



**NATIONAL
NURSE-LED CARE
CONSORTIUM**
a PHMC affiliate



**SCHOOL-BASED
HEALTH ALLIANCE**
The National Voice for School-Based Health Care

*Addressing Diabetes Factors
in Elementary School
Children Through School and
Community Partnerships*

July 2021

A collaboration between the National Nurse-Led Care Consortium and the School-Based Health Alliance.

Introduction

What does connecting health centers with schools make possible for children at risk of Type 2 diabetes (T2DM)?

Health centers, in collaboration with schools and other community partners, can play a powerful role in performing appropriate screening, prevention, and management of elementary-aged children with obesity and other pre-diabetic indicators. This resource highlights ways health centers (such as federally qualified health centers) can enhance these efforts through school partnerships.

Health center staff can adopt a multi-component strategy towards collaboration with schools and other community partners to enhance their efforts to prevent diabetes in elementary school-aged children. The four components of this strategy are: (1) assess your community, (2) initiate partnerships with school(s) through messages that resonate, (3) select evidence-based program(s), and (4) identify other community partners. This resource explains the four components and highlights best practices for screening and assessing elementary-school aged-children for risk of diabetes once your partnership launches.

1. Assess your community



2. Initiate partnerships with school(s)



3. Select evidence-based program(s)



4. Identify other community partners



Background

Why deliver diabetes prevention in schools?

School-based health care is a powerful investment in the health and academic potential of children and adolescents—and an effective strategy for reaching young people whose environments put them at risk for poor health outcomes. This commonsense delivery strategy provides students with convenient, accessible, and wide-ranging primary and mental health care services where they already spend most of their time – at school. Bringing your health center staff and programs directly to schools increases access to prevention services for elementary school-aged children and, when applicable, links them to care management for addressing pre-diabetic risk factors.

Before 1990, T2DM was nearly unknown in children. Today, the incidence in people under age 20 is expected to triple by 2050.¹ According to a national study of health and nutrition status of adults and children, nearly one in five youth (18%) met criteria for pediatric prediabetes—many of whom were undiagnosed.² Although T2DM is still extremely rare in elementary school-age children, it is possible to detect risk for early onset among this age group. And while some predictors may be challenging to assess (e.g. atypical antipsychotic medications, family history of diabetes, and sub-optimal fetal nutritional environments), other risk factors like food insecurity and childhood obesity can easily be tracked in school settings across an entire student population.

The case for population-level, school-based strategies for early detection of T2DM could not be stronger: young people who develop T2DM appear to be at a much higher risk of developing early diabetes mellitus-associated complications than those with type 1 diabetes mellitus. If we can intervene early with children experiencing altered insulin secretion, we can slow the onset of T2DM and its progression – which is far more challenging to achieve with medication or behavior changes once insulin resistance occurs.

1. Imperator G, et al. Projections of type 1 and type 2 diabetes burden in the U.S. population aged <20 years through 2050: dynamic modeling of incidence, mortality, and population growth. *Diabetes Care*. 2012 Dec;35(12):2515-20.
2. Menke A, Casagrande S, Cowie CC. Prevalence of Diabetes in Adolescents Aged 12 to 19 Years in the United States, 2005-2014. *JAMA*. 2016;316(3):344-345

Strategy Component 1: Assess your Community

What data will help inform this work?

A comprehensive, multi-component strategy to partner with schools to address diabetes risk factors begins with assessing your community needs. This process helps you identify the most appropriate school partner(s) and subsequently, select an evidence-based program that fits the school's needs.

Through publicly available data, your health center can assess relevant community factors—including health and education outcomes as well as social, economic, and environmental determinants (social determinants of health, or SDOH) like poverty, race, place of residence, and life experiences that shape our well-being. Understanding local data related to these risk factors listed below can help your health center develop your prevention program with a partner school.

Pediatric health risk factors for T2DM and relevant education data

1. Family medical history: among children who eventually develop T2DM, family medical history of adult-onset diabetes is reported in 74-100% of cases.
2. Obesity: children living in areas with high rates of childhood obesity have increased risk of prediabetes, food insecurity, and eating behaviors that result from food insecure conditions.
3. Access to nutritious food: foods that support healthy eating and weight (food with high nutrient density and low calories) are often unavailable or unaffordable in these areas.
4. Access to physical activity: communities with high rates of childhood diabetes typically lack safe outdoor spaces at home and school in which to play or exercise.
5. Adverse childhood experiences (ACEs): Early exposure to physical, emotional, or sexual abuse, physical or emotional neglect, and household dysfunction is highly correlated to long-term negative effects in learning, behavior, and health. The intensity and number of adverse experiences translates to increased risk for poor health outcomes for children. Are ACEs tracked in your community?
6. Race and ethnicity: although children of all backgrounds can develop T2DM, some are at increased risk because of their race or ethnicity. Are there schools in your community that host a disproportionate number of students who are Hispanic/Latino, Native American/Alaska Native, South Asian, and/or Black/African American?
7. Economic deprivation: schools with high rates of free and reduced lunch program participation educate students who likely live in economically isolated neighborhoods and face risks like food insecurity or lack of safe outdoor play spaces.

8. Absenteeism: schools with high absentee rates are highly motivated to get students back in class, increasing their academic achievement. Because chronic absenteeism (when a student misses ten percent or more of school days for any reason) is often the result of complex mental, physical, and family health issues, health centers can gain buy-in from schools with high rates of absenteeism. Health center staff can explain how your prevention program will identify and support students with unmet health needs so they can re-engage with school.
9. School health policies, practices, and profiles: what are the current policies and practices with respect to physical activity and healthy eating practices, policies, and programs within your local schools? This information will help your health center determine what components you will bring in your diabetes prevention program to the school(s).

Data Sources

- [Build Healthy Places Network](#)
- [The Children's Health and Education Mapping Tool](#)
- [Civil Rights Data Collection](#)
- [Community Commons Map Room](#)
- [County Health Rankings and Roadmaps](#)
- [Diversity Data Kids](#)
- [National Center for Education Statistics](#)
- [School Nutrition Environment](#)
- [School Health Profiles](#)
- [School Health Policies and Practices Study](#)
- [The State of Childhood Obesity](#)

Strategy Component 2: Initiate partnerships with school(s)

How do health centers develop partnerships with schools?

To partner with schools, you must engage everyone in the education system—from facilities custodians to building administrators—as enthusiastic participants. Health care professionals must effectively communicate and demonstrate the value of the school-health center partnership within the context of school priorities, such as testing, absenteeism, and discipline issues. Your outreach to education staff should emphasize your essential contributions to their success in educating students. Reinforcing messages that resonate with schools and help them meet mutually beneficial goals will enhance your prospects for an enduring partnership.

Taking time to learn the culture and priorities of the education sector will help health centers approach school partners more meaningfully. Talk to local education leaders and listen to their priorities. Health centers that bring programs to schools can help schools focus on “non-academic barriers to learning”—which include physical and mental health. Use the local health, SDOH, and education data gathered in strategy component 1 to help make your case in building school partnerships related to T2DM prevention. For example, document rates of childhood overweight and obesity in your community, as well as chronic absenteeism in your elementary schools. Health center staff can then develop messages to education staff explaining that heavier children face a greater risk of absenteeism than their normal-weight peers, as many studies demonstrate ([Upstream Public Health 2014](#) and [Obesity 2012](#)). Garner their buy-in by explaining how the partnership will contribute towards their goal of reducing absenteeism.



Strategy Component 3: Select evidence-based program(s)

What programs should our health center utilize with schools?

When partnering with an elementary school on diabetes prevention, utilize or adapt existing evidence-based programs. The four examples featured here were mostly implemented at health centers. Your health center can adapt these programs to deliver them at schools. Collaborate with staff at your partnering schools and other community organizations to select the program and approaches best suited for your community of elementary school-aged children.

Kid POWER (KiPOW!)

Children's National, Washington DC and Orange County, CA

Team Kid POWER™(known as KiPOW!) started in Washington, D.C., in 2012 through the leadership of cardiologist Michele Mietus-Snyder, M.D. and then-George Washington University Medical School student Nisha Narayanan. KiPOW! helps kids take full advantage of the physical activity programs, health education, and nutritious meals available in D.C. public and public charter schools through the D.C. Healthy Schools Act of 2010. Through a volunteer program, George Washington University medical students serve as health mentors in the schools.



Data from the pilot of KiPOW! demonstrated BMI stabilization and improved blood pressure for elementary school students. Drs. Mietus-Snyder and Narayanan are creating a centralized platform for the expansion of this promising program.

For more information contact Michele Mietus-Snyder, MD, at mmsnyder@childrensnational.org

iAmHealthy

The University of Kansas Medical Center, Kansas City, KS

iAmHealthy is an empirically supported family based behavioral group treatment program delivered to families in their homes via tablet computer. Families receive eight weekly treatment sessions followed by six monthly sessions each one hour long. Families also receive 12 hours of “health coaching” to focus on their implementation of their individual and family health goals, which focus on increasing activity, decreasing sedentary time, and consuming healthier foods. The University of Kansas Medical Center is implementing iAmHealthy in partnership with 18 elementary schools in Kansas as part of a grant from the National Institutes of Health.



For more information contact: Ann M. Davis, PhD, MPH, ABPP at adavis6@kumc.edu or check out their website at <https://www.iamhealthyschools.org>

Mind, Exercise, Nutrition, Do It! (MEND)

Denver Health, Denver, CO



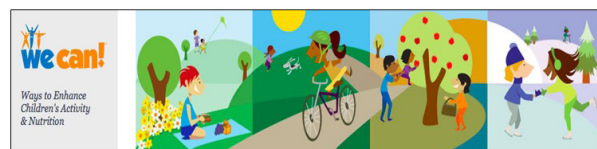
MEND 7-13 empowers 7-13 year olds, with the support of their families, to reach and maintain a healthy weight. It helps families change unhealthy attitudes about food and activity (Mind), keep physically active regularly (Exercise), learn how to choose foods that are healthy, tasty and nutritious (Nutrition), and take action to maintain a healthy lifestyle - for life (Do It!). The MEND 7-13 Program, designed by childhood obesity experts, is one of the world's largest evidence-based healthy lifestyle programs. Program staff implement MEND over ten weeks, meeting twice weekly for two-hour sessions. Denver Health implements MEND in five of its health centers.

Denver Health's MEND program data demonstrate decreased BMI, increased healthy eating and physical activity, and improved body image and self-esteem in children. Denver Health codes and bills for an additional layer of medical visits as part of MEND using standard E/M coding. They get their standard FQHC reimbursement rates. This revenue helps offset the costs of program delivery.

For more information contact Jessica Wallace, at jessica.wallace@dhha.org

We Can!

Unity Health Care, Washington, DC



In 2008, Unity Health Care adapted the National Heart, Lung, and Blood Institute's We Can! (Ways to Enhance Children's Activity & Nutrition) curriculum. We Can!

gives parents, caregivers, and entire communities a way to help children 8 to 13 years old stay at a healthy weight. Children and families get referred to We Can! through their provider. Unity implements We Can! via weekly group wellness visits — shared medical appointments — that engage families. These visits focus on healthy eating on a budget, promoting physical activity, and connecting families to community resources. Unity runs the weekly sessions year round, and they are bilingual in Spanish and English.

Unity developed unique community partnerships that enhance session content and referrals to community resources, such as a Produce RX program with community gardens, and use of community pools and playgrounds. Examples of evaluation data results include reduced BMI (for children and adults) and increase knowledge in taking care of their own and their children's health.

For more information contact James Huang, MD at JHuang@UnityHealthCare.org

Strategy Component 4: Identify other community partners

Who else can help our health center implement this program?

It is helpful to take inventory of the community organizations that can partner with you to bring diabetes prevention programs to schools. By establishing and sustaining community partnerships, health centers can address patients' SDOH and medical needs through coordinated, holistic interventions that account for each patient's unique challenges and strengths.

How can health centers develop and sustain community partnerships?

1. Take inventory of the services and organizations patients are already utilizing.
2. Develop a list of community organizations that share your health center's goals and objectives.
3. Decide who will research, implement, and sustain partnerships at your health center.

Special Consideration: Engaging Families as Partners

How can we ensure that these promising practices are brought to the home?

Partnering with the patient's family is often a key component in the success of any diabetes prevention program. Training staff in communication with parents and guardians better equips them to navigate questions, concerns, or hesitations and collaborate with families. By educating caregivers, the health center is helping to close the loop in the patient's diabetes prevention plan. The following programs are available to train health center staff on how to partner with families to promote healthy living.

Juntos Nos Movemos: Parents and Children Making the Time to Move Together

Farmworker Justice, Washington, D.C.

This program helps reduce and prevent childhood obesity by partnering with agricultural worker families and promoting healthy living. By adapting Head Start's "I Am Moving, I Am Learning" curriculum, Farmworker's Justice trains and engages families in fun and culturally appropriate physical activities. This resource includes a curriculum for trainers, a trainer's guide and flipchart, and a "My Week" worksheet for families. While its focus is on migrant and agricultural workers, health centers can adapt it for other populations.

For more information or to download resources, [visit the Farmworker Justice website](#).

5210 Healthy Children

Penn State, State College, PA

This program highlights a straightforward approach to improve families' and children's health. It promotes the importance of the parents and guardians taking charge to create healthy environments for their children. The 5210 resource provides physical activity and dietary guidelines, access to the free Thrive Parenting Program, and other nutritional highlights.

For more information or to download resources, [visit the 5210 website](#).

Conclusion

Prediabetes (like T2DM itself) is a complex, multi-faceted condition that is increasingly prevalent among elementary school-aged children. As community-based providers, health centers can intervene to prevent T2DM onset by partnering with schools to offer student-centered, evidence-based care. Through a school-based health approach, health centers can expand their reach, optimize care for patients, and directly benefit the students and families in their communities.

Notes

This resource was published in collaboration between the National Nurse-Led Care Consortium and the School-Based Health Alliance.



NurseLedCare.org

The National Nurse-Led Care Consortium is a national leader supporting and advocating on behalf of nurse leaders. We are a nonprofit member-supported organization, and provide a wide range of services to educate and support nurses on the frontlines of health care.



sbh4all.org

The School-Based Health Alliance works to improve the health of children and youth by advancing and advocating for school-based health care. Our vision is that all children and adolescents are healthy and achieving at their fullest potential.

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