Medical-Legal Partnership Interventions and Child Development: Cross-sector Partnerships to Address Social Determinants of Health

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(introduction)

The challenges facing the healthcare delivery system are multifaceted and complex, with a wide range of stakeholders looking to both improve public health while reducing costs and burdens on the healthcare system. Medical-Legal Partnerships offer an innovative, cost-efficient approach by layering medical diagnosis and treatment with an examination and remediation of environmental factors in patients' lives causing them to be or stay sick.

Medical-Legal Partnerships (MLPs) go beyond treating symptoms to address root contextual causes that limit child and family health and well-being. Through a holistic approach, MLPs foster immediate and long-term health while removing barriers to supporting healthy child development and healthy families.

This paper outlines the structure, services, and outcomes associated with Medical-Legal Partnerships, explores the growth and utilization of MLPs in South Carolina as a case study to inform other efforts, highlights the impact of social determinants of health and child development, and identifies opportunities to strengthen MLP service delivery for improved public health.

(what is a medical-legal partnership?)

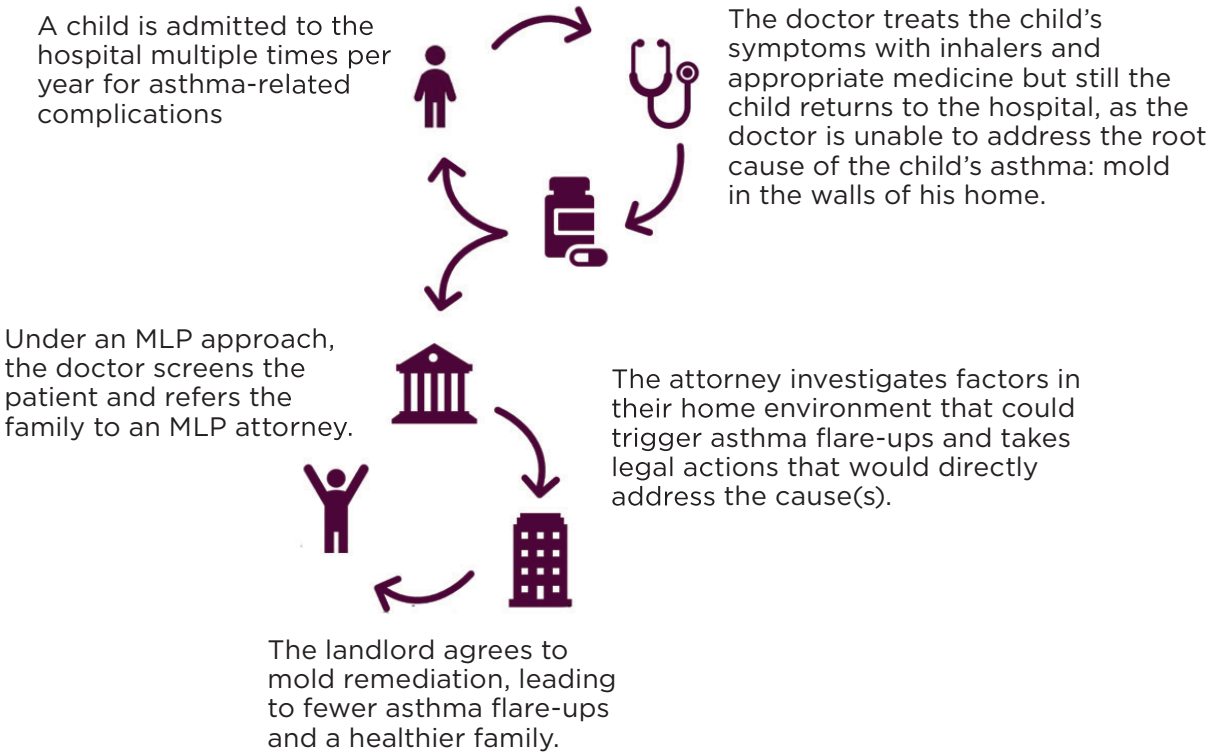
Medical-Legal Partnerships (MLPs) are a cross-disciplinary approach to integrated healthcare, proven to improve child and family health and economic outcomes. Using this approach, doctors and lawyers work together to address and prevent health-harming civil legal barriers to a person's quality of life and health outcomes.

The timely and careful intervention of a civil legal aid attorney helps healthcare providers respond more effectively to the social needs which negatively impact health. These civil legal aid attorneys can:

- improve low-income patient access to justice,
- reduce costs for "safety net" hospitals,
- improve patient satisfaction, and
- reduce community health disparities.

Over the last decade, 333 hospitals and health centers across the U.S. have adopted the MLP approach.[1] Beyond health care organizations, 146 legal aid agencies and 53 law schools across 46 states collaborate on MLPs.[2] Numerous pro-bono partners, medical schools, and higher education institutions partner to serve as additional community partners in the MLP approach. Each MLP may have different specialty areas, intervention types, or organizational structures.

Image 1: MLP Intervention for Asthma Example



At MLPs, civil legal aid lawyers embed into the health care institution. Clinicians conduct an MLP screening as part of their practice, identifying civil legal problems that contribute to negative health outcomes, like an illegal eviction or the financial exploitation of a vulnerable adult. These patients are then referred directly to the MLP for consultation and intervention. Like other members of the healthcare team, MLP staff are available to consult with clinical and non-clinical staff about system and policy barriers to care. In addition to working directly with patients, many MLPs then use their experience to advocate for policies that improve community health.

Medical-Legal Partnerships offer three main services:

- representing individuals or families to address conditions that harm or impact health;
- training clinicians to screen for potential legal barriers to good health; and
- advocating for structural policy change.[3]

MLPs typically address the civil legal barriers commonly represented by the acronym "I-HELP": Income Supports, Housing, Education, Legal Status (including divorce), and Personal Safety and Stability. The table below outlines a non-exhaustive list of cases MLPs can address.

Table 1: Medical-Legal Partnership Case Supports

I-HELP category	Types of Case Support
Income Supports	Claim and delivery issues, credit, health insurance coverage claims: social security, SSI, SNAP, Medicaid, Medicare, veterans (VA) claims and benefits
Housing	Foreclosure defense, public housing, eviction defense, homeownership, housing vouchers, federally-subsidized housing, housing conditions, utility shut-off protection
Education and Employment	School discipline, school enrollment and fees, Individualized Education Plans (IEPs) and special education services, disability accommodations in school/work
Legal Status	Criminal background issues, consumer law status, military discharge status, immigration status
Personal Safety and Stability	Domestic violence, orders of protection, custody, kinship care arrangements, adoptions, guardianship, child support, advanced directives, estate planning

MLPs fill an important gap in the legal system for patients. In criminal cases, low-income defendants have a right to legal counsel through a public defender. In civil cases, however, citizens do not have a right to counsel; they must provide their own. In the instance of interpersonal violence, if a male partner is arrested for a domestic violence incident, he has the right to a lawyer for his criminal case. Conversely, his partner does not have any right to an attorney for legal issues surrounding the domestic violence. To obtain protection, she must pay out of pocket for legal assistance with protective restraining orders, custody arrangements, and child support payments. MLPs play an important role in improving health, safety, and self-sufficiency for clients.

Case Study: South Carolina's MLP History, Impact, and Significance

In South Carolina, there currently is an MLP in Greenville, consisting of 3 partners: Greenville Health System (GHS)[i], South Carolina Legal Services (SCLS), and Furman University. In Columbia, the MLP known as CHAMPS – the Carolina Health Advocacy Medicolegal Partnership Clinic – is a collaboration of the USC School of Law, the USC School of Medicine, Palmetto Health, Palmetto Health-USC Medical Group, and South Carolina Legal Services – a statewide private non-profit law firm providing civil legal services to protect the rights and represent the interests of low-income South Carolinians. There is also a nascent MLP in Charleston in partnership with the Medical University of South Carolina (MUSC), SCLS and the Charleston School of Law.

Greenville MLP Case Example:

A one-year-old with cystic fibrosis is repeatedly admitted to the hospital with trouble breathing and a history of lung infections. The MLP attorney challenged the landlord over a mold-infested apartment. The landlord was forced to move the family and provide new tiles and air filters. As a result, the child's breathing improved.

i In January 2018, Greenville Health System (GHS) and Palmetto Heath conjoined their services under the auspices of a company presently known as the South Carolina Health Company (SCHC,) serving patients from the Upstate to the Central Midlands of South Carolina. This new not-for-profit healthcare organization states on their website (http://scbettertogether.org) the restructuring began from a realization that, "the severe impacts of poor health and health disparities in our state are simply not sustainable. Our [GHS and Palmetto Health] partnership gives us a unique opportunity to make positive changes over time. Together, we will reach more patients, make South Carolina healthier, attract new team members, spur economic development, offer new and broader services to our patients and address rising health care costs."

The first MLP in South Carolina began with a casual e-introduction by a friend of a friend. In 2013, Annie Maertens, an intern with Developmental-Behavioral Pediatrics at GHS's Children's Hospital, introduced Nancy Powers, M.D. of the GHS to Kirby Mitchell, J.D., a Greenville legal aid lawyer, to explore building a partnership in Greenville.

Ms. Maertens, an MSW graduate student at the University of South Carolina, was participating in a federal Leadership Education in Neurodevelopmental and Related Disabilities (LEND) grant under Dr. Powers's supervision. Their goal was to survey local health needs, possible partners, and civil legal aid resources in Greenville. At that time, MLPs existed in 34 states. The larger dream – of establishing the Palmetto State's first MLP with GHS in Greenville – developed into a serious collaboration from these early friendly meetings in 2013.

Understanding the potential, South Carolina Legal Services' (SCLS) Greenville office, under the leadership of managing attorney Kimaka Nichols-Graham, began taking a wide variety of MLP test cases before any dedicated MLP funding existed. This test phase identified potential "MLP champions" in each partner organization and developed key cross-professional relationships between legal aid attorneys and GHS clinical staff. Each partner had the chance to learn each other's procedures, language, culture, strengths, and limits and see the great potential for a formal MLP. In 2015, an official MLP Memorandum of Understanding recognized the formal beginning of the MLP between the three Greenville partners – SCLS, GHS, and Furman. The South Carolina Developmental Disabilities Council awarded a 3-year pilot grant to develop a screening and referral pipeline to get needed legal help (primarily around transition of care and guardianship) to families struggling with autism spectrum disorders and other developmental disabilities.

The inclusion of Furman University as a formal MLP partner is noteworthy. Of the 300+ MLPs across the U.S., many are affiliated with prestigious law schools and medical schools but Furman University is the only undergraduate liberal arts institution partnered with an MLP in the country. Through a popular "Maymester" class, fellowships, and independent study opportunities, Furman students – future doctors, lawyers, nurse practitioners, social workers, and health care professionals – have the opportunity to study, intern, and research with Greenville's MLP while undergraduates.

The Greenville MLP continues to be focused in GHS's Behavioral Pediatrics, with the embedded MLP office at the Center for Developmental Services (CDS) in downtown Greenville. The MLP is exploring new case types and patient populations for maximum impact on community health through legal interventions. The Greenville MLP was boosted substantially by key two-year "seed funding" for a dedicated MLP attorney beginning in 2016; a large number of SCLS attorneys (including in the near-to-Greenville offices of Spartanburg and Greenwood) continued to accept and work on MLP cases primarily in public benefits, family law, and housing. Additionally, a Greenville Bar pro bono initiative agreed to accept MLP and SCLS cases and serve as the pilot county for a pro bono matching software project initiated by S.C. Supreme Court Justice John Few through his role with the S.C. Access to Justice Commission.

Beginning in late 2017, the MLP began to spread into the wider GHS Pediatrics practices through the efforts of pediatrician Kerry Sease, M.D., MPH, the Medical Director of GHS Children's Hospital Bradshaw Institute for Community Child Health & Advocacy. The MLP also moved toward a more streamlined clinician referral process, allowing MLP cases to be electronically referred within GHS's electronic medical record system, EPIC. This represented a major MLP administrative, record-keeping, and time-saving breakthrough.

The Greenville MLP has also hired its first coordinator, Catie Buckingham, whose role embodies the embedded structure of this MLP – she is a Furman employee who works at GHS while working primarily with a SCLS attorney. In May 2018, the Greenville MLP received a Healthy Greenville grant of over $590,000 for three years to expand the MLP from GHS Pediatrics into GHS Geriatrics, providing for the hiring of an additional MLP coordinator and MLP paralegal.

In 2017, CHAMPS – the Carolina Health Advocacy Medicolegal Partnership – launched, housed at the School of Law at the University of South Carolina in Columbia, South Carolina. Led by USC assistant law professor Emily Suski, JD, CHAMPS trains a new generation of doctors and lawyers in an MLP team approach to work together to improve health outcomes. Law students, medical students, and MSW students from USC, along with pediatric residents and physicians, work in teams on cases referred through pediatric clinics staffed by the Palmetto Health-USC Medical Group. Under Suski's MLP-experienced supervision, the MLP team works together to determine what legal solutions may exist for health problems that initially present as "medical" in nature. CHAMPS Clinic partners also include Palmetto Health, the Palmetto Health-USC Medical Group, and S.C. Legal Services' office in Columbia.

The two MLPs – CHAMPS in Columbia and the Greenville MLP – quickly began informally collaborating and sharing "best practices" information, as well as cooperating on MLP presentations and appearing as guest lecturers in each other's educational efforts. January 2018 brought a new potential South Carolina MLP opportunity, through the official partnering of the respective medical providers (GHS in Greenville and Palmetto Health in Columbia) into one health care company, which would be the largest private employer in South Carolina. Discussions are underway about the possibility of more formal collaboration between these two differently-focused and independent but potentially complementary MLPs.

Since its inception, the Greenville Medical-Legal Partnership has accepted 121 cases, the majority of which dealt with custody and visitation, adult guardian or conservatorship, public benefits, and special education and disability services.

Greenville MLP Case Example:

Developmentally-delayed and autistic 8-year old child is well-cared for by his mother. She mentions to nurse that she has just been sued by the child's biological father regarding child support and custody/visitation. The child has hardly met his father, and mom is very concerned that his special medical needs and medication schedule will not be carefully addressed by the child's father if he is granted custody and/or visitation. The family is referred to the MLP. The attorney represents mother at the contested family court hearing, and through extended litigation and mediation secures an detailed court-enforced agreement (after consultation with the child's pediatrician) that benefits all parties and protects this vulnerable child's health.

(why an mlp approach?)

Beyond immediate health care delivery, the MLP approach represents "a starting point for thinking about the role of law in creating health systems and environments that are premised on – and can help create – health equity."[4] America today is experiencing a "Justice Gap": there is only one legal aid attorney for every 6,415 persons in poverty. Families in rural areas may be even less likely to utilize legal aid services if they do not exist close by. Beyond those who qualify for free legal aid services due to income, "the Legal Services Corporation and the American Bar Association estimate that of the approximately 50 million low-income individuals in this country, *each has at least one health-harming civil legal need*."[5]

Medical-Legal Partnerships have research-proven benefits to children and families and to effectively address social determinants of health. Chronic illnesses are a major driver of healthcare costs[6] and are more frequently treated in emergency rooms rather than more appropriate, less costly settings.[7]

According to the National Center for Medical-Legal Partnerships, housed at the George Washington University, MLPs have five main research-proven areas of impact:[8]

- Patients experiencing chronic illness are hospitalized less frequently;[9, 10, 11]
- Patients more often take medication as prescribed;[12, 13]
- Patients report lower stress levels[14, 15, 16]
- Healthcare service costs decrease for high-need, high-cost patients who would typically go to the hospital;[17, 18]
- Medical services see higher reimbursement rates.[19, 20]

In New York City, hospitals saw a 90 percent reduction in emergency department visits for asthma patients who received legal help from an MLP for a housing issue.[21] A pilot MLP program in Pennsylvania found that the overwhelming majority of high-need, high-use patients had at least two civil-legal needs. Once these legal needs, most of which centered around housing adequacy, were tackled, hospital admission, ER usage, and overall costs were halved.[22]

Further, MLPs generate significant cost-savings and returns on investment: among the range of studies demonstrating cost savings for healthcare systems and the families that utilize their services, one longitudinal study in a rural Illinois MLP intervention saw a 149 percent private return on investment and a 319 percent Medicaid ROI.[23]

Beyond patient-centered impacts, healthcare providers engaged with MLPs reported markedly improved patient health outcomes and patient treatment compliance.[24] MLPs not only foster positive health outcomes but may also help strengthen a positive provider-patient relationship.

(structural factors influence overall health)

Healthcare access and genetics are only a small component of overall health. It is estimated that the majority of what influences our overall health are the social, environmental, and behavioral factors we experience.[25] These are often referred to as a person's **Social Determinants of Health**, or, the conditions and contexts in which children grow and develop that influence their overall health and quality of life. These factors have a bigger impact on population health than does access to medical care.[26]

The World Health Organization notes social determinants are the "factors such as where we live, the state of our environment, genetics, our income and education level, and our relationships with friends and family [that] all have considerable impacts on health, whereas the more commonly considered factors such as access and use of healthcare services often have less of an impact."[27] The Social Determinants of Health (SDOH) can be categorized into several key domains:

- Economic Stability,
- Education,
- Social and Community Context,
- Health and Healthcare, and
- Neighborhood and Built Environment.[28]

These factors and their relation to health-harm or health-promotion are discussed further in the following section. Remarkably, one factor missing from these SDOH is the law. The Co-Directors of the National Center for Medical-Legal Partnership note, "[t]his exclusion is deeply unwarranted: The law and legal system are vitally important to the health of individuals and populations."[29] The law's impact on individual and population health is not discussed directly here; instead we focus on using the law as a lever to improve health.

As a part of their core services, MLPs provide training and development opportunities for medical students and doctors in medical-legal education. As a result of these trainings, medical students are statistically more likely to screen their patients for social determinants of health risk factors and to refer patients to legal aid services.[30] This is especially important, as a recent survey of pediatricians found that less than 11 percent were familiar with Adverse Childhood Experiences (ACEs) study, and 32 percent did not ask about any ACEs at well-child visits. In addition to recommending an ACEs screener, the Academic Pediatric Association's Task Force on Poverty recommend screening children, especially children in poverty, for Social Determinants of Health and recommend MLP intervention as one avenue to respond to a child's SDOH needs.[31]

Many of the social determinants have a bi-directional impact on health, meaning that a deficit in one area may negatively impact a person's healthiness but poor health can limit a person's potential to achieve good outcomes in that area. In this way, the connection between health and its social determinants can feel a bit like a "chicken or the egg" equation, which merits attention to both angles.

Education is one such example: An individual's education level has been consistently directly and indirectly tied to numerous health outcomes for both children and adults. Higher education levels are tied to higher income levels, which are also correlated to health outcomes. Higher education levels are associated with better health, but inequitable access to high quality educational experiences can limit educational potential and overall health outcomes. Children experiencing poor health, safety risks, or health risks are less likely to attend school and have poorer achievement outcomes —a child who cannot breathe well from mold in her home is more likely to be chronically absent, which can put her behind her peers; a child experiencing trauma and toxic stress from domestic violence and frequent moves may be suspended from school for acting out or falling asleep in class.

In the United States, all children regardless of immigration status or income level are eligible for a free public education, but children in predominantly low-income communities may only have access to lower-quality educational environments. Unfortunately, the funding available for education varies substantially from district to district and state to state. Most school districts in the US largely

rely on local property and income taxes to fund the schools; nationwide, roughly 47 percent comes from state funding and 45 percent from local funding.[32] As a result, school districts serving children with high rates of household poverty have less money to spend per student. Children living in poverty often have greater educational needs and fewer resources to support education outside of the school but may be served in districts underfunded for those needs. As educational attainment is a key strategy for rising out of poverty, the net effect of this inequality in school funding is to contribute to a generational cycle of poverty.

MLP Interventions:
MLPs reduce inequities by ensuring school districts appropriately serve children's special education needs and comply with children's Individual Education Plans (IEPs) and federal requirements. Because of this intervention, children with intellectual disabilities, developmental delays, or other special education needs have more appropriate placements, accommodations, and services.[33]

(economic insecurity is tied to poor health outcomes)

Income inequality is at the root of many forms of inequality related to the social determinants of health, and studies demonstrate clear links between income inequality and poor health outcomes.[34]

Financial hardship and early adversity impact children in multiple ways: economic insecurity can lead to physical deficiencies, like malnutrition and developmental delays, but the unmitigated stress of insecurity and the inability to meet basic needs puts children at greater risk for maltreatment. One randomized control trial in a major urban hospital, where most patients are covered by Medicaid, examined the impact of MLP intervention on infant health in low-income families. The study found that the infants who received the MLP-based intervention were more likely to be immunized on schedule, more likely to be seen more for well-baby pediatric visits, and less likely to be hospitalized in their first year of life.[35] Further, their families experienced significantly greater access to safety net resources and benefits, like the Supplemental Nutrition Assistance Program (SNAP), or housing, utility, and income assistance.

Economic insecurity, high costs of care, and inequitable access to healthcare are limiting factors to good health. Cost-burdened or financially insecure adults are less likely to fill prescriptions or comply with recommended medical treatments. For families, increased compliance can mean healthier children and babies.

When pregnant women have timely access to care and eligible social services, they are more likely to have adequate prenatal care and birth babies at a healthy birthweight. Conversely, limited access to prenatal care puts babies at risk of being born pre-term or at low birthweight. These births are costlier (about $20,000 more than healthy-weight births)[36] and low birthweight is associated with both short and long-term health complications, behavioral challenges, poorer academic performance, special education placement, and grade retention.[37, 38] The Annie E. Casey Foundation notes that in addition to healthcare access, "smoking, poor nutrition, poverty, stress, infections and violence can increase

the risk of a baby being born with a low birthweight."[39] As indicated in Table 2, wide disparities exist in terms of healthy birth outcomes across demographic and geographic factors. Interventions that can improve birth outcomes result in short- and long-term benefits for children, families, and their communities.

Table 2: Pre- and Post-Natal Health Care and Outcomes, South Carolina and US

	South Carolina			United States		
	Total	**White**	**Black**	**Total**	**White**	**Black**
Babies born to mothers with inadequate prenatal care (2016)	33%	30%	39%	10%	4%	6%
Babies Born at Low Birthweight (2016)	9.6%	7.3%	14.6%	8.2%	7%	13%
Babies Born Pre-Term (2015)	13%	*	*	11%	*	*
Infant Mortality Rate per 1,000 births (National are 2015; SC are 2014-2016)	6.8	4.9	10.6	5.9	4.8	11.4

* = data not available

Note: Racial and Ethnic Disparity data are not available at the national level but are presented here to note stark contrasts in care and outcomes by race. All data are from the Annie E. Casey KIDS COUNT data center.

The most sensitive period of cognitive development occurs from before birth to roughly eight years old, with the first five years of life as the period of most rapid brain growth. As a result, children are most at risk for poor outcomes when they experience poverty and deprivation early in life when their brains are developing critical executive function, language, and memory skills that are foundational to future learning.

Children who experience poverty or economic insecurity early in their lives are more likely to experience chronic health conditions linked to toxic stress, including: high blood pressure, high cholesterol, diabetes, and obesity.[40]

If a family is economically insecure due to low wages, an unstable job, or unexpected hardships, that family is much more likely to be food insecure, meaning they are either eating lower quality foods or going without for some meals. Going to school hungry prevents learning and limits children's ability to fully participate in the classroom. Food insecure children are more likely to miss school and repeat grades than their food-secure peers. In South Carolina, 1 in 5 children have been food insecure at some point in the year.[41]

MLP Interventions:
MLPs address economic instability by improving family access to eligible benefits like Supplemental Nutritional Assistance Program (SNAP), Women, Infants, and Children (WIC), Temporary Assistance to Needy Families (TANF), Social Security benefits, and more.

Intimate Partner Violence (IPV):

Intimate Partner Violence is a scourge that affects victims and their children; while IPV does not discriminate by socio-economic status, women in in poverty and women of color are at an increased likelihood for IPV.

IPV constrains economic opportunity: beyond the physical and mental stress from experiencing abuse, between 21 – 60 percent of victims are fired for reasons stemming from the abuse, including missed work time for healthcare related to injuries. A 2005 survey from the National Law Center on Homelessness & Poverty (NLCHP) and the National Network to End Domestic Violence (NNEDV) found over 600 of 5,422 studied evictions resulted from domestic violence and more than 300 people were denied housing due to their victim status.[42]

This topic is particularly salient in South Carolina, which has led the nation in rates of IPV-related homicide for every recent year of data collection.[43] When children are exposed to violence in the home, they are 1500 percent more likely to experience maltreatment. The prominence of IPV and culture of abuse in the state extends to its children. In South Carolina, rates of physical abuse far exceed the national average: 42 percent of founded child maltreatment investigations in 2015 found instances of physical abuse, compared with 17 percent nationally.[44, ii]

MLP Interventions:

When a medical or legal professional identifies risk factors or evidence of intimate partner violence, MLP attorneys can provide legal interventions that promote family safety, including drafting protection orders and negotiating child support. As noted earlier, while someone charged with IPV in criminal court has a right to legal counsel, victims pursuing civil actions do not. MLPs help overcome the financial barrier this may otherwise cause.

Toxic Stress and Health

Defined by the National Scientific Council on the Developing Mind, there are three categories of stress responses in young children: positive, tolerable and toxic. These responses are defined by their potential to cause constant, ongoing activation of the body's stress response.[45]

Positive stress, like the anxiety related to a new situation, is part of the normal developmental process when buffered by the stable relationship with a caring adult. Positive stress promotes learning and adaptive skills for stressful situations.[46]

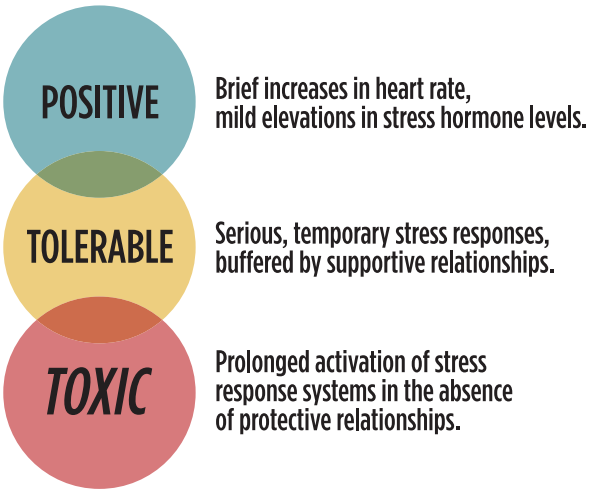


Image 2: Stress level responses.

Adapted from the "Toxic Stress" from the Center for the Developing Child at Harvard University

ii It is important to note that rates of IPV are often *under*reported, for reasons related to stigma and fear, and so the scope of this issue is likely much larger than demonstrated here.

Tolerable stress represents situations that are not typical of daily life and can be defined as something posing a higher degree of threat to the individual. These types of stressors include the death of a parent, a serious illness or injury, or divorce. Response to tolerable stress can be tempered by the effects of a nurturing relationship with an adult who can help the child adapt to his or her stressor.[47]

Toxic stress is the most damaging type of stress on the body and the brain. Toxis stress occurs when the child is exposed to frequent or ongoing adverse stimuli without the supportive relationship of a trusted adult to mitigate or help regulate said stress.[48] Examples of toxic stress stimuli include neglect, abuse, domestic violence, caregiver mental illness, as well as the potential accumulated effects of economic hardship. Exposure to toxic stress and adverse childhood experience puts young children at significant risk for poor health and developmental outcomes. The continual exposure to toxic stress can cause disruption in the brain and other organs in the developing child with lasting impacts on health and well-being for a lifetime.[49]

The cumulative burden of stress on the body can alter the brain's architecture and ability to process memories, regulate emotions and behavior, and make decisions. Because toxic stress wears down the ability to manage stress, children who experience toxic stress are more likely to have more volatile reactions to subsequent, smaller stressors. Experiencing toxic stress early in life is associated with costly, long-term negative health outcomes like heart disease, depression, autoimmune disease.[50]

Experts Jack Shonkoff, MD, and Andrew Garner, MD, note that the evidence of toxic stress' long-term impacts "underscores the need for the entire medical community to focus more attention on the roots of adult diseases that originate during the prenatal and early childhood periods and to rethink the concept of preventive health care within a system that currently perpetuates a scientifically untenable wall between pediatrics and internal medicine."[51]

It is particularly important for overall family health to identify young children experiencing toxic stress, as "families most vulnerable to toxic stress tend to lack the financial and social capital needed to advocate for themselves when legal issues arise... [these families] typically have 2 to 3 unmet legal needs. ***Virtually all of these needs are directly or proximally connected to health status***."[52] It has been shown that adults at high risk for toxic stress may be less able to offer the stable and supportive relationships that help buffer these stressors.

MLP Interventions:
Routine screening for increased vulnerability and exposure to adverse events as listed above is useful only if collaborative relationships exist with local services to address the identified concerns. MLP represents one such collaboration. Addressing legal needs connected to family health can mitigate stress, improve family relationships, and improve overall health. Additionally, patients report less stress, which grants them more mental and emotional freedom to focus on other areas of life.

(different forms of instability are interconnected)

Any form of instability is stressful, but when a family experiences economic insecurity, they are at higher risk for other forms of insecurity or instability. Low hourly wages may mean a family has few quality housing options. Instability in job security may threaten a family's ability to make rent

payments. The graphic below shows the linked nature of instability, and illustrates that children, unable to control their circumstances, are at the center of each stressful life condition.

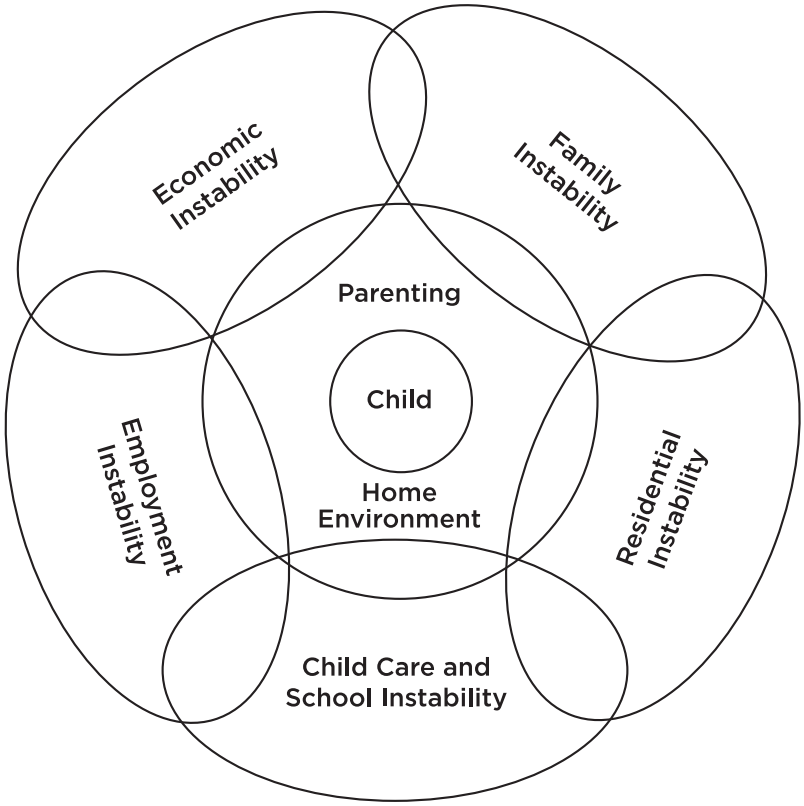


Image 3: Adapated from Conceptual Framework of the Effects of Instability on Children and the Supportive Role of Parenting and the Home Environment.

From: Sandstrom, H., and Huerta, S. (2013). The Negative Effects of Instability on Child Development: A Research Synthesis. Urban Institute. Used with permission

(housing quality and stability drive health)

The physical environments and communities in which children are raised play a significant role in their overall health. Both quality and stability of the environment matter, with research making particularly clear the importance of housing quality. Both quality and stability can be addressed by an MLP approach.

Housing Quality and Child Health

The quality of a child's home environment can influence their health in a variety of ways. Quality measures include safety, exposure to environmental toxins, and disparities in indoor and outdoor surroundings. The most pressing safety concerns for children today are lead exposure and asthma-inducing causes.

Lead: Lead is a common environmental toxin and can affect almost every organ and system in the body. Children six years old and younger are most susceptible to the effects of lead. Lead exposure puts children at increased risk for developmental delays, IQ deficits, lower academic achievement, poor social-emotional development, behavior problems, slowed growth, anemia, and in rare case: seizures, coma, and death.[53]

For children, there is no safe level of lead exposure. Even very small amounts of blood lead levels been shown to significantly impact children's academic and cognitive abilities, demonstrating increased need for improved lead abatement efforts.[54] The Centers for Disease Control estimates that "14 million children below age 6 live in houses built pre-1960 [which are likely to have lead paint hazards], and 35 percent of low-income housing units have lead-based paint."[55]

Infrastructure can pose a significant risk to community lead exposure. This is most evident in Flint, Michigan, where residents have been unable to use and drink tap water since early 2014 due to lead contamination in pipes. In April 2018, Michigan ended free bottled water distribution for the city though water safety concerns remain, putting children and families at further risk of costly and debilitating impacts of lead exposure.[56]

The documented risks of learning, behavioral, and cognitive problems are present for all potentially exposed children in Flint, though the ongoing problem of lead exposure is not confined to any one city. Nationally, one million US children have blood lead levels high enough to impact intelligence, development, and behavior.[57] Many experts agree that the "failure to address the public health threat that lead represents to children's health is a financially shortsighted decision."[58]

Because lead exposure can cause and exacerbate aggressive and impulsive behaviors, adolescents are at higher risk of engagement with the criminal justice system; this is particularly true for youth of color, who already have disproportionately high interactions with law enforcement based on structural inequities. Ongoing data collection in Flint suggests residents are at high risk of hypertension, kidney problems, and stillbirths, which may affect exposed residents for decades to come.[59]

Greenville MLP Case Example:

Our MLP received emergency notice of a parent (with two small children) who received eviction papers. The kids had seen a GHS pediatrician due to bed bugs in their apartment, and the landlord blamed this family, alleging they had been the source of the bedbugs. The landlord actually filed two evictions – against this family, and also against the grandmother, who lived in another unit, alleging that all of them were the source of the bedbugs.

Our MLP was able to:

(a) get these improper eviction actions dismissed;

(b) show that there was a prior history of bedbugs in this apartment unit that the landlord had attempted to treat (but apparently been unsuccessful);

(c) get the landlord to properly treat this apartment for bedbugs from a professional pest control service;

(d) get the landlord's allegations of rent owed eliminated, saving client hundreds of dollars;

(e) assist client in moving to a different apartment by getting her a settled departure date for which no additional rent was owed and keeping her Sec. 8 housing assistance voucher; and

(f) assist to make sure no improper "black mark" was placed against this tenant on the public record which would make renting in the future difficult.

Other environmental toxins are also an issue. Childhood asthma is a leading cause of chronic absence in school.[60] Asthma is exacerbated by the presence of mold, toxins, allergens, and damp environments.[61] Structural defects, like leaking pipes and old carpets, can worsen and intensify asthma symptoms. In South Carolina, 9 percent of children experience asthma problems.[62] Addressing environmental factors can reduce a child's likelihood of missing school or being hospitalized due to asthma complications.

Geographic and Neighborhood Conditions: Beyond structural factors that cause direct health issues, geographic and socio-economic disparities in access to safe and adequate homes and neighborhoods can pose as barriers to good health. Noise, crowding, and segregation all impact overall health.

Chaotic, sporadic, or constant noise, like that from construction, an airport, or in a community experiencing violence, is stressful and distracting. For children, high amounts of noise impacts cognitive processing and overall academic performance. It increases aggression and one's learned helplessness.[63]

Crowding, too, impacts children's processing ability. Crowding is frequently defined as more than one person sharing a living space. When children's living situations are tenuous and unstable, many families choose to stay short or extended periods of time with friends, relatives, or neighbors, which means sharing space. On top of changes to their known living space, children's normal eating, sleeping, and homework routines are impacted. On the whole, the more chaotic a child's home environment or community is, the more likely a child will have poorer attention skills, behavior issues, and the inability to process social cues.[64]

Lower-income communities are often segregated by race, ethnicity, or socio-economic status. Segregated neighborhoods are associated with inferior access to healthcare providers, lower-quality healthcare providers, and hospitals with worse outcomes and less medical equipment. This can lead to higher adult and infant mortality rates in segregated communities, greater risk of coronary heart disease, and poorer mental health.[65]

MLP Interventions:
Legal intervention can address access barriers to fair, affordable housing, helping to alleviate crowding, and limit exposure to environmental toxins. Reducing the high burden of housing costs can free financial resources to pay for healthcare, food, and other basic needs.

Residential Instability's Influence on Child Development

Children thrive in stable environments with daily expected routines. Dramatic or sudden disruptions can prove stressful and limit a child's feeling of safety and security; severe or constant disruptions create adverse conditions for children.[66] Homelessness and housing instability negatively impact family functioning and child development.[67] Frequent moves disrupt family social networks, limiting access to both formal and informal services and supports.

Young children who experience these disruptions may form fewer secure attachments, which are key to language and social-emotional development. For school-aged children, frequent moves are linked to chronic absence and poor academic outcomes. Each school change is associated with up to 6 months of learning loss.[68, 69]

Economic instability, housing instability, and housing quality are related. Over the past 20 years, wages have largely stayed flat, despite strong growth in worker productivity.[70] The Economic Policy Institute reports that "income inequality has risen in every states since the 1970s and, in most states, it has grown in the post-Great Recession era."[71] Demand for affordable housing far exceeds the dwindling supply.

During this time period, housing costs have outpaced wage growth, which both limits a working poor family's ability to own a home and takes up a larger proportion of family finances each month.[72] In South Carolina, 28 percent of all children live in households with high housing cost burdens, meaning they spend more than 30 percent of monthly income on rent or mortgages. Low-income children are more vulnerable: 51 percent of children in low-income houses have high housing cost burdens.[73, 74] The higher the proportion of monthly income is required for housing costs, the greater the family's risk for homelessness or instability.

The strain on family finances means families must make decisions on how to spend their limited resources, which can include choosing cheaper but less nutritious foods, scaling back on health care spending, and prioritizing bills each month. Individuals and children with chronic illnesses who have utilities shut off are more likely to have complications from a lack of air conditioning, heat, or water.[75]

MLP Interventions:

MLPs can offer powerful interventions to improve housing stability and quality by: reinstating or preventing utilities from being shut off, supporting family relocation to better residential environments, appealing rent hikes, and retaining or regaining housing subsidies. Many states have laws preventing utility shut-off for families with children, the elderly, or chronically ill but burdensome compliance requirements create barriers to this needed protection. In Massachusetts, integrated care teams worked together to identify those at risk for utility shut off and wrote letters on their behalf. Further, legal teams worked to find patients who had their utilities shut off unfairly to reinstate their services. As a result of more universal screening, integration into electronic medical records, and state advocacy to change reporting requirements for eligibility, "more than 10,000 people with asthma and 400 people with sickle cell disease seen annually at Boston Medical Center are at a significantly reduced risk of the health complications that arise from having their lights, heat, and air conditioning shut off during the year, while also reducing burden on the healthcare clinic."[76]

Non-parental Caregiving

Two and a half million children are being raised by grandparents or other relatives with no birth parent present, according to a 2016 report from the advocacy group Generations United. For every child raised by a grandparent in the formal foster care system, there is an estimated 20 being cared for by relatives outside of the system. Nationwide, millions more non-parent adults play a caregiving role in families with young children in the form of routine or occasional child care provision. Yet, medical systems are generally built with the expectation of parents as the sole medical decisionmakers, potentially creating hardship for families outside of this arrangement.

Recommendations call for more than a dozen well-child visits from birth to age 5. During this time, the vast majority of children under age 5 spend some time each week in the care of a non-parent, either with a non-parent family member or a non-relative in the child's home.[77] Paid sick leave to care for family members is a rarity (policies are on the books for nine states, two counties, and 31 cities as of early 2018);[78] coupled with the fact that low-income families are more likely to have shift work with unpredictable, infrequent schedules, parents are not always available to take children to well and sick visits.[79]

Guidance exists for medical providers in determining consent by proxy for non-emergency medical decisions; a recent article in *Pediatrics*[80] highlights Florida's hierarchy as an example: "(1) stepparent, (2) grandparent of minor, (3) adult brother/sister, and (4) adult aunt/uncle of minor."[81] However, families may not consider this decision-making process until a time-sensitive need arises, and have little guidance in how to grant consent to another party.

MLP Interventions:

The most concrete way for a caregiver to have peace of mind regarding who makes medical decisions for a child – and for doctor's offices to have the most clarity – is through legal documentation. The American Academy of Pediatrics notes that some states require a signed affidavit or written power of attorney to grant consent to non-parents, which may need to be witnessed or notarized. This option may make the most sense for guardians and children who will be separated for a period of time. MLPs provide an opportunity to guide families through this process and develop documents specific to their needs rather than families trying to navigate the situation based on the policies of individual offices.

(how do medical legal partnerships influence public policy?)

Across the country, MLPs are addressing structural policy issues or systemic barriers in state or local codes that limit good health. These changes to state law and local policy benefit children and families beyond those directly served by an MLP.

The Health Justice Project, an MLP in Chicago, Illinois fought to require the Chicago Housing Authority to lower the level of lead poisoning in children that would trigger a mandatory assessment for lead abatement. Similar efforts stem from the Erie Family Health Centers, a Federally Qualified Health Center in Chicago offering MLP services. Chicago families using vouchers from the Department of Housing and Urban Development were prohibited from moving out of a home before the end of a lease term, even in the event that environmental hazards were found. The MLP created a multi-state coalition that convinced the federal Department of Housing and Urban Development to update lead regulations. The MLP is currently working on federal legislation requiring lead inspections before families move in.[82]

The MLP at Cincinnati Children's Hospital traced a health-related eviction problem back to a single landlord who owned 700 units of housing in the community. They worked to get buildings placed under new ownership and the units updated.[83]

Cincinnati Children's Hospital MLP also identified and worked to reduce administrative barriers to enrolling newborns in SNAP food benefits. This common barrier left new moms without, on average, $154 in benefits that would support the health and nutrition of a new mom and her newborn. The

hospital now sends birth records directly to the agency that administers benefits in order to enroll newborns right away, meaning families have better nutritional supports.[84]

Work and Family Medical-Legal Partnership in San Francisco ensures low-income women have access to existing legal protections like disability leave, pregnancy and lactation accommodations, and paid time off for prenatal care.[85]

Georgia's Medical-Legal Partnership team linked child head trauma emergency department admissions to the state age requirement for booster seats in cars. They found the age requirement was lower than the national average, which led to a new state law raising the booster seat age.

(growing the mlp approach)

Financing

Sustainable financing is essential to high-functioning MLPs. The amount and sources of funding differ by MLP based on organizational partnerships, location, and services. Nationally, legal organizations are more likely to allocate portions of their budgets to MLPs than health care organizations; health care organizations may fund MLPs through both general operating budgets as well as their internal foundations. Among health care organizations, Federally Qualified Health Centers are more likely than general or children's hospitals to designate general operating dollars for MLP services.

Existing MLPs generally utilize multiple funding streams, often using a private-public partnership approach. Common funding streams include private philanthropic or foundation funding (utilized in half of all MLPs), funding from Legal Services Corporation, government contracts, and Interest on Lawyers' Trust Accounts (IOLTA).[86]

Several states – including Colorado, California, Illinois, and Washington – utilize Medicaid funding to pay for MLP services. The mechanisms vary by state, with managed care organizations, coordinated care collaboratives, and modified state waivers paying for MLP services. With the exception of Colorado, these states are early in their usage of Medicaid funding.[87] Amending Medicaid waivers can be complex and time consuming; however, because of the added value and demonstrated return on investment MLPs provide to Medicaid-eligible patients, examining the state waiver to allow for MLP expenditures may prove worthwhile.

Image C: Elements of a Pay for Success Project



Ongoing trends in health care provision create opportunities for new innovation. As noted earlier, the two existing MLPs in South Carolina collaborate with health systems that are in the process of merging. This restructuring creates an opportunity for more formal collaboration and knowledge sharing across the state, rather than just in the hometowns of these institutions, and may create efficiencies in fundraising and service administration. It also affords South Carolina the chance for robust promotion and development of MLPs. Medical

and law schools can better support the next generation of medical and legal practitioners by funding MLPs to train their current students in the inter-disciplinary approach.

Outcomes-based financing and pay for performance mechanisms have gained popularity for their potential to create more efficient, effective social service provisions. In one such mechanism, Pay for Success (PFS) financing, philanthropic funders and private "impact investors" provide the initial capital to scale up successful interventions and launch promising, innovative practices. The services selected for PFS financing are generally delivered by community-based service providers. The government contracts to repay the investment based on specific outcomes, and an independent evaluator determines whether the outcomes are achieved.[iii]

These interventions often save government money by reducing the likelihood of crime, child abuse, or other social problems; thus, they both prevent problems and promote positive outcomes. In addition to so-called cashable savings, governments may also value other outcomes based on local priorities and needs. A paper from the Center for American Progress proposes three prongs a government should consider in selecting and pricing outcomes in a PFS project:

1. "Well-being benefits: Does the outcome lead to improvements for individuals and communities that are greater than the intervention's costs?
2. Public willingness to pay: Is the outcome important enough to the community that additional public dollars should be allocated to achieving it
3. Cashable savings: Will government achieve cashable savings by investing in this initiative?"[iv]

There are 17 PFS projects in the United States at the time of this writing,[v] with numerous others globally. Projects focus on a robust set of issues ranging from homelessness to criminal justice to environmental issues to education. In the U.S., early childhood health, education, and welfare have particularly embraced this funding structure as an opportunity to expand and innovate.

Current PFS projects have embraced this general theory by focusing on social determinants of health and early intervention rather than treatment. In Baltimore, the Green and Healthy Homes Initiative (GHHI) aims "to break the link between unhealthy housing and unhealthy families by creating and advocating for healthy, safe and energy efficient homes."[88] GHHI is using PFS financing coupled with value-based contracting to allow for reimbursements for services that address social determinants of health. Some services include home inspections, pest management (as droppings trigger asthma), in-home health management education (like action plans for asthma and/or adherence to medical instructions), hypo-allergenic home cleaning kits, and referral to other services as needed. These interventions have resulted in avoided hospitalizations, energy bill savings and more. While MLPs have not yet utilized this financing structure, they present a compelling opportunity for the outcomes-based structure of a PFS project.

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iii This is a very brief overview of a model which continues to evolve in the United States. For more information on the parties who commonly participate in American PFS projects, including transaction coordinators, project managers, and legal counsel, we suggest the dataset of current project developed by the Nonprofit Finance Fund, available online: http://www.payforsuccess.org/

iv Kohli, J., Golden, M., Coletti, J., & Bosher, L. (2015). From Cashable Savings to Public Value. Center for American Progress. Retrieved from: https://www.americanprogress.org/issues/economy/reports/2015/09/01/120300/from-cashable-savings-to-public-value

v These 17 projects do not include one completed project. This information is from NFF's PayForSuccess.org and accurate as of September 12, 2017. The early childhood projects referenced here are based on NFF's definition of PFS projects. The Nurse-Family Partnership Michigan Pay for Success Project is considered "in development" by NFF.

Lessons Learned

As interest in MLPs grows nationwide, hospitals and legal partners may explore a number of options to collaborate to serve families. MLPs are complex organizations, and clear, well-designed boundaries among partner organizations are essential to their success. The National MLP Center has sample MOUs as well as trainings and webinars on helping MLPs get off on the right organizational footing.[89] As the South Carolina case study makes clear, ongoing communication and a commitment to innovation are key. The Greenville MLP benefited from an exploratory phase in which SCLS took "MLP-like" cases and all partners became familiar with each other's processes before the formal launch of the MLP.

Parties considering an MLP should consider program design from the perspective of the end-user – that is, the patients who will be served. By using principles of design thinking, MLPs can ensure that patients are able to access services conveniently in a culturally sensitive environment free of stigma. Most MLPs begin their work by focusing on one particular speciality or population group – pediatrics or geriatrics, for example – and working to understand the specific needs of the patient population.

While each MLP may look and operate differently, there is great benefit for practitioners in knowledge-sharing across MLPs. In South Carolina, the two MLPs – CHAMPS in Columbia and the Greenville MLP – quickly began informally collaborating and sharing "best practices," which can help to streamline processes and avoid pitfalls. Additionally, both medical and legal practitioners working through MLPs may experience burnout based on the nature of the issues facing their clients. Opportunities for informal and formal collaborations, communities of practice, and convenings can help strengthen MLPs across states and nationwide.

(conclusion)

Medical-Legal Partnerships offer a unique value to families with young children by nurturing more promising Social Determinants of Health. Rather than simply treating symptoms alone, by leveraging legal services, MLPs directly address root causes that manifest themselves as health care concerns. Supporting and expanding MLP services will afford families access to legal services necessary for good health.

As sophisticated knowledge of Social Determinants of Health continues to grow, "the time is ripe to spread the view that law is an important lens through which we should view health promotion, disease prevention, and overall well-being to stakeholders in fields as diverse as health care administration, business, technology, communications, transportation, consumer protection, criminal justice and corrections, education, and others."[90] MLPs are a collaborative, cross-sector opportunity to meet families where they are and foster positive health outcomes.

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Headquartered in Greenville, South Carolina, the Institute for Child Success (ICS) is an independent, nonpartisan, nonprofit research and policy organization dedicated to the success of all young children. ICS pursues its mission by

- Proposing smart public polices, grounded in research.
- Advising governments, nonprofits, foundations, and other stakeholders on strategies to improve outcomes.
- Sharing knowledge, convening stakeholders, embracing solutions, and accelerating impact.
- Modeling, encouraging and cultivating catalytic, innovative leadership in early childhood.