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Creating a Healthier Future Through Early Interventions for Children

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POLICY MAKERS HAVE WIDELY ENDORSED THE IDEA THAT educational and economic achievement are a function of early childhood experience and development and can be improved through interventions such as preschool.^{1,2} However, they have yet to fully embrace that adolescent and adult health is also profoundly affected by early childhood experiences and can similarly be improved through wise public investments. Neurobiological, behavioral, and social science research conclusively shows that early adverse experiences can affect brain development and increase vulnerability to a broad range of mental and physical health problems.³⁻⁵ In addition, health depends on developing psychological, behavioral, and social competencies built on a foundation of safety, stability, and nurturance that is laid down early in life and that buffers against early adversity.^{3,5}

Programs or policies that increase children's exposure to safe, stable, and nurturing relationships and environments can improve their health over a lifetime. Moreover, these programs can be more efficient than treating health problems as they arise later in life.^{1,5} Such programs can also reduce criminal behavior and generate important economic benefits to society.² The high-quality scientific evidence supporting these propositions justifies investments in prevention research and programs to support parents and communities in raising safe and healthy children.

Early Adversity and Health

Parental mental health and substance abuse problems; significant social deprivation or neglect; physical, sexual, and emotional abuse; and exposure to violence between parents or other adults are examples of breakdowns in the protected and nurturing environments children need to become healthy adolescents and adults. Early exposure to such adversities has been linked to many emotional, behavioral, and physical health problems. Associated emotional and behavioral problems include aggression, conduct disorder, delinquency, antisocial behavior, substance abuse, intimate partner violence, teenage pregnancy, anxiety, depression, and suicide.⁴ Furthermore, a history of adverse exposures has been associated with

health risks such as smoking and health problems such as obesity, diabetes, ischemic heart disease, and sexually transmitted diseases.⁴

These exposures pose a substantial risk for short- and long-term health through several mechanisms. For instance, chronic exposure to stress can accumulate and lead to potentially irreversible changes in the interrelated brain circuits and hormonal systems that regulate stress (eg, sympathetic-adrenomedullary system, hypothalamic-pituitary-adrenocortical system).³⁻⁵ These exposures also increase the risk of engaging in health risk behaviors such as smoking, substance abuse, overeating, and unsafe sexual behaviors associated with a variety of long-term adverse health outcomes.⁴ Exposure to these adversities also might contribute to poor health by compromising the development of skills that influence income and socioeconomic status.⁴

Whether a young child is exposed to adversities is strongly associated with that child's social and economic environment.⁶ Children from households with lower income and lower parental education and who live in communities with greater concentrations of disadvantage are more likely to be exposed to unsafe levels of lead, child maltreatment, family and community violence, and parental mental health and substance abuse problems. Exposure to these adversities exacerbate and sustain socioeconomic, racial, and ethnic health disparities across generations.⁶ Therefore, reducing exposure to early adversity may be important to reducing health disparities.

Safe, stable, and nurturing relationships and environments for children counter the adverse exposures that occur during childhood and compromise their health over the lifespan. Safety, stability, and nurture each represent an important aspect of the social and physical environments that protect children and promote their optimal development. Safety refers to the extent to which a child is free from fear and is secure from physical or psychological harm. Stability refers to the degree of predictability and consistency in children's interactions with caregivers and other persons in their environment. Nurture refers to the extent to which a caregiver is available and able to sensitively respond to and

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meet the physical, developmental, and emotional needs of the child.

Programs and Policies to Optimize Child Health and Well-being

Several early intervention approaches can increase children's exposure to safe, stable, and nurturing relationships and environments. The most basic approach to facilitating positive relationships involves teaching parents safe and nurturing child-rearing and management skills. Providing adequate social support to parents and families may also help them buffer the adverse effects of stress.⁷ In addition, programs and policies designed to reduce social and economic disadvantage may help in alleviating children's stress and exposure to adversity. Although evidence suggests that programs teaching parenting skills and providing social support can be effective in influencing child-rearing practices, the contributions of programs or program components that focus on social and economic disadvantage are not as well studied.⁸

The most rigorously evaluated example of a program that promotes safe, stable, and nurturing relationships and environments is the Nurse-Family Partnership, which provides home visitation to low-income, first-time mothers from pregnancy through their child's infancy. This program is designed to systematically engage mothers and other family members in improving prenatal health-related behaviors (eg, smoking, alcohol use, health access), providing more responsible and competent care of infants and toddlers, and improving parents' economic self-sufficiency.⁹ Results from several randomized controlled trials have shown this program to effectively reduce abuse and injury, improve cognitive and socioemotional outcomes in children, and have a favorable benefit-cost ratio.^{9,10} A 15-year follow-up study of the program found reduced rates of crime and antisocial behavior among both children and mothers.⁹ Evidence supporting the benefit of the Nurse-Family Partnership program shows that it is ready to be broadly expanded, and efforts to undertake this expansion are under way.¹⁰

Another rigorously evaluated program ready for broader expansion is the Triple P—Positive Parenting Program.¹¹ Triple P provides a system of population-level parenting and family support that includes professional training to pediatricians, child welfare case workers, and other similar health professionals combined with media and communication strategies. This program was found to reduce substantiated child maltreatment, out-of-home placements, and hospitalizations and emergency department visits for injuries.^{11,12} A meta-analysis of Triple P programs globally found consistent evidence that this program also positively changes parental skills, child problem behavior, and parental well-being.¹²

Several preventive interventions in this area, although not yet ready for broad expansion, should be further evaluated and replicated. For example, a hospital-based program

that disseminated information about the detrimental effect of violent infant shaking to parents and how to avoid shaking was found to substantially reduce rates of abusive head trauma.⁹ The Chicago Child-Parent Centers, in addition to providing a stable early learning environment for children, provides educational and support services for parents that promote personal development, health, and involvement in their child's education.¹³ A 19-year follow-up of a quasi-experimental evaluation of this program found positive effects on educational attainment, criminal behavior, and adult well-being.¹³

Bringing Early Interventions to Scale

The time has come to act on scientific knowledge about preventing early exposure to adversity and promoting positive child development. The necessary infrastructure to transfer effective interventions from research to action must be built. This infrastructure requires 3 interrelated systems. The first system would synthesize and translate information on effective interventions that is accessible and user-friendly for practitioners. The second system would build the motivation and skills (ie, capacity) of individuals, organizations, and communities so that they are equipped to engage in evidence-based prevention and promotion activities. Finally, the third system would deliver high-quality implementation of evidence-based interventions at the national, state, or local level.¹⁴ Nurse-Family Partnership and Triple P programs are examples of prevention strategies that could be implemented with high quality on a much larger scale if these 3 systems were in place. In addition, if such an infrastructure existed, new discoveries could be added seamlessly as they are made, ensuring the best available scientific evidence is being immediately translated, supported, and delivered.

Neither Nurse-Family Partnership nor Triple P offers a panacea for preventing early adversity or promoting safe, stable, and nurturing relationships.¹⁵ Thus, it is important to strengthen the research and program evaluation infrastructure. Even as effective interventions are broadly implemented, the quality of implementation, the short- and long-term benefits and costs, and the continued effect on outcomes must be monitored as these interventions become more widely used. In addition, the time lag between discovery and practice could be shortened if systems existed to easily provide resources for replication studies when an intervention initially shows promising results through a rigorous trial. Currently, the bulk of research on preventing early exposure to adversity and promoting positive child development focuses on changing the child-parent relationship. Therefore, a critical research gap is testing the effectiveness of interventions that make children's social and economic environments safer, more stable, and secure.

The United States faces increasing rates of chronic disease in youth and adults, thereby posing a serious threat to the collective social and economic well-being. Early child-

hood exposure to adversity increases the risks of developing poor physical and mental health outcomes, and safe, stable, and nurturing relationships and environments promote good health and development. Proven and promising strategies to promote safe and nurturing child-caregiver relationships exist. Support and resources are needed to develop parenting and other intervention strategies and for the implementation, research, and evaluation infrastructure required to support them. Such strategies can result in both short- and long-term benefits for improving the health of children facing adversities.

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