Health Screening Programs

Introduction to Health Screening Programs

Screening for special health care needs in children and youth should be carried out using a "systems of care" approach that utilizes the skills and resources of a variety of health care providers/partners. These health care providers/partners may include primary care providers, local health departments, hospitals, community health centers, other agencies such as Prevent Blindness North Carolina (PBNC), and trained school staff. The Children & Youth Branch of the NC Division of Public Health promotes the goal that "all children will be screened early and continuously for special health care needs."

Screening methods are available for a variety of health needs, including dental caries, overweight/underweight, hearing deficits, vision deficits, blood pressure, and social-emotional concerns. According to Galemore, et al. (2019), "Screening mandates or guidelines may be written into state law, state regulations, or determined by a school district" (p. 290). In North Carolina, the only mandates related to screening are found in G. S. 130A-440 that pertains to the required health assessment for all students entering a NC school for the first time and NC 1503-2.4 through NC 1503-2.6 that address required screenings for the Exceptional Children's (EC) program.

In the school setting, the health screening program is primarily coordinated by the school nurse while diagnosis and treatment are the function and responsibility of the physician or dentist. A successful school screening program utilizes the school health professional, the medical/dental professional and unlicensed assistive personnel such as volunteers and classroom assistants. Volunteers and other non-medical assistants may help carry out the screening program after appropriate training.

As cited in the National Association of School Nurses (NASN) *Framework for 21st Century School Nursing Practice* (2016a), "Screenings, referrals, and follow-up are secondary prevention strategies that school nurses utilize to detect and treat health-related issues in their early stage." (See Section B, Chapter 4.) If a potential disability can be identified before it becomes symptomatic, then diagnosis and treatment can be undertaken at the optimum time, and sometimes at less cost. Screening is an easy, relatively inexpensive way to identify from a large number of apparently well children and youth those who may be at risk for a health problem.

Before a school health professional embarks on a screening program, there are several key principles to consider. Screening programs do impact classroom time so should be directly related to impact on education and available resources. According to Galemore et al. (2019) these principles include:

- Health screenings must address a health condition that impacts a large number of the individuals being screened.
- Early intervention must be available and affordable for the condition being screened and

there must be enough time between detection of the condition and the development of clinical symptoms to allow for early intervention.
- There must be access to appropriate and accessible referral sources for those with a positive screening finding.
- Early identification, diagnosis and intervention need to alter the health outcome sufficiently to merit screening (p. 291).

In addition to deciding on conditions for which to screen, there are also key screening elements to be considered. These key elements include:

- The test, tool or technique used to screen must be reliable and valid. Reliability refers to the consistency of results while validity refers to the degree to which the test measures what it says it measures and elicits a true "positive" or "negative" finding.
- Screening tools must be used correctly and in a consistent manner. For example, some tools such as blood pressure cuffs, developmental screening tools, and eye charts, may be age group specific.
- Screening programs should be cost effective and easy to administer to large groups in a short period of time.
- Screenings should be acceptable to the population being screened and minimally disruptive to instructional time and overall school environment.
- Screeners must be properly trained and educated on the screening tools and processes to enhance the reliability and validity of the screening activity. In other words, screenings must be done according to recognized protocols.
- A procedure must be in place that allows for referral and appropriate follow-up of those referred (Galemore et al., p. 291).

Since the success of any screening program ultimately depends upon securing the cooperation of the student, family, provider, and other health professionals, it is essential to design a program which addresses everyone's concerns and needs. Common challenges which may create problems (e.g., delays in securing appointments, parent difficulty with absences from work, what may appear to be unnecessary red tape) may lessen willingness to participate and thereby limit the effectiveness of the program. Careful planning can reduce such barriers. The following steps should be considered:

- Obtain administrative approval for the scheduling and screening process.
- Start planning several months in advance as screenings often impact a large number of staff in the school setting. Select the date, time and location for the screening.
- Educate staff, students, and parents as to the importance of the screenings and the value of their participation.
- Ensure that parents have information in the form of local policy and/or procedures about all planned screenings which will allow the parent to decide whether or not they want their child to participate.
- Prepare students with a brief, developmentally appropriate explanation of the screening and what to expect on the screening day.

- Document all screenings, referrals, and follow-up. Consider including the date of the screening, information about the tool that was used, the results, and any action that is needed on the part of the parent.
- Be prepared to provide resources to those who may benefit from assistance in getting needed care.

There is a distinction between screening and a screening program. Screening is a means of acquiring significant data about a population. A screening program ***uses the data to remediate the problems*** or defects that are identified. The distinguishing characteristic between the two terms is intervention, which is an essential component of a screening program. Intervention in the school setting might mean adapting the school program to meet the student's needs if a problem cannot be, or has not been, corrected.

If appropriate referral activities and follow-up measures are determined to be unavailable for a particular non-mandated screening, a program should not be initiated. School children need screening programs, not just screenings. A successful outcome is measured by securing care that addresses identified needs.

Common Screenings Conducted in Schools

Anthropometric Measurements

Height and weight measurements of children are part of the total physical assessment completed on any child at well child health exams by the health care provider. According to the Centers for Disease Control and Prevention (CDC, 2017), there are two types of BMI measurement programs and each serves a specific purpose.

1. **Surveillance**: To identify the percent of students in the school or school district who are underweight, healthy weight, overweight or obese. These data are typically anonymous and can be used to identify trends over time or monitor the outcomes of a school policy or practice aimed to improve student health. This is not intended to inform parents of their child's weight status.
2. **Screening:** To provide parents with information on whether their child is underweight, healthy weight, overweight or obese.

Rationale

The National Association of School Nurses (NASN) Position Statement, *Overweight and Obesity in Children and Adolescents in Schools - The Role of the School Nurse* (2018), offers rationale for the supporting role of the school nurse in addressing weight issues. Research studies have demonstrated that school programs are effective in preventing childhood obesity by encouraging healthier diets and increased physical activity (Segal et al., 2017). Obesity in childhood can lead to being overweight or obese in adulthood, therefore it is critical to reduce and prevent obesity at a young age. Without intervention, children and adolescents who are overweight or obese could

be the first generation to live shorter, less healthy lives than their parents (Segal et al., 2017). The school nurse can create a culture of health that supports balanced nutrition and physical activity for all students within the school setting (para. 9).

Recommendations

The CDC (2017) recommends that schools have the following steps in place before implementing a BMI measurement program:

- A safe and supportive environment for students of all body sizes.
- A comprehensive set of strategies to prevent and reduce obesity.
- A series of safeguards that address the primary concerns that have been raised about such screenings. These safeguards help to ensure respect for student privacy and confidentiality, protect students from potential harm, and increase the likelihood that the program will have a positive impact on promoting a healthy weight.

Safeguards 1–8 below are relevant to both screening and surveillance programs. In schools that screen students' BMI, additional safeguards (Safeguards 9 and 10) are needed to ensure that parents have what they need to make informed decisions and take follow-up actions.

1. Introduce the program to parents, guardians, students, and school staff; ensure that there is an appropriate process in place for obtaining parental consent for measuring students' height and weight.
2. Ensure that staff members who measure height and weight have the appropriate expertise and training to obtain accurate and reliable results and minimize the potential for stigmatization.
3. Ensure that the setting for data collection is private.
4. Use equipment that can accurately and reliably measure height and weight.
5. Ensure that the BMI number is calculated and interpreted correctly.
6. Develop efficient data collection procedures.
7. Do not use the actual BMI-for-age percentiles of the students as a basis for evaluating student or teacher performance (e.g., in physical education or health education class).
8. Evaluate the BMI measurement program by assessing the process, intended outcomes, and unintended consequences of the program.
9. Ensure that resources are available for safe and effective follow-up.
10. Provide all parents with a clear and respectful explanation of the BMI results and a list of appropriate follow-up actions.

NASN (2018) concludes, "Overweight and obesity remain an American epidemic, affecting one in every six children. Overweight and obesity prevention is an investment in our children's ability to be healthy, safe, engaged and ready to learn. School nurses are in key positions to provide cost-effective, sustainable, overweight and obesity prevention strategies that address the needs of children and adolescents who are overweight or obese" (para. 12).

Resources

- CDC Training Modules on Growth Charts and BMI: https://www.cdc.gov/nccdphp/dnpao/growthcharts/index.htm
- CDC BMI calculator for child and teen: https://www.cdc.gov/healthyweight/bmi/calculator.html
- Growth charts for boys and girls, ages 2 to 20: http://www.cdc.gov/growthcharts
- CDC Body Mass Index (BMI) Measurement in Schools: https://www.cdc.gov/healthyschools/obesity/bmi/bmi_measurement_schools.htm
- NASN School Nurse Childhood Obesity Toolkit: https://www.nasn.org/nasn/nasn-resources/practice-topics/childhood-obesity
- Eat Smart Move More NC, Tools for Use in Schools: https://www.eatsmartmovemorenc.com/
- NC Public Schools Fitness Testing Guidelines as found at the NC DPI Healthful Living Physical Education page: https://www.dpi.nc.gov/teach-nc/curriculum-instruction/standard-course-study/healthful-living

Audiometric Hearing Screening

Hearing screenings are mandated in two areas: on the student's health assessment and before the initial evaluations or scheduled reevaluations of students with disabilities. The NC Department of Public Instruction (DPI) Exceptional Children Policy manual states, "All children with disabilities three through 21 residing in the LEA […] who are in need of special education and related services, are identified, located, and evaluated" (NC DPI, March 2018, p. 29). One part of that evaluation can include hearing screening. Many school systems implement some form of mass hearing screening to identify children with disabilities or conditions who may need special education and/or related services, as required by federal law and state policy. The goal of hearing screening completed for the purpose of eligibility determination in the Exceptional Children's program is to eliminate hearing as the primary root cause of the child's need for special education services. It is imperative for school nurses and school personnel to become familiar with their district's policy on hearing screening.

North Carolina General Statute 90-294(6) stipulates that all personnel conducting audiometric screening must be under the supervision of a physician or an audiologist. Hearing screenings are regulated by the NC Board for Examiners for Speech-Language Pathologists and Audiologists. For more details related to training and supervision go to 21 NCAC 64 .0212 Supervision of Hearing Screening**.**

Mass hearing screening may be conducted for select grades based on availability of resources to conduct the screenings and to provide follow up with referrals. Additional screening should be completed on those students in special education programs, at the time of initial or re-evaluation, who have failed a screening during the previous year with an unresolved referral, who failed academically the previous year and are referred for EC eligibility determination, and who are referred by their parents or teacher for hearing concerns.

Referral Sources

If the local school system has an audiologist, the student should first be referred to this professional for further evaluation. Depending upon the findings of the audiologist, additional resources for referral may include local health departments, private practice audiologists, physicians, speech and hearing centers and universities. Local district policies and procedures should be followed.

Resources

- American Speech Language Hearing Association has many resources available on their website at https://www.asha.org/PRPSpecificTopic.aspx?folderid=8589935406&section=Resources

- NC Department of Public Instruction, Exceptional Children Division. (2006). *North Carolina guidelines for speech-language pathology services in schools.* Retrieved from https://ec.ncpublicschools.gov/disability-resources/speech-language-impairments/speech-guide.pdf

- NC Department of Public Instruction, Exceptional Children Division, *Deaf & Hard of Hearing* webpage at https://ec.ncpublicschools.gov/disability-resources/deaf-hard-of-hearing

Dental Screening

Dental health screening programs are multifaceted and serve to increase awareness and importance of good oral health and enable school nurses to assist students, teachers and parents with available resources. The partnership between nurses and dental professionals offers great benefits for children. Dental hygienists or other oral health professionals may conduct mass dental screenings in schools with permission of LEA administration. School health programs help facilitate dental screenings and assist with referral and follow-up for students. The mission of the North Carolina Oral Health Section is preventing oral disease and promoting access to dental care based on prevention and education. Resources for teachers, other health professionals, and consumers are found at the NC DHHS Oral Health Section.

Vision Screening

G.S 130A-440.1 states that every student entering North Carolina public schools for the first time should obtain a vision screening as a required element of the mandated Health Assessment. This screening is to be completed by the primary care provider.

Recommendations for Vision Screenings

School screenings are a means of identifying vision difficulties. Screenings should be considered for students who are new to the school system, being evaluated for the special education program, failed academically the previous year, exhibit signs and symptoms of possible vision problems, or are referred by teachers or parents. In addition, mass vision screenings may be done in selected grades. The number of children screened should take into consideration the resources available to provide for adequate follow-up activities for those students referred, as well as other previously mentioned items described for screening programs.

Visual acuity has particular educational significance because of the obvious relationship to learning. One in four school aged children has a vision problem significant enough to affect their learning. Uncorrected vision problems, such as amblyopia and strabismus, can worsen over time and result in permanent vision loss. Most eye problems in children can be corrected if they are detected and treated early. Screening for distance acuity helps detect the most common and treatable vision abnormalities (NASN, 2016b).

When school systems implement mass vision screening programs, school nurses should have the responsibility for organizing the programs and for assessing the in-service education needs of teachers and other school staff. Trained volunteers may be used for initial mass screening but should not be asked to screen very young children or those with special needs. It is recommended that any re-screenings be done by the school nurse to help minimize unnecessary referrals.

Training for vision screening should be carried out by Prevent Blindness North Carolina (PBNC). When training by PBNC is not available, vision screeners must follow the PBNC recommendations as promoted by the NC Division of Public Health, Children & Youth Branch, School Health Unit, until such training can be arranged. Mass vision screenings should include an assessment of observable signs and symptoms of eye problems and distance visual acuity for each eye.

When screening for potential placement in EC programs, vision screening must include both near and distance acuity. The goal of vision screening completed for the purpose of eligibility determination in the Exceptional Children's program is to eliminate vision as the primary root cause of the child's need for special education services.

The most current information about vision screening, vision screening certification workshops, charts, and financial resources available for obtaining follow-up treatment can be found at Prevent Blindness NC website: https://nc.preventblindness.org/. The NASN Vision and Eye Health website also has resources for vouchers for examinations and eyeglasses. There is also a template for collecting eye examination results.

Follow-Up of Suspected Health Problems

The nurse providing or coordinating health services within the school is the appropriate professional to institute the follow-up process. School nurses should be familiar with relevant school district policies and procedures for making a health referral. It may require the ongoing involvement of the school nurse to assure that action is taken to meet any identified problems. When a health problem is identified, the nurse contacts the parent to discuss the issue and possible options for referral. A variety of methods are available to notify parents of the need for an evaluation such as telephone calls, written communications, or personal conferences with students and parents (at school or in the home).

A health screening is of value only if the student with the identified problem receives necessary treatment with optimum correction. If the results of screening tests or health assessments suggest that a health problem is present, follow-up is necessary. Follow-up is the term used to describe the various processes used in securing care for the child's suspected health concerns. The follow-up process begins when a student is first identified and is completed when the recommended care has been received.

When a student is referred to the nurse for a suspected health problem, the nurse assesses the health status of the child through various mechanisms:

- Screening results
- Health history
- Review of developmental evaluation(s)
- Nutritional assessment
- Physical assessment
- Review of immunization status
- Review of reports such as physical therapy, speech or psychological exams

Referrals will vary depending upon assessment findings and available community resources. It is essential that the nurse be knowledgeable of the resources in the community. Adequate follow-up of health problems is dependent upon a collaborative working relationship between school personnel, parents, students, private medical providers, and other community agencies such as the local health department. Students who receive the appropriate care are more likely to fully benefit from the educational instruction and reach their optimum potential.

Most parents are willing to assume the responsibility for their children's health care needs. However, some are uncertain of the need for a referral or may not be able to provide those resources. Care should be taken not to mistake a lack of follow through in securing care for non-compliance. Factors causing a parent to delay seeking care are varied and could include: lack of understanding of the health impact, both present and future; financial inability; denial of the health problem; low health literacy; lack of access to health care; past experiences with health care providers that were unpleasant or inefficient; etc.

According to Pontius (2013), forty-three percent of the adult population has difficulty understanding basic health information. The nurse should be sensitive when communicating with parents to use the learner's language of choice and an interpreter when needed. Communication should be simple, avoiding medical terminology. "A school nurse's knowledge of the importance of health literacy and use of common health literacy tools in his or her practice can dramatically change both verbal and written interaction with parents and will undoubtedly lead to an increase in 'compliance'" (p.246).

The nurse should work with parents to help them plan for their children's health care needs. This can be done by establishing a relationship of mutual trust and by demonstrating through actions that display empathy and support of the family. In the event that the family does not follow up on a suspected health problem that presents a significant health or academic concern, the school nurse, as an advocate for the child, should refer the matter to the school's student assistance team or other school-based intervention service. The nurse and/or team, following school system policy, may consider initiating a report of suspected neglect with county Child Protective Services when warranted.

For the legal protection of the nurse and other school staff, it is extremely important for all involved in the referral and follow-up process to document the findings of health assessments or health screenings that have been performed, as well as parent conferences, referrals, follow-up contacts, and evidence of recommended care received by the child

References

American Speech Language Hearing Association. Childhood hearing screening (n.d.) Retrieved from https://www.asha.org/PRPSpecificTopic.aspx?folderid=8589935406&section=Key_Issues

Centers for Disease Control & Prevention (2017). *Body Mass Index (BMI) Measurement in Schools,* Retrieved from https://www.cdc.gov/healthyschools/obesity/bmi/bmi_measurement_schools.htm

Galemore, C., Kimel, L.,& Tedder, G. (2019). Health promotion and screenings for school-age children. In Selekman, J., Shannon, R. A., & Yonkaitis, C.(Eds.), *School nursing: A comprehensive text.* (3rd ed., pp. 282-312). F. A. Davis

Hagan J.F., Shaw J.S., Duncan P.M., eds. Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents. 4th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2017

National Association of School Nurses. (2016a). Framework for 21st century school nursing practice. *NASN School Nurse, 31*(1), 45-53. doi: 10.1177/1942602X15618644

National Association of School Nurses (2016b). *Principles for practice vision screening and follow-up.* Silver Spring, MD: NASN.

National Association of School Nurses. (2018). *Overweight and obesity in children and adolescents in schools -The role of the school nurse* (Position Statement). Silver Spring, MD: Author.

Pontius, D. (2013). Health literacy Part 1: practical techniques for getting your message home. *NASN School Nurse, 28*(5), 246-252.

Public Schools of NC, Exceptional Children Division. (March 2018). Policies governing services for children with disabilities. Retrieved from https://ec.ncpublicschools.gov/conferences-profdev/march-institute/2018-march-institute-handouts/policy-updates-legal-trends/amendedmarch2018policy.pdf

Segal, L. A., Rayburn, J., & Martin, A. (2017). *The state of childhood obesity: Better policies for a healthier America 2017*. Retrieved from http://sf-nutrition.org/wp-content/uploads/2017/12/stateofobesity2017.pdf