UTILIZING HEALTH KNOWLEDGE IN THE
PUBLIC SCHOOLS

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By
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Approved by: 
[Signature]
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UTILIZING HEALTH KNOWLEDGE IN THE
PUBLIC SCHOOLS

INTRODUCTION

Statement of the Problem

The problem of this study is to determine how we are utilizing, or failing to utilize, our knowledge in matters pertaining to health with respect to the welfare of the child of school age in Ohio. Are we giving the children the benefit of our knowledge by providing health training in the schools commensurate with that knowledge; are we providing a school environment which measures up to standards which are at least acceptable on the basis of present day health and safety standards; and are we providing health services which measure up to our need and capabilities in this respect?

Sources of Data

The chief sources of data used were as follows: (1) pertinent literature on the various phases of the subject as given in bibliography, pages 71-73. (2) discussions as to available information and data with Paul E. Landis, State Supervisor of Health, Physical Education, Recreation and Safety; also, his assistant Mr. P. C. Bechtel; Miss Gertrude Bush, State Supervisor of Nurses, State Department of Health; D. Oberteuffer, Professor of Physical Education, Ohio State University; and personnel in the statistics division of the State Department of
Health, (3) Sections of the General Code of Ohio relating to school health and school health services, (4) the latest information from Congress relative to H. B. 1980, The National School Health Services Bill, via Congressman Earl R. Lewis of the 18th Ohio District, and (5) personal experience in six years public school teaching in Ohio plus two and one half years in Public Health work as sanitarian including a semester's training in Public Health at the University of Michigan School of Public Health.

Justification of Study

During the last few decades we have made remarkable progress in the field of preventative medicine, nutrition, surgery, endocrinology, and most other fields dealing with the well-being of the human individual. However, this vast amount of information has not been made available in such a manner as to benefit the people of this country as much as it would seem that we have the right to expect.

For example, we have a rather adequate knowledge of nutritional requirements, care of the teeth, care and correction of the defects of the eyes, the prevention of many of the so-called communicable diseases, yet each day we see, or we ourselves are the victims of neglect or ignorance or both in matters of this kind which are so important to the individual.

It is intended in this paper to deal particularly with
a program of prevention and correction of such an unfortunate state of affairs as it exists in the public schools.

However, "The school is not the sole agency responsible for the health of the people. The health of the people is determined by many factors, including heredity, home environment, nutrition, personal attitudes, intelligence, information, economic status, accidents, disease, or injury. It would be as unfair to attribute ill health in the nation to failure of schools as it would be unwarranted to claim all health progress as caused solely by the schools. Yet the schools are a vital factor. In the school is offered unparalleled opportunity for acquiring health knowledge, forming health attitudes, and establishing health practices. Ignorance about health remains wide-spread, even among otherwise well-informed and well-educated persons. Superstition and misinformation are by no means confined to the illiterate or those with limited education."¹

In a speech made by the Hon. Evan Howell of Illinois, in the House of Representatives, February 17, 1947, in support of the National School Health Services Bill, he indicated that according to the United States Children's Bureau, which has the most reliable information now avail-

¹American Association of School Administrators, Health in Schools, p. 11.
able on children's health, at least three-quarters of America's 30,000,000 school children need dental care. Approximately one-third need medical care. Ten million have defective vision. One million have hearing defects. Half a million have orthopedic defects or defects which could be corrected by plastic surgery. Approximately 175,000 children have active tuberculosis.

In our schools something can be done to correct most of these defects, and a whole lot can be done to correct many of them. The schools are a good place to begin. For under our laws, the schools have contact with more children for longer periods than any other public agency.

If we want a healthy nation, we must start with the children. Physically fit and productive adult citizens are the best investment a nation can have; and any study which in any way may lend support to such a goal seems amply justified.

Methods of Research

The most promising method of approach to the problem appeared to be: (1) to determine what constituted the best thinking and best general application of available information in each of the three phases of the school health program to be studied, (2) to determine as accurately as possible the current practice in these phases of
the school health program, and (3) on the basis of findings in (1) and (2) to draw conclusions and offer recommendations.

Overall view:

In Chapter II, we deal with health education as it is related to the whole school program. The thinking of some of the authorities in the field is reviewed. In this light some of the present practices are indicated together with suggestions and recommendations. The need for teacher training in health education, and methods for application of such training is particularly emphasized.

The subject of environmental control as it applies to the school premises is dealt with in Chapter III, dealing especially with those aspects of the school environment which relate to child health. A study of the actual practice relative to this matter is also undertaken together with references to authorities on best current practice. The functions of various personnel directly concerned with environmental control in the school health program are also indicated on the basis of authoritative opinion relative to these functions.

In Chapter IV, the subject of school health services is undertaken and the activities of school personnel in school health service are indicated on the basis of
reference to authorities in this field. The portion of the school health services receiving the most attention deals with school health examinations and records with particular emphasis as to quantity and quality of these examinations and records. These are closely connected with what should logically be of very great concern in the school health program but which is found to be a very great weakness, namely, the follow-up program for the correction of remediable defects.

Chapter V deals with conclusions and recommendations based on the results of the research made in the area of this study.
CHAPTER II
HEALTH EDUCATION

Health Education is the sum of all experience which favorably influence habits, attitudes, and knowledge relating to the individual, community and racial health.\textsuperscript{1} Taken in a broad sense, this may be broken down into three divisions. These are: (1) public health training, (2) public health education, (3) school health education. It is intended here, in large measure, to deal with the latter, which in turn, may be divided into three phases: (1) physical activities, (2) health instruction, (3) health service.\textsuperscript{2}

School Health Education has been defined as that part of health education that takes place in the school or through the efforts organized and conducted by school personnel.\textsuperscript{3}

Newer Concepts of Health Education

In speaking of health education in its newer meaning, we are dealing with a subject or field which, as such, is quite recent in gaining general recognition. Not

\begin{itemize}
\item \textsuperscript{1}C. E. Turner, Principles of Health Education, p. 2.
\item \textsuperscript{2}Ibid., p. 2.
\end{itemize}
only has it been slowly recognized but there is even slower progress in gaining an understanding of the program and its possibilities. In the philosophy of education which holds that the child is to be educated for a place as a citizen in society, the program of health education must and will play a major part. It must play a major part as good health is almost a prime requisite for satisfactory, normal participation in organized society.

Keene\(^1\) comments in this manner: "Health is that condition of the body and its organs necessary to the proper performance of their normal functions. It is that condition which is ordinarily spoken of as 'physical fitness'. It goes deeper than that, however, and includes mental, moral, and social fitness. When we add to this the Spencerian ideal that, 'true education is training for a complete living', we have a program whose attainment means readiness in body, mind, and character, for participation in an advancing social life."

In applying this philosophy to health education, Oberteuffer states\(^2\), "To know how to avoid one of the common diseases is in itself important but a complete program of health instruction will include all the


problems of growth, development, and adjustment within the environment of the normal student."

The implications for the school, with respect to social adjustment is, then, the subject at hand.

Formerly, the child went to school for only a short period of three or four months during the year and only for three to six years of his life. During those years he acquired the little book learning which was all that was at that time felt to be essential, namely, reading, writing, and simple arithmetic. The rest of his training, both physical and mental (if the reader will pardon a separation of the two) was obtained at home or church or through apprenticeship.

At the present time, the child goes to school for at least seven months each year, and in many states nine or more, and for an average of eight years of his life. Consequently, the opportunities for home training decrease.

Variety and intelligent interest have been lost from many of our occupations. We have become immured in flats and apartments, in offices, shops, mills and factories. Social Activities, formerly wholly domestic or communal, have become largely commercialized, and are frequently destructive of the finer things which should be the inherent right of young people.

Thus, the school has been compelled to take on one by one functions and duties once performed elsewhere.
With the increase in population, the greater dependency of the individual upon society, and many other complementary factors, the public school is becoming aware of the opportunity, in fact, the necessity, for playing an ever increasing part in fostering that type of society which we believe to be best.

This does not imply, however, that the teachers in the classrooms are directly taking the place of the home, church, and other natural associations which the child will ordinarily make. The implication is rather in the creation of attitudes, ideals and abilities, which should favorably supplement those gained in the home and community—perhaps in some instances, even being contrary to undesirable home and community influences.

Today progressive educators believe that it is not information which counts for success and happiness so much—not even knowledge taken as a thing apart—but doing. This is particularly apparent in the efforts made in many communities and in some states to get the type of health education which will result not so much in information as in action. At the present time, almost the whole effort in that particular phase of education seems to be building up proper habits in regard to health matters.

The real function of the school is training for complete living, training for citizenship which shall make
children not only informed, but well and strong, physically as well as mentally, so that growing boys and girls may participate in a worthy manner in fostering a better society.

The notion that the child was an empty vessel to be filled with knowledge, precepts, and regulations of adults, has long since lost any title to respectful hearing. There remain remnants of the belief that the child is a dual mechanism of separate mind and body. But surely, if slowly, this concept is giving way to the view that the child is a unit, an organic whole.

It is increasingly clear that understanding of the child is favored by the newer concepts of child nature. These views, based on many investigations and illustrated in modern methods of school organization and teaching, are most important in health education.

In this light, Williams and Shaw\(^1\) refer to the child as a developing organism, a receiving organism, a responding organism, and a unified organism.

As a developing organism the child is considered an individual with possibilities. There is no disposition to regard him as prone to favor undesirable behavior but rather the conviction that he has possibilities, which, although limited in certain respects, are challenging. In this view, then, education is a process of dis-

\(^{1}\) Williams and Shaw, Methods and Materials of Health Education, pp. 13-19.
covery and the teacher seeks in various ways to find out what he can do to promote the best development of the child. Education then is not primarily concerned with inherent weaknesses that are supposed to exist, nor to fashion the child into a precise example or a particular pattern. On the contrary, the best opportunity possible is to be provided for the child to develop his powers and capacities. Since these are many and varied, the teacher seeks to favor the development of those that are socially useful and durable and to hinder those that would impair the life of the child. To do this wisely and well, the teacher is or should be trained to understand child nature to interpret the needs and demands of society. In addition, he requires the assistance of the school physician, nurse, dentist, psychiatrist, and other experts from special fields.

As a receiving organism every individual is aware of his world by an enormously extended series of receptors or endings or sensory nerves. The messages received by the individual come not only from the environment about him but from all parts of the internal structure as well. The kind of world that exists for the individual is the world as it is reported to him both from without and from within. Since the external and internal receptors continually receive messages sent to them, these
constitute a very real part of the child at every and any moment. The reality of this fact has given rise in recent years to a phrase that gives new emphasis in understanding child life. We refer to "the total situation". Because the child is a receiving organism, he cannot be fully or adequately known unless, his home, his playmates, his food, his habits, the community in which he lives, are also known. To best promote his development, the modern school sets itself the task of controlling in part, and offering in part, the most desirable messages.

As a receiving individual, the child fits easily into many schools, but his characteristic of responding is harder to provide for. Dewey's statement that we "learn by doing" is widely accepted but feebly practiced. The importance of response is very great in learning health. One must actually practice some health knowledge or engage in a health procedure to achieve benefit. Even knowledge that may be of value in the future is questionable, if the disposition to use it is not developed.

We know today that the whole child goes to school. Some practices might lead one to believe that only minds are present since in some schools nothing but mental discipline is offered as education. Science declares that thinking is not a function of the brain alone but a functional activity in which the whole organism participates. Indeed, it is quite accurate to say that one
thinks with his glands, the muscles, with all the multitudinous cells of the body among which are included the cells of the brain. The mistaken idea that one thinks with the brain alone has led to the neglect of other functions because of the high value placed upon thinking and the location of this only in the brain. One can scarcely acquire a sound view of the nature of the child and the problems that he faces in living until this superstition of separate mind and body is replaced by the modern, scientific view of the individual as a unified, biological organism, closely identified with and expressive of the world in which he lives.

The concept of the child as a developing organism, receiving from and responding to the environment, belonging to the environment as a part of the whole, and unified in all functions as he receives messages from his world and responds to the many and varied stimulations of sense - this concept enormously widens the service of health education. One understands then, that more than habit formation is to be achieved by children and small bits of health knowledge in themselves are of little worth. The whole range of experience to which the child is exposed implies healthful responses or their opposites and hence the whole experience is to be viewed in its effect upon the child.
Need for Adequate Teacher Training in Health Education

Altogether too much subject matter teaching is done with little or no regard to the complete picture of physical, mental, and social health of the child.

Certain factors and situations are herewith mentioned which should be anticipated in an adequate program of teacher training.

A maladjusted, unhappy, nervous teacher, a narrow, academic curriculum, a military disciplinarian as principal - these may affect more profoundly and more adversely the health of the child than his failure to brush his teeth, to keep his hands and face clean, or to drink milk daily. It is not intended to imply that these latter practices are of no value, but to emphasize the fact that all the experiences of the individual should be understood with reference to their bearing upon the health of the child.

Adequate teacher training becomes imperative if this type of thing is to be accomplished in any satisfactory degree. Whatever else may be included in an "adequate training program", it seems that a rather thorough understanding of physiology correlated with child psychology is absolutely essential. Also, the teacher should be familiar with such items as the following: the whole school program, community health,
sanitation, welfare societies, mental hygiene, public health agencies and their functions, juvenile courts, etc.

**Teacher Application of Health Training**

It has been mentioned above how certain factors, not usually recognized as being of the field of health, may have a very acute bearing on the health of the individuals involved. One of the factors is that of discipline. Much has been written and spoken of the influence of discipline upon the personality of the child and hence upon his health, since health is a condition of the whole individual. The teacher may excel or fail in promoting a healthful reaction of the child to the daily tasks and responsibilities of school life. The philosophy of the teacher will determine largely the type of discipline. What is he trying to do? Is there an effort to correct what are regarded as inborn traits or inherent urges to misconduct, or is the child viewed as an organism responding to the environment according to his powers and capacities? In the former philosophy he is an individual to be corrected and directed. In the latter he is an individual to be developed.

If development is the basis, then it is essential that the child help formulate the standards, cooperate in their execution, and be judged with the others of their usefulness, performance, and merit. This viewpoint has possibilities of making the classroom experience a vital, happy, and stimulating one.
On the contrary, if the teacher attempts to "keep school", to hold the class through love or fear of the teacher, there is apt to be an undesirable effect upon the personality that may even extend to the visceral functions when the emotion of fear is involved.

The school should be conducted to eliminate as far as possible fears in children, and to promote in them self-confidence, self-respect, self-direction. Fear is often held as cause for numerous types of abnormal behavior, such as jealousy, types of delinquency, and lying.

Individual differences must be accounted for. Unsatisfactory work may be the result of lack of capacity or lack of interest. Undesirable relationships with other pupils must be recognized and adjustments made.

Berry\(^2\) says in this connection, that a child may be doing satisfactory work in school and may like his teacher while at the same time he is most unhappy because of treatment received from other children. He also states in effect, that children socially well adjusted at school rarely become delinquent.

\(^{1}\)C. S. Berry, *The Behavior Problem Child in the Home, School, and Community*, p. 22.

\(^{2}\)Ibid., p. 22.
The teacher should be able to recognize such maladjustments and either correct the causative factor or see that it is adjusted. In addition, teaching personnel must realize, in the light of our rather broad definition of health education, that discipline, punishment, fatigue, physical handicaps, success and failure, ventilation, cleanliness, food, social life, and many other factors must be taken into consideration if the all-around health of the individual is to be maintained.

The individual classroom teacher must be made conscious that he is a part, and that his individual program must correlate with, and be a part of, those efforts which directly aim at better health for each individual child. This means that he must be made to realize that he has a part in the health education program.

As has been indicated above, the major emphasis for individual health in the school rests largely, at the present time at least, in the hands of those in charge of the physical and health education program. In this program, in the area of health service, physical examinations are made of school children with the purpose of determining physical defects. Ideally this is followed up by a correction or adjustment of these defects. This may be accomplished by the school, the home, or other agency, or a combination of these. In this connection, Berry suggests that the first step in the discovery

\[1\text{C. S. Berry, op. cit., p. 21.}\]
and removal of the causes of delinquency is to see that the child is in proper physical and mental condition to make the most of the opportunities offered by the school. He suggests further that uncorrected physical defects often result in undesirable behavior.

Turner¹ mentions the following groups of defects in relation to their implication for the school: visual defects; hearing defects; speech defects, defects of nose and throat; heart defects; malnutrition; tuberculosis; dental defects; orthopedic defects; and nervousness.

The health and personality of the child are influenced in most cases of the above mentioned defects. For instance, myopia, or near-sightedness, tends to lead toward study rather than physical activity as reading is easy while activities involving distant vision are difficult. In cases of hyperopia, or far-sightedness, the situation is reversed. Activities involving distant vision are easy, while reading and other close work requires over-work of the ciliary muscles with eyestrain resulting.

Another common eye defect, astigmatism, is usually accompanied by severe symptoms of eyestrain, and a large percentage of functional headaches are caused by it. Astigmatism may cause certain symptomatic conditions such as dizziness, convulsions, lack of emotional control, rapid heart, indigestion, constipation and others.

Strabismus (cross-eye or squint) not only affects the ability of the child in normal activities but in many cases leads to a very real personality difficulty.

Here we see the need for adequate physical examinations, plus an adequate teacher training program. In the interest of the health of the child and the educational progress of the class, the teacher needs to be able to detect possible signs of difficulties and secure a thorough examination by competent persons where there is a suspicion of trouble. The teacher is in no way relieved of this responsibility in case a physical examination has already been given. For instance, children often have remarkable powers of visual accommodation which may result in a 20/20 rating on a short chart test. Even with this apparently good eyesight the child may still have defects which may result in headaches, eye-strain, and other undesirable effects.

The detection and diagnosis of eye defects should be followed up with adequate corrective measures. It may be necessary to see that the parents are properly informed and glasses secured; or it may be necessary to modify the school program of the child. It may be necessary in some cases to do both. It may also be necessary, in situations where money is not available in the home or in a school fund, to seek the assistance of some other source, such as city clubs or welfare agencies.
Adequate detection and correction of visual defects by intelligent school personnel will be a step in the direction of giving the child a chance to be at his physical best which will lessen greatly the possibility of later social maladjustment due to failure, inability to participate, etc.

Defective hearing may result in apparent lack of attentiveness, misunderstanding, and the like. The signs of possible hearing difficulty are often wrongly interpreted and the child is thought to be shy, sullen, stubborn, or stupid. He may not do well at school. He feels discouraged, perhaps, and misunderstood.

Here again the physical examination should detect the difficulties and see that correction, if any is possible, is provided for. In event of missed cases, or where no physical examination has been given, the teacher must be able to recognize the symptoms and act accordingly.

Speech defects will, in most instances, be overlooked in the physical examination. For the most part the detection and correction will lie with the individual teacher. In cases where speech defects are definitely affecting the personality, it may be necessary for the child to receive special instruction in proper speech.

Defects of the nose and throat such as adenoids, enlarged tonsils, or a deviated nasal septum, may hinder
normal breathing by causing the child to breathe through the mouth. This is unfortunate for the child. In pronounced cases, the lower jaw drops, the tongue falls away from the palate, and the cheeks are pressed inward. The facial contour is changed because of the high narrow palate, and narrow chin. The nose may become small and narrow from disuse. The voice takes on a nasal quality, and the face and expression of dullness. An open mouth may contribute to this unfortunate appearance. Failure of the body to secure sufficient oxygen for more than average activity may result in apparent dullness and imperfect nutrition. Difficulty in breathing is likely to result in disturbed sleep. Poisons from infected tonsils may result in apparent sluggishness and lack of ability. Certainly an individual of this type would find it difficult to adjust himself to the group in a normal way.

Such defects must be detected in the school program, ideally in the physical examination, if not taken care of by the parents before the child comes to school. Again, the teacher, in absence of a physical examination, must be alert and responsive to such defects.

The detection of organic heart disease lies almost entirely within the realm of the physician, whether school or private. The adjustments and compensations this individual must make should be aided and directed
by a cooperation of the school personnel with the home.

The detection, and determination of degree, of malnutrition is difficult. The causes and results are many and varied. The malnourished child may come from any strata of society as malnutrition may result from improper kinds or proportions of food as well as insufficient food. A child who is malnourished is not in the best health mentally or physically, and is therefore not capable of making his best adjustment in his life situation.

In increasing degree, teachers are realizing the importance of at least some basic knowledge of the subject of nutrition for the maintenance of their own health, and for understanding and assisting the pupil. The professional leadership and cooperation of the physician, the nutritionist, the school nurse, and others, is extremely important in severe cases of malnutrition.

Tuberculosis in early stages is difficult to detect. Probably the best procedure at present is the tuberculin test with the follow-up X-ray of those who react positively. In positive cases and in active cases every effort should be made on the part of the school to see that adequate agencies, such as the public health department, are informed.

The teacher realizes he cannot pick out the tuberculous child nor can he be sure that one who looks well is
free from the disease. The greatest contribution of the school in the prevention of tuberculosis will be through the proper development of the physical and health education program promoting vigorous health for all children, with special emphasis on health and nutrition.

The health education in the school will help both the children and general public to understand the nature of tuberculosis; the importance and methods of early diagnosis; the curability of the disease, especially in the early stages; and the need for the early detection of cases. Vigorous health is a protection against the disease. In early detection and arresting of cases we prevent serious active cases which result in loss of time, money, and unwholesome attitudes and conditions.

Dental defects are, as a rule, more easily detected and corrected than some other defects mentioned. The physical examination should reveal most of these but steps must be taken by parents or school if they are to be corrected.

Poor teeth may interfere with proper mastication and hence with digestion and nutrition. Infection from abscessed teeth may result in heart disease. Poor arrangement of teeth may result in embarrassing speech defects.

Detection of these lie within the province of a school program which desires to maintain the all-round health of the child.
The responsibility and possibility of the school in providing education for children with orthopedic defects, which cannot be corrected, cannot be over-emphasized. The physical examination should determine the extent of activities which may be indulged in. From this point the school in cooperation with the home must aid the child in developing compensations, attitudes, and skills, which will permit the individual to make his best possible adjustment to society.

Detection and correction of defective posture due to malnutrition, obesity, etc., will be necessary more often than for those orthopedic defects which are beyond repair. Both physical exercises and intelligent attitude on the part of the pupil are necessities and the obtaining of these should be a part of the school program.

In regard to nervousness, the teacher must recognize the effect of unhappy mental states in upsetting digestion, in disturbing sleep, and interfering with the coordinated activities of the organs of the body. Perhaps the greatest contribution to the health of the child lies in the wise conduct of the program of general education. In other words, the teacher who conducts her class and works with individual children in such a way that the child can carry forward the school program with reasonable success, without emotional stress, and with the assurance of
fairness, understanding, and a reasonable appreciation from the teacher, is contributing to the child's physical health as well as to his emotional balance and school progress.

Serious and continuing emotional situations have devastating effects upon both physical and mental health. For instance, fear in its various forms produces physical manifestations ranging from cold chill, rapid heart, painful respiration, and the all-gone feeling in the abdomen, to complete unconsciousness.

Conversely the body affects the mind. Chronic or exhausting illness, surgical operation, or any situation which drains the energy and resources of the organism, will affect the thinking, feelings, and behavior of the individual.

Nervousness is not a scientific term which is applied rather generally to conditions, theoretically of the nervous system, which result in some degree to maladjustment. Among the various characteristics exhibited by such children are liability to fatigue, lack of emotional control, restless sleep, changes in appetite and conditions of the bowels, and "aches and pains" of all kinds, which are more often disagreeable feelings than true pains. The child may be unnecessarily worried and possessed of recurring fears and doubts. He may have an undue craving for sympathy, respect and admiration. These symptoms may
be present only to a slight degree or they may be so serious as to color the child's whole behavior.

It is quite important in the total school program and in the health program in particular that "nervousness" be recognized for what it is, and that an effort be made to remove the cause. The cause may have a physical basis in the inheritance of a neurotic make-up, in recent illness, in endocrine disturbances, or in physical or mental defectiveness, but more often it has a mental and emotional basis in fears and worries arising from home or school conditions. Fear, conflict, and revolt sap the energy of the child and interfere with the normal functioning of the whole body. The adjustment of causative conditions and conflicts can transform the child's health, behavior and school progress.

Thus, we see the need of, and possibilities for all teachers and administrators properly trained in the field of health, particularly as it applies to the child. This type of work can certainly become an important part of the school health program. However, it must be emphasized here that a teacher is not a physician and therefore is not qualified to diagnose and particular disease or defect as being this or that resulting from a particular organism or other causes. The teacher in some cases may actually be able to make accurate diagnosis. Such
diagnosis, however, must be confined in almost all cases to himself. His authority to diagnose ceases with the recognition and reporting of deviations from the normal to the school physician or other responsible individual. This approach to health education comes not as a coorelation of curriculum but as a part of the general integration of the ideals and objectives of the teaching staff.

Nyswander\(^1\) demonstrated that the teacher's responsibility for observing the health of pupils can be made an effective part of the school health service. Teachers were prepared to observe and report to school nurses the health conditions of pupils. The annual medical inspection was replaced by annual and semi-annual conferences between the classroom teacher and the school nurse. After teachers had received preparation, eight of every ten children selected in these conferences, when examined subsequently by the school physician, were found to have a health condition requiring further medical attention. The study also revealed that teachers need more knowledge of and experience in observing health behavior and recognizing health deviations. It should be understood that this preparation of teachers is not for the

purpose of assuming work to save the time of nurses and physicians, but primarily to enable the teacher to perform more adequately an important responsibility. The Michigan Superintendent of Schools\(^1\) has published a helpful guide to aid teachers in the observation of the health of pupils.

**Direct and Correlated Methods of Health Education in the Classroom**

In health instruction itself there are two general methods of accomplishment. One is the method of correlation with other subjects; while the other is the teaching of health as an individual subject. Dr. Oberteuffer\(^2\) goes on to suggest that each method should be utilized, suggesting that the best correlation be made with physical education. He suggests further, that health instruction is just as much a part of the curriculum, or should be, as English or any other subject. Correlation of subjects is fine but it is quite difficult to teach a particular subject by merely introducing it incidentally, as the occasion may or may not arise, in other courses.

In primary grades the course of study and classroom situations are sufficiently flexible to permit considerable, and possibly adequate, health instruction without

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the necessity of a special class or period. In junior and senior high schools, it is essential that regular classes in health instruction be maintained. Specific health instruction by classes is necessary just as for other definite subjects. As has been indicated above, a direct attack on a field of knowledge is usually productive of better results than an indirect attack. However, it is also important that the subject matter within any field be correlated with the whole program as a part of sound development and adjustment. Biology, for instance, offers a considerable opportunity for health education; social sciences may interpret the past, present and possible future developments of health knowledge and the particular effects upon a person or group of persons. (Supplementary readings such as: "The Life of Pasteur" by Radot; "Microbe Hunters" by Paul De Kruif; or "Disease and Destiny" by Major, would be indicated here.)

Whether as a result of teacher training - resulting in an intelligent perspective in the field of health, or physical exam, which may be made quite educational, direct or indirect instruction, or all of these combined, health education must be considered a factor in insuring good health and consequently an agent in preventing and adjusting disability so that the individual may be physically, hence mentally, able to best adjust himself socially.
Oberteuffer\textsuperscript{1} suggests that the principle aim of health instruction is the development of intelligent health conduct. By presenting teachable material relating to health, such instruction aims to produce in each individual a behavior compatible with his own and his community's best interests. These interests are usually thought of in terms of protection against disease, or the warding off of ill health, but in addition it includes teaching us how to live so as to develop the fullest organic strength and wholesomeness of mind.

In this same light, the Joint Committee of Health Problems in Education of the N. E. A. and A. M. A.\textsuperscript{2} suggest that by health is ordinarily meant the well-being of each cell and organ of the body and its harmonious functioning. But this well-being depends on the way in which those cells are fed and exercised, and how the organs are used, that is, on certain kinds of behavior. For instance, the nutrition of the body depends upon how one eats. But eating is a form of behavior. The maintenance of health requires a certain amount of exercise and sleep. Again both physical exercise and sleep are forms of behavior. The avoidance

\textsuperscript{1}D. Oberteuffer, Ohio Health and Physical Education Series, Vol. 3, p. 126.

\textsuperscript{2}Joint Committee on Health Problems in Education. Health Education. Washington: National Education Association, 1936, 360 pp.
of accidents implies certain habits which must operate accurately and without exceptions. In other words, health, thought of as physical well-being is dependent upon certain forms of hygienic behavior.

Behavior like all other conduct is the result of learning. Consequently, the maintenance of health becomes a problem in applied psychology and the concern of education. Psychology is the science which deals with mental activity, and one form of mental activity concerns the control of conduct. Education is concerned with the guidance of learning, and since health, thought of as behavior, is a form of learning, it becomes a real and vital concern of education.

Let us be considerate however. Good health is too often represented as the principal objective of life. Health is not living. Even if we include the wide range of adjustments under the heading of mental hygiene, we must still recognize many factors in success other than health. To overemphasize health is to defeat our own purpose in two ways; we promise more than we can deliver and thereby create skepticism, indifference, or antagonism; and in the more introspective types of individuals we may even bring about an excessive pre-occupation with health. While hypochondriacs and neurotics are not created by health education, they may certainly be encouraged by the wrong type of health
education. Health contributes to both success and happiness. Neither will likely be obtained without good health. Teachers must endeavor to achieve through a nice balance between overemphasis and underemphasis regard for the importance of good health without creating attitudes of overconcern.¹

Let us summarize briefly:

1. The child is an organic unit; a unit of the home; the home a unit of the community and the community a part of that larger framework we call society. The child must be at his best physically to make the best application and interpretation mentally. Physical defects and intelligent health attitudes and practices may invite compensatory activities of an undesirable nature. The degree of maladjustment may range from some scarcely noticeable peculiarity to extreme delinquency and crime.

2. Inasmuch as defective health may play an important part in contributing to maladjustment, it is only reasonable that these defects be prevented, corrected, or adjusted to. The school as a focal point, as far as children are concerned, has in recent years assumed, together with the help and advice of welfare organizations and the like, the major portion of this responsibility.

¹Joint Committee on Health Problems in Education, op. cit., p. 97.
3. Teachers in the classroom can be of great value in this program if they are able to detect physical and behavior deviations from the normal.

4. In the program of the school dedicated to better health, the child may secure information or help through direct health instruction, health information correlated with other subject matter, physical examination and follow-up, and the physical education program.

5. The trend is definitely toward more adequate school health programs which cannot but lessen social maladjustments having as their roots health defects and unhealthy attitudes, habits and ideals.

In conclusion: If a healthy personality is our goal, we may do well to list some of the characteristics we would expect in such a child,¹ in varying degrees and combinations, of course:

1. The child possesses intelligence adequate to meet the demands of life.

2. He is able to concentrate his attention on the matter before him and to perceive the important elements of the situation with accuracy and alertness.

3. He is interested in the world about him and is curious to understand it.

¹Joint Committee on Health Problems in Education, op. cit., p. 39.
4. He is generally self-confident; he expects success and achieves it with reasonable frequency.

5. He is active in overcoming difficulties; he does not daydream so much that he fails to meet the actual situation.

6. His predominating emotional qualities are happiness, cheerfulness, courageously. He is not troubled by unnecessary fears, shyness or timidity. His emotional responses are those that are appropriate and useful for the occasion.

7. He does not ordinarily brood, sulk, or indulge in morbid introspection.

8. He has many objective interests - friends, hobbies, games in which he finds adequate self-expression.

9. He is companionable and mingle freely with other children. He adapts himself easily to cooperative enterprises; to leadership and followership.

10. His relationships with children of the opposite sex are wholesome.

11. He has a sense of responsibility for the happiness and well-being of his friends and schoolmates and members of his family.
CHAPTER III
ENVIRONMENTAL CONTROL

As we have progressed in knowledge of methods and materials involved in the recognized plan of health education we likewise have made important strides in knowledge of things which are best for the school child from the standpoint of environment.

Environmental control relative to the school and surroundings is somewhat more concrete in nature than the program of health education discussed in Chapter II. However, inasmuch as buildings, sites, climate, and other rather firmly established factors are involved, it becomes a long range problem of planning intelligently if optimum, or near optimum, environmental conditions are to be obtained in any given situation.

The justification for emphasis here on environmental control lies in the fact that in this field as in other phases of utilization of health knowledge we are not adequately applying the knowledge we have at hand in making the improvements and correction of conditions necessary to provide an optimum school environment.

Provisions for Healthful School Living

The Ohio High School Standards of Health, Physical Education, Recreation, and Safety, 1946 (pp. 31-38), refer to healthful school living as meaning the operation of those agents or agencies dealing with the establishment
of a healthful school environment. School officials are responsible for the provision of school facilities which are conducive to healthful physical, mental and emotional growth of pupils.

The school building and grounds shall be located, constructed and equipped as to meet the needs of the educational program and to safeguard the health and safety of the pupils.

The General Code of Ohio establishes many standards pertaining to hygiene, sanitation, construction, maintenance, and safety of school buildings. Standards should be in accordance with, and in some instances superior to, standards established by law. Some of the more important items are indicated below.

Site. The site should be well drained, readily accessible, large enough to provide adequate facilities for physical education activities, free from any and all obstructions to the admission of sunlight, removed from traffic, noise, railroads and unsanitary conditions. Consideration should be given to attractiveness and landscaping without detriment to the functional aspects of the school plant. The recommended standard for junior high schools is five to ten acres, and ten to twenty acres for senior high schools.
In this connection the National Council on Schoolhouse Construction makes the following comment. The size of any school site should be determined by the nature and scope of the contemplated educational program. To accomplish this, actual layouts of the spaces needed by the various phases of the program should be made. While it is recognized that for many schools much larger areas are desirable, the acceptance of the following suggestions will be a distinct advance for the majority of schools throughout the country.

For elementary schools, it is suggested that there be provided a minimum site of five acres plus an additional acre for each 100 pupils of ultimate enrollment. Thus, an elementary school of 200 pupils would have a site of seven acres. For secondary pupils, it is suggested that there be provided a minimum site of ten acres plus an additional acre for each 100 pupils of ultimate enrollment. Thus, a high school of 500 pupils would have a site of fifteen acres. In the case of a combined elementary and secondary school, it is suggested that the acreage be determined by the formula suggested for the secondary schools.

Lighting. Section 12600-54 of the Ohio General Code states as follows:

There shall be provided not less than one square foot of glass area to each five square feet of floor area in each class, study, recitation or schoolroom. Windows shall be placed either at the left, or left rear of pupils when seated.

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"A growing recognition of the effects of indoor visual environments upon the physical development and the educational achievement of children, together with an increasing body of knowledge concerning the factors involved in effective seeing, has led to a more serious consideration of the visual environment in school buildings as it is influenced by both natural and artificial lighting. For many years attention was focused primarily upon the intensity of light provided at work level as measured in the conventional foot-candle unit. Lighting authorities have recently emphasized the fact that it is more important to consider brightness of the object viewed (intensity of reflected light from the object), since the eye sees brightness and not illumination. Brightness in this sense is commonly measured in foot-lamberts (foot-candles of illumination on the object multiplied by the reflection factor of the object). A second change in emphasis is the shift from considering one factor which influences seeing (light intensity on the task) to considering all the factors for effective seeing."

The factors referred to above include such concepts as brightness contrast, brightness ratios, visual field, reflective factor and others which have been studied in

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great detail\textsuperscript{1,2} with the result that we know what is best for the child at his school work (or elsewhere) but again our utilization of this knowledge to the best interests of our school population lags far behind.

\textbf{Water Supply.} In providing a safe and sanitary water supply in school buildings every precaution should be taken. City and county boards of health are charged with the responsibility of checking on the purity of public water supplies by taking samples at intervals designated by the State Department of Health (Sec. 1252-2 Ohio General Code). These samples for which sterile containers are provided by the State Health Department are collected with great care and sent to State Health laboratories where a bacteriological analysis of the sample is made and the report returned to the board of health from which it was sent.

Adequate sanitary drinking fountains are required by law and no tin cups or tumblers shall be allowed in or about any school building. (Sec. 12600-65 Ohio General Code). Drinking fountains should be recessed in the wall and so constructed as to prevent the lips of the user from coming in contact with the orifice from which

\textsuperscript{1}\textit{Ibid.}, p. 50-55
the water issues.

Again we are confronted with the situation of adequate knowledge of proper health protection measures and at the same time a lack of corresponding application of such knowledge. In the subject of water supply where the laws are more definite than in other phases of health practice, it would be noticed by even a casual observer that violations of the letter of the law and the spirit as well are found all too frequently in our public schools.

In rural sections of Ohio, many of the smaller schools depend on a pump outside the school house as their source of water. These wells have been greatly improved in recent years but even today many of questionable construction and location can be found. In some cases the water is carried from the house of a neighbor near by in open buckets. To the people of such communities, and probably to many others, such practice not only is often condoned but considered as a measure of thrift in that a water supply already exists so there is no need to be put to the expense of another water supply just "to keep the kids from having to carry water".

We have practically eliminated typhoid fever in the state of Ohio by intelligently safeguarding our water supplies and proper disposal of sewage, but this does not mean that there is no danger of the disease;
quite to the contrary. For as we have nearly eliminated this disease (and other kindred diseases) we acquire a false sense of security and tend to neglect those fundamental requirements of sanitation necessary to the continuance of this desirable condition. Any water supply not properly constructed, located and maintained is a potential source of infection to those who use it.

In this particular instance, the lack of proper supplies, maintainance and testing is due quite largely to a combination of two factors: (1) ignorance and carelessness on the part of public officials and, (2) inadequate funds and consequently inadequate Public Health personnel to carry on an effective program of water supply sanitation.

The above discussion of water supplies obviously refers largely to rural areas as city and village supplies are for the most part adequate and sanitary. In city and village schools will be found drinking fountains which are known to be unsanitary however.

With our knowledge of water supply sanitation there is no excuse for any school water supply in the State of Ohio to be questionable as to its safety.

**Lavatories, Toilets, and Washrooms.** As in the case of our water supplies, we have advanced in our knowledge of safe sewage disposal and toilet sanitation to a point never more than dreamed of by our grandfathers; yet, we in this so very progressive State of Ohio not only permit of the private disposal of excreta and other wastes in
the most primitive fashion but also do we permit it to exist in many of our rural schools.

It is unnecessary to go into detail on the possible points of visit by the housefly on his daily rounds, (excreta to food etc.) nor to mention the fact that human excreta may be laden with many types of potential death-dealing organisms.

We preach (or should) the advisability of washing the hands before eating but we do not, in all too many cases, provide facilities either adequate or convenient for the building of this desirable habit in the schools.

Heating and Ventilation. According to the Guide for Planning School Plants\(^1\), heating and ventilating systems have three objectives: (1) The supplying of heat to balance loss from the human body through radiation, conduction, and evaporation; (2) the removal of excess heat; and (3) the removal of unpleasant body odors through dilution, and in special cases the direct removal of injurious or obnoxious gases, vapors, fumes, and dusts.

"It has been definitely established that neither the supplying of oxygen nor the removal of carbon dioxide and organic matter in the air is of practical consequence under normal conditions obtaining in school buildings.

"Heating plants and ventilating systems should be installed with sufficient capacity to meet the following requirements within the building during the period of

\(^1\)National Council on Schoolhouse Construction, op. cit., p. 131.
occupancy, under the most severe winter conditions:

(1) Temperature: (a) Classrooms, auditoriums, offices and cafeterias, 70 degrees measured thirty inches above the floor; (b) corridors, stairways, shops, laboratories, and kitchens, 60 degrees measured sixty inches above the floor; (c) vigorous activities such as gymnasiums, 65 degrees measured sixty inches above the floor; and (d) special cases, 78 degrees for locker and shower rooms and 33 degrees for swimming pools. The maximum temperature gradient from floor to sixty inches above the floor should not exceed three degrees.

(2) Air Supply: Ventilating systems should provide, and heating systems should allow for, introduction for fresh outdoor air as follows: (a) for removal of excess heat where no special odor sources exist, as in classrooms, libraries, and study halls, fifteen cubic feet per person per minute. (Note: ten cubic feet per minute is adequate for the removal of ordinary body odors at all times and is also adequate to remove excess heat during the winter months in the northern states.) (b) where unusual odors are likely to occur, as in toilet and locker rooms and chemical and food laboratories and kitchens, six complete air changes per hour. Toilet room ventilating systems should be entirely independent of those serving the rest of the building. When odors, obnoxious fumes, and dust arise from localized sources, they should be removed by special vents at those sources.
(3) Air Movement: Air movement in occupied areas should not exceed: (a) during the heating season, twenty-five lineal feet per minute, and (b) during mild weather (for cooling), one hundred lineal feet per minute."

The above objectives if obtained would constitute an ideal heating and ventilating situation which might be approached in a new building. However, we again are apt to think that if the system will keep the pupils reasonably warm in the coldest weather that the system is adequate while probably more important are the other factors mentioned, namely, humidity and cleanliness of the air. Many a school child in the State of Ohio spends a large number of winter days at school in rooms filled with fresh outside air - filled with smoke sufficiently concentrated so as to be visible in the room, and so devoid of moisture that the throat and nasal passages are rendered quite dry thus enhancing the susceptibility of infections of the upper respiratory tract. Gymnasiums offend in like manner and possibly the damage done there is greater or at least more intense as the very nature of activities there require a greater air consumption over a given period of time. Many basketball games and other indoor winter games are played in rooms where smoke or dust from the outside is visible.

Ventilating and heating systems probably are more excusable in being in arrears than some of the other items
mentioned as they generally "go with the building" and probably the most practical solution will be to make sure that the best available ventilating and heating system is installed with regard to the health requirements in each new school building wherever constructed.

**General Sanitation.** The general sanitation of the school building and other school property is charged directly to the janitor but is fundamentally an administrative responsibility in which all school personnel, pupils, teachers, administrators, and janitors should be made to feel equally responsible.

*The Function of the School Administrator, School Physician, School Nurse and Sanitarian, in Environmental Control.*

**The School Administrator.** While others are necessarily involved in the work of providing and maintaining a healthful school environment the responsibility rests with the school administrator. He should be familiar with the criteria for a good school plant and cooperate with the health department of the city or county and other appropriate community agencies in evaluating the plant and its program of maintenance. In planning the construction of a new school plant or the modernization of an old one, he should be prepared to recommend sources of competent advice so that the building program will incorporate the best available standards of sanitation, ventilation
and lighting, safety features, and other conditions conducive to safe and healthful living.

In the program of maintenance, it is the administrator's job to see that the janitorial service is adequate and that the children and school staff cooperate in making the best use of the supplies and facilities provided. He should welcome recommendations from the teaching and custodial staffs and the physicians and nurses serving the school on needed improvements in, or corrections of, adverse environmental conditions, and on adjustments or adaptations which should be made because of the requirements of new programs or new understanding of child health needs. The administrator must work with the physician serving the school in interpreting the assets and liabilities of the school plant in such manner that adequate levies or appropriations may be secured to assure the proper health environment and services to the children of the community.

"The administrator helps to provide a wholesome mental, emotional, and social environment in the school. In particular, the health and happiness of the teaching staff will help to create the atmosphere necessary for the development of good emotional and social adjustment among the students. It is the administrator's job to provide an administrative plan or program that subordinates convenience to the physical, mental, and emotional health
need of both teachers and children.\footnote{1}

The need for teacher training in matters of health has been stressed in Chapter II. The need for health education on the part of the administrator is even more important. For no matter how democratic may be the administration of a school system, the understanding or lack of understanding of any phase of the school program tend very surely to result in the emphasizing or de-emphasizing of that particular part of the school program. We have school administrators in the schools of Ohio who have had little more in the way of health education than a course of hygiene in grade school, possibly a "health" class in high school, and then have topped that off with a brief class in hygiene in college.

Unless and until school administrators become aware of the fact that by and large we are not providing the average school child with the advantages that should be his as the result of our vast amount of knowledge in the various phases of health we will be at a very great disadvantage in any attempt to bring health education, environmental factors, and health services up to the level of our knowledge in these fields.

The School Physician. The physician serving the school (if the school is fortunate to have one) should exercise

\footnote{1The National Conference for Cooperation in Health Education, "School Health Bulletin No. 13," p. 16.}
reasonable control, through the administrator, over the factors of the physical environment which may affect either favorably or unfavorably the health, happiness, and welfare of school children or staff members.

As has been indicated in Chapter I the personality of the teacher is probably the most important environmental factor influencing the mental and emotional health of the children, and the physician is in position to see the effect of teachers upon children and other members of the staff. He may be the deciding factor in determining when a given teacher should be retired as being unfit to be in charge of a classroom.

The physician serving the school should make himself aware of the needs of children with special problems and strive for a solution of their difficulties by arranging the kind of a school program, including environment and curriculum, in which they can make the most progress and which will be most helpful to them as well as others. When facilities for accomplishing these things do not exist, the physician should initiate steps for procuring them.

Such is rather an ideal situation. Many schools in Ohio do not see a physician, who directly serves the school, from one year to the next. In a large proportion of Ohio schools the only physician having any official connection with the school is the county health commissioner.
who cannot possibly perform the duties which would meet even the minimum of desirable health requirements in the school.

The School Nurse. In the area of environment the school nurse should be familiar with the standards for maintaining a wholesome school plant and works with the school staff, the children, and the parents to see that safe and hygienic conditions are maintained. She should note unsafe or unsanitary conditions or practices wherever encountered, and informs the school administrator with a view to getting them corrected. She normally assists the administrator and the teachers in stimulating the children's pride in, and sense of responsibility for, maintaining clean, healthful, safe, attractive surroundings.

Here again, personnel is generally inadequate both in quantity and in many cases in quality as it has been necessary to hire persons as school nurses who have not been properly trained for the job.

The Sanitarian. In most well organized health departments will be found a sanitarian whose principal duties could well be classed under the heading of Environmental control. As a member of the health unit, his field includes the inspection and recommendations for the general sanitation of the schools in his district. Among his duties relative to the school will be the inspection and testing of the water supply, disposal facilities, foods served by the school, and general sanitation of building and premises.
In this work the sanitarian usually makes very close contact with the school administrator and janitor and should use this opportunity for informal instructions and suggestions relative to the reasons for his work there and the methods used to evaluate the school sanitation.

Since the sanitarian is well acquainted with the testing of milk, testing of water, inspection of foods and the sanitary facilities of the school, he has a very fine opportunity, through his contacts with the school administrator, to arrange to discuss and give lectures and demonstrations of the methods used by him and the health department in matters of health to the various classes in the school and to community groups centered at the school.

The understanding of health practices is a very potent tool in gaining moral and financial support for needed health legislation and also for gaining support for the existing health program. The sanitarian can play a very important part in a program of this type.
CHAPTER IV

SCHOOL HEALTH SERVICES

Definition.

"The school health service includes the operation of those agents or agencies which aim to conserve, protect, and improve the health of school children. Such a program should include:

1. Periodic health examinations of all students.
2. A follow-up program for the correction of remediable defects.
3. Special examination when necessary.
4. Special testing programs.
5. Immunization and disease control program.
6. Education and care of the physically handicapped.
7. The teacher's part in the preparation for the health examination and follow-up program."

Before examining actual practice relative to some of the major points mentioned above let us consider the key school personnel and the functions which they are generally expected to perform relative to school health services.

The School Administrator. The school administrator is very largely responsible for the organization of the whole school health program. He should consider the total program on a long-time basis and in relation to the acquirement of desirable attitudes, knowledge, and practices. When there are no physicians or nurses employed in the school system, or assigned to the schools by the local health department, as is so often the case in rural areas,
he must accept the responsibility for setting up coöperatively the detailed program through the use of available agencies and private physicians. In actually carrying out of health or medical service procedures he must promote good working relationships among the technical staff, students, teachers, parents, and the general public.

The school administrator should cooperate with the physician and nurse in making out schedules for periodic health examinations. He must arrange the making of whatever school adjustments are necessary to permit the physician to use the time he spends in school to the best advantage. The administrator must encourage the teacher to exchange with the nurse significant observations regarding the children's health, and provide the time and opportunity for the recording of such observations by the nurse for her own use and that of the physician.

The administrator should cooperate with others in encouraging parents who are able to do so to have their children examined by the physicians most familiar with the children's health status. He should assist in the development of record forms which will best serve the needs of the child, the school, and the physician or nurse.

Working through the school physician, or directly when there is no school physician, the school administrator must seek and support the best available methods of handling health problems, first through medical care provided by
the parents, but, if this is not obtainable, through resources in the community, either official or voluntary. If resources are not available in the community, he should accept the responsibility of going outside the community in order to obtain the health services necessary for individual children.

The administrator must insure the establishment of good health records and an adequate system for their use to the best advantage of the children, including their transfer with the child. He sees that health information is obtained on all children transferring to his school from another.

The School Physician. The school physician will assist the administrator in setting up an adequate and efficient program of periodic health examinations. He also aids the administrator and nurse in encouraging parents who are able to do so to have their children examined regularly by their family physician. He should make the medical examinations done in the school an integral part of the total health counselling program, and consider it an opportunity to give guidance and counselling to the children and the parents on the basis of health needs revealed. The health examination should be planned in such a manner as to include the consideration of all pertinent factors in each particular case and should be of such a nature as to be of value to the family physician,
the parents, the school, and serve as an educational experience and motivation for the child. The health examination which will be of greatest educational value and contribute most to the child's emotional health will be the one in which the physician is able to help the child understand his own growth and development and in which the physician shows respect for the understanding of the child. This type of examination will tend to encourage the child to consult the physician voluntarily on health problems. If parents are present at the time of the examination, as is very desirable, they too should be made to share the confidence and understanding of the physician.

The school physician should make it his concern to see that the family physician has a clear picture of the findings made by him at school so as to facilitate corrective measures. He must also see to it that the teachers are made aware of the needed corrections and of any adjustments which may be advisable in the general program of the classroom. The teachers should also be advised as to how best they can aid the physician and the administrator in the follow-up program.

To the physician falls largely the responsibility of devising health records which will be functional and meet the continuing needs of those concerned.

The physician should also be responsible for an in-service training program for school personnel whereby they
are instructed as to the part they may best play in the health program. Actual instruction in the recognition of deviations from normal, the handling of such illness, and methods for controlling of communicable diseases in the school should be provided all school personnel.

The School Nurse. The school nurse assists the physician in the preparation and execution of the health examinations. She encourages the presence of parents at the examination. It falls largely to the nurse to instruct the teachers and parents through her daily contacts to recognize deviations from the normal and the proper procedures when such deviations are encountered.

The nurse should assist in coordinating all available information regarding the health status, health behavior, home environment, and progress of each child so that it can be used in getting maximum practical results in the way of needed remedial work or correction of poor health practices or poor environmental conditions. A large part of the nurse's time normally must be spent in guiding and encouraging parents in their efforts to get their children's defects corrected or to provide the best possible conditions for healthy development of the child. She should be familiar with existing medical and social resources of the community, have easy access to them, and able to arrange for their utilization. If she is a nurse hired by the school she should coordinate her work with
that of other public health nurses in the community so as to save time and overlapping of services.

The Teacher. The work of the teacher in this respect has been rather thoroughly discussed in Chapter II. However, the teacher does have the opportunity not only to observe and instruct intelligently in matters of health but also is often in a very favorable position to contact the parent or other agency in view of obtaining remedial action for the children in a given classroom.

As her part in the program of health examination the teacher should play a very important role in that there should be created among the pupils as nearly as objective and scientific attitude as possible. The pupils should be fortified with knowledge of the purpose and use of the examination. The teacher should emphasize the value of the examination as a positive device for self-checking and raising of standards, rather than a means for finding faults and latent abnormality or disease.

Such an approach can do much to prevent nervousness and reactions in adolescents during examination that are not typical of normal behavior. The teacher has the opportunity to impress upon the pupils the fact that health status of the individual is not static but constantly changing and that the whole function of the health services is to provide a continuing program of medical supervision which is intended to keep each pupil up to date on
his or her physical condition as seen by those skilled in this profession.

**Health Examinations.**

Let us now turn to one of the major items listed above and examine it in the light of actual practice as we find it in Ohio.

The main purposes of the health examination are:

1. To discover the early evidence of disease or abnormality;
2. To correct remediable defects and abnormalities;
3. To determine the health status of the individual;
4. To establish high personal health standards based upon knowledge of the purpose, content, and value of the health examination; and
5. To promote a continuing desire on the part of the pupil to desire to live according to these standards.¹

According to the General Code of Ohio, Section 4838-6, health examinations must be made by duly licensed physicians, and reads as follows:

The board of education of each city, exempted village or local school district may appoint one or more school physicians and one or more school dentists; provided two or more school districts may unite and employ one such physician and at least one such dentist. ***Said school physician *** and each school dentist shall be duly licensed to practice in this State. ***Such boards may also employ trained nurses to aid in such inspection in such ways as may be prescribed by the board. ***Such board may delegate the duties and powers, herein provided for, to the board of health or officer performing the functions of the board of health within the school district if such board or officer is willing to assume the same.

¹Ohio High School Standards, op. cit., p. 11.
Section 4838-9 of the General Code states:

The board of education of a city, exempted village, or local school district may enter into a contract with a health district for the purpose of providing the services, as provided by law, of a school physician, dentist, or nurse.

Section 4838-10 of the General Code states:

Where the board of education of a city, exempted village, or local school district has not employed a school physician, the board of health shall conduct the health examination of all school children in the district and shall report the findings of such examinations and make such recommendations to the parents or guardians as are deemed necessary for the correction of such defects as may need correction. It is provided that this authorization shall not be construed to require any school child to receive a medical examination or receive medical treatment whose parents or guardian objects thereto.

It will first be noted that in lieu of the hiring of a physician, etc., by the board of education that the board may delegate such duties to the board of health or officer performing these duties if such officer or board is willing to assume the same. (Sec. 4838-6, Gen. Code). In a following section of the General Code, Section 4838-10, as indicated above, if a board of education has not employed a school physician "the board of health shall conduct health examinations of all school children in the health district." Both of these laws became effective September 16, 1943.

Notice also that in Sections 4838-6 and 4838-9, that the word may is used so as to permit rather than to require action; while in Section 4838-10, the word shall is used, no mention is made of the time interval between
examinations. Thus, as would be expected, the practice of giving health examinations has varied greatly with respect to the time between examinations for any particular individual or group of individuals; however, in many health districts, it has been common practice for the county health commissioner to attempt, at least, to examine each school child in his district each school year.

In Ohio, this has resulted in an assembly line method of hasty and inadequate examinations. The results of these examinations tend to result in a better health picture, because of incompleteness, than is truly the case, and thus, the report which the parent usually receives as the result of such examinations tends to give a false sense of security. "An examination which gives the parent a false security about the status of his child's health is not a physical examination."¹

In this connection the Ohio High School Standards recommends that "the health examination shall be given all entering students, and annually to all students enrolled in school, or in the seventh, ninth, and twelfth grades, or some other plan for providing for a minimum of three examinations in six or two examinations in four years. The examination should be detailed and complete even though the service be offered at less frequent intervals."²

¹A School Health Policy for Ohio, Ohio Public Health Association, 1941, p. 10.
²Ohio High School Standards, op. cit., p. 12.
Thus, it is obvious that the law permits a great variety of interpretations both as to the quality and quantity of health examinations in the schools of Ohio.

If we go a step further we again find in the Ohio High School Standards: "The content and nature of the examination will vary with local circumstances. The physician uses various methods and techniques, including measures, tests, estimates and local subjective inspection. The general categories of the physical examination include: ****."

Here we see what apparently amounts to a sanctioning of such haphazard practice as exists in the public schools of Ohio today in the quality and method of health examinations.

Even in some cases where the State law is specific, the practice seems to be to ignore it as we find in the case of Section 4838-8 of the General Code of Ohio:

School physicians shall keep accurate card index of all examinations, and said records, that they may be uniform throughout the State, shall be according to the form prescribed by the superintendent of public instruction**.

In explaining the situation relative to this particular section of the code the standards\(^2\) indicates as follows:

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\(^1\) Ohio High School Standards, op. cit., p. 13.

"record forms vary greatly in extent and diversity of printed material. Some physicians like complicated records that suggest all possible signs and symptoms, while others prefer just spaces for notes and recommendations. Because of these preferential differences, it is recommended that the school develop its own forms that will lend themselves to the time allowed for examinations and extent of testing equipment. This will be determined by the examining physician and the board of education."

The law states "that they (the records) may be uniform throughout the State, shall be according to the form***", yet we see here actually a recommendation apparently contrary to the code to the effect that the school should develop its own form, etc.

As a result of this type of record keeping, and the uncertain nature and quantity of physical and dental examinations, plus the fact that no system has been implemented to obtain valid results of examinations which are made, it is not so surprising to find that neither the Ohio State Department of Health nor the Department of Education can give any valid figures on the number of physical examinations made in Ohio during a given year, much less give valid figures on detailed items such as smallpox immunization, vision defects, et cetera.
As an example of the difficulties encountered the following were findings relative to a study of forms filled out by school physicians (from individual record cards of pupils) in the city of Columbus, Ohio:

A careful examination of these forms, which are replete with the phrases "no records" and "no complete records", indicates clearly the shortcomings of the health program in Columbus public schools. For example, there either are "no records" or "no complete records" for the following:

1. Children excluded by nurses for illness.
2. Common defects among first grade children.
3. Results of physical examinations of specially referred children.
4. Follow-up home visits made by nurses.
5. Number of indigent children for whom correction or remediable defects was arranged for by nurses.
6. Number of children from grades I to IX, inclusive, having dental defects and needing corrective dental work.
7. The number of children given vision tests by the physician.
8. Number of children in grades VII to XII, inclusive, examined by physicians for common defects.
9. Number of children in grades I to XII, inclusive, having heart defects.
10. Number of children who because of defects were given instruction in their homes.
11. Number of children vaccinated against smallpox.

As pointed out above, this situation apparently is true in varying degrees throughout the State of Ohio, and it certainly does not lend itself to a program of planning on the basis of "where do we go from here", but, rather

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T. C. Holy and G. L. Walker, A Study of Health and Physical Education in Columbus Public Schools, p. 68.
seems to indicate a position of "where do we start".

The Follow-up Program for Correction of Remedi able Defects.

Perhaps the variety and quality of physical and dental examinations; the fact that some are performed by physicians and dentists employed by the board of education either full or part time, while others are employees of the city and county health departments, and others are health commis sioners; plus the hodgepodge of record systems throughout the State may partially account for the even less effective and accurately accountable quantity and quality of remedial corrections made as the result of physical and dental ex aminations. These are not all the factors involved in the problem of obtaining remediable corrections but certainly we must have accurate and valid facts and figures as to what needs to be done if an intelligent program is to be planned.

The most thorough health examination is of little value unless proper steps are taken to make use of the findings.

Here, it seems, is the weakest single point in the whole school health program. There are no specific obligations beyond those stated in Section 4838-10 of the General Code of Ohio which states:

**** the board of health shall conduct the health examination of all school children in the health district and shall report the findings of such exam ination and make such recommendations to the parents or guardians as are deemed necessary for the correction of such defects as may need correction**.*
The Ohio High School Standards suggest in this connection:

It is primarily the parent's responsibility to arrange for adequate treatment of undesirable health conditions found in their children. To accomplish this effectively, the follow-up program should be a cooperative enterprise between the home, school, and community. Cooperative action of parents, local physicians, dentists, nurses, city and county health departments, and other persons or agencies, is necessary in order to get defects corrected.¹

Another source refers to the follow-up of the examination in the following manner:

The follow-up program is a cooperative enterprise requiring participation by school personnel, private physicians and dentists, social welfare and health agencies, and parents. The initial step is made when the examiner outlines the treatment needed and where it can be obtained. The school personnel should not attempt to select a physician, dentist, or specialist for individual pupils or families. In some cases, through the cooperation of the local medical and dental society, a list of available physicians and dentists may be presented to parents from which they may choose a family physician and dentist. It is the parent's responsibility to arrange for the adequate treatment of the child. The schools should advise consultation with the private physician or dentist. For those unable to pay the resources of the community and family should be carefully studied to discover a procedure for correcting the child's defects. Sound school health education teaches children (and parents) where and when they are in need of care during vacations, they will have learned how health needs may be met.²

This leaves for the child the possibility of too many dead end roads insofar as actual correction of physical

¹Ohio High School Standards, op. cit., p. 22.
²A School Health Policy for Ohio, Ohio Public Health Association, 1941, p. 13.
defects is concerned. After the recommendations are made to the parents neither the school, the physician, the parents, the community, the health department, nor any other agency has any legal obligation to correct defects found.

The result is what teachers see in their classrooms every school day: decayed teeth, apparent visual defects, hearing defects, and the whole gamut of physical defects from teeth to tuberculosis which for some reason or other are not given remedial attention. Regardless of who may be most at fault in any given case, a large proportion of our boys and girls of school age are not being given the benefit of medical knowledge which is available in this country. This is nothing short of criminal negligence.

We do not have the figures as to the nature and number of defects so it is therefore very doubtful if any satisfactory or valid set of statistics can be found which would indicate the point or points at which failure to make corrections lies. Certainly, financial inability to meet present day medical and dental costs is an important factor as is indicated in the following study in Florida relative to ability to pay. The results of this study are as follows:

D. H. Turner, director of the Bureau of Dental Health, Florida State Board of Health, says that surveys in that State reveal that between 80 and 92 percent of the school population are victims of dental disease.
Approximately 20 percent of the elementary school population is able to pay for dental service, against 35 percent definitely unable to pay anything, and 45 percent of doubtful ability to pay.

Ten of Florida's 67 counties have no dentists or dental facilities; 13 have only one dentist each; the majority of dentists are concentrated in cities - leaving large rural areas virtually unserved by competent dentists.

In few communities is adequate provision made for giving dental care to dental indigents, near-dental-indigents, maternal cases, or pre-school and school children.¹

While Ohio and Florida have different climate as well as other differences, in view of lack of supporting evidence of like nature for Ohio, it seems reasonable to assume that probably similar figures as to ability to pay for dental service exists in Ohio.

This kind of study represents the type of information which must become increasingly available if we are to gain a basis from which to launch an intelligent attack - not only on dental defects but on all phases of medical needs of our school age population.

That these cumulative defects are a national tragedy and scandal has been recently pointed out in the following article appearing in the New York Times under the date line of Washington, July 16, 1947:

Maj. Gen. Lewis B. Hershey, director of Selective Service, today was one of a dozen witnesses who urged before a House subcommittee the need for better health services for the school children of America.

¹Oliver E. Byrd, Health Instruction Year Book, 1946, p. 302.
Today's testimony was recognized as a curtain-raiser on full hearings next session for the National School Health Services bill, with both Senator Leverett Saltonstall of Massachusetts and Representative Evan Howell of Illinois, authors of companion bills on this subject, appearing to recommend the legislation.

The House bill would carry a $12,000,000 appropriation the first year, $18,000,000 thereafter, in Federal aid to the states for school health services, half on a matching basis, half on a formula giving more to the needier states.

**Reviews Army Rejections**

General Hershey once more reviewed the record of rejections of the physically, mentally and emotionally unfit of the last war. He contended there is "cause for anxiety in a nation when 2,000,000 men 18 to 25 are unable to bear their proportionate share" in national defense.

He cited the Hagerstown Study which showed that many of the disqualifying effects of draft registrants had been known through school examinations fifteen years earlier as evidence that school services to correct defects when found were also needed.

"It is quite useless to talk of democracy and the acceptance of equal obligation by all our citizens when a very considerable proportion of these citizens are unable to carry out their civic obligations," he said.

Katherine F. Lenroot, chief of the Children's Bureau, said that while the appropriation suggested would not meet the needs of all school children, they would be sufficient to permit programs to develop as fast as there would be personnel and facilities available.

She stressed the futility of "discovering the same defects year after year and doing nothing to correct them. The records kept in the rural areas of one state, she said, showed 36,666 children having visual defects, with only 7,452 corrections; 213,500 with defective teeth, only 7,452 corrections, 8,555 with speech defects, only 512 corrections. She said this was due to two reasons: medical care was too costly, or was unavailable."
Work Permit Data Cited

Reginald M. Atwater of the American Public Health Association said that when people came asking "where can I see outstanding school medical services?" it is difficult indeed to find examples of good work. He supported the bill but asked that it be administered in the states by health and not education departments.

Mrs. Richard J. Bernhard of the National Child Labor Committee and the Child Welfare League of America described the system under which work permits to children, based on physical examinations, often hold them from employment. She said that twenty percent of the 121,352 children examined in 1946 were given limited permits or were temporarily rejected due to such defects.

George J. Hecht, publisher of Parents Magazine, presented a table of state expenditures for school health services for the last year on which statistics were available, 1943-44, which showed a national average expenditure of only 98 cents per pupil for school health services. New York's average was $1.98.
CHAPTER V
CONCLUSIONS AND RECOMMENDATIONS

Health Education

While there has been rapid progress the last few years in the field of health education we still are not applying our available knowledge in matters of health in sufficient amount or manner as to provide the average school child with the information and attention he should have the right to expect.

It is therefore recommended that all school administrators and all teachers be encouraged to attend, from time to time, as should be determined by competent authority, colleges or universities for the purpose of becoming acquainted with present-day trends and practices in health education, that they may better understand the importance and place of the school health program in the school, and their own particular function in that program; and, it is also further recommended that all prospective teachers in their undergraduate or graduate work be required to take certain courses in zoology, physiology, anatomy, bacteriology, epidemiology, and/or such other courses and in such amount as may be determined to be most likely to produce the basic knowledge fundamental to the understanding and participation in an intelligent health program.
(It should be stated here in this connection according to Paul E. Landis, State Supervisor of Health and Physical Education, that the Kellogg Foundation is financing a program which will encourage the inclusion of health training for prospective teachers at the undergraduate level. This is in the process of implementation in several colleges and universities, including Ohio State).

**Environmental Control**

While we have the knowledge, the techniques, and the materials for providing an ideal environment for school children we permit them to attend schools which often are actually unfit for use either because of the nature of the building or of the surroundings.

It is recommended that by law it be required that before any new school building be erected in Ohio that the plans for and location of such building shall meet the recommendations of the Bureau of Educational Research, which bureau shall be expanded sufficiently to meet this obligation and at the same time begin a systematic survey program with particular emphasis on the elimination of school buildings which are considered, by a standard evaluation procedure, to be unfit for school purposes; and, also attention be given to cases where major additions or corrections may be needed in connection with existing buildings; also, that the State Department of Education have the power to enforce the above
mentioned recommendations of the Bureau of Educational Research by condemnation of a building or buildings concerned or by other legal methods obtain the results desired.

It is also recommended that administrators, teachers and prospective teachers be encouraged to attend an adequate course in environmental control relative to schools; such course should include information on sanitation, lighting, heating and ventilating, and such other related items as may be deemed advisable.

School Health Services

In the whole school health program it is this area of school health services that the greatest immediate service to the school population of the State can be rendered. It likewise is in this area that the weakest part of the school health program lies. Though the causes for this condition are many and of a complicated nature under existing practices and laws, perhaps the two greatest contributing factors are (1) lack of ability to pay the price of medical and dental service and (2) ignorance. These and other factors account not only for the lack of adequate health services, as is evidenced by mere observation of any given group of average children, but also for the fact that practically no adequate or valid records exist on a state-wide basis (and probably those for city or county districts are in similar condition) which may be used to determine just
where we stand and what are some of the rather specific needs in terms of personnel, dollars, and organization necessary to make the health service a truly functioning part of the health and school agencies.

It is recommended that adequate and thorough health examinations be made available and required for all children of school age, to be held at such time and at such intervals of time as shall, in the opinion of competent authority, provide the child, the parents, the school, and the health and education authorities of the State with a continuing record of the health progress for any or all children of school age in the State. To this end it will be necessary to obtain some reasonable uniformity relative to the training, experience, and connection with the school of the physicians, dentists and nurses serving the schools throughout the State; therefore, it is further recommended that there be sufficient funds to obtain competent medical personnel (preferably through the medium of the public health service) to conduct health examinations of equal calibre throughout the State.

As of the present time neither the State Department of Health nor the State Department of Education has any adequate and valid statistics relative to the findings on the physical examinations made, much less are they able to evaluate such statistics as they do possess.
because of the wide variation in the quality of results indicated in such reports as are received.

It is recommended that, if uniformity and equal quality of examinations is to be obtained, that the same record system shall be used throughout the State and that the examiners be thoroughly instructed and agree as to the interpretation of each item of record: furthermore, an agreement as to techniques, instruments, and other factors involved should be reached; and that complete and uniform summary reports of findings thus made shall be sent to the State Departments of Health and Education at such intervals as shall be determined by those departments.

As has been related in Chapter IV, the recommendations of the Ohio High School Standards (Health, Physical Education, Recreation and Safety) have, in one instance at least, made a recommendation apparently contrary to the intent of the General Code (Sec. 4838-9) relative to the making of record forms. In at least one instance two sections of the Code (Sections 4838-6 and 4838-10) relative to responsibility for health examinations are in conflict with respect to the obligation of the board of health. (Both of these sections of the Code became effective the same day.)

It is recommended therefore, that very careful attention be given to such instruments of the State
Departments to the end that they will not be in conflict with the General Code; and, furthermore that different sections of the General Code may not be in conflict, it is recommended that such sections shall be revised to eliminate such a condition.

As has been indicated, the laws of the State relative to matters of school health as quoted in the preceding chapters are, in many important instances, so written as to entail no obligation but merely give permission. If the children of the State of Ohio are in need of considerable concrete medical attention, and if such attention is of vital importance not only to the welfare of the individual child but to the welfare of the State and nation as a whole, then positive obligatory legislation apparently is needed.

It is recommended that a thorough study be made of health needs of school age children in Ohio and of the ability of the local and state resources to meet these needs; that, this study having been properly made and evaluated, such laws as shall be necessary to provide for the complete medical needs of every child of school age resident in this state shall be enacted.

Furthermore, it is recommended that a State Commission on School Health be created for a period of two years, and given a legislative appropriation to finance its study, to culminate in a report to the legislature in 1951, such report to include drafts of recommended legislation.
Inasmuch as the medical and dental professions hold in their hands the professional skills necessary for correction of physical defects and which are not adequately being corrected, it is recommended that these professions examine carefully their purposes and functions to so determine how they can render their services under existing practices to meet the medical needs of children of school age (and others) that there may not be reason to supplement the recognized independent medical profession further with medical and dental employees in government service.
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