

SCHOOL HEALTH INSPECTION BY TEACHERS

by DON W. GUDAKUNST, M. D.¹

THE purpose of medical examinations in school should be to discover children in need of additional advice and guidance so as to improve or preserve their health. It, ordinarily, is impossible, if not actually inadvisable, to attempt to examine all children each school year. Whenever such a program is undertaken, the examination by medical men becomes either farcical because of its superficiality, or has other by-products of a nature too undesirable to warrant its continuation.

Various screens and arbitrary means of selecting different groups of children have been devised. The most commonly applied selection is one based upon the examination of all children in certain grades, usually those entering school, fifth or sixth grade, and again on entering high school. While this reduces the number of children served by the school physician, it leaves much to be desired. There are many children in need of medical attention who are ignored entirely and there are many brought to the attention of the doctor who are already adequately cared for, or who are in no need of medical attention. Such a plan obviously leaves much to be desired from the point of intelligently directing the limited services and tends to create a further sense of dependency on the part of the parents, causing them to rely on the scheduled medical examination in school in place of turning to their own medical counsellor for guidance.

In an attempt to overcome some of these faults, the School Health Service of the Detroit Department of Health in 1921 introduced what they were pleased to term a "Teacher Health Inspection" program. By this somewhat ambiguous title was meant a

¹ Director of School Health Service and Deputy Commissioner, Department of Health, City of Detroit, Michigan.

service whereby the teachers, after instruction and training, were entrusted with the selection of those children who were most in need of medical attention. In a few selected schools the teachers were shown how to inspect the children in the class rooms for defects or indication of defects in respect to those points that could be inspected visually or with simple aids. In addition to examining the children for faults of vision and hearing, they were asked to evaluate the health condition of the skin, teeth, tonsils, palate, cervical glands, thyroid, and to look for evidences of nasal obstruction as shown by chronic mouth breathing, and to pass judgment on the nutritional state and orthopedic system.

It is not the purpose of this paper to give in detail the methods of training teachers to conduct this type of inspection. Suffice it to say that the average school teacher gladly added this task to her program after a few hours of lecture and demonstration, aided by printed instructions. It is to be emphasized, however, that without such instruction, and without guidance and supervision of a conscientious nature, such work would almost be doomed to failure. The teachers find the work interesting and profitable. This is well demonstrated by the fact that the plan spread on a purely voluntary basis from the few schools included during the early years to all of the public and most of the parochial schools of the City. The rapidity of spread depended solely on the rate at which adequate instruction could be supplied to the teachers wishing to take part. At no time was any school or any teacher asked to participate; yet in a few years it was an almost universal practice.

A preliminary study of the efficacy and accuracy of the work of the teachers was made and reported on by Buck.² The study was made, however, at a time when the plan was as yet new, and while there was continuous supervision of the comparatively few teachers engaged in the work. In order to further check the accuracy

² Buck, C. E.: School Health Examinations. *American Journal of Public Health*, November, 1925, xv, No. 11, p. 972.

of the teachers' inspections, as measured by subsequent medical examinations, detailed records were kept as to the defects of each individual child inspected by the teacher and referred to the physician. The records of the year 1930 have been selected for more complete analysis. This year has been chosen as it represents the last year during which this somewhat elaborate system of bookkeeping was in use. It is to be pointed out that such record-keeping can in no way serve the individual child, or in any way alter the health practices of that child. It is of value only insofar as it serves to furnish information to be used to measure the program itself.

The records from 159 public and parochial schools were included in this report. The enrollment of these schools was 147,043. There were 28,551 children in the group on whom we had complete information relative to all the findings by the school teacher and a school physician. This number of schools and students does not represent a selection, but includes all the schools and all the students in these schools in which a complete inspection and a complete examination were made by both teacher and physician. There were additional schools in which the service was rendered by the teacher but where no subsequent medical check was made by physicians; likewise, there were certain schools where the preliminary screening inspection had not been carried out by the teacher, but where certain arbitrary grades were examined by physicians. This seeming irregularity was due to a deliberate attempt to set up a control practice for the purpose of studying certain other phases of the medical examination. It should be added at this point that while this work was carried out in the schools during 1930 and previously, due to the depression it was not possible to secure adequate clerical service to analyze the data until help from a WPA project was secured.

Under the plan of teacher health inspection all children included in Table 1 were completely inspected for the points included. Those who were found as the result of this inspection to have what the teacher thought to be some condition calling for medical attention

ITEM	TOTAL DISAGREEMENTS		OVERESTIMATED BY TEACHERS		UNDERESTIMATED BY TEACHERS	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
TOTAL	25,782	8.2	15,807	5.0	9,975	3.2
Skin	527	1.8	234	0.8	293	1.0
Anemia	503	1.8	428	1.5	75	0.3
Thyroid	1,053	3.7	577	2.0	476	1.7
Tonsils	7,839	27.5	5,649	19.8	2,190	7.7
Mouth Breathing	1,132	4.0	830	2.9	302	1.1
Teeth	9,404	32.9	3,641	12.8	5,763	20.2
Palate	66	0.2	65	0.2	1	—
Cervical Glands	1,519	5.3	1,195	4.2	324	1.1
Orthopedic	138	0.5	22	0.1	116	0.4
Vision	2,916	10.2	2,508	8.8	408	1.4
Hearing	685	2.4	658	2.3	27	0.1

Table 1. Analysis of 28,551 inspections and reexaminations.

were referred to the school physician who in turn made a complete examination of all the same items included in the schedule, with the addition of a heart examination. This type of dual coverage allowed for an analysis as to the number and percentage of items wherein there was an essential disagreement between the teacher and physician. A disagreement for the purpose of this study was interpreted to mean a difference as to whether the condition deviated from normal sufficiently to warrant referral to a private physician for corrective work or further study and treatment. The scale used in marking each item was:

0-normal

1-slight deviation from normal—not needing medical attention

2-appreciable deviation—calling for medical follow-up

3-marked deviation—calling for immediate follow-up

A difference in markings between 0 and 1, or 2 and 3, on the part of the teachers and physicians was not considered a “disagreement.” However, if one used either 0 or 1 and the other judged the condition as 2 or 3, there was considered to exist an essential dis-

agreement. No consideration was taken of the fact that the physician might himself be wrong in his opinion. For the purpose of this study his opinion was taken as a basis of comparison, since we were measuring not the medical condition of the child, but rather the degree of agreement between the findings of a school teacher and a school physician. Nor was any consideration given to the fact that in the weeks or even months that elapsed between the two services the essential condition of the child might be subject to change. Faults discovered by the teacher might have been corrected or disappeared, or new pathological conditions might have developed. The statistical problems introduced by the time factor were too great to be considered in view of the fact that the apparent differences of opinion were so comparatively small.

Children considered by the teachers as not presenting physical defects of great enough severity were not referred to the school physicians for examination. It was not the purpose of this study to determine the number of children that might be missed who were in need of medical examination; but rather it was hoped to be able to measure the efficiency of the work done by the teachers in measuring and evaluating particular items. This, however, leads to certain possible conclusions as to the efficacy of the screening method in selecting children in need of medical follow-up. This is particularly so since each set of examiners made a complete tabulation of their findings, both positive and negative.

It is to be noted from the table that the greatest gross error occurred in the examination for teeth. While this inspection should be highly objective in nature, the question of judgment entered in interpreting the significance of the findings. This inspection was not for the purpose of determining whether there was or was not evidence of dental caries, or poor oral hygiene—but rather for the purpose of determining whether there was present any condition immediately inimicable to the child's health that warranted reference to corrective agencies and a follow-up by the school staff.

The picture is further distorted by the fact that at this time there was an independent dental inspection made of these same children by a staff dentist. Separate records were kept—different staffs were involved—and the director of school health service exercised only nominal supervision over the dental health program. It is to be assumed that under these conditions a different attitude and a different degree of care might well have been adopted by both teacher and physician than if the full responsibility had been placed on them for dental health. The school physicians seemed to have been much more concerned with the need for dental care of the children examined than were the teachers since an additional 20.12 per cent of all the children inspected by the physicians were marked as in need of dental care.

The comparatively high disagreement between physicians and teachers in respect to the condition of the tonsils was to be expected. As shown by the American Child Health Association and other groups of workers, there is a similarly high percentage of disagreement existing between physicians themselves when the judgment is based on a physical inspection alone. Here the important point is that of the 25,782 children examined only 7.7 per cent were thought by the doctors to be in need of medical care, and who had been passed by the teachers as being in no such need. It is therefore quite fair to conclude that within the limits of accuracy of the type of examination made by doctors in school, comparatively few children would be overlooked by the teacher in passing judgment on the tonsil health of her children.

The high degree of agreement between teacher and physician in respect to faults of vision and hearing is to be expected from the comparatively highly objective type of examinations conducted, and from the fact that rather high degrees of error had to be present before the condition was labeled as a defect. In respect to vision slight errors of 20/30 or less were not referred by the teacher to the physician unless such errors were accompanied by severe symptoms

or evidence of not being able to do satisfactory school work. Furthermore, for a number of years particular attention has been paid by all teachers and school health workers in detecting vision errors in the entire enrollment. Comparatively few new cases were discovered in any one year, excepting in the newly entering group.

On the basis of these findings Detroit has entirely discontinued the practice of examining any arbitrary age or grade groups. Since the examination by the physician revealed a total of but 3.2 per cent of conditions that had not been discovered by the teachers themselves, it seemed just to discontinue the work of the doctors in schools as a fact-finding device. The teachers themselves, with the amount of instruction and supervision afforded, were able to unearth the facts in an adequate manner. Teachers did not examine for abnormalities of heart and therefore children, passed through this screen, might go on with an undetected heart pathology. This objection was shown by another study to be to a very large extent purely theoretical and did not exist in actual practice to a degree sufficient to constitute a real objection. Those children who had diseased conditions of the heart were also those who had other faults, or, if the condition was at all serious, it was known to the parents, school, and medical staff. It is doubted if any number of impairing cardiac conditions were missed. During the transition stage from the examination of selected grades to the universal use of the teacher inspection plan there was opportunity to compare the percentage of cardiac defects of these same grades in the two groups receiving the different types of service. The percentages of cardiac defects recorded for the first and fifth grades were the same when all children of those grades were examined annually by a physician as when the physician examined only those referred by the teacher on the basis of a defect discovered by her.

The teachers are well able to carry out the fact-finding work, discovering those children in need of medical care. A serious question may be raised as to whether the teacher is prepared to take

the responsibility for transmitting this information to the parents in a manner that will lead to placing these same children under medical care. Therefore the children are referred to the school physician, but only for the purpose of having him demonstrate to the child's parent the need of medical care. The parents of those children found by the teacher to have defects are invited to the school. The physician then demonstrates to the parent the need of medical attention. He further is charged with the task of pointing out to the parent the method of securing the indicated attention in a manner compatible with the parent's social and economic status.

When there has been such a contact in the school between the parent and the physician, there is little that the nurse needs to do in immediate follow-up. The physician has accomplished all that the nurse can do in a first home visit.

A further screen is applied in selecting those children who are referred to the school physician. If the teacher discovers a defect in a child and it is a recorded fact that this is known to the parent, and that the child is securing medical care, then this child is not referred to the school doctor. The facts are known. The parents are handling the situation to the best of their ability and there is nothing more the school physician can add. Any examination or evaluation on his part would be equivalent to passing judgment, not on the child's health, but rather on the quality of care administered by the attending physician. Such a course of action can only place insurmountable obstacles in the path of the program.

Still a further limitation of the number of children referred to the school physician has been developed. If a child can be given an examination by his own physician, and if the findings of that physician can be transmitted to the school, then there is nothing to be gained by having either the teacher or the school physician inspect or examine this child for the presence of physical defects. An examination blank has been developed and used in Detroit for the past several years. It has been used to an increasingly large extent so

PHYSICAL EXAMINATION BY PRIVATE PHYSICIAN

Name _____ Age _____ Color _____

Address _____ Grade _____

School _____ New Entrant _____ Yes _____ No _____

I have examined this child and advised the parents as to the best procedure to follow to safeguard and improve health. The following are the important findings:
 Code: 0 - no defect: 1 - slight defect: 2 - 3 - 4 - grading denotes seriousness of the defect:
 00 - condition has been corrected: T - now treating.

Height _____ Nose _____ Orthopedic _____

Weight _____ Teeth _____ Vision: R - 20/ _____ L - 20/ _____

Skin _____ Palate _____ Eyes _____

Nutrition _____ Cervical Glands _____ Hearing: R - 20/ _____ L - 20/ _____

Endocrine Glands _____ Cardiac _____ Ears _____

Tonsils _____ Lungs _____

Diphtheria Prevention _____ Negative Schick Test _____
 Mo. Date Yr. Mo. Date Yr.

Smallpox Vaccination _____ Dick Test _____
 Mo. Date Yr. Mo. Date Yr. Pos. Neg.

Date of Communicable Diseases: Chickenpox _____ Diphtheria _____ Measles _____
 Mumps _____ Scarlet Fever _____ Whooping Cough _____ Others _____

Remarks and Recommendations: _____

The Board of Education maintains classes for the handicapped in elementary schools so as to allow every child to receive the greatest good from the schools. These classes are: Open Air schools, and Open Window rooms for the tuberculosis exposure case, the arrested tuberculosis case, and the severely malnourished; crippled schools; sight-saving classes; schools for the blind; lip-reading classes and schools for the deaf; cardiac classes; and classes for mentally retarded.

If the child is handicapped in any manner where special educational work in one of these classes would be desirable, please indicate which. Transportation by the Board of Education can be furnished for certain of these cases.

Since the placement, classification, and management of these cases, while in school, constitutes a serious problem, it is frequently necessary for the child, for whom the physician requests admission, to be re-examined by the school physician. This school examination will not be for the purpose of prescribing treatment, but solely to meet administrative needs.

I suggest that this child be considered as an applicant for a _____ school or class.

Date
 Examined _____
 M.D. Address _____ Mo. Date Yr.

PLEASE RETURN THIS TO THE SCHOOL NURSE (over)

Fig. 1. Examination blank used by private physicians of Detroit, Michigan, for transmitting findings of physical examinations of school children to the school authorities.

In order to enjoy life to the fullest, and to obtain the most from work or play, every person should be in the best possible health. Many of the handicaps of adult life have their start in youth. In order to assure a successful future for your child you are urged to take him to your own physician for a complete health examination each year. Be guided by the physician's advice. Give your child the advantages of the modern type of preventive medicine being practiced by the physician of today. HAVE YOUR PHYSICIAN FILL OUT THE BLANK ON THE REVERSE SIDE AND RETURN IT TO THE SCHOOL.

This is a cooperative plan of the following agencies to do all that is possible to improve the health of the children of Detroit.

Detroit Board of Education
 Detroit Department of Health
 Wayne County Medical Society

Please take _____ to your physician for:

1. A health examination
2. Consultation regarding conditions with respect to

Are the children in your family protected against diphtheria and smallpox?

Date form was given _____ Center _____

Fig. 2. Reverse side of record blank.

that during the past year, of the children entering a school for the first time, 32.7 per cent of the elementary, 20.9 per cent of the junior high school, and 22.2 per cent of the senior high school pupils were examined by their own physicians and a report filed with the

school. The information about health secured in this manner was entered on the school record forms the same as was done for the results of the school physician's findings.

The program described in this paper is aimed at freeing the school physician from a large amount of unnecessary work, thus leaving him free to use his particular skills and training with those children who are most in need of his services. Those children who cannot or do not visit their own physicians, and who have obvious defects that are not under medical supervision, are the only ones coming to the attention of the school physician. This group represents those who are in need of the service he has to render. The others are well able to care for themselves and have demonstrated their ability to do so. In order to apply selective screens several devices have been developed. Examination blanks have been designed for and used by private physicians whereby these physicians can inform the school of the health conditions of their patients. School teachers have been trained to do a very satisfactory fact-finding screening type of inspection of the remainder of the students, referring to the school physician those children and their parents who are most in need of this type of health education and guidance. The physician in school then is left free to concentrate on those needing medical care, and education in the manner of obtaining such care.