



School Health REPORT CARD

By Rebecca F. Presswood, MS, RN

ABSTRACT

School nurses all across the nation perform valuable screenings every year for the students in their schools. These screenings identify abnormalities that have the potential to affect their education. With skill and determination, a variety of health screenings are performed and the results communicated with the parents of the children. A health “report card” is a proposed method of communicating vital health screening information, including the height, weight, and BMI of every student. This is directly related to the epidemic of childhood obesity. Current life styles promote minimal exercise and increased consumption of food that has minor nutritional value. It is time to identify affected children and become engaged in resolving this health crisis, by teaching this nation’s children behaviors that will result in optimal health.

School nurses all over the United States perform health screenings for the children in their schools or school districts every year. The government of each state mandates many of these health screenings, which include height, weight, vision, hearing, and scoliosis. Other screenings that are performed include dental health, blood pressure, color vision, muscle balance, lead, and acanthosis nigricans. The purpose of these screenings is to identify abnormal results and consider the cumulative results in relation to the health of the child.

REPORT CARD IDEA

For many years the report card has been a means to communicate the academic progress of students to their parents (Aidman, Gates, & Sims, 2000). By adopting this same method of communicating with parents, it is feasible that a health report card can address existing as well as potential health concerns. The screenings that school nurses perform are an avenue to identify some of these health concerns. School nurses intervene with actual and potential health problems and actively collaborate with others to enhance the learning potential of each student by performing a variety of health screenings (Percy et al., 2001). These health screenings set parameters for the identification of potential and existing health problems. Parents, school

nurses, teachers, and healthcare providers are on the same team in an effort to shape a healthy, educated adult who will be a responsible citizen and an asset to society.

VALID HEALTH SCREENINGS

Since the number of uninsured children in the United States increases every year, many children do not have a primary healthcare provider to conduct a wellness examination. A school nurse may be the only healthcare provider with whom children come in contact. It is the job of school nurses to screen for conditions that would affect their health and, consequently, their education. Health and success in school are interrelated: schools cannot achieve their primary mission of education if students are not healthy and physically, mentally, and socially fit (Bogden, 2000). Schools are viewed as the sites most likely to provide access to almost all children (Yawn & Yawn, 2000).

Vision, hearing, blood pressure, and scoliosis (or postural screening) are a few of the mandated screenings in the United States. The state governments and state health departments of each state determine what screenings are mandatory, and their frequency. Each screening is valid and essential to maintain the health of students in that state. (See Table 1 for state-mandated screenings for individual states.)

Vision screening is most effective in preschool years. Identifying conditions early helps to prevent irreversible vision loss. Correcting vision problems helps in the crucial early years of learning. Vision problems have been associated with behavioral risk, reduced academic performance, and low self-esteem (Yawn, Lydick, Epstein, & Jacobsen, 1996). Some conditions that can be recognized with early screening are strabismus, amblyopia, hyperopia, and severe astigmatism (Cross, 1985). Findings from a current study conducted in Michigan (Kemper, Fant, Bruckman, & Clark, 2004) indicated by parent report that the majority of the children who had an abnormal vision screen received treatment. Vision screening in schools continues to be valuable and cost effective (Cross, 1985).

Color blindness also is important to identify at a young age, since it will aid the classroom teacher in understanding reasons a student chooses atypical colors or why a child cannot identify different colors. The screening to determine if a child is colorblind is mandated in only two states. About 12 million people in the United States are color blind; 8% of the male and 0.4% of the female population suffer from inherited color vision deficiency (Joyce, 2000).

An identified hearing deficit could save the student from missing important details presented in class. Ideally, a hearing deficit will be identified before school age, but periodic screening can discover intermittent hearing loss that could adversely affect learning in the classroom. A Michigan study (Kemper et al., 2004) revealed that 51% of those students who failed their hearing screening received treatment. The treatment included outcomes such as antibiotics, decongestants, drops, cerumen removal, myringotomy tubes, tonsillectomy/adenoidectomy, and amplification therapy. Newborn hearing screening has been implemented and should identify problems very early.

Scoliosis, or postural, screening facilitates identification of pre-adolescents and adolescents who have slight or significant curves in their spine. The student's back is noted for asymmetry from in front of, from the side, and behind while the student stands and is bending over. Deviations are measured with a scoliometer so alterations can be compared from one school year to the next. The degree of deviation referred varies according to the school district. The screening at school identifies any abnormalities, and subsequently the child goes to seek additional evaluation by a health professional. (Health professionals are very conservative and do not aggressively treat a student with a diagnosis of scoliosis.)

The remaining screenings performed by school nurses across the nation aim to identify the health needs of students. The faster any abnormalities are detected as a result of health screenings, the faster modifications can be made for the advantage of the student. Screenings such as dental, blood pressure, and height and weight calculation give important data about the students who receive those screenings

A health report card should include the student's growth variables. Height and weight are indices that are easily measured with an accurate scale and stadiometer. Percentiles are plotted on the growth chart to see the relationship of that child to other children of the same age and sex. The calculation of body mass index (BMI) can determine if a child is underweight or overweight for age. A BMI of greater than or equal to the 95th percentile for age and sex is considered overweight.

A BMI greater than or equal to the 85th percentile but less than the 95th percentile for is considered to be at risk of overweight (CDC, 2000). Children's body fatness changes as they grow. As they mature, the body fatness of boys and girls differs. Thus, growth charts used for children and teens are sex-specific (CDC, 2000).

All of the screenings that school nurses perform have the potential to impact the health of the student. A health report card is an opportunity to communicate the vital information to the parents and care givers.

OBESITY

Management of an Epidemic

Collecting health data on students would not be complete without including their height and weight. Data available in Arkansas revealed that one in four high school students is either overweight or at risk for being overweight (Arkansas Center for Health Improvement [ACHI], 2004). Statistics have indicated that more than 30% of children in the United States are overweight or obese (Miller, Rosenbloom, & Silverstein, 2004). Findings from studies have shown that more than two thirds of children 10 years and older who are obese will become obese adults (Miller et al., 2004). The life expectancy for obese young adults is 5–20 years less than that of a person of normal weight (ACHI, 2004). Clinically healthy but obese children place their future health in danger of developing medical complications associated with obesity throughout life. Some of these medical conditions affect the cardiovascular and endocrine systems and mental health. Other systems affected include pulmonary, orthopedic, and gastrointestinal/hepatic (Krebs et al., 2003). Obesity is considered the most prevalent nutritional disease of children and adolescents in the United States (Dietz, 1997).

Reason for the Epidemic

The cause of obesity is simply an inappropriate balance between energy intake and energy expenditure. The most probable cause of a decrease in energy expenditure in children is a change in life styles over time that has led to a decrease in physical activity. Sources of inactivity include reliance on cars for transportation, long hours of school busing rather than walking, and time devoted to television and computer games. The constraints of urban life that contribute to obesity are the restricted space for active games, keeping children indoors for safety reasons, and restricted time available for activities outdoors (Shephard, 2004).

Changes in diet also are contributing to childhood obesity. For example, portion sizes in fast food restaurants have more than doubled in the past 20 years (Miller et al., 2004), and the quality of the food eaten is poor (Bowman, Gortmaker, Ebbeling, Pereira, & Ludwig, 2004). In a hectic society, family routines require quick and convenient meals. Busy households no longer enjoy the "luxury" of a family meal. In lower socioeconomic households, food choices may not foster healthful eating because these families may not have such choices.

Student Identification

Prevention of being overweight is easier than treatment (Krebs et al., 2003). Each child's BMI needs to be calculated and plotted yearly to monitor any change. Early recognition of excessive weight gain

TABLE 1

State Mandated Screenings by Individual States. From National Association of School Nurses 2003 Annual State Affiliate Report Summary. Used with permission by Sharon Conley.

R=recommended; M=mandated.

State	Hearing	Vision	Postural/ Scoliosis	Dental	Muscle Balance	Lead	Blood Pressure	Acanthosis Nigricans	Color Blindness	Ht/Wt
Alaska	M	M								
Alabama			M							
Arizona	M	R								
Arkansas	M	M	M							
California	M	M	M							
Colorado	M	M								
Connecticut	M	M	M							
Delaware	M	M	M							
Florida	M	M	M							
Georgia	M	M	M							
Illinois	M	M								
Indiana	M	M	M							
Kansas	M	M	R	M						R
Kentucky	M	M	M							R
Louisiana	M	M								
Maine	M	M	M		M					
Maryland	M	M	M							
Michigan	M	M				R				
Minnesota	R	R	R							
Missouri	R	R	R	R			R			
Mississippi	M	M	M							
Montana	M	M								
Nebraska	R	R	R	R			R		R	R
Nevada	M	M	M	R						
New Jersey	M	M	M				M		M	M
New Mexico	M	M					M			M
New York	M	M	M						M	
North Carolina	M	M								
North Dakota			R							
Ohio	M	M	R				R			R
Oregon	R	R	R							
Pennsylvania	M	M	M							M
Rhode Island	M	M	M	M						
South Carolina	R	R	R				R			
Tennessee	M	M								
Texas	M	M	M					M		
Utah		M	M	R						
Vermont	M	M								
Washington	M	M	M							
West Virginia	M	M								
Wisconsin	R	R								
Wyoming	M	M								
District of Columbia	R	R								R

should become routine. Once a student is identified as being overweight, the student and/or parent of that student needs to be provided guidance to assist with resolution of the condition. School nurses and healthcare providers need to promote programs related to teaching children how to maintain a healthy weight, accept their body size, and what behaviors are necessary to stay healthy. Dietary practices need to be directed toward moderation rather than over-consumption. Emphasis should be placed on healthful choices (Krebs et al., 2003). Children's autonomy in self-regulation of food intake and setting appropriate limits needs to be encouraged.

Parental Involvement

An overweight school-aged child living in a household with an obese parent has an increased risk of becoming obese in young adulthood (Baughcum, Chamberlin, Deeks, Powers, & Whitaker, 2000). For example, if one parent is obese, the overweight child has three times the normal risk of becoming obese in adulthood; if both parents are obese, the child's risk is 10 times greater (Krebs et al., 2003). For this reason, involvement of the family in the prevention of obesity is vital. Parents primarily control the food available, the context of eating, and opportunities for safe activity in children. In some instances, parents may not perceive that their overweight child is overweight. Mothers may believe that having bigger children signifies good health and reflects parental competence (Baughcum et al., 2000). Parents need to be aware of this epidemic, know the weight status of their children, and become involved in behavior change so they can become better role models for them.

Anticipatory Guidance

School nurses are obligated to give guidance to any student or family desiring to know more about the cause and treatment of obesity. Early recognition of obesity is a key to effective treatment. In preventing excessive weight gain, physical activity is most effective. School nurses can be advocates for required daily physical education in all grades. A change of life style can be another method of increasing physical activity. Having a daily routine that includes walking, cycling, or any other physical activity would be beneficial. All children need limits set in the amount of time devoted to viewing or playing video games. Children need to consume more fruit and vegetables and decrease consumption of fat (Shephard, 2004). A slogan of "2-1-5" was developed by a coalition of educators, school nurses, community health researchers, and clinical providers in Cambridge, Massachusetts (Chomitz, Collins, Kim, Kramer, & McGowan, 2003). The slogan aims to promote a healthier life style through the recommendation of 2 hours or less of television or videos per day, 1 hour of physical activity, and 5 servings of fruits and vegetables every day.

Some dieticians say that height and weight do not measure body fatness, and that BMI is more useful in adults than children. The changes in the BMI are more important than a single reading. The American Academy of Pediatrics (AAP) feels that school nurses should not diagnose a child as overweight, just give the parent the BMI value; physicians then can diagnose obesity (Scheier, 2004a,b). The solution to the epidemic is not just calculating the BMI and reporting the data to the parents,

but preventing obesity needs to be part of a comprehensive school health program. Parents, the community, and multiple health agencies need to be involved.

There are a multitude of programs available to be implemented in schools. Schools are a natural avenue for dissemination of multifaceted health education programs that target both child behavior and the environment (Hoelscher et al., 2004). It is up to school nurses to identify and track children who are at risk, calculate and plot BMI, identify any excessive weight gain, encourage healthy eating, promote physical activity, and recommend limitation of television and video time (Krebs et al., 2003). The Center for Weight and Health of the University of California produces a pamphlet giving guidelines for collecting heights and weights in the school setting (Ikeda & Crawford, 2000). A sample letter to parents informing them of the results of the screening is available (see Figure 1). This letter stays neutral and does not diagnose. Reporting the data to the parents and urging them that follow-up is needed is sufficient.

THE PROS AND CONS OF A HEALTH REPORT CARD

The American Academy of Pediatrics recommended that healthcare providers calculate and plot BMI once a year for all children and adolescents and use any change in BMI to identify excessive rates of weight gain relative to linear growth (Krebs et al., 2003). The AAP also recommended that healthcare providers encourage parents and care givers to promote healthful eating patterns by offering nutritious snacks, low-fat dairy foods, and whole grains. Encouraging children's autonomy in self-regulation of food intake, setting appropriate limits on choices, and modeling health food choices will promote healthful eating.

In 2003, the state of Arkansas passed a bill (Act 1220) mandating schools to include, as part of the student report card sent to parents, an annual BMI percentile for each student with an explanation of the possible health effects of increased BMI, nutrition, and physical activity. Arkansas has now become the first state to implement a comprehensive statewide program. The BMI of each student was calculated and letters sent home with students whose BMI indicated they were overweight or at risk for being overweight (Wallis, 2003). Findings from Wallis' study showed that the prevalence of childhood obesity is higher than was thought previously. There are still some skeptics who criticize the efforts of the State of Arkansas in initiating the health report cards; there is concern revolving around the potential for children to be placed on harmful diets and the psychological feature of labeling children as overweight or obese (Scheier, 2004a).

In Cambridge, Massachusetts a coalition of educators, school nurses, community health researchers, and clinical providers tested a healthy weight program among public elementary school students. The program included BMI study, health report card feedback, and school nurse follow-up. The group that was provided a health report card from the Cambridge Public Schools project was associated with increased parental awareness of their child's weight status (Chomitz et al., 2003). Personal information provided to the parents raised their awareness. The study showed that being aware made them more likely to get medical help or engage their children in physical activity.

In Guilford County, North Carolina a study was done using the Kindergarten Health Assessment Report as a Health Report Card (Clemens & Nunnally, 2002). The findings of this study revealed that a significant number of children failed screening tests that are critical to successful learning. The investigators also found that a significant number of children had health problems such as obesity, asthma, and allergies. Studies have shown that these health problems can affect learning and success in school. The lower socioeconomic status children were identified as entering school with a number of existing health problems. The study illustrated that the earlier health problems can be identified, the better it is for the children (Clemens & Nunnally, 2002).

The State of Texas Legislature 2002, through House Bill 2989, has mandated that all children in grades 3, 5, and 7 be screened for acanthosis nigricans, a skin condition linked with hyperinsulinemia. In this condition, the skin on the back of the neck, elbows, and behind the knees is rough to the touch and darker in color. School nurses also screen for height, weight, and elevated blood pressure. The Border Health Office at The University of Texas-Pan American oversees this project for the state. The initiative was identified as the Acanthosis Nigricans: The Education and Screening (ANTES) program. The ANTES program intends to address latent health problems before they become debilitating health conditions. A report is sent home with the student identified as having acanthosis nigricans. The report includes an explanation of acanthosis nigricans and related conditions, a statement

concerning a student's need for further evaluation of conditions related to acanthosis nigricans, and instructions to help the student or family receive evaluation and intervention by the school district (Border Health Office at the University of Texas-Pan American [UTPABHO], 2002).

CONCLUSIONS

A school health report card seems to be a natural avenue to inform parents of identified abnormalities that may be potential health problems for their child. All screenings performed by school nurses are valid and worthwhile. As long as the screenings benefit the students by targeting abnormalities that affect their education and enhancing their overall health, they are needed. The desire of school nurses is to teach good health habits for life and discourage children from behaviors that are detrimental.

From the experiences reported in Arkansas, school nurses know that data must be handled delicately. It is imperative that parents not be skeptical about information derived from health screenings, especially BMI. The Cambridge study showed that parents of overweight children were twice as likely to know their child's weight status if they received personalized health report cards than if they received no information at all. They were also more likely to seek medical advice and initiate physical activities for their overweight children (Chomitz et al., 2003). School nurses need to be ready to give assistance as needed and give information about agencies that might be of assistance to the family.

FIGURE 1. SAMPLE LETTER NOTIFYING PARENTS/CAREGIVERS.

The following is a sample letter, which could be used to notify parents about a child's weight status.

Dear Parents:

We recently weighed and measured the children in our school to determine how they are growing. Your child's weight was found to be low/high for his/her height and age. This does not necessarily mean your child is underweight/overweight but your child may be at risk for this condition. The best person to evaluate your child's weight status is his/her regular doctor or healthcare provider.

We encourage you to make sure your child has annual medical checkups by a physician. The doctor will weigh and measure your child, may ask questions about your child's growth since birth, and may ask about the heights and weights of your child's close biological relatives. If your child is too thin/heavy, your doctor will tell you so. Ask your doctor for advice about good nutrition and physical activity.

If you do not have health insurance or access to healthcare, please contact us for information about possible medical services.

Please do not put your child on a weight gain/loss diet. For information on helping an underweight/overweight child, [insert information on obtaining a pamphlet].

If you have questions, please call me at [_____].

Cordially,

School Nurse

Used with permission from Joanne P. Ikeda, MA, RD and Dr. Pat Crawford, DrPH, RD, Co-Directors of the Center for Weight and Health, University of California at Berkeley.

School Health REPORT CARD

A school health report card could be combined with the academic report card children receive every reporting period. Many school districts have computer-generated academic report cards. The data derived from the screenings by the school nurse could be combined at the end of that report. This information also would be helpful to pediatricians and other healthcare providers. In addition, combining the student's immunization record is worthy of consideration as part of the student's health report card. Report cards are usually mailed home to the parents or transported by the child inside the privacy of an envelope, so confidentiality would be guaranteed.

A school health report card in the form of an informational letter is another method of communicating data derived from screenings. In Arkansas, a letter was mailed at the end of the school year to all of the students. The letter stated the student's height, weight, and BMI. The parents were informed of the significance of BMI and were given the recommendations of the AAP for children with that particular BMI. The results of the Arkansas BMI Initiative are available online at www.achi.net. The name of the report was amended from Report Card to Individual Health Report (ACHI, 2004).

Reporting of all of the screening that school nurses perform is important. Identifying the students who are overweight and at risk of being overweight is of the greatest importance. If Americans do not act quickly to reverse the trend of childhood obesity, it is possible that our children will live sicker and die younger than the generation before them (Lavizzo-Mourey, 2004). School nurses need to act now to aid in reversing this health threat. Strong community partnerships that connect healthcare providers, public officials, parents, and school health individuals are pivotal.

No matter what method is chosen to communicate important health data to the parents of the students served by school nurses, the data are valuable. It is the duty of school nurses to evaluate the screenings and the results. The screenings should be compared every year for significant changes. School nurses need to educate and model healthy behaviors to the children in their schools. The children are the citizens of tomorrow. They need to be independent, self-reliant, healthy individuals who have healthful habits and life styles as they are being educated in our schools. 🍷

REFERENCES

Aidman, B.J., Gates, J.M., & Sims, E.A.D. (2000, Fall). Building a better report card. *National Association of Elementary School Principals*, 19, 1-4.

American Academy of Pediatrics. (2003, August). *Overweight and obesity*. Retrieved September 26, 2004 from: <http://www.aap.org/obesity/recommendations.htm>

Arkansas Center for Health Improvement. (2004). *Obesity and school BMI initiative*. Retrieved October 21, 2004 from: http://www.achi.net/BMI_Info/facts.asp

Baughcum, A.E., Chamberlin, L.A., Deeks, C.M., Powers, S.W., & Whitaker, R.C. (2000). Maternal perceptions of overweight preschool children. *Pediatrics*, 106, 1380-1386.

Bogden, J. F. (2000). *Fit, healthy and ready to learn, part 1—physical activity, healthy eating, and tobacco use prevention*. Washington, DC: National Association of State Boards of Education.

Border Health Office at the University of Texas-Pan American (2002, December). *ANTES (Acanthosis nigricans: The education and screening program)*. Retrieved October 2, 2004 from: <http://www.panam.edu/dept/tmbhco>

Bowman, S.A., Gortmaker, S.L., Ebbeling, C.B., Pereira, M.A., & Ludwig, D.S. (2004). Effects of fast-food consumption on energy intake and diet quality among children in a national household survey. *Pediatrics*, 113, 112-117.

Centers for Disease Control & Prevention (2000, May 30). 2000 CDC *growth chart: United States*. Retrieved October 3, 2004 from <http://www.cdc.gov/growthcharts>

Chomitz, V.R., Collins, J. Kim, J. Kramer, E., & McGowan, R. (2003). Promoting healthy weight among elementary school children via a health report card approach. *Archives of Pediatrics and Adolescent Medicine*, 157, 765-772.

Clemens, C.J. & Nunnally, T. (2002, May). Using the kindergarten health assessment report as a health report card. *Journal of School Health*, 72, 212-215.

Cross, A.W. (1985). Health screening in schools. Part 1. *Journal of Pediatrics*, 107, 487-494.

Dietz, W.H. (1998). Health consequences of obesity in youth: Childhood predictors of adult disease. *Pediatrics*, 101(Supplement), 518-525.

Hoelscher, D.M., Day, R.S., Lee, E.S., Frankowski, R.F., Kelder, S.H., Ward, J.L., et al. (2004). Measuring the prevalence of overweight in Texas schoolchildren. *American Journal of Public Health*, 94, 1002-1008.

Ikeda, J.P. & Crawford, P. (2000, September). *Guidelines for collecting heights and weights on children and adolescents in school settings*. Retrieved October 2, 2004 from: <http://www.cnr.berkeley.edu/cwh/resources/childrenandweight.shtml>

Joyce, P.C. (2000). Should color vision screening yield a black or white answer? *Journal of Occupational & Environmental Medicine*, 42, 679-682.

Kemper, A.R., Fant, K.E., Bruckman, D., & Clark, S.J. (2004). Hearing and vision screening program for school-aged children. *American Journal of Preventative Medicine*, 26, 141-145.

Krebs, N.F., Baker, R.D., Jr., Greer, F.R., Heyman, M.B., Jaksic, T., & Lifshitz, F. (2003). Prevention of pediatric overweight and obesity. *Pediatrics*, 112, 424-430.

Lavizzo-Mourey, R. (2004, September 30). *Preventing childhood obesity: RWJF president and CEO reflects on Institute of Medicine action plan*. Retrieved October 21, 2004 from: <http://www.rwjf.org/new/special/risaObesityInterview.jhtml?liquid&pf>

Miller, J., Rosenbloom, A., & Silverstein, J. (2004). Childhood obesity. *Journal of Clinical Endocrinology & Metabolism*, 89, 4211-4218.

Percy, M.S., Mortenson, J., Labuski, C.M., Lipani, M., Anderson, A., Boski, E.L., et al. (2001). *The Texas guide to school health programs*. Austin, TX: Texas Department of Health, Bureau of Children's Health.

Scheier, L.M. (2004a, April). Potential problems with school health report cards. *Journal of the American Dietetic Association*, 104, 525-527.

Scheier, L.M. (2004b, March). School health report cards attempt to address the obesity epidemic. *Journal of the American Dietetic Association*, 104, 341-344.

Shephard, R.J. (2004, May). Role of the physician in childhood obesity. *Clinical Journal of Sport Medicine*, 14, 161-168.

Wallis, C. (2003, September 15). Guess what F is for? FAT. *Time*, 162, 68-69.

Yawn, B.P., Lydick, E.G., Epstein, R., & Jacobsen, S.J. (1996). Is school vision screening effective? *Journal of School Health*, 66, 171-175.

Yawn, B.P., & Yawn, R.A. (2000). The estimated cost of school scoliosis screening. *Spine*, 25, 2387-2391.

ABOUT THE AUTHOR

Rebecca F. Presswood, MS, RN has been a school nurse at Jowell Elementary in the Cypress Fairbanks Independent School District for the past 15 years and a school nurse for the past 22 years. This article was written to fulfill the requirements for her Master's degree at Texas Woman's University, Houston, TX. She is awaiting her certification as a Pediatric Nurse Practitioner.