

Running the Numbers

*A Periodic Feature to Inform North Carolina Health Care Professionals
About Current Topics in Health Statistics*

School Health Services Reports for North Carolina Public Schools

North Carolina's leaders in both education and health agree that the two are interdependent. The identification of health-related barriers to learning is crucial to the academic success of every student. Instituting comprehensive school health services in every school district has been a priority of the North Carolina Public Health Task Force and the North Carolina Division of Public Health. In concert with the American Academy of Pediatrics, the Centers for Disease Control and Prevention, the American School Health Association, and the National Association of School Nurses, North Carolina established a goal that every public school student have access to a school nurse in a ratio not to exceed 1 nurse per 750 students. To achieve this goal, the state has instituted strategies such as the North Carolina Healthy Schools Coordinated School Health program, the School Health Advisory Councils (SHACs), the North Carolina School Health Leadership Assembly, and establishment of a School Health Cabinet at the highest levels of state government. Other strategies include the School Nurse Funding Initiative, the Child and Family Support Team Initiative, and local funding directed toward school health services and personnel.

In August 1998, about 556 school nurses delivered services in 87 counties, and these nurses carried caseloads of about 2,450 students each. During the 2009-2010 school year, despite the economic crisis, there were 1,169.61 nurse positions, and the ratio of school nurses to students was 1:1,185. Significant improvement has been made in providing comprehensive school health services, and school nursing is a critical component of these services.

Since 1996-1997, the Division of Public Health has summarized school health data from each district; these annual school health services reports are available online [1]. The annual school health services report includes details about student health and school nursing activities. North Carolina is one of few states in the nation to compile such a report. All 115 local education agencies (LEAs) participate in the data collection and submit the survey instrument electronically. The data contained in the school health services report are based on data collected by school nurses and reflect their knowledge of the health services provided in their schools. The report also summarizes data and provides information on trends. The following data are excerpted from the 2009-2010 School Health Services Report [1].

National certification in school nursing is the standard by which school nurses are judged to have the knowledge and skills necessary to provide these health services [2]. During 2009-2010, the number of nationally certified school nurses, as a percentage of the total number of school nurses in North Carolina, increased by 3 percentage points to 53%. North Carolina has the highest number of nationally certified school nurses in the country.

During the 2009-2010 school year, a number of outcomes were a direct result of school nurse-led management of students with specific disease processes. Among students with allergies severe enough to affect their health and ability to learn, more than 900 stated that they had reduced the number of episodes of severe allergic reactions that required the use of their injectable emergency medication, and almost 2,000 stated that with the school nurse's assistance, they had increased their knowledge of their disease, its causes and treatments, and how to better manage the illness. Among students with asthma severe enough to affect their health and ability to learn, almost 4,000 said their improved health allowed them to increase their participation in physical education and/or after-school physical activity. Among students with diabetes severe enough to affect their health and ability to learn, more than 1,000 improved their skill in testing their own blood sugar, and more than 500 calculated and correctly drew

TABLE 1.
Individual Student Health Counseling Sessions Provided by School Nurses During the 2009-2010 School Year, by Condition or Topic

Condition or topic	School level			Total (N = 177,298)
	Elementary (N = 77,141)	Middle (N = 46,590)	High (N = 53,567)	
ADD/ADHD ^a	6,090	3,599	1,577	11,266
Asthma ^a	21,691	6,219	4,113	32,023
Child abuse/neglect	1,817	697	594	3,108
Depression/suicide	680	1,413	3,086	5,179
Diabetes ^a	13,959	10,804	8,066	32,829
Grief/loss	1,197	863	1,291	3,351
Hygiene ^a	12,421	6,831	4,735	23,987
Mental health issues ^a	3,043	4,279	4,629	11,951
Pregnancy	40	1,053	7,478	8,571
Puberty/reproductive health	5,148	4,798	8,799	18,745
Seizure disorders ^a	2,430	851	1,185	4,466
Severe allergies ^a	6,452	1,791	1,668	9,911
Sickle cell disease/trait ^a	408	111	246	765
Substance abuse	166	710	2,280	3,156
Tobacco use	141	758	2,351	3,250
Violence/bullying	1,458	1,813	1,469	4,740

Note. ADD, attention-deficit disorder; ADHD, attention-deficit hyperactivity disorder.

^aDoes not include Charlotte-Mecklenburg Schools because of differences in reporting.

their own dose of insulin 100% of the time. Among students with weight issues severe enough to affect their health and ability to learn, more than 500 were able to increase their participation in physical education, sports, or after-school activity, and about the same number demonstrated a better understanding of their condition.

School nurses also provide general health education to staff and students. During the 2009-2010 school year, the nurses reported providing 27,825 programs and presentations. Forty-eight LEAs (42%) presented asthma education programs for staff, 46 (40%) provided asthma education programs for students, and 105 (91%) provided diabetes education programs for staff.

A critical function of school nurses is to manage, throughout the school day, the care of students with chronic health conditions. During 2009-2010, the most common chronic health conditions of K-12 public school students in North Carolina, as reported by the nurses who care for them, were asthma (92,838 students), severe allergies (22,359), and diabetes (4,318). As part of care management, school nurses develop individual health care plans and train school staff members to give necessary medications and safely perform nursing procedures delegated by the nurse to school staff.

Health counseling is defined as any encounter with a student in which instruction and advice for health promotion, health improvement, and health maintenance were discussed. During the 2009-2010 school year, school nurses provided 177,298 health counseling sessions to individual students (Table 1). Several hundred additional counseling sessions were provided to school staff.

Facilitating periodic health screenings in schools is another important role of the school nurse. The goal of any mass screening program is to assess the condition and, if indicated, to treat. One indicator of the success of a school health screening program is the percentage of students who secured care; that is, how many of the students who did not pass a screening and were therefore referred for further evaluation actually completed the process by seeing a health care professional for the condition? For example,

TABLE 2.
Student Screening and Referral for Follow-up Care by School Health Services Staff, by Screen Type

Screen	No. or no. (%) of students		
	Screened	Referred for follow-up care	Secured follow-up care
Body mass index	79,084	5,586 (7)	1,691 (30)
Hearing	156,808	4,027 (3)	2,748 (68)
Vision	527,843	38,216 (7)	27,482 (72)

among children who received vision screening during the 2009-2010 school year and were referred for follow-up care, 72% secured such care (Table 2).

Some school districts, by increasing numbers of school nurses, increasing efforts to communicate with parents, and finding health care resources for school children, secured care for 100% of students with referrals. Screening for vision is the most frequently conducted health screen in North Carolina schools. More than half a million North Carolina school children (38%) had their vision checked for possible eye problems. The school-based vision screening program is an example of the highly collaborative intersections among school health professionals, nonprofit organizations, volunteers, and health care providers. The Prevent Blindness North Carolina (PBNC) Vision Screening Certification Program works under contract with the Division of Public Health, in collaboration with the Children and Youth Branch, to deliver vision screening certification training to all 100 counties. The PBNC's certification program is the Division of Public Health's primary means of ensuring consistent screening practices and referral criteria across all schools in North Carolina.

Nurses received 113,206 physician orders for individual medications, including drugs for regular, daily use by specific students, as well as drugs ordered to be on hand should the student need them. The school nurse reviews the orders before administering the medications, training non-health care school staff to administer them, or, when specific conditions are met, assisting students to self-administer these medications. Review of the order by a registered nurse trained to identify the indications for use of a drug, its side effects, and its usual doses and routes of administration can reduce the incidence of medication errors. Routine audits by registered nurses of records of medications given to students means the risk of errors can be spotted and reduced quickly.

School nurses work with their local SHAC to develop and implement local programs designed to prevent illness and promote health. The SHACs are mandated by the North Carolina State Board of Education Healthy Active Children Policy (GCS-S-000). School nurses also assist with disaster and emergency planning for their communities. As the number and complexity of health needs of children in school continue to grow, so must the availability of school nurses until the recommended ratio of 1:750 is reached and, ideally, there is at least 1 school nurse in every school in North Carolina. NCMJ

References

1. North Carolina Annual School Health Services Report 2009-2010. Raleigh, NC: Division of Public Health, North Carolina Department of Health and Human Services; 2011. <http://www.ncdhhs.gov/dph/wch/doc/stats/SchoolHealthServicesAnnualReport-2009-2010.pdf>. Accessed August 8, 2011.
2. National Board for Certification of School Nurses Web site. <http://www.nbcsn.com/>. Accessed August 8, 2011.

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