Amid a steady rise in the number of children with complex health problems, a push is on to establish more full-fledged medical clinics within public schools and make the school nurse a more active participant in children's medicine.

In the past few years, school budget cuts have left students with a growing range of physical and mental health problems in the care of a shrinking number of nurses in many states. According to the National Association of School Nurses, just 45% of public schools have a full-time nurse; 25% have no nurse at all.

Meanwhile, as many as 18% of kids have a chronic health condition or problem, including attention disorders, Type 1 diabetes, epilepsy or asthma, and may require help with medication or other assistance from a school nurse.

Obesity has more than tripled among adolescents in the past 20 years, and 33% of students are obese or overweight, with related mental and physical health issues, including depression and the growing number of Type 2 diabetes cases. The number of children under age 18 with food allergies grew 18% from 1998 to 2008.

Of special concern, though less prevalent, are the continuing special health needs of children who were born prematurely. Improved survival of premature babies has led to more children with developmental issues and requirements including feeding tubes, ventilators and IV medication.

"More and more students are coming to school with very significant and specialized health needs, including many children who would not have survived infancy in the past," says Linda Davis-Alldritt, president of the school nurses association. These students often need the skilled care of a registered nurse, Ms. Alldritt says, yet some local school boards are hiring licensed practical nurses and vocational nurses, who are less qualified. "It's like replacing a credentialed teacher with a teacher's aide," she says. School nurses earn from $40,000 to $60,000 a year, while the mean annual wage for RNs in hospitals and other settings is close to $70,000.
School nurses in many states are stretched to the limit: Vermont has one school nurse for every 396 students; Michigan has one for every 4,411 students. Proposed legislation currently in Congress would encourage lower student-to-nurse ratios. And school nurses are pushing for private and public insurers to cover more services.

Sandi Delack, a school nurse at Nicholas A. Ferri Middle School in Johnston, R.I., with 700 students, says a boy she monitors has intravenous lines delivering medication via a pump with an alarm that goes off if it isn’t working properly. "We have to keep him safe, and it is pretty scary stuff," Ms. Delack says. "It isn’t just the numbers of kids, but the types of problems they have are so much worse than they used to be, and more help would be great."

More school-based health centers are opening in rural and urban communities where poverty levels are higher and medical care harder to come by. Clinics usually are inside or adjacent to school buildings, with a medical staff including pediatricians and nurse practitioners who can bill services to Medicaid and private insurance. With parents' consent, they can diagnose illness, prescribe medications and give preventive care. A growing number provide dental care.

School-based health centers have nearly doubled in number since 1998 to about 2,000, though some have closed because of lack of funding. The Obama administration's new health law appropriated $200 million through 2013 for the centers, to build new facilities, purchase equipment and expand services.

The clinics don't negate the need for school nurses, says John Schlitt, vice president for policy and government affairs at the National Assembly on School-Based Health Care. School nurses help "triage" students, so clinics don’t become clogged taking care of minor cuts and scrapes or administering medication—issues the school nurse can handle.

Besides reimbursements, clinics' funding comes from state and federal government grants and private foundations. Some clinics are operated by nonprofit hospital systems who see them as a way to reduce emergency room visits and prevent new cases of chronic disease.

Montefiore Medical Center, in Bronx, N.Y., operates 19 centers serving more than 20,000 students regardless of insurance coverage. David Appel, the pediatrician who directs the program, says it is the only source of health care for half of high-school students in those schools.

The centers provide physical exams, immunizations, lab tests and treatments for asthma and diabetes, as well as pregnancy testing, prenatal care, mental health services and treatment for sexually transmitted disease. It will refer students who request it to contraceptive providers. It also provides some dental care, including sealants to prevent cavities and
restorative care. There is also an obesity prevention program.

Dr. Appel says in the Montefiore system, elementary-school children with asthma had a 50% reduction in emergency visits compared with schools with no clinic. School attendance improved by three days a year.

Latasha Oliver, who moved to the Bronx from Georgia in 2010 and works in guest relations at the Bronx Zoo, says her 8-year-old son, Terrance Lord, has asthma and has been treated at the Montefiore health center at his school, P.S. 64.

In addition to giving Terrance inhaler treatments when necessary to control wheezing and shortness of breath, the center also has provided free medication and connected Terrance to pulmonary specialists at Montefiore. "It's so much of a relief to know he can get his education without having to miss school because he is out sick all the time," Ms. Oliver says.

In Cooperstown, N.Y., Bassett Healthcare Network's 19 school-based clinics in four rural counties had about 26,000 student visits last year. "We do all the things a school nurse used to do, but now instead of having to send a child to the ER or having Mom come and pick them up, we can treat them in the school-based health center," says Chris Kjolhede, Bassett's school-based health program director. "There aren't doctors on every corner out here, so it's hard to get good health care unless they get it at school."

On a recent day, Dr. Kjolhede saw a child with severe congestion and another with ear pain that was lasting several days. He gave a physical exam to a 12-year-old, a follow-up exam to a head-injury patient and evaluated a child on attention-deficit medication. The school nurse sent over a child with a nasty-looking dog bite to the face, who Dr. Kjolhede determined needed antibiotics. About 30% of visits are for mental health issues, he says, "and sometimes we see some horrible things."

Write to Laura Landro at laura.landro@wsj.com