

THE EFFECT OF HEALTH SERVICES  
ON SCHOOL ABSENCES

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We hereby recommend that the dissertation prepared under  
our supervision by Gladys Jan Herron  
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## CHAPTER I

### INTRODUCTION TO THE STUDY

#### Organization of Health Services in the Fort Worth Independent School District

The main objectives of education in the early 20th century were formulated by a committee of the National Education Association and published in 1918 by the Bureau of Education. They are "command of fundamental processes, worthy home membership, vocational efficiency, citizenship, worthy use of leisure, ethical character and health."<sup>1</sup> These are known as the seven cardinal principles of education and are popularly considered the main objectives of education.

In 1919 the Board of Education of the Fort Worth Public Schools recognized that health was a major objective of education. They agreed with a committee from the Tarrant County Medical Society that the city commission should be asked to levy a tax of seventy-one (71) cents of the \$100 valuation for the support and maintenance of public schools two (2) cents of which would be for medical inspection in the schools.

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<sup>1</sup>Carter V. Good, and Winifred R. Merkel, Dictionary of Education, Third Edition (New York): McGraw-Hill Book Company, 1973), p. 532.

In the spring of 1919 the city charter was amended by a referendum vote. "The City of Fort Worth authorized a two-cent tax levy for health work in the schools, and as a result of that, the work of the Department of Hygiene has been possible."<sup>1</sup> This assured a source of revenue to be used specifically for health purposes. This also placed the Department of Hygiene directly under the superintendent and the Board of Education, completely independent of outside authority and revenue.

Incidence of communicable disease were high. By 1924 there were no compulsory immunization regulations and there were numerous cases of measles, mumps, chicken pox, diphtheria and several cases of smallpox in every school.

Sanitary conditions of the schools and grounds were surveyed and many things were found to be in need of correction. Many water fountains had to be replaced because children could not drink without placing their mouth directly on the spigot. Janitor services in the schools were very much in need of improvement. Obsolete plumbing needed to be replaced in the rest rooms and some schools did not have inside plumbing.

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<sup>1</sup>M. H. Moore, Report of the Public Schools of the City of Fort Worth (Fort Worth, Texas: Paul T. Mosier and Co. 1924), p. 5.

After looking at the existing health problems several plans for hygiene services were considered. "An attempt was made to create a department of hygiene that would suit the needs of the schools of this city."<sup>1</sup> The plan selected had for its objectives the control of communicable diseases, examination of certain students for physical defects, the sanitary survey of buildings and grounds and the supervision of cafeterias.

During the year following the organization of the department of hygiene the work of medical inspection in the schools was started. One full time physician known as the Supervisor of Hygiene and five nurses were employed for this task.

Physical examinations were done by the school physician which limited the number of students who received examinations. Nurses inspected students for communicable diseases. There were still no compulsory immunization regulations. Strayer and Engelhardt state that there has been no satisfactory campaign for modern immunization of children although the department encourages the practice in general.<sup>2</sup>

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<sup>1</sup>Ibid., p. 50.

<sup>2</sup>George D. Strayer, and N. L. Engelhardt, Survey of the Schools of Fort Worth, Texas (New York City, Teachers College, Columbia University, 1931), p. 401.



The work of the Hygiene Department and the Physical Training Department were closely related. Many students taking physical training from the sixth grade through junior high and senior high school were examined at the beginning of the school term. Physical defects were noted and special attention was given to students who were underweight, students who were anemic and those with heart defects. These students were excused from physical training and were referred to rest classes.

The Department of Hygiene later became known as the Department of Health Services. Health services have continued to improve throughout the years in the Fort Worth Independent School District. Personnel has grown until today the department has one Administrator of Health Services, four Medical Consultants, two secretaries, 58 professional nurses, and 20 nurses' aides.

Communicable disease control also improved throughout the years, however many parents still did not have their children immunized. In 1932 the Board of Education of the Fort Worth Independent School District passed regulations making it mandatory for students to have specific immunizations. The number of required immunizations increased as new immunizations became available. Rubella immunization was started in the Fort Worth Independent School District in

1970. According to Carter the use of measles vaccine between 1963 and 1972 averted 23 million cases of measles, saved 2,400 lives and prevented nearly 8,000 cases of mental retardation.<sup>1</sup>

Action was brought against the board of education in Fort Worth, *McSween v. Board of Education* (Tex. Civ. App) 70, S.W. 2d 350, by a father who sought to obtain admission of his children to school without vaccination on the grounds that there was no epidemic of smallpox within the area, that none was imminent, and that existing conditions of health within the district were good. The Court upheld the right of the school to require smallpox vaccination as an accepted and efficient act tending towards immunization that would safeguard the health of pupils and teachers in the public schools. The Court stated that it was not a question of emergency but whether or not the action of the board of education was a rational one based upon scientific facts. The decision was that such a rule was reasonably necessary and by common knowledge proper medication.<sup>2</sup> The court said it was within the power of the board of trustees to make an order requiring pupils to be vaccinated against smallpox

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<sup>1</sup>David Carter, M.D., "Health and the Environment," American Academy of Pediatrics, XXVI (December, 1975): p. 10.

<sup>2</sup>John Carroll Hinsley, B.A., L.L.B., Texas School Law (Austin, Texas: The Steck Company, 1958), p. 374.

except where such would be injurious to health. Court decisions supporting that policy are found in the following cases: *Zucht v. San Antonio School Board* (Tex. Civ. App.), 180 S.W. 849, writ of error refused by Supreme Court; *Staffel v. San Antonio School Board of Education* (Tex. Civ. App.), 201 S.W. 413 writ of error refused by Supreme Court; *City of New Braunfels v. Waldschmidt*, 109 Tex. 302, 207 S.W. 303, reversing *Waldschmidt v. City of New Braunfels* (Tex. Civ. App.), 193 S.W. 1077; *McSween v. Board of School Trustees of City of Ft. Worth*, 60 (Tex. Civ. App.), 27; 129 S.W. 206, writ of error refused by Supreme Court; *Booth v. Board of Education of Fort Worth Independent School Dist.* (Tex. Civ. App.) 70, S.W. 2d 350, writ of error dismissed by Supreme Court.<sup>1</sup> This court ruling strengthened the school's ability to enforce its immunization regulations. Today the state law is

"(a) No person may be admitted to any elementary or secondary school or institution of higher education unless he has been immunized against diphtheria, rubeola, rubella, tetanus, poliomyelitis, and smallpox, except as provided in Subsection (c).

(b) Subject to the provisions of Subsection (c) the State Board of Health may modify or delete any of the

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<sup>1</sup>Ibid.

immunizations in Subsection (1) or may require immunizations against additional diseases as a requirement for admission to any elementary or secondary school or institution of higher education.

(c) No form of immunization is required for a person's admission to any elementary or secondary school or institution of higher education when the person applying for admission submits to the admitting official either of the following:

(1) an affidavit or a certificate signed by a doctor who is duly registered and licensed under the Medical Practice Act of Texas,<sup>1</sup> in which it is stated that, in the doctor's opinion, the immunization required would be injurious to the health and well-being of the applicant or any member of his family or household; or  
(2) an affidavit signed by the applicant or, if a minor, by his parent or guardian stating that the immunization conflicts with the tenets and practice of a recognized church or religious denomination of which the applicant is an adherent or member; provided, however, that this exemption does not apply in times of emergency or epidemic declared by the Commissioner of Health.

(d) The State Department of Health shall provide the required immunizations to children in areas where no local provision exists to provide these services.

(e) A person may be provisionally admitted to an elementary or secondary school or institution of higher education if he has begun the required immunizations and if he

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<sup>1</sup>Civil Statutes, Arr. 4498 et seq.

continues to receive the necessary immunizations as rapidly as is medically feasible. The State Department of Health shall promulgate rules and regulations relating to the provisional admission of persons to an elementary or secondary school or institution of higher education."<sup>1</sup>

### Rationale for the Study

For some time the Texas public school administrators, teachers and nurses have recognized the need for improving school attendance by students. The challenge of the times dictates that children rapidly obtain the skills required for gaining information. The objective of any teacher is to have a classroom where all the children are using a major portion of their time in learning. "Learning is best defined as the change in behavior resulting from an intervening experience, observable in process through active responding, observable as a product in new skills and knowledge. Therefore, learning is facilitated and accomplished as the child is systematically brought to attend and respond to new experiences, arranged through systematic educational planning and guided by the continuous evaluation of performance in the classroom."<sup>2</sup>

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<sup>1</sup>M. L. Brockett, Texas Public School Law Bulletin (Austin, Texas: West Publishing Co., 1976), p. 5.

<sup>2</sup>Norris G. Haring, Attending and Responding (San Rafael, California: Dimensions Publishing Co., 1968), p. 42.

The need for a system of determining why students are absent from school and what measures can be introduced to reduce these absences is recognized by most school districts: 8 of the 9 districts contacted by the investigator recognized this need. "A good predictor of a pupil's future absence record is his past years absence record."<sup>1</sup>

Realizing the need for decreased absences the Administrator of Health Services in the Fort Worth Independent School District has instituted a program of physical assessment for students in the elementary schools in Fort Worth to determine existing student health problems. The nurse in each of the elementary schools in the district determines the health needs of students by obtaining a health history and by a physical assessment of the students' health when each enters the nurse's assigned school. This provides the nurse with information concerning possible future school absences due to health problems.

Why should health services be concerned with school absences? Student absence for any reason results in a break in the sequence of learning. Formal education begins when

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<sup>1</sup>Gene V. Long, RN, M.N., Caroline Whitman, RN, M.Ed., Mabel S. Johansson, RN, M.P.H., Carolyn A. Williams, RN, Ph.D., Robert W. Tuthill, Ph.D., "Evaluation of a School Health Program Directed to Children with History of High Absence," American Journal of Public Health, LXV:4 (April, 1975): 388.

the teacher and the learner are brought together to initiate a series of skills. These skills are best understood, retained, and applied when presented in an unbroken sequence. An unbroken sequence means a "program of studies that proceeds in an ordered way from lower to higher skill, with each lesson building on skills and concepts learned in previous lessons."<sup>1</sup> There is a need to examine health problems which cause absences resulting in a break in the sequence of learning. There is a further need to determine whether the school health services can significantly reduce student absences related to health problems.

Health services recognize that many families with health problems must have help and guidance in correcting medical problems. In low income families the lack of health care is usually due to the lack of resources including funds and knowledge about health care delivery. The health care delivery system is very complicated and most low income families are not accustomed to "pulling strings." They do not know the procedure for contacting people who can best provide the service they need. The accessibility of health care is generally difficult because it is usually not located in the area where low income families live. Primary

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<sup>1</sup>Neil Postman and Charles Weingartner, The School Book (New York: Delacorte Press, 1973), p. 148.

health care is frequently limited to that provided by a physician not utilizing other professionals on the health team to their fullest potential. "Increasingly, pediatric office care will be provided by a new pediatric office team that will include a nurse with special skills in child health supervision. The new pediatric team will allow pediatricians to have more time to provide the specialized medical care for which they are trained. It will allow them to function as specialists in the diseases of children and serve as consultants for other physicians involved with child care. It will allow them to select an area of special interest, and to spend part of their time in a neonatal unit, a diagnostic unit for learning disorders, or a genetic clinic."<sup>1</sup>

Coordinated efforts must be made to bring about changes in the delivery system of health services for children of low income families. Health services for children should be available at the community level. There should be enough flexibility in a health care delivery program to meet varying needs of children. Good health care involves a rational delivery system that insures continuity of care all the way from health education and routine check-ups through

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<sup>1</sup>John MacQueen M.D., "New + Comment," American Academy of Pediatrics, XXVI:12 (December, 1975): 9.



open-heart surgery. It involves building teams of health professionals and referral networks and, if we are to afford the costs, we must use people, facilities and equipment in the most productive ways.<sup>1</sup> "The relationship between the specialist in general pediatrics, his assistant or nurse practitioner, and other pediatric specialists may become a model for primary care teams in American medicine."<sup>2</sup>

Community Health Services should care for the whole child in health and disease. Ideally it would integrate primary, secondary and even tertiary care within its services for children. This would require large amounts of monies, buildings, personnel, etc. Primary health care could be provided at the community level with very little added expenditures. "The four essentials of primary care services are continuity of care, accessibility to care, coordination of all medical services and community orientation."<sup>3</sup> Since children age 5 to 18 are in school five days a week this seems the most logical place to provide primary health care.

Primary care functions for children include organization and provision of diagnostic and treatment services,

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<sup>1</sup>Ibid., p. 12.

<sup>2</sup>Ibid.

<sup>3</sup>Merritt B. Low, M.D., "News + Comment," American Academy of Pediatrics, XXVII:1 (January, 1976): 3.

including screening, health education and follow-up where appropriate to ensure prevention and other health needs of children. School health services could play a very important role in providing primary health care for school children. There should also be some public education in the use of the health care delivery systems and there should be greater attention to community or school health care, preventive care and public health.

"There has been a social revolution occurring over the past two decades."<sup>1</sup> Attitudes have changed in relation to medicine from a disease illness orientated society to one that is rapidly becoming more oriented to preventive medicine and a broader concept of health. Society is now concerned with the effects on the people of poor housing, poverty, crowded living conditions, noise, air and water pollution, malnutrition and over nutrition, automobile driving, smoking, drug abuse, child abuse, suicide, alcohol abuse and changes in the family structure. All of these reflect factors in health that lie outside of the disease illness concept. They also lie outside the individual doctor's traditional sphere of education and training. "They call for societal attention and present appropriate opportunities for government, in concert with medicine and the

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<sup>1</sup>Ibid., p. 8.

sciences, to exert significant leverage in the areas of morbidity and mortality prevention."<sup>1</sup>

Many medical and educational programs are preparing a cadre of physician extenders such as the nurse practitioner who many physicians say could manage almost ninety percent of the pediatric problems in the outpatient area. This means that a large percent of child health problems could be managed at the community school. All health professionals should be utilized to their fullest potential in any health care delivery system.

If children from low income families are to receive the health care they need the health care delivery system must be changed. Health care must be provided in the community where the children live. Hence the community school seems to be the best place to provide primary health care and health education and the school nurse in her daily contact with the school children can be the link in such a plan.

#### Purpose of the Study

The general purpose of the study was to determine the effect of health services on health-related student absences. The specific purpose of the study was to determine if the health services provided in the Fort Worth Independent

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<sup>1</sup>Ibid.

School District could significantly reduce health-related student absences.

### Statement of the Problem

The present investigation was undertaken to determine if the health services provided in the Fort Worth Independent School District could significantly reduce health-related absences.

The first phase of the study was the collection of data for a ten-week period in ten schools selected at random from the 120 schools in the Fort Worth Independent School District. The data consisted of the stated reasons for health-related student absences and was used for the selection of the schools in the final study.

The second phase of the study determined the quality of the nurses. Criteria used for this determination was an evaluation of five nurses by the principal, nurse supervisor and the Director of Health Services of the Fort Worth Independent School District using a Likert Scale type questionnaire. The questionnaire consisted of ten items and was developed by the investigator. (see appendix A) The nurse's past nine week reports were used as a factor in determining the quality of the nurse's performance in the job.

The third and final phase of the study was the collection of absentee data for a ten-week period while the

nurses were focusing attention on the reduction of health-related school absences.

Definitions and/or Explanations of Terms

For the purpose of clarification, the following definitions and/or explanations of terms were established for use in the study:

A. Community Health. Measures designed for the protection of the health of the people of the community.<sup>1</sup>

B. Comprehensive Care. Coordinated, Continuing, Accessible, Optimal, Personal, Medical, (preventive, curative, rehabilitative), Social, Dental, Emotional, Educational, Vocational, Nutritional, Recreational, Services rendered by a Team focused on Family as Unit.<sup>2</sup>

C. Genetic Clinic. A clinic to study metabolic anomalies. The abnormalities may be so severe as to end fatally, or mild enough to be of no medical significance. They follow genetic patterns and may be referred to as dominant or recessive (e.g., Phenylketonuria, wherein the gene may be passed from one generation to another without

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<sup>1</sup>Carter V. Good, Dictionary of Education (New York: McGraw-Hill Book Company, 1973), p. 277.

<sup>2</sup>Charles Lewis MD., "Symposium of Comprehensive Care," American Journal Diseases of Children, CXXII (December, 1971), 469.

recognition until the clinical disease is produced in 1/4 of the offspring through the mating of heterozygote parents).<sup>1</sup>

D. Health Program. A planned organization of the resources of the school, usually involving also those of the home and community, in order to promote desirable knowledge, habits, and attitudes about health for the purpose of improving the health conditions of the pupils and of their environment: usually implemented by such means as periodic physical examinations, classes in health and hygiene, nutrition programs, and the regulation of health conditions within the school as well as by attempts to enlist the cooperation of the home and of community agencies.<sup>2</sup>

E. Health Inspection. A routine health check on children in the classroom for the purpose of screening out those children who reveal symptoms of communicable diseases or other illness; an early part of the daily program in all elementary classrooms, preferably taking place as the children enter the room.<sup>3</sup>

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<sup>1</sup>Charles E. Lyght, M.D., Editor, and John M. Trapnell, M.D., Associate Editor, The Merck Manual (Rahway, N.J.: Merck & Co., Inc., 1967), p. 297.

<sup>2</sup>Good, p. 277.

<sup>3</sup>Ibid.

F. Morbidity. The condition of being diseased or morbid. The sick rate; the ratio of sick to well persons in the community.<sup>1</sup>

G. Mortality. The death rate; the ratio of total number of deaths to the total number of population. The mortality rate of a disease is the ratio of the number of deaths from a given disease to the total number of cases of that disease.<sup>2</sup>

H. Nurse Practitioner. Professional nurse who has had additional training in an area of specialization. (e.g., Pediatric Nurse Practitioner, does a thorough medical history and physical, evaluating the developmental and social adjustment of the patients, providing anticipatory guidance to parents concerning child rearing practices, carrying out a predetermined immunization plan, and counseling with pregnant women and new mothers. Her counseling delves into such areas as feeding and nutrition, safety, newborn care, toilet training, discipline, play with children, speech development, dental care, sex education and drug abuse).<sup>3</sup>

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<sup>1</sup>Lloyd W. Daly, A.M., PhD., Litt. D., Dorland's Illustrated Medical Dictionary (Philadelphia: W. B. Saunders Company, 1965), p. 943.

<sup>2</sup>Ibid., p. 945.

<sup>3</sup>The University of Texas System Newsletter, March 1974), p. 5.

I. Pediatrics. A medical specialty dedicated to care for the whole child in health and disease, integrated primary, secondary and even tertiary care within its services for children.<sup>1</sup>

J. Physical Assessment. An attempt to judge and evaluate the health situation within the framework of nursing responsibility. (1) the relationship between observed or elicited facts about behavior; (2) the potential impact of the conditions observed on the health of the family or community; and (3) the likelihood that these conditions can be changed by direct nursing action or by referral.<sup>2</sup>

K. Primary Health Care. Is popularly considered to include management of well babies and children, routine examinations, immunizations and treatment of minor illness and injury.

L. Secondary Health Care. Is popularly considered to include diagnostic procedures, treatment of more complicated illness and injury, medical emergencies and critical illness.

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<sup>1</sup>American Academy of Pediatrics Board, American Academy of Pediatrics (Evanston, Illinois: American Pediatric Association Publication, 1976), p. 3.

<sup>2</sup>Ruth B. Freeman, RN, Ed.D., Public Health Nursing Practice (Philadelphia: W. B. Saunders Company, 1963), p. 36.



M. Tertiary Health Care. Is popularly considered to include surgical procedures and treatment of critical complications.

N. Type X Nurse. A nurse who received a rating for all questions on the Likert-type questionnaire of most of the time or better on the evaluation from the principal, nurse supervisor and Director of Health Services; and has provided or arranged for corrections for at least seventy-five percent of the students who have physical defects as reported on her nine weeks report.<sup>1</sup>

O. Type Y Nurse. A nurse who received a rating for all questions on the Likert-type questionnaire of some of the time or better on the evaluation from the principal, nurse supervisor and the Director of Health Services; and has provided or arranged for corrections for at least forty percent of the students who have physical defects as reported on her nine weeks report.<sup>2</sup>

### Hypotheses

Hypotheses relating to the study were as follows:

A. Health services provided in the Fort Worth Independent School District can significantly reduce health-related student absences.

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<sup>1</sup>Investigator's Definition.

<sup>2</sup>Ibid.

B. Health related student absences will be reduced to a greater extent in School C having the services of a half time type X nurse than in School A having the services of a half time type Y nurse.

C. Health-related student absences will be reduced to a greater extent in School C having the services of a half time type X nurse than in School B having the services of a full time type Y nurse.

#### Delimitations of the Study

The following delimitations were established:

A. To students who were enrolled in school from the beginning to the end of the ten-week testing period.

B. To those students in grades kindergarten through five.

C. To elementary students in the Fort Worth Independent School District.

D. To students in three selected elementary schools in the Fort Worth Independent School District who met the established criteria.

E. Reliability and accuracy of parental explanation of health-related absences.

#### Summary

Professionals in education have known for some time that if students are to receive the maximum from their

educational experience they must attend school regularly. There are various reasons why students do not attend school but specific reasons for absences are often not known to educators.

As a result of observing the high rate of student absences the investigator undertook a study to determine reasons for health-related student absences.

The number of days absent for health-related problems would be reduced if medical care was readily available in the student's school or community. The purpose of the study was to determine (1) which health problems caused school absences, (2) if health services provided in the Fort Worth Independent School District could reduce health-related absences, (3) could type X nurse reduce health-related absences to a greater degree than type Y nurse.

## CHAPTER II

### SURVEY OF RELATED LITERATURE

A comprehensive review of the available literature related to school absences for health reasons disclosed that the investigator did not duplicate any previous studies. The chapter is divided into four sections: (1) Health Studies Related Specifically to Nursery Schools, (2) Health Studies Related Specifically to Elementary Schools, (3) Health Studies Related to Elementary, Middle and High Schools, (4) Health Related Studies and Literature.

#### Health Studies Related Specifically to Nursery School

Pediatricians agree that increased incidence of respiratory illness occur during cold weather. Exposure to airborne droplet infection from sneezing and coughing by individuals in an enclosed area magnifies the problem. Sale states that "one of the main causative factors is the dry air with low relative humidity accompanying central heating."<sup>1</sup>

Sale states that in a study by Stataloff and Menduke, no reduction in respiratory illness was demonstrated under

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<sup>1</sup>Charles S. Sale, M.D., "Humidification to Reduce Respiratory Illness in Nursery School Children," Southern Medical Journal, LVIV (July, 1972): 882-85.

the circumstances of their experiment of bacterial air counts in classrooms.<sup>1</sup> Sale decided to approach the problem using a different basis for obtaining humidification; namely, constant humidity control throughout an entire nursery school building.

Sale's study was conducted from November 1, 1969 to May 1, 1970 using five hundred and fifteen children, ranging in age from two and a half to six years from three private nursery schools. Parents were notified of the project and encouraged to cooperate. Addition of humidity equipment in the home and child absences were recorded on file cards.

Complete equipment was installed in school No. I to provide automatic humidification. No humidification was added to the other two buildings. Temperature, relative humidity, children absent, and telephone contacts with parents were recorded. Non respiratory illnesses were not considered.

An average of 140 children were attending school No. I each day, 215 in school No. II and 160 in school No. III. For analysis the children were classified in groups representing various degrees of humidification exposure.

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<sup>1</sup> Joseph Sataloff, M.D., and Hyman Mendke Ph.D., "Humidity Studies and Respiratory Infections in a Public School," Clinical Pediatrics, LL (March, 1963): 119-21.

Group I - 39 children had humidity at home and school

Group II - 101 children had humidity at school only

Group III - 95 children had humidity at home only

Group IV - 28 children had no humidity

"Absences for the first five months of the study were: group I, 1.3%; group II, 3.9%; group III, 5.1%; and group IV, 7.1%. When humidification was discontinued in school No. I the weekly absence rate rose in group I to 5% and group II to 6.5%." <sup>1</sup>

The result of the study was that "the use of humidification during the winter heating season is very beneficial in reducing respiratory illnesses in children. The frequency of absence from school was proportional to the degree of humidity in the school and home environments." <sup>2</sup>

Health Studies Related Specifically to  
Elementary Schools

In preparation for a research study to be conducted by the Palm Beach County Health Department an attempt was made to identify pupils with records of poor school attendance. They found that industrial studies had shown that a small proportion of persons are responsible for the majority

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<sup>1</sup>Ibid., p. 883.

<sup>2</sup>Ibid., p. 884.

of illness among working groups. It was felt that this would probably be true among school children. They found that past absence patterns are the best predictor of future absences. However not all students followed that pattern, some had fewer absences than the past year and some had considerably more absences.

In the study at Palm Beach County Health Department the nursing staff conducted a study of 40 high absence pupils randomly selected from a high absence group in two schools. The school indicated that these children had a high prevalence of health problems. "It was decided that identification of children with a past record of high absence would be a reasonable way of defining a group of children with a high risk of future episodes of illness and possibly a high prevalence of basic health problems."<sup>1</sup>

In Palm Beach County public health nurses are responsible for providing generalized nursing services to the community as well as to the school children. This limits the services provided for school children to vision and hearing tests. The nurse generally encounters a child only once during the school year. Confining a school health

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<sup>1</sup>Robert W. Tuthill, Ph.D., Carolyn Williams, RN, Ph.D., Gene Long, RN., B.S., M.N., and Caroline Whitman, RN., MEd., "Evaluating a School Health Program Focused on High Absence Pupils: A Research Design," American Journal of Public Health, (January 1972): 40-42.

program to vision and hearing tests and one time encounters with children results in children with unidentified problems never coming to the attention of the nurse.

"The major objectives of the study were (1) to consider the utility of directing nursing services to a defined risk group, and (2) to document the results of the experience in terms of patient outcomes, specifically, change in absence experience."<sup>1</sup> Each high absence pupil from the intervention school was matched with a pupil from a control school. The nurse had increased contact with only the intervention group. For each contact made the nurse recorded on the contact record the reason for the contact, findings, and the plan of action. For each student in the experimental group brief accounts of the contacts and results were also recorded on a summary sheet.

Activities included examinations of all available school health records of the student, home visits, and conferences with the classroom teacher. Other types of contacts were the nurse-pupil conference, nurse-principal conference, phone calls and written communications to the parents.

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<sup>1</sup>Gene V. Long, RN, M.N., Caroline Whitman, RN, M.Ed., Mabel S. Johansson, RN, M.P.H., Carolyn A. Williams, RN, Ph.D., Robert W. Tuthill, Ph.D., "Evaluation of a School Health Program Directed to Children with History of High Absence," American Journal of Public Health, (April 1975): 388-93.



The result of this one year study was that a mean decline in absence of 7.08 days for the intervention group as compared to a decline of 5.10 days in the control group. The difference in absence decline between the intervention group and the control group exceeded the minimum level specified as being worthwhile. It was decided before the beginning of the study that for the intervention program to be worth while it should bring about a ten percent greater reduction in absences among the experimental group than the control group. At the end of the study the nurses questioned whether the differences observed between the intervention and the control groups could be attributed to nursing service.

Despite the difference between the nursing service provided to the two groups, association between nursing service and the change in absence was viewed only as suggestive, for two reasons. First it was possible that the absence decline in the intervention group was due to the fact that during the study the nurse called attention to the child's absence history. This and the nurse's interest in the child rather than the resolution of health problems may have been the reason for the absence reduction.

In a study done in Charlestown, Massachusetts by Moore and Frank it was found that absenteeism increased

subsequent to the establishment of a comprehensive health care center in the area.<sup>1</sup> The health center was designed to provide comprehensive ambulatory services to the community which had previously been provided by several general practitioners and one dentist. A major proportion of the patients were children who were served without charge under a grant from the Children's Bureau. Many children who were not acutely ill and who would not ordinarily have visited the doctor were absent from school in order to keep an appointment for follow-up or primary health care. "The more comprehensive the services provided at the center, the more such visits a well child would be likely to make and the more school he might miss as a consequence."<sup>2</sup>

This suggests that school absenteeism may not be an appropriate measure of the level of health in a group of children. It serves too, as a reminder to the pediatrician that a visit to the doctor may mean a day's absence from school.

A study by Kaplan and Lave in Pittsburgh included an analysis of attendance records of children enrolled in a comprehensive care clinic located in a low income housing

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<sup>1</sup>Daniel S. Blumenthal, D.S., "School Absenteeism and Child Health," Pediatrics, LII (September, 1973): 465.

<sup>2</sup>Ibid.

project.<sup>1</sup> The purpose of the study was to determine the full consequences of a comprehensive care project. Kaplan and Lave did not attempt to separate attendance improvements due to reduced morbidity from improvements due to a reduction in alienation. It was their hope that the comprehensive care project would be viewed as a evidence that conventional society cares about the poor children. An effort was made to let the children in the community know the clinic was available. Professionals in the clinic included physicians, dentists, nurses and social workers. Two elementary schools served the children in the project. Many of the children attended parochial school for which attendance data were not available. The goal of the study was to measure improvement in school attendance due to the comprehensive health care project. Kaplan and Lave compared children enrolled in the comprehensive health care project with similar children from similar backgrounds who were not in the project.

The study showed that school attendance rates are determined by many factors. It showed that "a comprehensive care project does produce an improvement in attendance, but

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<sup>1</sup>Robert S. Kaplan, Ph.D., Lester B. Lave, Ph.D., "The Efficacy of a Comprehensive Health Care Project: An Empirical Analysis," American Journal of Public Health, LXII July 1972): 924-30.

the effect is small compared to other variables, such as proximity of the school, race, sex, and socioeconomic conditions."<sup>1</sup>

Sataloff and Hyman initiated a study to explore the possibility of reducing the frequency of upper respiratory infections in school children by increasing the amount of moisture in classroom air during the time while heating units were turned on. Humidity units were installed in one first grade, one second grade, and one third grade classroom which were kept in operation for a five month period from October through March. Humidifiers were in operation during school hours only and a device was placed next to each humidifier for recording both temperature and humidity.

Neither parents, teachers, nor students were told the purpose of the experiment. When a child was absent from school, his parents were asked to fill out an excuse form. At the end of the period each parent was asked to fill out a health questionnaire.

The temperature remained constant at about 75 degrees in all rooms but the relative humidity showed greater fluctuation. When the humidifiers were in operation

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<sup>1</sup>Robert S. Kaplan, Ph.D., Lester B. Lave, Ph.D., "The Efficacy of a Comprehensive Health Care Project: An Empirical Analysis," American Journal of Public Health, LXII (July 1972): 924-30.

the relative humidity was much higher in the humidified rooms, but the difference averaged approximately three per-cent.

The results of the study showed there was no lowered incidence of illness in the humidified rooms. "In fact, the non humidified rooms had somewhat lower averages than the humidified rooms, although the differences were rather small and, using an Analysis of Variance, were not statistically significant at the conventional 0.05 level.<sup>1</sup>

An investigation was made in two California cities to determine the possible effects of air pollution on absenteeism of elementary children.<sup>2</sup> Two comparable groups of children were studied. One group was located in an area with varying concentration of air pollutants and the control groups was located in a relatively smog-free area.

The methods used in the study were the collection of data about air pollutants, absences and levels of air pollutants in excess of clean air standards, data concerning absences of the control group and a comparison of the attendance records of the two groups.

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<sup>1</sup>Joseph Sataloff, M.D., and Hyman Menduke Ph. D., "Humidity Studies and Respiratory Infections in a Public School," Clinical Pediatrics, II (March 1963): 119-21.

<sup>2</sup>Irene B. Bury, PHN., M.A., "A Study of the Effects of Air Pollution on Children," The Journal of School Health, XL (November 1970): 510-13.

The study showed that a greater percent of absences occurred in the study group than in the comparable control group. "The difference represented an increase absenteeism of approximately 22% in the test group as compared to the control group."<sup>1</sup> The rate of absenteeism between the two groups was significantly different. It appeared obvious that the children in the study group are surrounded by a polluted atmosphere, at home, in school, and in their neighborhood.

Wayne and Wehrle's main purpose of this study was to ascertain the statistical relationship between levels of oxidant air pollution and school absence rates attributed to respiratory symptoms, in two independent populations of school children in Los Angeles.<sup>2</sup>

Absentee data were collected at two elementary schools during one school year. School No. I was located in the east downtown section of Los Angeles and school No. II was in the western part of the city. The socioeconomic level was much lower in school No. I than in school No. II. Also, the two had different ethnic backgrounds.

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<sup>1</sup>Ibid.

<sup>2</sup>Walborg S. Wayne, M.S., and Paul F. Wehrle, M.D., "Oxidant Air Pollution and School Absenteeism," Environmental Health, XIX (September 1969): 315-22.

The trends in absence rates attributed to respiratory illness in both school populations were similar to those observed in a recent study in Omaha, Nebraska. In the Nebraska study the trends were a somewhat uniform average rate prior to the Christmas holidays; peaks of about twice the average rate in the latter part of January and early February, followed by average rates interrupted by lesser peaks in late March and early April.

The percentage of school absences was greater at school No. II than at school No. I. School No. I had twice as many absences for other health conditions and non illness as school No. II. This difference in absence rates between the two schools could not realistically be attributed to oxidant air pollutions because the daily concentrations were practically the same in the communities of both schools and so were weather conditions. "Dissimilar socioeconomic characteristics and ethnic origins are suggested as contributing causes of the markedly greater absence rate and percentage for other health conditions and non illness at school 1 compared to school 2."<sup>1</sup>

Ferris conducted a study on absences of children in the first and second grades in three parochial and four

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<sup>1</sup>Ibid.

public elementary schools.<sup>1</sup> A public health nurse telephoned each school at least twice each week to obtain a list of students who were absent from school. An absence was considered due to respiratory illness when the child had a running nose, stuffed-up nose, raw or sore throat, sneezing, coughing, earache, hoarseness, wheezing, or allergy such as asthma or hay fever. This study was run at the same time as an air pollution survey. For some degree of comparability with other studies school absences were followed up and simple tests of pulmonary function were done. There was no clear gradient of respiratory illness across the school. There was no consistent pattern. All respiratory diseases ranged from 1.1 days to 3.2 days and averaged approximately two school days per illness. Data from time periods for Berlin, New Hampshire were compared with the results obtained in Seaview, a community with a higher rate of pollution. Rates for a comparable period were lower in Berlin than in Seaview.

The study showed an increased incidence of nausea, vomiting, and stomach pain in Seaview, where odors from

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<sup>1</sup>Benjamin G. Ferris, "Effects of Air Pollution on School Absences and Differences in Lung Function in First and Second Graders in Berlin, New Hampshire," American Review of Respiratory Diseases, CII (October 1970): 591-05.



a kraft plant were prevalent. The incidence of these symptoms in Berlin was much lower than that in Seaview.

"Children who attended parochial schools were less likely to have non-illness absences. Whether this was an effect of the school, the family, the church, or some other factor is not clear."<sup>1</sup>

When the over-all results were compared with those of a study from Western Canada, many similarities were apparent; the number of non-illness absences, tonsilectomy, and the absences per student. These differences did not suggest that air pollutants from kraft mills affected such symptoms as nausea, vomiting, or respiratory illness in young children.

The results of pulmonary function tests did indicate changes that could be due to air pollution. Another difference from the Canada study was the percentage of dust that was water-soluble.

Health Studies Related to Elementary,  
Middle and High School

The Division of Nursing of the National Institutes of Health, in cooperation with the Delaware State Department of Education conducted a study of the health of a selected

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<sup>1</sup>Ibid.

school population.<sup>1</sup> The purpose of the study was to delineate child and family characteristics that are associated with illness and absence behavior in school populations.

Data were collected from school records of 2,000 first, fourth, seventh and tenth grade students. The results of this data showed that of the twenty-three student, family and social variables studied, grade point average, age-grade relationship, social class, parent's marital status, school location, grade level, and color were found to be associated with absence from school at a statistically significant level. The absence patterns of the 2,000 students were studied over a two year period and a major finding was that absence behavior during the two year period had a high degree of consistency. Low absence children tended to remain in the low absence group both years and the same was true of the high absence children.

Three factors which seemed to have the most significant effect on absence were school location, grade level and social class. Children whose parents were divorced or separated had more absences than children from intact homes.

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<sup>1</sup>Dolores Basco, R.N., M.P.H., Sandra Eyres, R.N., M.P.H., Jay H. Glasser, Ph.D., and Doris E. Roberts, R.N., Ph.D., "Epidemiologic Analysis in School Populations as a Basis for Change in School Nursing Practice," American Journal of Public Health, LIX (April 1972): 491-96.

Children whose parents were widowed had a similar absence pattern compared to children with both parents in the home. The child's attitude toward school showed the greatest association with total absence episodes. Children who enjoyed school had fewer absences than children who disliked or were afraid of school. The parents' expectation for the child's future education was significant as well as the child's ordinal position in the family. Children whose parents expected educational accomplishment and youngest children had fewer absences.

It was expected that children would have a better attendance record if parents perceived absence as having an adverse effect on school work but the reverse was found. "A logical explanation might be that the parent is reporting what he sees is happening as a result of frequent absences i.e., the child falling behind in school because it is difficult to make up the work he had missed."<sup>1</sup> Parents of high absentee children were also more likely to report more frequent contact with the school nurse.

The findings from this study described the high absentee child as a first grader from an urban school who is the eldest child in a lower social class family. He is likely to have difficulty with his school work, doesn't like

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<sup>1</sup>Ibid.

or is afraid of school and has parents who do not expect him to go far in school, at least not beyond high school.

In a report by the Department of Allergy at the University of Texas School of Biomedical Sciences at Houston it was stated that allergic diseases represent approximately one third of all chronic conditions reported for children under age 17. "Allergic diseases represent a major school health problem since approximately ten percent of the population suffers from major allergies and an additional 40 to 50 percent have experienced, or will experience, some relatively less severe, frequently evanescent allergic manifestation often insufficiently pronounced to require medical consultation."<sup>1</sup> Hayfever, allergic rhinitis, and asthma are the major types of allergies suffered by children. "In one national survey the total time lost from school because of chronic affections amounted to approximately 33 million days."<sup>2</sup> Asthma accounted for more than 7.5 million days, hayfever and other allergies for another 1.5 million days.

According to McGovern of every 10,000 youth medically rejected for military service 557 were disqualified because

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<sup>1</sup>John P. McGovern, Kenneth E. Pierece, and Rufus E. Lee Jr., M.D., "The Allergic Child and His Challenge to the School," Clinical Pediatrics, X (November 1971): 636-44.

<sup>2</sup>Ibid., p. 641.

of allergic disorders. This means that allergic disorders represented six percent of all medical disqualifications. Incidence of illness, days lost from school and high cause of rejection for military services does not reflect the total impact on the individuals involved or on the loss to the nation. The most important factor is the effect on the individual in terms of physical, mental, and emotional growth and development.

McGovern further states that in dealing with the allergic child it is important that each person be constantly aware that every action should be to help in the development of a physically and emotionally mature adult who will be capable of functioning as a stable and productive citizen. In the school setting we must pay attention to early symptoms, environmental factors, the effect of physical exercise on the child, problems with medication and the need for effective emergency care. An allergic child may react to many factors both internal and external. He may react with bronchospasm to such stimuli as infection, climatic changes, physical exertion, endocrine and emotional factors.

Bharani and Hyde report that allergic diseases usually appear early in life; 80 percent of the total number of allergic syndromes start before age fourteen. "Approximately four percent of school children have asthma. The school is

concerned when chronic asthma interferes with class attendance and performance as well as physical education."<sup>1</sup>

Bharani and Hyde classify children with asthma into three categories. Class one includes children with occasional asthma, who are easily controlled with antiasthma medication for a few days at a time. They usually are absent from school less than two weeks during the school year. Class two includes those children who have chronic asthma and have a dependency on bronchodilators and who are usually absent from school more than 14 days a year. Class three includes children who are severe enough that they can only do a limited amount of school work. They are frequently hospitalized and much of their schooling takes place at home or in the hospital.

At a meeting of the American School Health Association in October, 1974 at New York City where most of the delegates were school teachers, nurses and physicians, the participants were asked to respond to a questionnaire concerning the supervision of an asthmatic child in the classroom. The responses of the three groups were very different: 65% of the physicians responded that supervision at school

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<sup>1</sup>Sakina N. Bharani, M.D., and John S. Hyde, M.D., "Chronic Asthma and the School," The Journal of School Health, XLVI (January 1976): 24-30.

was inadequate; 79.5% of the nurses believed that supervision was adequate and 96% of the teachers believed it was adequate.

Bharani states that experienced nurses can supervise the administration of medication, provide excuses for physical education if needed and excuse the child from going outdoors at lunch in inclement weather. Personnel unfamiliar with asthma may suspect infections and subsequently send the child home; this practice increases school absenteeism.

A study was made of a home transfusion program for children with hemophilia to determine its effectiveness. "Rabiner and Tefler have provided information concerning the efficacy of home transfusions, and Cooke and Associates have reported on the effectiveness of Cryoprecipitate transfusion prophylaxis in decreasing hospitalization as well as in improving school performance and attendance."<sup>1</sup>

The study group was composed of 20 children with severe classic hemophilia who were involved in a one year home transfusion program.<sup>2</sup> Half of the children ranged from five to nine years of age and the other half were between

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<sup>1</sup>Jack Lazerson, M.D., "Hemophilia Home Transfusion Program: Effect on School Attendance," Journal of Pediatrics, LXXXI (August 1972): 330-32.

<sup>2</sup>Ibid.

10 and 17 years old. All patients were oriented to use cryoprecipitate infusions at the first sign of any clinical bleeding. "School attendance records were documented by obtaining copies of records from the patient's schools. The average school year is 175 to 177 days, and the expected absenteeism is 5 to 7 days per child per year."<sup>1</sup>

The trend of decreased absenteeism in the study was obvious. One of the three cases of continued absenteeism was caused by a case of hepatitis and one was caused by parents who felt uneasy about allowing the student to leave home after he had given himself a transfusion.<sup>2</sup> The mean number of days of absence for all children during the 1970 to 1971 was 20, only one third that during 1968 to 1969.

Marked attendance improvement for patients living far from a treatment facility was noticed. Home transfusions frees the patient and family from the time consuming process of locating their physician, traveling to the office or emergency room, and waiting for an evaluation of the patients bleeding status.

The study showed that "the school attendance records of 20 patients with severe hemophilia A have been compared

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<sup>1</sup>Ibid., p. 330.

<sup>2</sup>Ibid., p. 331.



prior to and after development of a comprehensive care center with a home transfusion program. Analysis of the results indicates a dramatic decrease in school absences."<sup>1</sup>

In a study by the Delaware State Department of Public Health it was noted that there is considerable evidence that indicated a lack of understanding of the problems in our school population. "The National Health Survey, for instance, estimated that from June, 1966 to July, 1967, there were almost 330 millions days of restricted activities associated with acute illness in the 6-16 age group. This represents 700 days per 100 children, additionally, there were 60 million days (or 137 per 100 children) of restricted activity associated with injury. These estimates show further that injuries and acute illness were responsible for approximately 4.5 days of school absence per child during the year."<sup>2</sup>

In the Delaware study school absence was selected as a major dependent variable. The investigator wanted to use morbidity data as an additional measure, but data concerning

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<sup>1</sup>Ibid.

<sup>2</sup>Doris E. Roberts, R.N., Ph.D., F.A.P.H.A., Dolores Basco, R.N., M.P.H., Cecil Slome, M.D., J.H. Glasser, Ph.D., and Gladys Handy, M.D., "Epidemiologic Analysis in School Populations As a Basis for Change in School Nursing Practice," American Journal of Public Health, LIX (December 1969): 2157-67.

absence due to illness was not available. A total of 23 independent variables representing the student, family and school characteristics were included in the study. Characteristics of the child included age, sex, color, ordinal position, grade-point average, height, weight, and immunization status. Data concerning the family included occupation and education of parents, religion, size of household, and place of residence. Data concerning the school included administrative control, size, urban/rural location, and proportion of white and non-white students.

Cumulative and attendance records for five percent of the students in the first, fourth, seventh and tenth grades were studied. From these records it was found that nine percent of the total sampled had no days absent for the previous year. The highest number of days absent for any student was 140.

In the study it was found that 50% of the white group had fewer than five absences per year in contrast to only 29% of the non-whites. High absence was associated with having low grade-point average, being over age for one's grade, having low socioeconomic status, coming from a broken home and attending an urban school. A major finding was the high degree of consistency in attendance patterns of the study population over a two year period.

Prior to the winter of 1968-69 it was predicted by the Public Health Service Advisory Committee on Immunization practices of Pennsylvania that there would be a significant outbreak of influenza.<sup>1</sup> The Pennsylvania Department of Health established a statewide influenza surveillance system to delineate the extent of the outbreak in Pennsylvania, to facilitate early laboratory confirmation of suspected cases, and to elucidate the clinical and epidemiologic characteristics of influenza infections. "The system was designed to monitor daily absenteeism in representative schools and industrial plants and to make such information available to laboratories and clinical institutions."<sup>2</sup>

Forty-two days of absence reports were received and reviewed daily. This included 15 reporting units comprising 37 primary schools, 26 secondary schools and 22 industrial plants. Each afternoon the office of the communicable disease division in Harrisburg called each surveillance site to obtain the data collected earlier in the day. The average number of plants reporting per day was about 71 percent and the average number of schools reporting per day was about 91 percent.

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<sup>1</sup>Victor R. Hrehorovich, M.D., William D. Schrack, Jr., M.D., David A. Hall, A.B., Robert E. Longenecker, A.G., and Issak F. Gratch, M.D., "Influenza Surveillance in Pennsylvania," Public Health Reports, LXXXV (July 1970): 630-09.

<sup>2</sup>Ibid.

"Increased absenteeism, probably caused by influenza, crossed the state in about 5 weeks. Beginning in Philadelphia, absenteeism spread rapidly to the southeast corner of the State, and then almost sequentially progressed first to the northeast and north-central portions and later to the south-central and western areas."<sup>1</sup>

It was concluded that a statewide surveillance system can be readily instituted to document influenza activity. "Daily institutional absenteeism not only provides insight into the magnitude of the epidemic and its geographic distribution and progression, but also facilitates early laboratory documentation of influenza activity."<sup>2</sup>

Identification of areas with probable influenza activity allowed the State Department of Health to issue periodic reports on the status of the epidemic. These reports alerted the public to the presence of the epidemic and stressed the need for vaccinating persons in high-risk groups.

#### Related Studies

"The Migrant Health Act of 1962 notes that immigrant farm families have only tentative relationships to schools

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<sup>1</sup>Ibid., p. 608.

<sup>2</sup>Ibid., p. 607.

in the various communities in which they work as they follow the crops during the harvest season. This is also true of health and other services."<sup>1</sup> Poverty, mobility, differences in language, culture, beliefs and values and illiteracy help isolate these families and reduce their use of community resources. Many of these families have had little or no medical care and the school nurse may be the first contact with a health professional.

In the Fresno County area, general practitioners and pediatricians are looking to the school nurse for detection and referral of health problems, continuity of prescribed medical care and follow-up of recommendations.

In a Pilot Project in Fresno County the school nurse developed a record system that provided a means for recording medical orders and follow-up. This Health Data Form supplemented by a teacher's Health Observation Form became the content outline for the interviewing and perceptual skills developed by the nurse in the health roundups.

In preparation for the health roundup bilingual home-school liaison aides did door-to-door surveys in the camps and community, interpreted the health services to the

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<sup>1</sup>Mary G. Patterson, Ed.D., Ann Gavel, RN., Lillian Homes, and James A. Coffe, M.D., "Extending the Role of the School Nurse to Migrant Families," The Journal of School Health, XLI (October 1971): 421-24.

parents and encouraged them to come to the health roundup.

"The primary purpose of the roundup was to do health assessments, review immunizations of the children and the parents, plan for follow-up of the findings and recommendations and do health teaching."<sup>1</sup> Many fathers as well as children and mothers participated.

The school nurse pilot project demonstrated the effectiveness of extending the role of the nurse to the people who need them in a way they can accept. When services are limited to those people who are referred for care or to those who request care, people outside the system for whatever reason are missed.

In a study conducted with law students at Temple University the effects on learning of class attendance or non attendance were studied. In a health science class each student was presented with a list of specific course objectives in the form of study questions. The class was informed initially that these questions were to be utilized as a guide to study and to class discussion and a sample of the same questions would be given as the course examination. One student kept all attendance records and these records were not presented to the professor until after all final

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<sup>1</sup>Ibid., p. 421.

grades were turned in. A pretest was administered to the class to determine what to emphasize in class sessions. The same test was later readministered as the midterm examination. The final tests revealed that class attendance correlated .799 with proficiency gain on the test. "Classes attended by individual students varied from six to all twenty-one of the pre-midterm sessions with a mean attendance of 15.9 sessions and a standard deviation of 4.2. The investigators concluded that the class raw score mean on the test increased from 27.5 (standard deviation, 4.8) on the pretest to 41.8 (standard deviation, 8.5) on the posttest."<sup>1</sup> The study showed that class attendance had value over individual learning.

Hersov ties emotional problems of childhood and adolescence to recurrent or long absences from school and sees them as a constant problem for educational authorities and school teachers. "The commonest reason for absence is illness, for which about 80-90% of children are kept at home. Others are unlawfully withheld from school by their parents to help at home, to keep a parent company, or to do the

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<sup>1</sup>Frank H. Jenne, Ph. D., "Attendance and Student Proficiency Change in a Health Science Class," American Journal of School Health, XLIII (February, 1973): 125-126.

shopping for a phobic, house-bound mother."<sup>1</sup> The best known kind of illegal absence is truancy. Another reason for absence is the persistent inability to attend school, often starting with reluctance and progressing to total refusal to go to school or to remain in school. The child may insist he wants to go to school but when the time comes to go signs of panic occur. The child may complain of loss of appetite, nausea, vomiting, headache, abdominal pain, diarrhea, tachycardia, pain in legs, or even recurrent low grade fever. When school refusal assumes a somatic disguise careful assessment by the family physician is needed.

If symptoms disappear on weekends, holidays and when the decision is made to allow the child to remain home from school, the parent should suspect it is associated with school attendance. Sometimes the symptoms are fearfully anticipated, rather than experienced, causing the child to remain home from school in case he vomits or faints in special situations, such as a school assembly. This kind of behavior suggests an irrational fear of some feature of school. The child may complain about a critical teacher, unfriendly or bullying schoolmates, games, examinations, undressing in the showers, or rude talk by classmates. As

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<sup>1</sup>Lionel Hersov, M.D., M. R., C.P., O.P.M., "Emotional Problems of Childhood and Adolescence: School Refusal," British Medical Journal, (July 1972): 102-04.



the complaints continue, attention may be drawn to the fact that the reasons given by the child are not the real ones.

The younger child usually starts by a sudden and unexpected clinging to the mother, and a refusal to leave her to go into the school. The child seeks safety in the mother's company at home. He fears that harm may come to the mother while he is away from her. In these instances the inability to go to school is really a fear of leaving home because separation anxiety is aroused by attempts to do so.

The older child often withdraws from his peers and from group activities which he formerly enjoyed. He experiences a general dislike and a fear of the world outside. "In many instances without clear precipitants, inquiry may disclose complex earlier family psychopathology of long standing and evidence that the earlier personality development of the child has been deviant. Here the school refusal is an indicator of the child's inability to cope with the demands for an independent existence outside the family."<sup>1</sup>

When treatment begins an essential aim is early return to school. Once the condition has been diagnosed parents must take a firm stand instead of the customary bargaining. Parents need to be advised on how to handle the

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<sup>1</sup>Ibid., p. 102.

issue of going back to school. They must have a fixed day for the child to return to school and then must act firmly and consistently.

Schmitt wrote about school phobia from a pediatrician's point of view. He states that school phobia is frequently undiagnosed because it is such a frequent imitator of physical disorders. "School phobia is generally defined as poor school attendance, based on unwarranted fear of the school and/or inappropriate anxiety about leaving the home. The definition also stipulates that the time not spent in school must be spent at home. This is a sharp contrast to truancy, where the child deliberately avoids both school and home during the day."<sup>1</sup> The child rarely tells the parent he is afraid of school. He tells them he is sick, he complains of stomach ache, headache, nausea, dizziness, and vomiting. All of these symptoms are vague and nonspecific.

Three things, when in combination, should be considered by the physician as diagnostic of school phobia: "(1) vague physical symptoms, (2) normal physical and laboratory findings, (3) poor school attendance because of vague symptoms."<sup>2</sup> When a physician finds a child with vague

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<sup>1</sup>Barton D. Schmitt, M.D., "School Phobia-The Great Imitator," Pediatrics, XXXXVIII (September 1972): 433-40.

<sup>2</sup>Ibid.

symptoms he should ask the parent if the symptoms have made it hard for the child to get to school. This one question could prevent a large number of cases of school phobia.

Other symptoms such as sore throat, persistent cough, and hyperventilation may also be symptoms of school phobia. In a study by Kravitz on nine children with psychogenic cough tics, eight of the nine had school phobia.<sup>1</sup> These children were absent three to fifteen weeks due to a cough. A persistent cough frequently leads a physician to do prolonged and expensive workups such as laryngoscopy, and bronchoscopy. The nature of the cough plus the fact that the child is missing a great deal of school should be the key to diagnosing school phobia. The most constant feature in the nine children studied by Kravitz was that eight of them did not cough during their sleep.

"The gastrointestinal tract has been called the mirror of the emotions. It is the most common pathway of expression for anxiety. The classic chief complaint for the child with school phobia is recurrent abdominal pain."<sup>2</sup> This is usually the tense stomach that many normal people

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<sup>1</sup>Psychogenic Cough tic in Children and Adolescents, Vol. 8, "cited by" Barton D. Schmitt, School Phobia (H. Kravitz, 1969), p. 580.

<sup>2</sup>Ibid.

experience under stress. In a study by Millar on 27 patients with school phobia 5 were found to have peptic ulcers.<sup>1</sup>

Nausea frequently accompanies the abdominal pain. The dread of leaving home may cause a child to lose his appetite, however there is seldom any weight loss.

Separation from home anxiety is a more correct diagnosis for this disorder than school phobia. It is really the fear of leaving home that leads to the fear of going to school. Some physicians call it school refusal. "Normal separation anxiety is resolved by age five. In children with school phobia, separation anxiety persists due to an over dependent parent-child relationship. The overprotective, oversolicitous, overdependent parent is the mother in over 90% of cases."<sup>2</sup> The mother wants her child to experience no physical or emotional distress. The child does not learn to tolerate the frustrations of reality. The parent usually also has unconscious fears for her child's safety when they are apart. These fears are verbally or nonverbally communicated to the child therefore the child cannot be expected to tolerate separation if the parent can't.

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<sup>1</sup>Ibid.

<sup>2</sup>Peptic Ulcers in Children, Vol. 10, "cited by" Barton D. Schmitt, School Phobia (T. Millar, 1956), p. 43.

The primary physician plays the most important role in treating this problem. His immediate goal is to return the child to school as quickly as possible. The five steps which he must take to achieve this goal are:

1. "Give the patient an unequivocal clean bill of health.
2. Persuade the parents that immediate return to school is mandatory.
3. Review with the mother what to do if the child is "sick" or late on school mornings.
4. Designate the adult responsible for taking the child to school if he refuses to go.
5. Contact the school principal and nurse."<sup>1</sup>

If the parents can acknowledge their part in the dependency problem, they can usually disengage themselves from it. This can best be achieved if the parents become involved in an enjoyable life of their own. The father should make every effort to fulfill some of the wife's needs for companionship, so she will not need an overly close relationship with the child.

Most school phobias occur in six to ten year old children. The adolescent with chronic school phobia is usually seriously ill. He may be schizophrenic with paranoid

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<sup>1</sup>Ibid.

delusions about his peers or teachers and should be referred to a psychiatrist.<sup>1</sup>

In Philadelphia there are 49 neighborhood comprehensive health service programs being supported by the OEO. "All of these programs are directed at finding better systems for the delivery of health care, with primary emphasis on ambulatory care as contrasted with expensive inpatient hospital care."<sup>2</sup> It is being recommended that the regional medical program take on new, alternative responsibilities, such as primary care. More time and energy should be spent in finding better methods or systems for the delivery of health care.

The Philadelphia School Board of Education recognized the changing concepts and objectives of education between 1950 and the present time. In the past their policies had set apart the medical and counseling services from the basic core of education. Now that the concept of education is growth and development of each child, health and counseling must be an integral part of the basic core.

The school and community must not duplicate services such as Head Start and Community Mental Health and Retardation

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<sup>1</sup>Ibid., p. 437.

<sup>2</sup>Leroy E. Burney, M.D., "New Missions in Health Service," The Journal of School Health, XL (January 1970): 3-7.

Centers. The focus should be on child growth and development. The health needs of school children differ from one community to another and the delivery of care should be designed to meet the needs of the community it serves. School health services should take the responsibility for assuring continuity of care from screening to treatment.

"Within the past decade, teachers, school nurses, and other members of the school health team have become more aware of the problems of individual differences."<sup>1</sup> Although some health problems have been given attention in the school, sickle cell anemia has not. Students with Sickle Cell Anemia will be absent more than normal. Due to sickle cell crisis, a student will not be present at school a considerable number of days, especially during the winter months. Sickle cell anemia is found mostly among black people in this country, however many cases have been found among Greeks and Italians.<sup>2</sup>

Walker states that many psychological problems arise as a result of a child having sickle cell anemia one of which is school absenteeism. He further states that if the

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<sup>1</sup>James E. Walker, Ed.D., "What the School Health Team Should Know About Sickle Cell Anemia," The Journal of School Health, XLV (March 1975): 149-53.

<sup>2</sup>Ibid., p. 149.

needs of children are to be met the school should be responsible for screening and education of sickle cell anemia.<sup>1</sup>

A study of health records of New York City school children was undertaken to determine which characteristics among those noted on academic and health records could serve as pointers to physical or behavioral disabilities in the early adult ages. A group of 6,000 students was selected and they were traced forward to draft registration and qualifying examinations.

Sources of data from the school system included both health and academic records. Records move with the children therefore the records in middle and high school were cumulative and included information on all school medical examinations, school nurses' notes, academic ratings, teachers' notes, about behavior and adjustment, attendance records, home addresses, and number of children in the family.

"Five physical defects or characteristics (uncorrected vision score of 20/50 or worse, cardiac condition, asthma or hay fever, major accidental injury and health class placement) were found to be significantly associated with rejection."<sup>2</sup> In order to look at the relationship between

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<sup>1</sup>Ibid.

<sup>2</sup>Paul M. Densen, D.Sc., Doris B. Ullman, M.S., Ellen W. Jones, M.P.H., and Jules E. Vandow, M.D., M.P.H., "Childhood Characteristics as Indicators of Adult Health Status," Public Health Reports, LXXXV (November 1970): 891-96.



characteristics noted on school records and rejection rates by cause, the examinees in the study were regrouped into broad categories. The medical rejection rate was 37 percent greater for boys with problems than for boys without problems. The rate was highest in the group of boys with one or more of the physical defects described.

"Excessive absenteeism (an average of 30 days or more per year in the first nine grades of school), to a greater extent even than behavioral problems, was associated with other childhood characteristics selected for study; 87.4 percent of the examinees with excessive absenteeism were found to have another type or other types of problems."<sup>1</sup> The risk of rejection was related to the amount of time lost from school.

The results of this study show that indicators of future functional impairment can be identified in populations of school children. It suggests a need for refocusing school health programs on those situations in which children are experiencing problems in school, whether the problem appears to be physical, behavioral, or academic.

#### Summary

A review of the available literature revealed the following information concerning health-related school

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<sup>1</sup>Ibid., p. 992.

absences: (1) contagious diseases and respiratory infections are major causes of absenteeism in nursery school children; (2) chronic asthma, allergies, air pollution, school phobia and primary health care including immunizations are causes of absences in elementary school children; (3) sickle cell anemia, hemophilia, emotional problems, allergies, asthma and respiratory diseases are causes of absences which affect children in elementary, middle and high school; (4) community comprehensive health care clinics may promote or deter school absences; (5) school health records are good predictors of future health status; (6) humidification of classrooms may help prevent respiratory infections; (7) changes in public health nursing practice such as phone calls and home visits to parents decreases school absences; (8) community surveillance can track the geographic spread of influenza; (9) individual values such as the importance the family places on education greatly affects school attendance; (10) class attendance increases learning over individualized study.

Chapter 3 presents the methodology utilized in the study.

## CHAPTER III

### PROCEDURES FOR THE DEVELOPMENT OF THE STUDY

The purpose of this chapter is to describe in detail procedures utilized by the investigator in conducting this study, the general purpose of which was to determine the effect of health services on health-related student absences. The specific purpose was to determine if the health services provided in the Fort Worth Independent School District could significantly reduce health-related student absences. Selected factors to be considered were: (1) instrument to be used for collecting absentee data, (2) criteria for the selection of the schools to be included in the study, (3) instrument to be used for the evaluation of the performance of the nurse.

This chapter is divided into six sections: (1) Preliminary Procedures, (2) Selection of Instruments, (3) Selection of Schools, (4) Selection of Nurses, (5) Treatment of Data, and (6) Procedures followed in Preparation of the Final Written Report.

#### Preliminary Procedures

In preparation for the study the investigator collected and reviewed all available literature pertaining to

health-related school absences. Following the study of this literature it was determined that the investigator should: (1) select the schools to be used in the first phase of the study, (2) develop an instrument to be used for the collection of health related absentee data, (3) collect absentee data from the selected schools, (4) determine the criteria for the selection of nurses and schools to be included in the second phase of the study, (5) collect the data from the selected schools, (6) analyze the data, (7) write the final report.

#### Selection of the Instruments

The instruments developed by the investigator and used in this study are in the following areas: (1) nurse performance evaluation form, and (2) health-related absence form.

The health-related absence form was developed after the investigator established the following categories for the reporting of absences.

Accidents: An absence was classified an accident when it was reported as an athletic injury, auto accident, insect bite or sting, broken bone, sprain, burn, cycle accident, or fall. A category of "other" was included to allow for reporting kinds of accidents that were not listed on the report form.

Communicable Disease: An absence was classified a communicable disease when it was reported as chickenpox, german measles, head lice, body lice, nits, impetigo, measles, ringworm, scarlet fever, strep throat, sore throat, or tonsillities. A category of "other" was included to allow for reporting kinds of communicable diseases that were not listed on the report form.

Conditions or Symptoms: An absence was classified a condition or symptom when it was reported as diarrhea, dizziness, fatigue, fever, headache, nausea, vomiting, nose bleed, soreness or pain in limbs, joints, or muscles, and stomach ache. A category of "other" was included to allow for reporting kinds of conditions or symptoms that were not listed on the report form.

Dental: An absence was classified as dental when it was reported as a toothache, dental abscess, or any other condition involving teeth except fillings and extractions.

Ear Problem: An absence was classified an ear problem when it was reported as an ear infection, earache, or any other condition involving ears except surgery.

Eye Problem: An absence was classified an eye problem when it was reported as an eye infection, conjunctivitis, or any other problem involving the eye except surgery.

Immunizations: An absence was classified an immunization when it was reported as a tuberculin skin test or any immunization.

Operations: An absence was classified an operation when it was reported as a hernia repair, tonsilectomy, adenoidectomy, tooth extraction or tooth filled.

Respiratory Disease: An absence was classified a respiratory disease when it was reported as asthma, bronchitis, common cold, influenza, or pneumonia. A category of "other" was included to allow for reporting other kinds of respiratory problems that were not listed on the report form.

Routine Checkup: An absence was classified a routine checkup when it was a medical or dental checkup unrelated to physical or dental problem.

Skin Disorder: An absence was classified a skin disorder when it was reported as alopecia, scabies, dermatitis, or eczema. A category of "other" was included to allow for reporting other kinds of skin disorders that were not listed on the report form.

Miscellaneous: An absence was classified as miscellaneous when it was reported as a kidney infection, urinary tract infection, menstrual problem, or viral infection. A category of "other" was included to allow for reporting kinds of miscellaneous health problems that were not listed on the report form.

Criteria for the Selection  
of the Instruments

The investigator searched the literature and found no usable instrument for the evaluation of the performance of the school nurse. The criteria established for the development of the nurse evaluation form stipulated that:

1. The instrument must measure specific functions of the nurse.

2. The instrument must measure a variety of nursing functions.

3. The instrument must be easy to complete.

4. The instrument must be considered adequate by the investigator with respect to the reliability and validity established for this study. (see appendix A)

The investigator searched the literature and found no usable instrument for the collection of absentee data. The criteria established for the development of the health-related absence form stipulated that:

1. The instrument must be easy to complete.

2. The instrument must not be time consuming.

3. The instrument would include only health-related absence data.

4. The instrument must contain specific personal data; name, sex, race, and number of days absent.

5. The instrument must contain specific health reason for absence. It was determined that half days absence would be counted as one half day absent as opposed to one full day absent or one full day present. (see appendix B)

6. The instrument must be considered adequate by the investigator with respect to reliability and validity established for this study.

#### Selection of the Schools

The investigator selected ten schools at random from the 118 schools in the Fort Worth Independent School District. Sampling without replacement was used for the selection of the ten schools to be included in the first phase of the study.

Health-related absentee data were collected from the ten schools for a ten-week period. From these data the five schools that were the most alike in enrollment, ethnic composition, health-related absences, and socioeconomic background of the students were selected. From these five schools three were selected to be included in the study. This selection was determined by the criteria established for the selection of the nurses.

#### Selection of the Nurses

The criteria established for the selection of the nurses stipulated that:



1. The five nurses would be evaluated by their principal, nurse supervisor, and Director of Health Services.

2. Type X for this study would be a nurse who received a rating for all questions on the Likert-type questionnaire evaluation of most of the time or better from the principal, nurse supervisor and Director of Health Services.

3. Type X nurse must have provided or arranged for corrections for at least seventy-five percent of the students who have physical defects as reported on her nine weeks report.

4. Type Y for this study would be a nurse who received a rating of some of the time or better for all questions on the Likert-type questionnaire evaluation from the principal, nurse supervisor and the Director of Health Services.

5. Type Y nurse must have provided or arranged for corrections for at least forty percent of the students who have physical defects as reported on her nine weeks report.

Only one nurse in the five selected schools met the criteria established for type X nurse; therefore she was the type X nurse in the study. Three nurses met the criteria established for type Y nurse. The two type Y nurses to be included in the study were selected because their

schools were the most alike in enrollment, ethnic composition, and socioeconomic background.

#### Treatment of the Data

Absence data were collected in each school for Phase I of the study which was for a ten-week period from September to November, 1975. This data permitted a comparison for data collected in Phase II which was for a ten-week period from January through March, 1975.

The health-related cause of student absence was determined by the nurse through telephone calls to the parents, home visits to the residence, and by parents written explanation of students' absence. If a student missed a portion of a school day greater than one hour, he was considered absent one half day. The duration of the absence was measured in official school days only.

In both Phase I and Phase II of the study the nurse contacted parents to determine the cause of the absence. In Phase II the nurse concentrated on the reduction of health-related absences. The action taken by the nurse was determined by the cause of the absence, the knowledge, skill and concern of the nurse, and the acceptance of nurse intervention by the parent. The intervention procedure might be information to the parent concerning treatment of the students' health problem, counseling with the parent concerning

the method of treatment and care of the health problem at home, counseling with a parent concerning the time period a student should remain away from school finding a source for the correction of the students' medical problem, providing transportation for the child and/or parent to the treatment facility, or obtaining monies to pay for the needed treatment.

At the beginning of the study it was determined that during Phase II the nurse would continue all functions usually performed by the nurses in the Fort Worth Independent School District except health education programs. During this ten-week period she made no special health education program presentations to the students in any classroom. This was done to maintain as much consistency within the study as possible.

Absence data were recorded by cause for each of the schools. Raw data were tabulated for each school in the study. A mean absence score was calculated for each school in phase one in order to provide a basis for comparison of absences in phase two. A tally of the percent of increases and decreases in absences was made, and a Chi square test was conducted.

Procedures Followed in the Preparation  
of the Final Written Report

The investigator prepared a written report of the study chapter by chapter and submitted one chapter at a time to each member of the Dissertation committee for suggestions and corrections. Each chapter was revised as recommended by the committee and resubmitted to each member of the Dissertation committee for approval. To complete the study, the investigator included Recommendations for Further Study, a Bibliography, and an Appendix.

Summary

In this chapter the investigator discussed the procedure for the development of the study under the headings: (1) Preliminary Procedures, (2) Selection of Instruments, (3) Selection of Schools, (4) Selection of Nurses, (5) Treatment of Data, and (6) Procedures Followed in Preparation of the Final Written Report.

Three schools were selected from the 118 schools in the Fort Worth Independent School District. Three nurses were selected according to specified criteria. Data were collected concerning health-related school absences during the first phase of the study permitting a comparison of the health-related absences in the second phase of the study.

Data collected were treated statistically by means of the Chi-square technique.

Chapter 4 includes a presentation of the data.

## CHAPTER IV

### PRESENTATION OF THE FINDINGS

#### OF THE STUDY

The purpose of the study was to determine if the health services provided in the Fort Worth Independent School District could significantly reduce health-related student absences. There were three elementary schools involved in the study with a total enrollment of 1154 students. School A was a control school and had the services of a half time type Y nurse. School B was an experimental school and had the full time services of a type Y nurse. School C was a control school and had the services of a half time type X nurse.

Health-related absence data were collected for two ten-week periods. The data collected during the first ten-week period permitted a comparison of the health-related absences in the second ten-week period. The chapter is divided into three sections: (1) Description of the Students, (2) Health-Related Absence Data, and, (3) Summary.

#### Description of the Students

In School A there were 346 students in grades Kindergarten through 5. Of these 346 students 123 were Black, 184 were Mexican American, and 39 were White.

In School B there were 416 students in grades Kindergarten through 5. Of these 416 students 121 were Black, 285 were Mexican American and 16 were White.

In School C there were 392 students in grades Kindergarten through 5. Of these 392 students 174 were Black, 149 were Mexican American, and 59 were White.

In table 1 the number of students by schools and race are depicted.

TABLE 1  
NUMBER OF STUDENTS BY RACE

| School | Black | Mexican<br>American | White | Totals |
|--------|-------|---------------------|-------|--------|
| A      | 123   | 184                 | 39    | 346    |
| B      | 121   | 285                 | 10    | 416    |
| C      | 174   | 159                 | 59    | 392    |
| Totals | 418   | 628                 | 108   | 1,154  |

#### Health-Related Absence Data

The school nurse used the Health-Related School Absence Form for reporting absences (see appendix A).

Tables 2, 3, and 4 reveal the number of students absent for health-related causes by school, sex and percent of total days absent.

TABLE 2  
HEALTH-RELATED ABSENCES BY SEX AND PERCENT  
OF TOTAL ABSENCES IN A TEN-WEEK PERIOD

| School | Phase | Sex    | Number of Absences | Percent |
|--------|-------|--------|--------------------|---------|
| A      | I     | Female | 123                | 16.4    |
|        |       | Male   | 96                 | 13.6    |
| A      | II    | Female | 110                | 13.5    |
|        |       | Male   | 124                | 15.5    |

A study of table 2 reveals that the number of students absent in School A during Phase I for health-related causes consisted of 123 females and 96 males. This represented 16.4 percent of the total days absent for females, and 13.6 percent of the total days absent for males.

In Phase II the number of students absent for health-related causes consisted of 110 females and 124 males. This represented 13.5 percent of the total days absent for females, and 15.5 percent of the total days absent for males.

A study of table 3, page 76, reveals that the number of students absent in School B during Phase I for health-related causes consisted of 164 females and 145 males. This



TABLE 3  
HEALTH-RELATED ABSENCES BY SEX AND PERCENT  
OF TOTAL ABSENCES IN A TEN-WEEK PERIOD

| School | Phase | Sex    | Number of Absences | Percent |
|--------|-------|--------|--------------------|---------|
| B      | I     | Female | 164                | 23.5    |
|        |       | Male   | 145                | 16.9    |
| B      | II    | Female | 152                | 20.1    |
|        |       | Male   | 150                | 17.3    |

represented 23.5 percent of the total days absent for females, and 16.9 percent of the total days absent for males.

In Phase II the number of students absent for health-related causes consisted of 152 females and 150 males. This represented 20.1 percent of the total days absent for females and 17.3 percent of the total days absent for males.

A study of table 4, page 77, reveals that the number of students absent in School C during Phase I for health-related causes consisted of 78 female and 88 males. This represented 20.7 percent of the total days absent for females, and 25.2 percent of the total days absent for males.

In Phase II the number of students absent for health-related causes consisted of 103 females and 92 males.

TABLE 4  
HEALTH-RELATED ABSENCES BY SEX AND PERCENT  
ON TOTAL ABSENCES IN A TEN-WEEK PERIOD

| School | Phase | Sex    | Number of Absences | Percent |
|--------|-------|--------|--------------------|---------|
| C      | I     | Female | 78                 | 20.7    |
|        |       | Male   | 88                 | 25.2    |
| C      | II    | Female | 103                | 25.3    |
|        |       | Male   | 92                 | 16.6    |

This represented 25.3 percent of the total days absent for females and 16.6 percent of the total days absent for males.

Tables 5, 6, and 7 show the number of students and the number of days absent for health-related causes by major categories.

Table 5, page 78, illustrates that in School A during Phase I there were 25 students absent for 79 days due to accidents which represented 3.3 percent of the total absences; 8 students absent 20.5 days due to communicable diseases which represented .8 percent of the total absences; 108 students absent 212 days due to a variety of conditions or symptoms which represented 8.7 percent of the total absences; 7 students absent 16 days due to dental problems

TABLE 5

COMPARISON OF HEALTH-RELATED ABSENCES IN PHASE I AND  
PHASE II BY MAJOR CATEGORIES - SCHOOL A

| Cause                  | Phase | Number of<br>Students<br>Absent | Days<br>Absent |
|------------------------|-------|---------------------------------|----------------|
| Accidents              | I     | 25                              | 79.0           |
|                        | II    | 25                              | 67.0           |
| Communicable diseases  | I     | 8                               | 20.5           |
|                        | II    | 15                              | 51.0           |
| Conditions or symptoms | I     | 108                             | 212.0          |
|                        | II    | 137                             | 208.0          |
| Dental                 | I     | 7                               | 16.0           |
|                        | II    | 2                               | 2.0            |
| Ear problems           | I     | 7                               | 18.5           |
|                        | II    | 8                               | 15.0           |
| Eye problems           | I     | 5                               | 8.0            |
|                        | II    | 1                               | 1.0            |
| Immunizations          | I     | 29                              | 38.5           |
|                        | II    | 14                              | 16.0           |
| Miscellaneous          | I     | 8                               | 12.0           |
|                        | II    | 6                               | 16.0           |
| Operations             | I     | 3                               | 3.0            |
|                        | II    | 0                               | 0.0            |
| Respiratory diseases   | I     | 100                             | 267.0          |
|                        | II    | 102                             | 209.0          |
| Routine checkups       | I     | 17                              | 19.5           |
|                        | II    | 13                              | 17.5           |
| Skin Disorders         | I     | 14                              | 32.0           |
|                        | II    | 7                               | 27.0           |

which represented .7 percent of the total absences; 7 students absent 18.5 days due to ear problems which represented .8 percent of the total absences; 5 students absent 8 days due to eye problems which represented .3 percent of the total absences; 29 students absent 38.5 days due to immunizations which represented 1.6 percent of the total absences; 8 students absent 12 days due to miscellaneous health problems which represented .5 percent of the total absences; 3 students absent 3 days due to operations which represented .1 percent of the total absences; 100 students absent 267 days due to respiratory problems which represented 11 percent of the total absences; 17 students absent 19.5 days due to routine checkups which represented .8 percent of the total absences; and 14 students absent 32 days due to skin disorders which represented 1.3 percent of the total absences.

In Phase II there were 25 students absent 67 days due to accidents which represented 3.1 percent of the total absences; 15 students absent 51 days due to communicable diseases which represented 2.3 percent of the total absences; 137 students absent 208 days due to various conditions or symptoms which represented 9.6 percent of the total absences; 2 students absent 2 days due to dental problems which represented .8 percent of the total absences; 8 students absent 15 days due to ear problems which represented .7 percent of

the total absences; 1 student absent 1 day due to an eye problem which represented .0 percent of the total absences; 14 students 16 days due to immunizations which represented 17 percent of the total absences; 6 students absent 16 days due to miscellaneous health problems which represented .7 percent of the total absences; 102 students absent 209 days due to respiratory problems which represented 9.6 percent of the total absences; 13 students absent 17.5 days due to routine checkups which represented .8 percent of the total absences; and 7 students absent 27 days due to skin disorders which represented 1.2 percent of the total absences.

Table 6, page 81, illustrates that in School B during Phase I there were 19 students absent 30 days due to accidents which represents 1.2 percent of the total absences; 49 students absent 227 days due to communicable diseases which represented 8.8 percent of the total absences; 134 students absent 250.5 days due to various conditions or symptoms which represented 9.8 percent of the total absences; 5 students absent 10 days due to dental problems which represented .4 percent of the total absences; 10 students absent 14 days due to ear problems which represented .5 percent of the total absences; 5 students absent 13 days due to eye problems which represented .5 percent of the total absences; 16 students absent 27 days due to immunizations which represented 1.1 percent of the total absences. 1 student absent

TABLE 6

COMPARISON OF HEALTH-RELATED ABSENCES IN PHASE I AND  
PHASE II BY MAJOR CATEGORIES - SCHOOL B

| Cause                  | Phase | Number of<br>Students<br>Absent | Days<br>Absent |
|------------------------|-------|---------------------------------|----------------|
| Accidents              | I     | 19                              | 30.0           |
|                        | II    | 27                              | 52.0           |
| Communicable diseases  | I     | 49                              | 227.0          |
|                        | II    | 33                              | 122.0          |
| Conditions or symptoms | I     | 134                             | 250.5          |
|                        | II    | 129                             | 178.0          |
| Dental                 | I     | 5                               | 10.0           |
|                        | II    | 3                               | 3.0            |
| Ear problems           | I     | 10                              | 14.0           |
|                        | II    | 13                              | 18.0           |
| Eye problems           | I     | 5                               | 13.0           |
|                        | II    | 6                               | 14.0           |
| Immunizations          | I     | 16                              | 27.0           |
|                        | II    | 14                              | 16.0           |
| Miscellaneous          | I     | 1                               | 3.0            |
|                        | II    | 5                               | 19.0           |
| Operations             | I     | 1                               | 9.0            |
|                        | II    | 0                               | 0.0            |
| Respiratory diseases   | I     | 163                             | 394.0          |
|                        | II    | 184                             | 387.0          |
| Routine checkup        | I     | 23                              | 32.0           |
|                        | II    | 35                              | 54.0           |
| Skin disorder          | I     | 10                              | 29.0           |
|                        | II    | 5                               | 13.0           |

3 days due to miscellaneous health problems which represented .1 percent of the total absences; 1 student absent 9 days due to an operation which represented .4 percent of the total absences; 163 students absent 394 days due to respiratory problems which represented 15.3 percent of the total absences; 23 students absent 32 days due to routine checkups which represented 1.2 percent of the total absences; and 10 students absent 29 days due to skin disorders which represented 1.1 percent of the total absences.

In Phase II there were 27 students absent 52 days due to accidents which represented 2.2 percent of the total absences; 33 students absent 122 days due to communicable diseases which represented 5.2 percent of the total absences; 129 students absent 178 days due to various conditions or symptoms which represented 7.6 percent of the total absences; 3 students absent 3 days due to dental problems which represented .1 percent of the total absences; 13 students absent 18 days due to ear problems which represented .8 percent of the total absences; 6 students absent 14 days due to eye problems which represented .6 percent of the total absences; 14 students absent 16 days due to immunizations which represented .7 percent of the total absences; 5 students absent 19 days due to miscellaneous health problems which represented .8 percent of the total absences; 184 students absent

387 days due to respiratory problems which represented 16.5 percent of the total absences; 35 students absent 54 days due to routine checkups which represented 2.3 percent of the total absences; and 5 students absent 13 days due to skin disorders which represented .6 percent of the total absences.

Table 7, page 84, illustrates that in School C during Phase I there were 6 students absent 38 days due to accidents which represented 2.3 percent of the total absences; 7 students absent 42 days due to communicable diseases which represented 2.6 percent of the total absences; 81 students absent 224 days due to a variety of conditions or symptoms which represented 13.7 percent of the total absences; 1 student absent 4 days due to a dental problem which represented .2 percent of the total absences; 5 students absent 14 days due to ear problems which represented .9 percent of the total absences; 4 students absent 36 days due to eye problems which represented 2.2 percent of the total absences; 9 students absent 32 days due to miscellaneous health problems which represented 2.0 percent of the total absences; 1 student absent 231 days due to respiratory problems which represented 20.3 percent of the total absences; and 12 students absent 24 days due to routine checkups which represented 1.5 percent of the total absences.

During Phase II there were 26 students absent 73.5 days due to accidents which represented 5.0 percent of the



TABLE 7

COMPARISON OF HEALTH-RELATED ABSENCES IN PHASE I AND  
PHASE II BY MAJOR CATEGORIES - SCHOOL C

| Cause                  | Phase | Number of<br>Students<br>Absent | Days<br>Absent |
|------------------------|-------|---------------------------------|----------------|
| Accidents              | I     | 6                               | 38.0           |
|                        | II    | 26                              | 73.5           |
| Communicable diseases  | I     | 7                               | 42.0           |
|                        | II    | 5                               | 34.5           |
| Conditions or symptoms | I     | 81                              | 224.0          |
|                        | II    | 89                              | 128.5          |
| Dental                 | I     | 1                               | 4.0            |
|                        | II    | 6                               | 8.0            |
| Ear problems           | I     | 5                               | 14.0           |
|                        | II    | 1                               | 2.0            |
| Eye problems           | I     | 4                               | 36.0           |
|                        | II    | 4                               | 8.5            |
| Immunizations          | I     | 0                               | 0.0            |
|                        | II    | 20                              | 33.0           |
| Miscellaneous          | I     | 9                               | 32.0           |
|                        | II    | 0                               | 0.0            |
| Operations             | I     | 1                               | 4.0            |
|                        | II    | 2                               | 12.0           |
| Respiratory diseases   | I     | 86                              | 231.0          |
|                        | II    | 112                             | 265.0          |
| Routine checkup        | I     | 12                              | 24.0           |
|                        | II    | 21                              | 26.0           |
| Skin disorders         | I     | 0                               | 0.0            |
|                        | II    | 7                               | 19.0           |

total absences; 5 students absent 34.5 days due to communicable diseases which represented 2.4 percent of the total absences; 89 students absent 128.5 days due to a variety of conditions or symptoms which represented 8.8 percent of the total absences; 6 students absent 8 days due to dental problems which represented .5 percent of the total absences; 1 student absent 2 days due to an ear problem which represented .1 percent of the total absences; 4 students absent 8.5 days due to eye problems which represented .6 percent of the total absences; 20 students absent 33 days due to immunizations which represented 2.3 percent of the total absences; 2 students absent 12 days due to operations which represented .8 percent of the total absences; 112 students absent 265 days due to respiratory problems which represented 18.2 percent of the total absences; 21 students absent 26 days due to routine checkups which represented 1.8 percent of the total absences; and 7 students absent 19 days due to skin disorders which represented 1.3 percent of the total absences.

From the graph depicting a comparison of the absences during Phase I and Phase II in School A, presented as figure 1 on page 86, it was found that the total number of days absent for health-related causes decreased during Phase II in the areas of accidents from 79 days to 67 days; conditions or symptoms from 212 to 208; dental from 16 to 2; ear problems from 18.5 to 15; eye problems from 8 to 1; immunizations

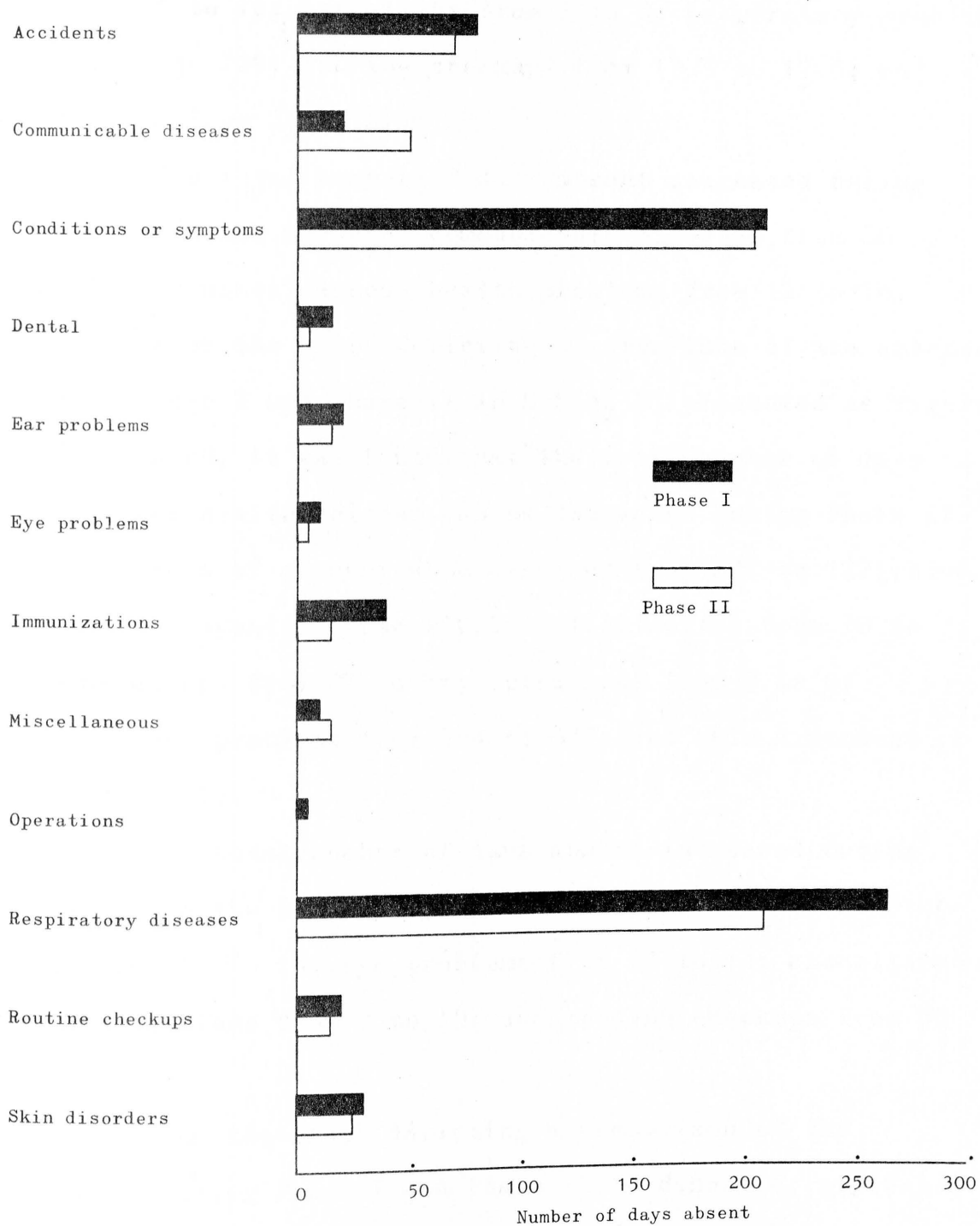


Fig. 1. Health-related absences by major categories in School A.

from 38.5 to 16; operations from 3 to 0; respiratory problems from 267 to 209; routine checkups from 19.5 to 17.5; and skin disorders from 32 to 27.

The total number of days absent increased during Phase II in the areas of communicable diseases from 20.5 to 51; and miscellaneous health problems from 12 to 16.

From the graph depicting a comparison of the absences during Phase I and Phase II in School B, presented as figure 2 on page 88, it was found that the total number of days absent for health-related causes decreased during Phase II in the areas of communicable diseases from 227 to 122; conditions or symptoms from 250.5 to 178; dental from 10 to 3; immunizations from 27 to 16; operations from 9 to 0; respiratory problems from 394 to 387; and skin disorders from 29 to 13.

The total number of days absent increased during Phase II in the areas of accidents from 30 to 52; ear problems from 14 to 18; eye problems from 13 to 14; miscellaneous health problems from 3 to 19; and routine checkups from 32 to 54.

From the graph depicting a comparison of the absences during Phase I and Phase II in School C, presented as figure 3, on page 89, it was found that the total number of days absent for health-related causes decreased during

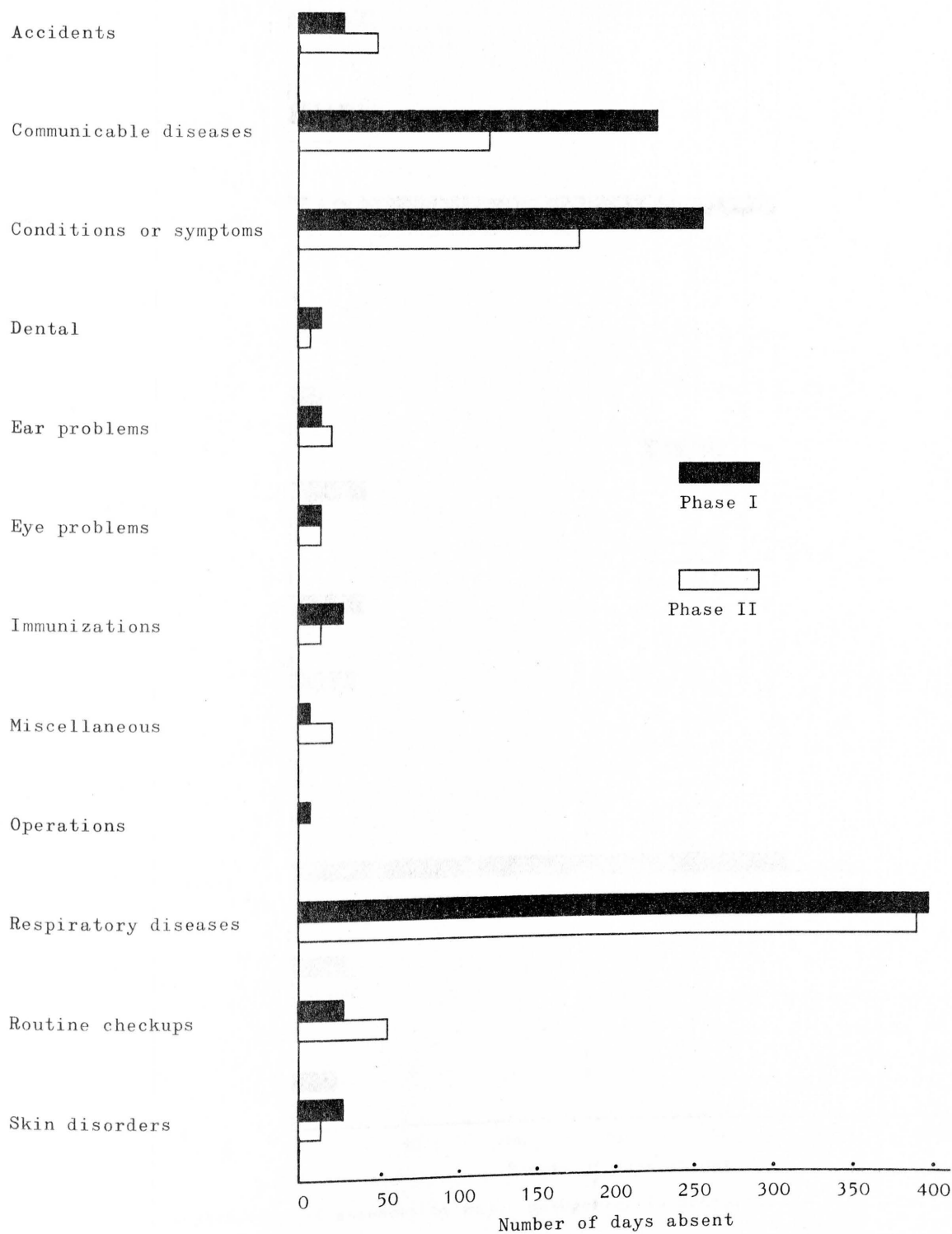


Fig. 2. Health-related absences by major categories in School B.

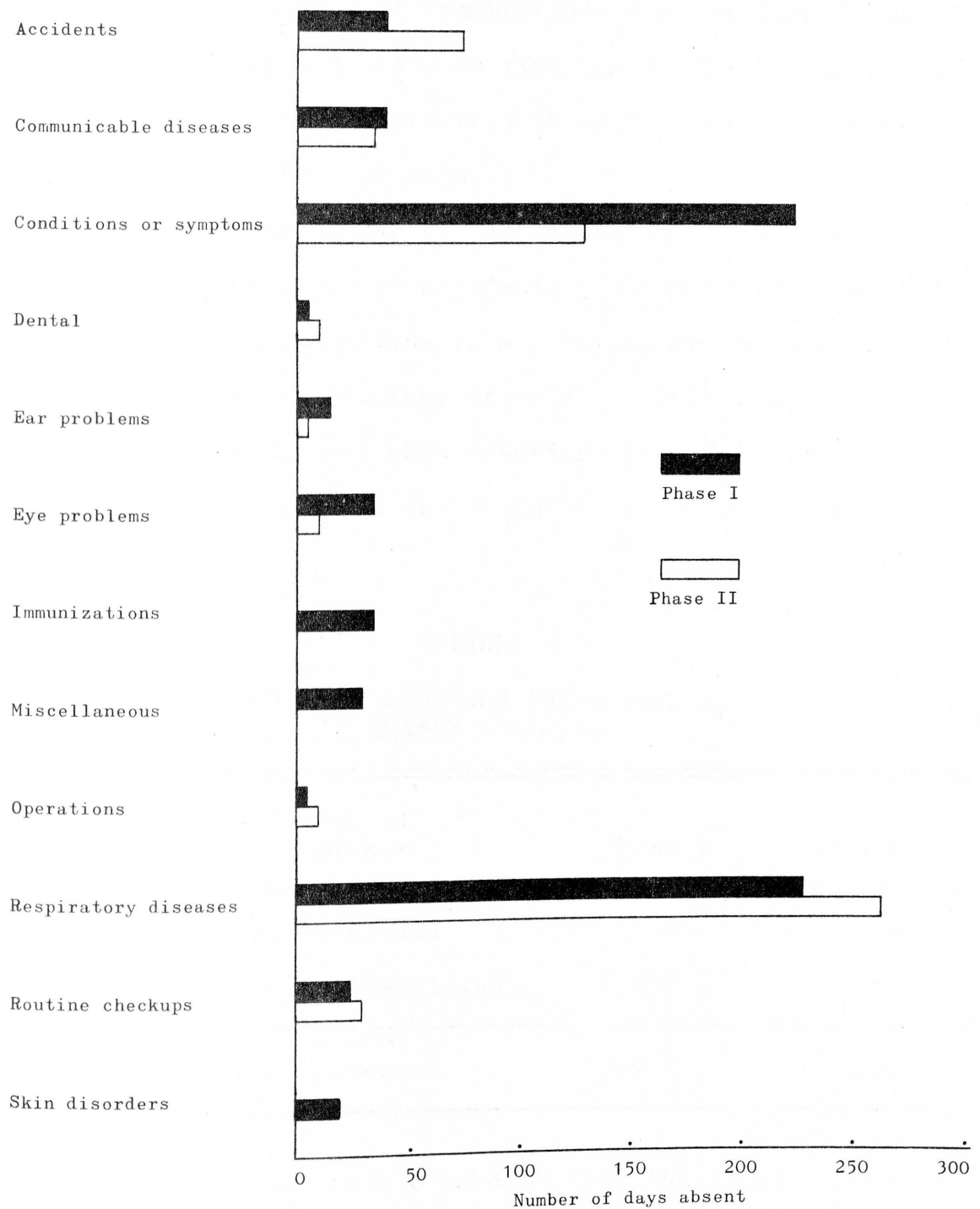


Fig. 3. Health-related absences by major categories in School C.

Phase II in the areas of communicable diseases from 42 to 34.5; conditions and symptoms from 224 to 128.5; ear problems from 14 to 2; eye problems from 36 to 8.5; miscellaneous health problems from 32 to 0.

The total number of days absent increased during Phase II in the areas of accidents from 38 to 73.5; dental from 4 to 8; immunizations from 0 to 33; operations from 4 to 12; respiratory problems from 231 to 265; routine check-ups from 24 to 26; and skin disorders from 0 to 19.

In tables 8, 9, and 10 the total absences are depicted.

TABLE 8  
TYPES OF ABSENCES FOR SCHOOL A  
PHASES I AND II

| School | Type of Absence    | Phase I | Phase II |
|--------|--------------------|---------|----------|
| A      | Health-related     | 727     | 630      |
| A      | Non health-related | 1,697   | 1,541    |
|        | Total absences     | 2,424   | 2,171    |

A study of table 8 reveals that the total number of absence days in School A during Phase I was 2424. Of these

2424 absence days 727 were health-related and 1697 were non health-related.

In Phase II the total number of absence days was 2171. Of these 2171 absence days 630 were health-related and 1541 were non health-related.

TABLE 9  
TYPES OF ABSENCES FOR SCHOOL B  
PHASES I AND II

| School | Type of Absence    | Phase I | Phase II |
|--------|--------------------|---------|----------|
| B      | Health-related     | 1,038.5 | 876.0    |
| B      | Non health-related | 1,528.5 | 1,469.0  |
|        | Total absences     | 2,567.0 | 2,345.0  |

A study of table 9 reveals that the total number of absence days in School B during Phase I was 2567. Of these 2567 absence days 1038.5 were health-related and 1528.5 were non health-related.

In Phase II the total number of absence days was 2345. Of these 2345 absence days 876 were health-related and 1469 were non health-related.

A study of table 10, page 92, reveals that the total number of absence days in School C during Phase I was 1632.



TABLE 10  
TYPES OF ABSENCES FOR SCHOOL C  
PHASES I AND II

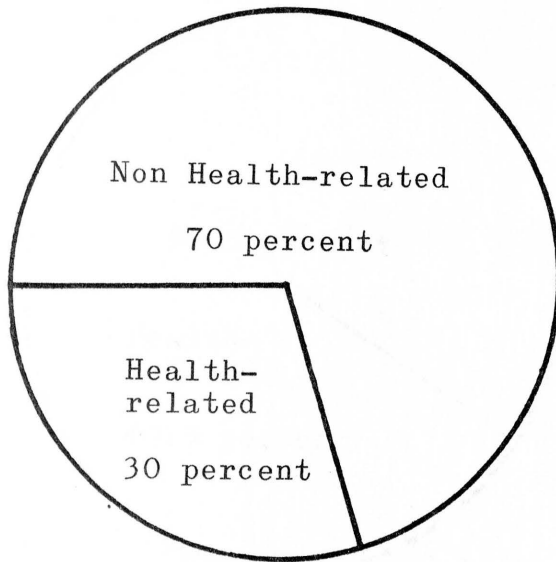
| School | Type of Absence    | Phase I | Phase II |
|--------|--------------------|---------|----------|
| C      | Health-related     | 749     | 610      |
| C      | Non health-related | 883     | 846      |
|        | Total absences     | 1,632   | 1,456    |

Of these 1632 absence days 749 were health-related and 883 were non health-related.

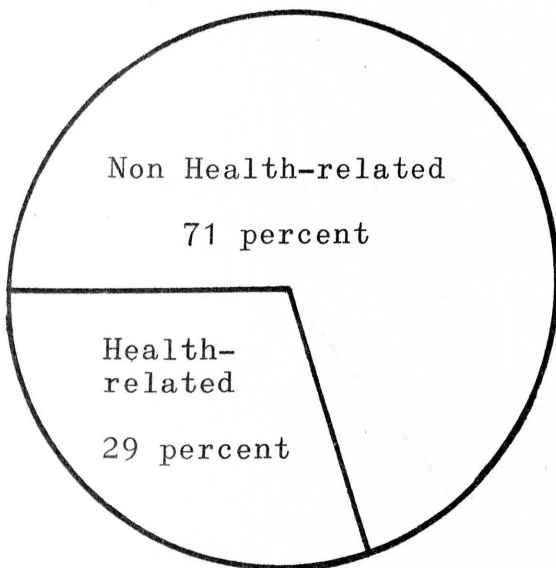
In Phase II the total number of absence days was 1456. Of these 1456 absence days 610 were health-related and 846 were non health-related.

From the graph depicting the percent of total absences in School A, presented as figure 4 on page 93, it was found that in Phase I 30 percent of the total absences were health-related and 70 percent were non health-related. In Phase II 29 percent of the total absences were health-related and 71 percent were non health-related.

From the graph depicting the percent of total absences in School B, presented as figure 5 on page 94, it was found that in Phase I 40.5 percent of the total absences



SCHOOL A  
Phase I



SCHOOL A  
Phase II

Fig. 4. Types of absences for School A by percent, Phases I and II.

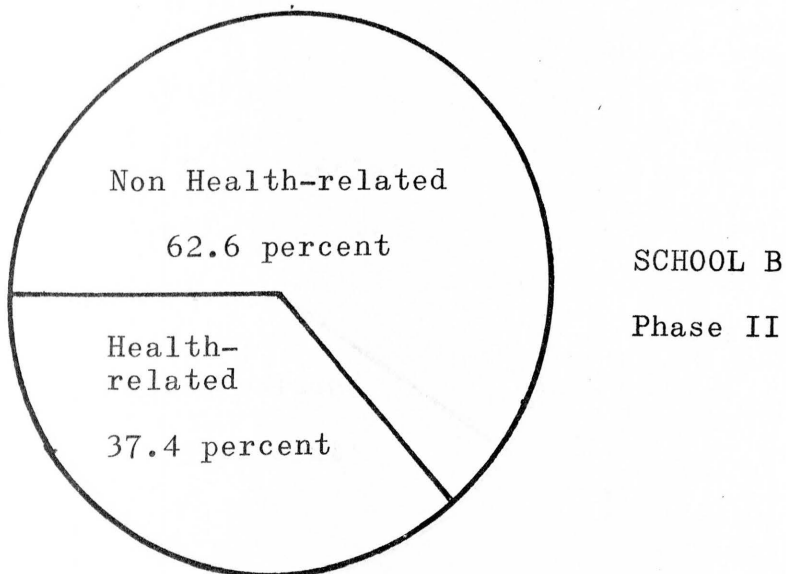
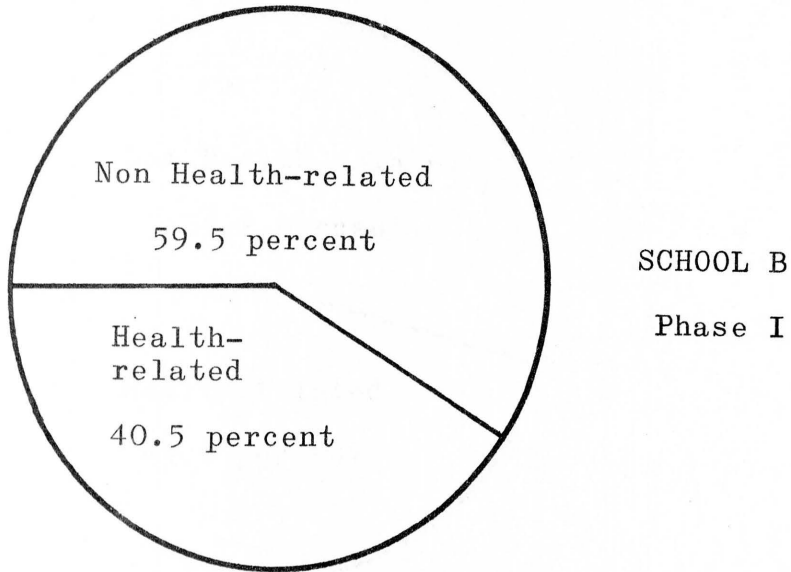


Fig. 5. Types of absences for School B by percent, Phases I and II.

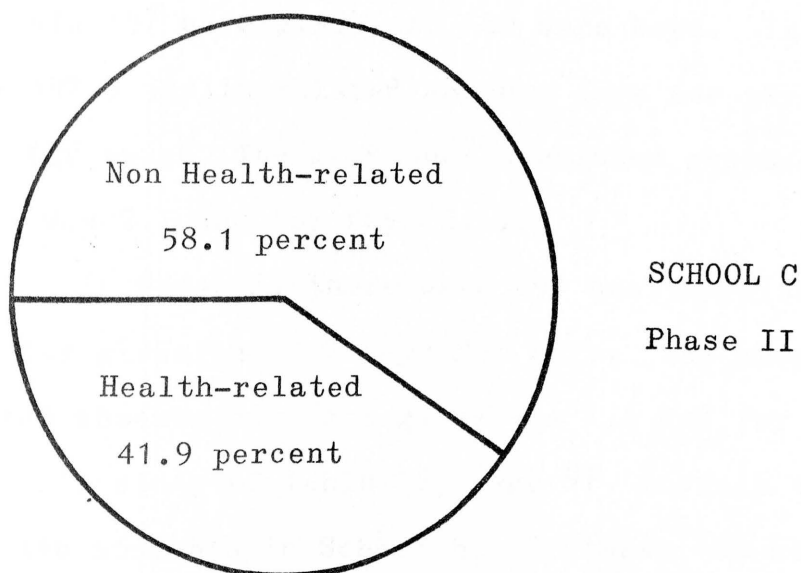
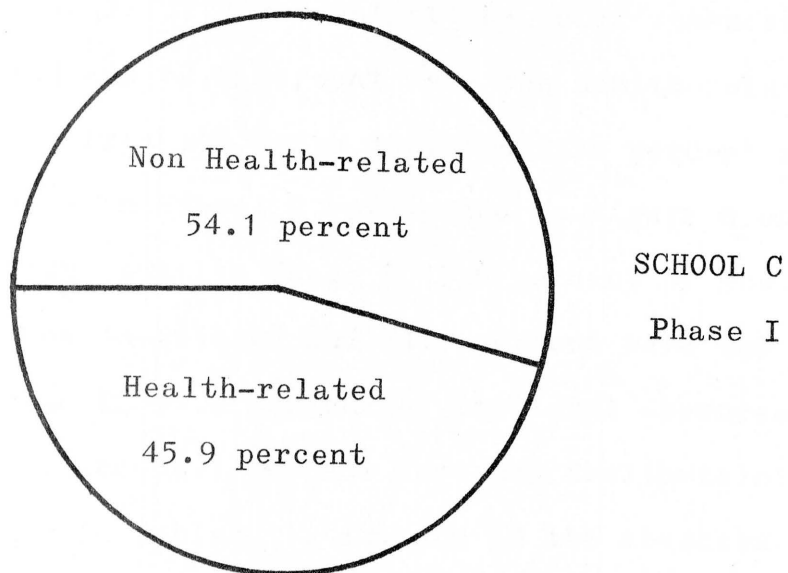


Fig. 6. Types of absences for School C by percent, Phases I and II.

were health-related and 59.5 percent were non health-related. In Phase II 37.4 percent of the total absences were health-related and 62.6 percent were non health-related.

From the graph depicting the percent of total absences in School C, presented as figure 6 on page 95, it was found that in Phase I 45.9 percent of the total absences were health-related and 54.1 percent were non health-related. In Phase II 41.9 percent of the total absences were health-related and 58.1 percent were non health-related.

In Tables 11, 12, and 13 the absences by sex and mean are depicted. A study of table 11 on page 97, reveals that there were 346 students in School A. Of these 346 students 187 were girls and 159 were boys. In Phase I there were 397.5 health-related absence days for girls and 329.5 days for boys. The mean health-related absence days for girls was 2.1 and for boys 2.1.

In Phase II there were 293 health-related absence days for girls and 337 days for boys. The mean health-related absence days for girls was 1.6 and for boys 2.1.

A study of table 12, page 97, reveals that there were 416 students in School B. Of these 416 students 218 were girls and 198 were boys. In Phase I there were 604 health-related absence days for girls and 434.5 days for boys. The mean health-related absence days for girls was 2.8 and for boys 2.1.

TABLE 11

## ABSENCES BY SEX AND MEAN FOR SCHOOL A

| Sex             | Number of Students | Number of Absences | Total Days Absent | Mean Absence |
|-----------------|--------------------|--------------------|-------------------|--------------|
| <u>Phase I</u>  |                    |                    |                   |              |
| F               | 187                | 123                | 397.5             | 2.1          |
| M               | 159                | 96                 | 329.5             | 2.1          |
| <u>Phase II</u> |                    |                    |                   |              |
| F               | 187                | 110                | 293.0             | 1.6          |
| M               | 159                | 124                | 337.0             | 2.1          |

TABLE 12

## ABSENCES BY SEX AND MEAN FOR SCHOOL B

| Sex             | Number of Students | Number of Absences | Total Days Absent | Mean Absence |
|-----------------|--------------------|--------------------|-------------------|--------------|
| <u>Phase I</u>  |                    |                    |                   |              |
| F               | 218                | 164                | 604.0             | 2.8          |
| M               | 198                | 145                | 434.5             | 2.1          |
| <u>Phase II</u> |                    |                    |                   |              |
| F               | 218                | 152                | 471.0             | 2.2          |
| M               | 198                | 150                | 405.0             | 2.0          |

TABLE 13  
ABSENCES BY SEX AND MEAN FOR SCHOOL C

| Sex             | Number of<br>Students | Number of<br>Absences | Total Days<br>Absent | Mean<br>Absence |
|-----------------|-----------------------|-----------------------|----------------------|-----------------|
| <u>Phase I</u>  |                       |                       |                      |                 |
| F               | 194                   | 78                    | 335.0                | 1.7             |
| M               | 198                   | 88                    | 411.0                | 2.0             |
| <u>Phase II</u> |                       |                       |                      |                 |
| F               | 194                   | 92                    | 368.5                | 1.9             |
| M               | 198                   | 103                   | 241.5                | 1.2             |

In Phase II there were 471 health-related absence days for girls and 405 days for boys. The mean health-related absence days for girls was 2.2 and for boys 2.0.

A study of table 13, presented above, reveals that there were 392 students in School C. Of these 392 students, 194 were girls and 198 were boys. In Phase I there were 335 health-related absence days for girls and 411 for boys. The mean health-related absence days for girls was 1.7 and for boys 2.0.

In Phase II there were 368.5 health-related absence days for girls and 241.5 days for boys. The mean health-related absence days for girls was 1.9 and for boys 1.2.

TABLE 14  
MEAN HEALTH-RELATED ABSENCE

| Phase           | Number of<br>Students | Number of<br>Absences | Absence Days | Mean<br>Absence |
|-----------------|-----------------------|-----------------------|--------------|-----------------|
| <u>School A</u> |                       |                       |              |                 |
| I               | 346                   | 219                   | 727.0        | 2.1             |
| II              | 346                   | 234                   | 630.0        | 1.8             |
| <u>School B</u> |                       |                       |              |                 |
| I               | 416                   | 309                   | 1,038.5      | 2.5             |
| II              | 416                   | 302                   | 876.0        | 2.1             |
| <u>School C</u> |                       |                       |              |                 |
| I               | 392                   | 166                   | 749.0        | 1.9             |
| II              | 392                   | 195                   | 610.0        | 1.6             |

A study of table 14, shown above, reveals that there were 346 students in School A. In Phase I there were 727 absence days for a mean absence of 2.1 days. In Phase II there were 630 absence days for a mean absence of 1.8 days.

In School B there were 416 students. In Phase I there were 1038.5 absence days for a mean absence of 2.5 days. In Phase II there were 876 absence days for a mean absence of 2.1 days.



In School C there were 392 students. In Phase I there were 749 absence days for a mean absence of 1.9 days. In Phase II there were 610 absence days for a mean absence of 1.6 days.

Chi-square computations were made to analyze absence data from the three schools. Table 15 depicts the summary of the decrease in ratio of absence-to-total days.

TABLE 15  
CHANGES IN RATIOS OF ABSENCE-TO-TOTAL DAYS

| Phase           | Number<br>of<br>Students | Total<br>Days | Total<br>Absences | Ratio of<br>Absences/<br>Total Days | Significance<br>of Change<br>from Phase I<br>to Phase II |
|-----------------|--------------------------|---------------|-------------------|-------------------------------------|--|
| <hr/>           |                          |               |                   |                                     |  |
| <u>School A</u> |                          |               |                   |                                     |  |
| I               | 346                      | 16,954        | 727               | .043                                | t = 2.86   |
| II              | 346                      | 16,954        | 630               | .037                                |  |
| <u>School B</u> |                          |               |                   |                                     |  |
| I               | 416                      | 20,384        | 1,038             | .051                                | t = 3.97   |
| II              | 416                      | 20,384        | 876               | .043                                |  |
| <u>School C</u> |                          |               |                   |                                     |  |
| I               | 392                      | 19,208        | 749               | .039                                | t = 4.18   |
| II              | 392                      | 19,208        | 610               | .032                                |  |

A study of table 15, page 101, indicates the determinate "reduction of health-related absences" was statistically significant in School A at the level of .01 confidence. It was statistically significant in School B and School C at the .001 level of confidence.

### Summary

Data concerning health-related absences were collected in Phase I of the study which was for a ten-week period. This data permitted a comparison for data collected in Phase II which was for a ten-week period.

The data collected were analyzed and presented in tabular form. Discussion followed each table. The presentation of the findings were grouped under the headings: Description of the Students, Health-Related Absence Data, and Summary.

Chapter 5 includes a Summary of the Study, Conclusion, and Suggestions for Further Study.

## CHAPTER V

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER STUDY

The present study was an attempt to determine if health-related absences could be reduced by the nurses providing health services in the Fort Worth Independent School District. It was also an attempt to determine if one type nurse could reduce absences more significantly than another type nurse. The study was limited to 1154 students in three elementary schools in the Fort Worth Independent School District. Of the three nurses involved in the study, two were designated as type Y nurses and one was designated as type X.

In Phase I of the study health-related absence data were collected for a ten-week period. These data permitted a comparison for data collected in Phase II of the study. The health-related cause of student absence was determined by the nurse through telephone calls to the parents, home visits to the residence, and by parents written explanation of students' absence.

In Phase II of the study health-related absence data were collected for a ten-week period while the nurses were

focusing attention on the reduction of health-related school absences. The action taken by the nurse was determined by the cause of the absence, the knowledge, skill and concern of the nurse, and the acceptance of nurse intervention by the parents.

### Findings

The findings of the study were based on the comparison of the health-related absence data from the three schools included in the study. These data were recorded by cause for each school. Raw data were tabulated and a mean absence score was calculated for each school during Phase I and Phase II. A tally of the percent of increases and decreases in health-related absences was made. The findings of the study indicated that:

1. Health services provided in the Fort Worth Independent School District did reduce health-related student absences. All schools decreased their ratio of absence-to-total days. At school A the decrease was from .043 in Phase I to .037 in Phase II; in School B the decrease was from .051 in Phase I to .043 in Phase II; and in School C from .039 in Phase I to .032 in Phase II.

2. Health-related student absences were reduced to a greater extent in School C having the services of a half time type X nurse than in School A having the services of

a half time type Y nurse. The Chi-square test of significance was utilized to determine if there was a significant difference between the reduction of absences in School C and School A. The test indicated that the difference in the reduction of absences in School C and School A was statistically significant at the .05 level of confidence.

3. Health-related student absences were reduced to a greater extent in School C having the services of a full-time type X nurse than in School B having the services of a full-time type Y nurse; however, the Chi-square test of significance indicated that the difference in the reduction of absences in School C and School B was not statistically significant at the .05 level of confidence.

### Test of Hypotheses

Based on the findings of the study, the investigator accepted the first two hypotheses and rejected the third hypothesis.

The hypotheses formulated and tested in this study were as follows:

I. Health services provided in the Fort Worth Independent School District can significantly reduce health-related student absences. Accepted.

II. Health-related student absences will be reduced to a greater extent in School C having the services of a

half time type X nurse than in School A having the services of a half time type Y nurse. Accepted.

III. Health-related student absences will be reduced to a greater extent in School C having the services of a half time type X nurse than in School B having the services of a full time type Y nurse. Rejected.

### Discussion

A look at absenteeism and the in-depth study of three elementary schools indicated there is a need for the reduction of health-related absences. This is the dual responsibility of the home and school; however, the skilled professional school nurse can provide services which result in the reduction of health-related student absences. The state has applied pressure for compulsory school attendance but is permissive to health-related absences.

As a result of this study it was found that both type X and Y nurses were effective in reducing health-related student absences; however, type X nurse was more effective than type Y nurse. It is the investigator's opinion that the determinant in the quality performance of the type X nurse was her past performance record which showed that she had provided or arranged for corrections for at least seventy-five percent of the students who had

physical defects, as opposed to the forty percent of corrections provided or arranged for by the type Y nurses. This seems to indicate that type X nurse is self-motivated and concerned about the health problems of all students.

### Conclusions

The conclusion of the study is that quality school nurses contribute to the reduction of health-related student absences.

### Implications of the Study

Student absences are costly to a school district in both monies and the effect on student progress. Since 1949 school districts in the State of Texas have been allocated most state monies on the basis of the average daily attendance of its students. The inability of students to get the maximum benefits out of their schooling because of absenteeism is an even greater loss to society. Implications of this study are as follows:

A. Health-related student absences could be reduced in all school districts if sufficient numbers of quality professional nurses were employed.

B. This study shows that health-related student absences can be reduced and that a nurse with a past record of providing or arranging for the correction of

seventy-five percent of the students who have physical defects seems to do this better than a nurse who has a past record of providing or arranging for the correction of only forty percent of the students who have physical defects.

C. The delivery of health care should be designed to meet the needs of the students being served. Students in most school districts could best be served if health care was available in their community and the school seems to be the best place to provide primary health care.

D. School health services should take the responsibility for assuring continuity of health care for students from screening to treatment. Frequently, the case load of the school nurse is so heavy that she spends most of her time managing office traffic. Increased utilization of her skills should be examined by school districts. Ways to utilize maximum skills of the professionals are as follows:

1. Creation of volunteer programs to relieve the school nurse of routine office traffic.

2. Creation of nurse practitioners in school districts to relieve the physician of routine physical examinations and other minor responsibilities.

3. Determination of which screening tests could be administered by professionals other than the school nurse.



### Recommendations for Further Studies

The investigator recommends further related studies that may be of value:

1. A study to determine if interviewing procedures can be used as predictors of probable success in school nursing.
2. A study to determine if a specific amount of supervision produces a more effective school nurse.
3. A study to compare school nurses who are graduates of Collegiate Schools of Nursing and those who are graduates of a Diploma Program followed by a B.S. degree in their ability in School Health Services.
4. A study to determine if a classroom teacher in elementary school can help reduce health-related absences through Health Education classes.
5. A study to determine if classroom teachers in elementary school can help reduce health-related absences after having teacher inservice training.

## APPENDIX A

## NURSE EVALUATION FORM

SCHOOL # \_\_\_\_\_

Would you please complete the following evaluation on your nurse using the following Likert-type responses?

1. None of the time
2. Occasionally
3. Some of the time
4. Most of the time
5. All of the time

Please circle the response that best fits the performance of your nurse.

1. Does the nurse assist parents in obtaining needed immunizations?

1    2    3    4    5

2. Does the nurse complete vision and hearing screening on all students in your school?

1    2    3    4    5

3. Does the nurse provide physical assessments for students in grades Kindergarten and 1?

1    2    3    4    5

4. Does the nurse assist parents in obtaining corrections for physical defects?

1    2    3    4    5

5. Does the nurse keep complete and up-to-date health records on all students?

1    2    3    4    5

6. Does the nurse provide the necessary evaluations of students in Special Education?

1    2    3    4    5

7. Does the nurse assist the teacher by providing resource material for health education classes?  
1 2 3 4 5
8. Does the nurse assist the teachers by presenting classroom programs in various areas of health education?  
1 2 3 4 5
9. Does the nurse provide leadership in assisting faculty with personal health problems?  
1 2 3 4 5
10. Does the nurse assist parents in utilization of community resources?  
1 2 3 4 5

## APPENDIX B

# HEALTH-RELATED ABSENCE REPORT FORM

|               |       |           |            |               |
|---------------|-------|-----------|------------|---------------|
|               |       |           |            |               |
| School<br>No. | Grade | Last Name | First Name | Mid.<br>Init. |

| Race    |  | Sex    | Date Returned |     |      | No. of Days<br>Absent |
|---------|--|--------|---------------|-----|------|-----------------------|
|         |  |        | Month         | Day | Year |                       |
|         |  |        |               |     |      |                       |
| Black   |  | Male   |               |     |      |                       |
| Mexican |  | Female |               |     |      |                       |
| White   |  |        |               |     |      |                       |
| Other   |  |        |               |     |      |                       |

| Primary Reason for Absence |
|----------------------------|
|----------------------------|

- |   |  |
|---|--|
| 1. <input type="checkbox"/> Asthma, bronchitis                | 11. <input type="checkbox"/> Lacerations                                     |
| 2. <input type="checkbox"/> Chickenpox                        | 12. <input type="checkbox"/> Measles   |
| 3. <input type="checkbox"/> Cold, sore throat,<br>sinus       | 13. <input type="checkbox"/> Medical or<br>dental check-up                   |
| 4. <input type="checkbox"/> Diarrhea                          | 14. <input type="checkbox"/> Mumps   |
| 5. <input type="checkbox"/> Earache, ear<br>infection         | 15. <input type="checkbox"/> Nausea, vomiting                                |
| 6. <input type="checkbox"/> Fever                             | 16. <input type="checkbox"/> Pinkeye,<br>conjunctivitis                      |
| 7. <input type="checkbox"/> German measles                    | 17. <input type="checkbox"/> Strept throat,<br>tonsillitis,<br>scarlet fever |
| 8. <input type="checkbox"/> Headache                          | 18. <input type="checkbox"/> Toothache                                       |
| 9. <input type="checkbox"/> Head lice, nits                   |  |
| 10. <input type="checkbox"/> Immunization or<br>Tbc skin test | Other _____  |

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