

IV. DISCUSSION AND RECOMMENDATIONS

Discussion

A strong body of evidence shows that these seven health conditions, when left untreated or undermanaged, impair learning. The prevalence of most of these Health Barriers to Learning is higher in children of color and in poverty, and these same groups bear more burden of disease—in part due to poor access to the services needed to identify, manage, and treat these conditions. Many children are affected by more than one Health Barrier to Learning, which only compounds the effects of other barriers to educational success faced by children in poverty. The following table provides a snapshot.

Health Barriers to Learning	Prevalence & Unmet Need for Services	Impact on learning
Adverse Childhood Experiences Contextual Factor	<ul style="list-style-type: none"> Nearly half (48%) of US children 17 years and below experienced one or more ACEs. Rates are high in black children (60%) and Hispanic children (51%), compared with white children (44%). About two-thirds of children from families in poverty (67%) experience at least one ACE, 2.5 times the rate in children from families that are at least 4 times above the poverty level (27%). A national survey of pediatricians showed that only about 1 in 3 pediatricians regularly ask about any ACE, illustrating the many missed opportunities to connect children and families to the support they need. 	<ul style="list-style-type: none"> Grade retention Decreased academic performance Disengagement with school Learning problems Behavioral problems at school Attendance problems
Uncontrolled Asthma	<ul style="list-style-type: none"> Nationally, 9% of children have asthma. Rates are higher in black children (13%) & Puerto Rican children (24%). Nationally, the rate of ED visits in children with asthma is 10.7 ED visits per 100 children, indicating the need for additional treatment. Rates in Black children are 15.2 ED visits per 100 children. Rates for Hispanic children are 12.5 ED visits per 100 children. 	<ul style="list-style-type: none"> Disrupted sleep Missed school days Poor academic performance Emergency Department visits Hospitalizations

Health Barriers to Learning	Prevalence & Unmet Need for Services	Impact on learning
Uncorrected Vision Problems	<ul style="list-style-type: none"> • Uncorrected refractive errors affect 18% of 12 to 17 year olds. • Amblyopia affects 2% of children aged 6 months to 6 years old. • Strabismus affects 2% to 4% of children below 6 years old. • In some underserved communities, 22% to 30% of children fail vision screening, indicating high unmet need for services. 	<ul style="list-style-type: none"> • Adverse effects on visual tasks such as reading, writing and using computers • Poor school performance • Adverse effects on motor skills needed in practical, daily tasks
Uncorrected Hearing problems	<ul style="list-style-type: none"> • 9 to 10 children out of every 1000 will have permanent hearing loss by school-age. • Although 95% of newborns receive hearing screening, newborn screening will still miss children who develop hearing loss later. 	<ul style="list-style-type: none"> • Inability to understand speech in the classroom • Grade repetition • Speech and language deficits • Social emotional issues including low self-esteem, less energy, & behavior problems • Poor educational performance
Dental pain	<ul style="list-style-type: none"> • Caries are common, with more than half of 6 to 8 year olds (56%) experiencing caries. • Untreated caries are also common. Nationally, about 22% of children aged 6 to 9 had untreated caries, with particularly high rates in black children (32%), Mexican American children (29%), and children living in poverty (27%). • Nationally, only 44% received dental care in the past year. Rates are even lower in black children (34%), Hispanic children (35%), and children in low-income families (33%). 	<ul style="list-style-type: none"> • Missed school days • Lost sleep • Difficulty with paying attention • Poor school performance: problems at school, falling behind in homework & lower grades • Psychosocial problems: Feeling worthless, shy and unhappy. Less likely to be friendly.
Persistent Hunger	<ul style="list-style-type: none"> • Nationally, children experience food insecurity in 8% of households with children. Rates are higher in single female-headed households (15%), black households (11%), Hispanic households (12%), and poor households (21%). 	<ul style="list-style-type: none"> • Emotional state of the child • Interaction abilities & social skills • Anxiety and depression • Lower levels of school engagement • Greater risk of being placed in special education • Poorer test scores

Health Barriers to Learning	Prevalence & Unmet Need for Services	Impact on learning
<p>Certain Mental Health and Behavioral Problems</p>	<ul style="list-style-type: none"> Behavioral disorders affect 4% of children and are most commonly diagnosed in black children (6%) and children in poverty (7%). Attention-deficit/hyperactivity disorder (ADHD) is the most common mental health problem with about 10% of children diagnosed at some point in their lives. Children who are poor, uninsured or whose parents have low levels of education tend to have less access to the mental health care they need. 	<ul style="list-style-type: none"> Lower likelihood of completing college Failure to graduate from high school Grade repetition Suspension Decreased academic performance (low reading and math test scores) Placement in special education
<p>Effects of Lead Exposure</p>	<ul style="list-style-type: none"> About 1.1 million low-income homes with children under the age of 6 still contain lead-based paint hazards. Average blood lead levels are higher in black children, children enrolled in Medicaid, and children from poorer families. About 67% of Medicaid-enrolled children were tested for lead by the age of 2, potentially missing opportunities to identify and mitigate the risk of permanent neurologic damage and behavioral disorders. 	<ul style="list-style-type: none"> Decreased IQ Decreased academic performance Speech and language deficits Behavioral problems, including ADHD and destructive and aggressive behaviors

Given that education and graduation from high school are critical to achieving good health, well-being, and social stability in adulthood, a child's ability to attend school, concentrate in the classroom, and perform academically are paramount. Windows of opportunity for children to achieve critical milestones, such as reading proficiency in 3rd grade, pass quickly. Thus, the pervasive problem of children with unidentified and untreated Health Barriers to Learning needs to be urgently addressed.

Each of these health barriers has treatments or interventions that have been proven to work. Many well-designed clinical screening and treatment guidelines and protocols include some or all of these HBLs. Additionally, there is a growing recognition that children in poverty are at higher risk. For example, the American Academy of Pediatrics' Bright Futures recommends screening for vision at ages 3,4,5,6,8,10,12, and 15—but adds the caveat that screening should be done annually for children who are at risk, which includes poverty and other high risk demographic and social factors.²⁹⁸ Similarly, the AAP recommends blood testing for children at specific ages, but also recommends that all children ages 0-6 receive an annual risk assessment for lead exposure.²⁹⁹ In 2015, the AAP added screening for hunger,³⁰⁰ and in 2016 added screening for poverty³⁰¹ to the recommended protocol for well child visits. Moreover, there is an increasing awareness of the impact of Adverse Childhood Experiences on health and brain development, and promising interventions continue to develop to mitigate their impact by building resilience.

However, to make a real difference at both an individual and a population level, children who need any or all of these interventions must be identified early, which requires longitudinal, systematic screening. Approximately 15 million children still have barriers to receiving routine primary care,³⁰² and many others do not routinely access it. To reach these children, solutions require an integrated, broad-based public health approach—one that ties together the often-siloed institutions of education, health care, and social services; and that better integrates parents into the circle of knowledge and care plan for the child.

Recommendations

To empower at-risk communities and to keep children healthy and ready to learn, the healthcare and education sectors, parents, and other community agencies need to work together to create an integrated safety net. To be effective, this requires coordination and collaboration among the medical and education sectors, parents, and other community agencies that provide support services for children. Shared messaging about the importance and interdependence of health, attendance, and school success will be important.

Annual Screening and the Medical Home Model of Care: In addition to uninsured and underinsured children, many children who have coverage are not yet accessing optimal care in the medical home model. Conceptually coined in the 1960s by the American Academy of Pediatrics, the term medical home refers to 'delivery of advanced primary care with the goal of addressing and integrating high quality health promotion, acute care and chronic condition management in a planned, coordinated, and family-centered manner.'³⁰³ Continuity is a key feature, particularly important in the management of children's health as they progress through different mental and physical developmental stages and challenges. The relationship developed over time allows for more consistent screening, targeted preventative guidance, and management of chronic conditions. As discussed, from a clinical standpoint, there are varying recommendations for the specific periodicity of some screenings, but clearly from the evidence presented above, children—especially those in poverty or with other risk factors—are being missed, which is subsequently impacting their ability to learn and succeed in school. Clinical teams need to prioritize age-appropriate annual screening for Health Barriers to Learning and ensure treatment in the medical home model, which includes coordination of care.

HBL Screening Required by Schools: To create a safety net for children who aren't engaged in regular, ongoing healthcare, additional screening systems need to exist in places where children can be reached—like schools—to identify and connect them with a medical home for comprehensive services and preventative care. Currently, there is little consistency across districts or states as to what health screenings are offered or required for attendance, or with what frequency.³⁰⁴ Some require as little as an immunization record, and many that do require a more comprehensive screening don't require it on an annual basis. Some districts and states do require vision screening at school, but not all require the screenings to be done annually. Though it is unlikely that schools could realistically provide comprehensive screening on site annually for all of the HBLs, a set of age-appropriate annual HBL screenings required by the school could be a driving factor to influence parents and community clinics to work together to make this approach succeed, better integrating children into medical home care. Screening at other agencies caring for children, such as preschool, afterschool programs, and homeless shelters—when integrated and supported for follow up services—could also help complete this safety net for the most at-risk children. These multiple access points can serve as doorways into the medical home and comprehensive healthcare.

Family Service Agencies and Organizations: Many families may require assistance or support from court, foster care, housing, or other social service agencies. An accurate understanding of a child's health and educational needs are fundamental components in each assessment. Similarly, referrals, further diagnostic studies, treatment, and plans for services at school may be needed and should be integrated into the placement or care plan. Agencies and workers need to fully understand the issues which children and their families may be experiencing. Appropriate training, protocols, and access to materials on HBLs and trauma-informed care need to be developed and offered to social service agencies and family court officials.

Parent Engagement: Parent education and engagement needs to be a high priority, as coordination of the health and education needs of a child comes from the home. Additionally, many services, even if offered through schools, still require specific parental consent and participation in needed follow-up. This could be, in part, facilitated by increased public awareness of the importance and impact of Health Barriers to Learning. Outreach, unified messaging, and coordination between the medical and education sectors is also key.

Communication: While required or recommended screening forms at school could bring more children into comprehensive medical home care, in turn, the clinical teams must also communicate needs of individual children effectively with the parents and school, so that appropriate care and services are provided for children in all of their daily environments. To do this, relevant care plans must be available and understood by caretakers and teachers. It is critical for clinical care teams to prioritize age-appropriate annual screening and treatment of Health Barriers to Learning, but also to ensure that parents and schools have access to and understanding of the information. This will require significant commitment by providers, parents, and school systems.

Use of technology and information systems, like web-based immunization registries, could be leveraged to securely store and share critical information on a child's screening status, identified Health Barriers to Learning, and associated needs. Creating an online repository for HBL-related information may be an excellent way to ease the data collection burden and improve accessibility for use in the development of supporting interventions, education for parents, and evolving policies that ensure every child has the greatest opportunity to be healthy and ready to learn. As with any vital information system, especially those that have health or educational personal information and direct impact on children, various regulations that guide the protection and use of sensitive data must be followed. Systems seeking to

leverage technology for innovation should be certain to define clear rules for accessing and using the collected information, as well as a clear governance process to ensure all parties have a voice in how these vital information tools are used.

Policy and Funding: For each of these things to happen, accessible and sustainable funding streams need to be made available. Parents need to be able to access and afford any screening and treatment required by school. Clinics need to be reimbursed for staffing necessary to complete multiple screenings at patient visits, and to provide for the necessary case management and health education often needed for children with identified Health Barriers to Learning. Potential new alternative reimbursement models such as value based payment to providers driven by outcomes may better allow for incorporation of these vital but traditionally non-reimbursable services. Schools, which are already struggling and painfully understaffed with school nurses, require protected funding to be able to support additional school nurses and services directed towards screening and referral.

Passed in late 2015, the Every Student Succeeds Act (ESSA) offers an expanded set of tools to plan and operationalize program initiatives to identify and address Health Barriers to Learning. It includes important provisions that allow states and school districts to use Title I and Title IV funds to supplement screening, health, wellness, and mental health services. States and school districts must be informed and encouraged to fully leverage the potential opportunities presented within the ESSA. However, even with resources provided through ESSA, many schools—especially those with high rates of children in poverty—face severe challenges, with many competing priorities to cover with this funding. One emergent and extremely promising option, the 2015 reinterpretation of the Free Care act, would permit school districts and schools to engage Medicaid providers, who would be newly enabled to bill for health-related services offered to school-based Medicaid-eligible populations.

Further Research: Further research needs to be done and assimilated to drive screening requirements and policy changes, in particular focusing on the potential cost savings that these early interventions could produce, both in health care costs saved by keeping children out of the Emergency Department and hospital; and also by increased earning potential, contribution to the workforce, and lower disease burden in adulthood.

CONCLUSION: In summary, Children’s Health Fund makes the following recommendations to empower at-risk communities and to increase identification, management, and treatment of Health Barriers to Learning for all children, with a particular focus on those living in poverty:

Healthcare Sector

All children should have an affordable, accessible medical home. Clinicians should:

- Prioritize annual, age-appropriate, systematic screening and management of the Health Barriers to Learning;
- Ensure effective communication of the results, importance to educational success, and relevant management considerations to schools and parents; and
- Promote the utilization of tools and inter-agency, cross-sector communication systems to consistently identify and track HBLs.

Education Sector

Schools should be supported as points of influence and access for annual screening and referral for Health Barriers to Learning, to ensure children who haven't been engaged with a medical home are screened and connected to health care. School systems/educational professionals should:

- Ensure teachers and other school personnel receive adequate training on the importance of Health Barriers to Learning and relevant school/classroom support to mitigate any potential effects on children's educational success; and
- Require annual screening for age-appropriate Health Barriers to Learning, either onsite, or in collaboration with children's primary care providers.

Family Service Agencies and Organizations

Children with documentable HBLs may need medical attention, health services, and social services that are relevant to their status and critical to meet their needs and coordinate care and intervention. Court and family service agencies should:

- Receive appropriate training on the relevance of HBLs to children in their care; and
- Ensure HBLs are appropriately addressed in their decision-making and care plans.

Parents and Caretakers

Public awareness campaigns and aligned messaging from the medical and educational sectors are ways to engage and empower parents to become informed advocates for their children. Parents should:

- Proactively request screening of their children for HBLs; and
- Ensure communication between their child's clinical team and school on any HBLs.

Policymakers

Resources and systems need to be in place to support services for screening, treatment, and mitigation of HBLs. Policymakers should:

- Ensure coverage of services such as case management and health education in the clinical environment.
- Make provisions to cover screening and referral of HBLs in schools and other settings.
- Ensure that as regulatory guidance for states and school districts is developed, the identification and amelioration of HBLs are encouraged and incentivized as a priority within Title I and other categorical funding streams in federal education legislation.