a large measure dependent upon the mutual understanding and co-operation of all concerned, it is very unwise to consider any plan a perfect one. The writer is not unaware that time will reveal many errors of judgement in the preceding pages. But of this he is sure. Throughout the whole educational programme there must be a co-ordination of effort to the end that a child may live healthfully a life of usefulness.
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