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Medical Management and Trauma-Informed Care for Children in Foster Care

Samantha Schilling, MD, MSHP, Kristine Fortin, MD, MPH, and Heather Forkey, MD

Permanency and the Foster Care System

Katie K. Lockwood, MD, Susan Friedman, MD, and Cindy W. Christian, MD

Mandates for Collaboration: Health Care and Child Welfare Policy and Practice Reforms Create the Platform for Improved Health for Children in Foster Care

Sarah Zlotnik, MSW, MSPH, Leigh Wilson, MSW, Philip Scribano, DO, MSCE, Joanne N. Wood, MD, MSHP, and Kathleen Noonan, JD

Foster Care and Health in the U.S.

Philip V. Scribano, DO, MSCE, Stephanie Anne Deutsch, MD, Kristine Fortin, MD, MPH, Amy Lynch, PhD, OTR/L, SCFES, Sarah Zlotnik, MSW, MSPH, Meredith Matone, MHS, Amanda Kreider, Kathleen Noonan, JD, Samantha Schilling, MD, MSHP, Heather Forkey, MD, Katie K. Lockwood, MD, Susan Friedman, MD, Cindy W. Christian, MD, Leigh Wilson, MSW, Joanne Wood, MD, MSHP

Foreword: Foster Care and Health in the U.S.

The health of children in foster care is worse when compared to their age and socioeconomically matched peers. We know from countless studies that children in foster care have disproportionately greater chronic physical and behavioral conditions. In many cases, maltreatment (most commonly neglect) precedes placement in foster care. Nearly 80% of children in the 400,000 children in the US foster care system have significant physical, mental, and developmental healthcare needs.

In this edition of *Current Problems in Pediatric and Adolescent Health* our group of experts examines the US foster care system as it relates to the health of the children and adolescents in the system. The first two articles familiarizes us with this unique population and their special healthcare needs including both their physical health problems and their significant mental health, behavioral and developmental issues including the surprising apparent overuse of psychotropic medicines. The authors discuss both the prevalence of the health conditions and also the barriers to coordinated and effective care.

The last articles offer some hope and recommendations that recent research and healthcare reform creates a platform upon which we can improve our care and the health of this vulnerable population. For example, Drs. Schilling, Fortin, and Forkey make a strong case that due to adversities and the child's experience prior to and during placement, that medical management should have a comprehensive, *trauma* informed approach. The reader will learn about screening for the negative health consequences of trauma and what interventions are most effective. There is optimism in the last article which discusses recent child welfare policy reform measures which seek to foster collaboration between the healthcare system and the child welfare system. A vital step toward improving outcomes.

I hope this edition will inform and inspire you to view the children and adolescents in foster care through a slightly different lens and take advantage of the expert advice offered.

Louis M. Bell, MD

Charting the Course of Improved Health for Children in Foster Care

Philip V. Scribano, DO, MSCE

There are approximately 400,000 children in the U.S. foster care system annually, with 255,000 entering the foster care system each year.[1] Children and adolescents who require foster care placement at some point in their lives experience significant disparities in their overall health and well-being, with several decades of research demonstrating this reality. There are measurable benefits to a stable foster care placement when comparing to their potential alternatives of institutional placement and/or remaining in an environment with ongoing maltreatment.[2] However, compared to their peers, children in foster care are more likely to have chronic health care conditions, developmental delays, and significant mental health challenges during their childhood and throughout their life course into adulthood.[3–5] And, while it may be a reasonable assumption that this health disparity is solely attributed to poverty, multiple studies comparing this population to similar impoverished populations, as well as the general population, demonstrate a consistent theme—children in foster care have disproportionately greater chronic physical and behavioral health conditions and require greater utilization of health care services, even when adjusting for socioeconomic and other demographic indicators.

While the current literature provides ample evidence to support the need for significant health care delivery reforms to improve access, establish coordination of care, and ensure stability and consistency of the health care to children and adolescents in foster care during this transition period, there have been meager advances in this regard.

While the current literature provides ample evidence to support the need for significant health care delivery reforms to improve access, establish coordination of care, and ensure stability and consistency of the health care to children and adolescents in foster care during this transition period, there have been meager advances in this regard. There exist a road map of sorts to guide clinicians in the approach to health care delivery to this population through efforts by the Child Welfare League of America and the American Academy of Pediatrics[6,7] and more recent literature that continues to provide clinical guidance for care to this population.[8,9] Inherent to the delivery of coordinated care, the recognition of the medical home as a means of delivering high-quality, accessible, comprehensive care[8,10–13] is one of the key

Inherent to the delivery of coordinated care, the recognition of the medical home as a means of delivering high-quality, accessible, comprehensive care is one of the key provisions that need to be systematically provided to all children, but especially for children who are placed into foster care.

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provisions that need to be systematically provided to all children, but especially for children who are placed into foster care. This approach to health care has been shown to improve health in multiple different populations; it is especially beneficial to manage health in vulnerable populations.[10–13]

Additionally, the health trajectory for children in foster care who age out of the system remain challenged throughout their lifetime; this translates to approximately 25,000 young adults each year in the U.S.[14] Once again, using health care frameworks such as the medical home, which often results in improved coordination of care, should continue during this transition period into adulthood to ensure that the necessary access to care is available to these young adults.

Much has been learned regarding the environmental influences on neurobiology, and the implications of a chronic, unremitting stress response, often resulting in greater disease and morbidity.[15–17] This knowledge has informed our understanding of particularly vulnerable populations such as children who experience various forms of child maltreatment (abuse and neglect), including exposure to intimate partner[18–21] and the health implications of chronic exposure to these adversities.

In order to translate this science into practice, one must first recognize if the problem exists (i.e., a significant health disparity for vulnerable populations like children placed in foster care); understand which populations are most vulnerable to these biologic perturbations (i.e., children in foster care who have experienced chronic maltreatment and who have not had stability with their placement); and provide a comprehensive, public health, and population health approach to addressing the problem. With this science, there is no longer debate that children who are placed into foster care due to multiple reasons (all of which result in activation of a chronic stress response and subsequent risks to health) require a coordinated health care approach to address this biologic response in a thoughtful manner and individualized to the specific needs of the child at risk.

While there has been recognition of the trauma experiences that children endure, its impact on child physical and behavioral health and development is only recently becoming part of the national dialog. As such, effective intervention efforts that address this problem in children placed in foster care are paramount to improve present and lifelong health. The toolkit developed by the American Academy of Pediatrics provides clinicians and adoptive and foster parents with the knowledge and practical guidance to address trauma and is a great starting point for effective intervention.[22]

Part of this trauma-informed equation is ensuring that optimal efforts are made to foster resiliency to increase the social–emotional buffering, which is very critical for this population. We know that resiliency may be enhanced through interventions that foster safe, stable, nurturing relationships in a child's life.[23] The evidence of positive attachments and support from a parent, i.e., foster parent figure, mentoring, school engagement, caregiver social support and education, and a sense of hope and expectancy, has been shown to enhance resiliency.[23,24] All of these non-medical domains have a tremendous impact on health outcomes and should be considered in the context of the health care encounter and ongoing coordination of health to children in foster care. Interventions that address these relationship attributes are just another piece to the puzzle to promote resilience and foster well-being among these children.[25]

Part of this trauma-informed equation is ensuring that optimal efforts are made to foster resiliency to increase the social–emotional buffering, which is very critical for this population. We know that resiliency may be enhanced through interventions that foster safe, stable, nurturing relationships in a child's life.

In the emerging "new world" of health care, with the catalyst of the Affordable Care Act (2010) and other important legislative health care policies pertaining to children in foster care, i.e., the Fostering Connections to Success and Increasing Adoptions Act (2008) and the Insurance Program Reauthorization Act (2009), several important and beneficial paradigm shifts are occurring. In specific, there exist new incentives to stipulate both health systems' and child welfare systems' responsibilities for overall patient outcomes and cross-discipline collaboration throughout a child's experience in foster care; monitoring and treatment of emotional trauma, including surveillance and

oversight of the use of psychotropic medications by children in the foster care system; and new measures in health care delivery, including targeted measures for children in foster care. However, continued efforts are needed in full implementation of key provisions in these laws in order for the health status of children in foster care to improve during and after the temporary placement of foster care. Embedded in these policies includes greater accountability to the child welfare system in addressing child health during the period of foster care placement and ensuring that a child receives timely and ongoing health care. Additionally, there has been progress made in the development and use of specific, core measures to evaluate relevant health care outcomes of children in foster care in order to monitor systems, evaluate outcomes, and inform future implementation to improve quality.[26,27] These national efforts in addressing the unique challenges in the health care of children in foster care, and in the monitoring of the health care delivery, have the potential to alter the life course of these children if their health and well-being are made a priority during this vulnerable and transitional period in their life.

These national efforts in addressing the unique challenges in the health care of children in foster care, and in the monitoring of the health care delivery, have the potential to alter the life course of these children if their health and well-being are made a priority during this vulnerable and transitional period in their life.

As innovative efforts continue to emerge in improving the health care to children in foster care, paths already paved for children with special health care needs will inform this evolving practice[28] as we forge toward a greater care coordination model for children in foster care. This effort will remain significantly challenged if health systems are functioning in silos without a substantive effort to bridge the many gaps between the health care and the child welfare systems. Working toward the common goal of improving life course health, and establishing supports to achieve success into adulthood, would seem a mutual goal of both the systems. Efforts to evaluate targeted health measures in children placed into foster care will require integration at the local, state, and national levels to ensure that all systems, in their quests to gather data, can share data that is meaningful and relevant to monitoring important health outcomes. Further legislative advocacy is ultimately required to get us closer to achieving these important goals.

In this edition of *Current Problems in Pediatric and Adolescent Health Care*, we have utilized a comprehensive lens to evaluate the literature on the health and well-being of children in the U.S. foster care system. In specific, we have placed particular focus on the physical health and chronic care conditions and notable health disparities; behavioral and developmental health challenges, outcomes, and their neurobiologic underpinnings; psychotropic use in children in foster care; medical care and care management using a trauma-informed approach to care, including specific evidence-based behavioral interventions to address trauma; permanency and aging out of the foster care system; and national policies that support the health and well-being of children in foster care.

This compendium of articles provides clinicians with the current knowledge of the field and offers practical information to support their health care delivery to a population of children who are at risk of experiencing significant adversity before, during, and after their foster care placement. Finally, it is hoped that the knowledge of important policies relevant to the health and well-being of children in foster care will further galvanize local, regional, and national efforts to greater implementation of the provisions of these important legislative acts.

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Physical Health Problems and Barriers to Optimal Health Care Among Children in Foster Care

Stephanie Anne Deutsch, MD,[a] and Kristine Fortin, MD, MPH[a,b]

Children and adolescents in foster care placement represent a unique population with special health care needs, often resulting from pre-placement early adversity and neglected, unaddressed health care needs. High rates of all health problems, including acute and/or chronic physical, mental, and developmental issues prevail. Disparities in health status and access to health care are observed. This article summarizes the physical health problems of children in foster care, who are predisposed to poor health outcomes when complex care needs are unaddressed. Despite recognition of the significant burden of health care need among this unique population, barriers to effective and optimal health care delivery remain. Legislative solutions to overcome obstacles to health care delivery for children in foster care are discussed.

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Introduction

Children placed into foster care are a population at great risk for physical, mental, and developmental health problems.[1–25] In many cases maltreatment, most commonly neglect, precedes placement into foster care.[1–25] Both acts of abuse and neglectful omissions of care can result in unaddressed medical and psychological needs.[17] Children placed in foster care may have experienced adversities and risks for poor health in addition to abuse and neglect, such as homelessness, parental substance abuse, parental mental illness, pre-natal exposure to drugs, insufficient pre-natal care, prematurity, and/or family violence.[1,2] This multitude of adverse exposures have all been linked with poor health outcomes, many of which continue to manifest into adulthood,[1,26] due both to the toxic stressors precipitating removal and the individual child's physiologic response to stress.[1]

Physical health problems among children in foster care tend to be multiple, chronic, and associated with a need for coordinated health care.

Despite decades of concern and acknowledgment of the multitude of health problems experienced by youth in foster care placement, barriers remain that prohibit access to essential health care services in this population.[15,18,27] This article will review the prevalence and nature of physical health problems among children in foster care, as well as barriers to care delivery in this vulnerable population.

Prevalence and Disparities of Health Problems Among Youth in Foster Care

High rates of all health problems, including acute and/or chronic physical, mental, and developmental conditions have been reported in this vulnerable population.[1–25] Nearly 80% of children in foster care have significant physical, mental, and developmental health care needs.[28] Of particular significance is the high prevalence of chronic conditions among foster children; it has been estimated that between 30% and 80%[12,19] of youth in foster care have chronic health problems.

The prevalence of health care conditions among children in foster care is disproportionately higher than that reported in similar groups of U.S. children who are not in foster care. Recent national data indicate that

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between 35% and 50% of children in the child welfare system have special health care needs, compared with <20% of the general population of American children.[27,29] Health disparities are so prevalent in this population,[6] that the American Academy of Pediatrics designated children and adolescents in foster care as having special health care need.

Children in foster care have more problems identified in health, developmental, and emotional assessments compared to children at similar poverty levels/socioeconomic status[5] but are not in foster care. Hansen et al. compared children in foster care with other Medicaid-eligible children from the same county, and found that significantly higher percentages of problems were identified and referrals for subspecialty care made among the children in foster care. The disparity between the health status of the Medicaid and foster children is likely due to a combination of significant risk factors contributing to their placement in care in the first place (i.e., abuse, neglect, parental substance abuse, and exposure to family violence) and a lower clinical threshold for diagnosing or referring children placed in foster care in response to the recognized obstacles this population faces in accessing medical care.[5]

Nature of Physical Health Problems Among Youth in Foster Care

Abnormal routine health screens and lapsed preventive care including immunizations are common among children and adolescents in foster care.[2,3,10,12,18,27,30,31] Failed vision and hearing screens are prevalent.[18] Lack of routine dental care and dental caries were the most common reason for referral to a specialist for children who were 3 years or elder.[3] Lack of routine laboratory screening, including for anemia and lead levels, are also common.[2,10,11,25,27] Although lapses in primary or preventive care may precede foster care entry, care discontinuity often persists while in foster care.[12]

Children and adolescents entering foster care frequently have irregular growth parameters, including both growth failure and more recently, overweight/obesity.[2,3,5,10,11,21,22,25] In the 1990s, being underweight (<fifth percentile on Centers for Disease Control and Prevention growth charts) was a frequent medical problem for children in foster care, including a large proportion of children with abnormally low height, weight, and head circumference measurements[2,10]; however, more recently, there is a growing prevalence of overweight/obesity in this population, paralleling national trends.[3,32] Steele et al.[3] reported the most prevalent medical conditions in a cohort of children entering foster care between 2001 and 2004 were overweight/obesity (35%).

Youth in foster care have several factors linked with increased STI risk,[33–35] including exposure to physical and sexual abuse, neglect, parental substance abuse, poverty, and violence in early life[2,36] and high rates of mental health problems, substance abuse disorders, and juvenile or criminal justice system involvement later in life.[37] Beyond increased STI risk, foster care has been associated with a higher risk of laboratory-confirmed sexually transmitted infections in both adolescent boys and girls.[27,33] Girls who have previously lived in foster care were more likely to have a diagnosis of Trichomonas infection, and reported increased sexual risk behaviors compared with female peers without a history of foster care placement[33]; and, boys who have previously lived in foster care were more likely to have both gonorrhea and chlamydia.[33] Maternal lifestyles during pregnancy also place children in foster care at increased risk for vertically transmitted infectious diseases, including HIV, hepatitis B and hepatitis C, congenital syphilis, and herpes.[30]

Chronic conditions are common among youth in foster care.[10] An early study analyzing the health status of foster children from Baltimore, MD[21] found that chronic health conditions by diagnostic category included: psychological/behavioral, 37%; ophthalmologic, 35%; educational, 31%; dermatologic, 22%; allergic, 17%; dental/oral, 16%; otologic, 12%; physical growth and developmental, 12%; and, musculoskeletal, 9%.[21] In many cases, there is a multiplicity of chronic conditions,[10] with an estimated 25% of foster children with three or more chronic conditions.[12] Young children are disproportionately represented in the foster care population with more chronic conditions than in older children.[10]

Referrals for subspecialty medical care are common among children and adolescents in foster care,[2,3] given the prevalence of multiple chronic conditions. Chernoff[2] found that 88% of children at entry into foster care required at least one specialist medical visit for additional medical, dental, or mental health care. Among the children referred for additional services, almost one quarter of the children required three or more referrals.[2]

Physical Health of Special Populations in Foster Care

Health Care Problems Affecting Adolescents in Foster Care

Adolescents represent a discrete segment of the foster care population, often having experienced multiple placements or placement instability, and involvement in several systems of care including mental health, juvenile justice, and special education. Health conditions worsen in association with increased length of stay in foster care and increased number of placements.[6,38] In the past decade, unique health care issues specific to the adolescent age group in foster care have been increasingly recognized. Because of this, in 2009, the Institute of Medicine designated adolescents in foster care as a priority population for federally funded research.[39]

Adolescents represent a discrete segment of the foster care population facing unique health care needs, often having experienced multiple placements or placement instability, involvement in several systems of care including mental health, juvenile justice, and special education.

Adolescent health concerns related to risk-taking behaviors including risky sexual behaviors, mental health (depression and conduct disorders), and substance use are more common and more severe in adolescents in foster care compared to those in the general population.[6,40,41] Nearly half of all adolescents involved in the child welfare system, including those in foster care placements, report at least one health risk behavior in the area of substance abuse, risky sexual behavior, depression, suicidality, or delinquency.[41] Risk-taking behaviors in adolescents in foster care begin earlier, are more frequent, and more serious beyond normative behaviors in peers in the general population.[6,40]

Foster care placement is associated with high-risk sexual behaviors,[42] including earlier sexual debut, earlier age of first pregnancy, and greater number of sexual partners.[42,43] In one study evaluating the impact of placement type on sexual risk behaviors, foster care was associated with younger age at first pregnancy and greater median number of sexual partners; kinship care was associated with younger age at first intercourse, younger age at first pregnancy, and greater median number of sexual partners.[42] Recognition of these risks may enable health care providers to intervene with high-risk youth in foster or kinship care, to prevent early initiation of sexual intercourse and early pregnancy.[42]

Health Outcomes in Young Adults With History of Foster Care Placement

Elevated rates of chronic health problems may persist once former foster youth transition into adulthood.[5,6,24,36,40,44] Higher likelihoods of physical or mental health conditions such as elevated BMI, cardiovascular risk factors, and diagnosis of ADHD[1,26,44–48] have been observed. Youth with history of foster care placement are also at increased risk for other health risk behaviors like increased smoking and lower self-efficacy.[46] Failure to adequately address these chronic health needs while in placement likely contributes to reported poor long-term outcomes.[47] Additionally, and possibly causally related, a large percentage of youth emancipating from foster care experience unemployment, criminal conviction, substance abuse, lower educational attainment, and homelessness in adulthood.[13,48,49]

Health of Children Re-entering Foster Care

Because of the high rates of chronic and acute medical conditions at initial foster care entry, unmet medical needs while in care, and poor health status as a contributor to re-entry, children who re-enter foster care comprise a distinct category of medical need and health risks.[22] A study[22] of 392 school-age children re-entering foster care found worsening of health status (subspecialty clinic involvement, health concerns reported by caregiver, patient or physician, hospitalizations, prescribed medications, sexual activity and substance abuse) between initial placement and re-entry into foster care.[22]

Barriers and Potential Solutions to Achieving Better Healthcare for Children in Foster Care

Factors related to the child welfare system, health care system and the interface between these systems must be considered when addressing barriers to care among foster youth. Resource shortages and lack of

formal policies to track or oversee health care administration pose potential barriers to optimal health care delivery within the child welfare system.[15,16] Foster parents may be relied upon to determine the need for care and seek necessary medical and mental health care for children under their supervision; however, many foster parents lack access to crucial historical information, including their child's past medical, developmental, and mental health history.[16] Foster parents may be ill-equipped to identify health care issues or access the health care system without guidance by child welfare,[15,50] when a child has a diagnosed complex, special health care condition. In one national study of foster parents, the physical, mental, and developmental health needs as well as access to care for these issues were among major concerns identified.[51] Furthermore, when biological parents retain rights for medical decision-making despite a child temporarily residing in care, legal consent issues may preclude obtaining needed care.[3,27]

Barriers faced by medical providers include missing data about relevant past medical history, time constraints, and lack of physician training to recognize the unique health care needs of children in placement. Health care utilization information, prior to placement, is often hard to obtain, in part because children may have had erratic contact with a number of different health care providers prior to placement.[15] Children often receive care from many different physicians and care systems, with little or no continuity of care plans or sharing of medical information by social workers, case management, or physicians involved in patient care.[15,16] This is particularly notable when foster care cases cross jurisdictions. Placement instability, including frequent moves among foster homes, exit and re-entry into foster care, or across state lines (in the absence of a unified, federal foster care system), further jeopardize continuity of care. Discontinuity of care may subsequently contribute to lapses in care plans, and duplication or omission of health care interventions such as immunizations and screening.[2,14]

Medical care for children in foster care with complex needs can be time consuming, require more referrals and more diagnostic testing. Compensation may not be commensurate with the physician's expended effort,[4] communications with child welfare agencies may require extra paperwork, and may be complicated by the potential for legal court proceedings. As a result, many health care providers may be deterred from involvement in the care of foster children.[15,16,27] Furthermore, many lack training specific to the needs of foster children,[16] such as trauma-informed care practices. Finally, there is a lack of coordination between the child welfare and health care delivery systems.[27] Sharing of information between child welfare systems, physicians, foster parents, biological parents, and children is greatly challenged and can lead to miscommunication about important health and medical information[8,29] and result in overall worse outcomes.

Two legislative provisions of the Patient Protection and Affordable Care Act (ACA), effective 2014, address barriers related to disrupted insurance,[44] another common reason for disruptions in medical care. The first provision extended Medicaid coverage through age 26 years to young adults who were in foster care placement prior to or on their 18th birthday. The second provision requires states to extend Medicaid coverage to all nonelderly individuals with incomes less than or equal to 133% of the federal poverty level in participating states.[52] Although this later provision is not specifically aimed at foster youth, it may increase Medicaid eligibility for former foster youth under this income-based provision.[52]

Various other solutions to improve the delivery and coordination of care for foster children have been proposed. The AAP recommends that child welfare agencies ensure transfer of medical information among health professionals and highlights the importance of communication between providers, child protection agencies, foster parents, and biological parents.[8] Strategies to address communication barriers, including the concept of a medical passport or abbreviated health record have been adopted, although not universally.[8] Different models of care have been proposed to service children in foster care, including specialized foster care clinics. In an attempt to standardize care delivery, the AAP has widely disseminated guidelines outlining the appropriate care for each child entering out-of-home care, including coordination with case management to facilitate access to all needed services.[15,29]

Current and former foster youth may additionally benefit from a level of preventive health care beyond that recommended at present for general population youth, including strategies to target modifiable cardiovascular risk factors (such as diet, exercise, or smoking cessation) and promotion of access to behavioral health interventions.[44,53]

Summary

Children and adolescents in foster care are a distinct population with more intensive service needs than the

general pediatric population. The unique health care needs of children and adolescents in foster care are related to factors precipitating their removal from care, including chronic neglect of their physical health, mental health, and developmental needs. This medically vulnerable population requires intensive, integrated care. Efforts to overcome common barriers to effective, coordinated health care delivery is paramount to improve health outcomes in this special population.

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Mental Health, Behavioral and Developmental Issues for Youth in Foster Care

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Youth in foster care represent a unique population with complex mental and behavioral health, social-emotional, and developmental needs. For this population with special healthcare needs, the risk for adverse long-term outcomes great if needs go unaddressed or inadequately addressed while in placement. Although outcomes are malleable and effective interventions exist, there are barriers to optimal healthcare delivery. The general pediatrician as advocate is paramount to improve long-term outcomes.

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Introduction

Youth in the foster care system experience a disproportionate risk of mental and behavioral health problems and developmental disorders compared to peers.[1] Nearly two-thirds of children in foster placement have mental and behavioral health problems,[2] and estimates of developmental disorders range from 20% to 60%.[3–6] While this article focuses specifically on children in foster care, emerging research demonstrates that mental, behavioral, and developmental issues faced by these children look similar to all children served by the child welfare system.[7]

These profound health care needs are best understood within a framework of the neurobiologic stress response. Both nature, genetic loading associated with parental impairment, and nurture (abandonment, parental rejection, early adversity, and resultant trauma) contribute to the high prevalence of mental health and developmental diagnoses in this population.[8] Issues that exist pre-placement, before entry into foster care, directly affect child development, particularly during formative infancy, toddler, and preschool years.[9] The effects of chronic neurobiologic stress predispose children entering foster care to serious behavioral and developmental issues, rendering early intervention imperative.[9,10] Evidence-based behavioral and developmental interventions, along with coordinated healthcare service delivery, have the potential to more effectively ameliorate early adversity and improve long-term outcomes, particularly for younger children.[11]

This article examines the unique mental health, behavioral, and developmental needs of children in placement, reviews challenges associated with service delivery, and illustrates opportunities for intervention by the general pediatrician to improve downstream outcomes for children and adolescents in foster care.

Mental and Behavioral Health Issues Affecting Children in Foster Placement

Mental and behavioral health challenges are a significant health concern for most children in foster care,[2] and understanding the true prevalence of psychological and emotional issues is challenging. Current challenges for care therefore surround accurate diagnosis, labeling of clinical symptoms, and use of appropriate treatment plans and approaches.

The most common mental health diagnoses for the foster care population include attention deficit/hyperactivity disorder, oppositional defiant disorder, conduct disorder, anxiety, and depression. Anxiety symptoms

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(stemming from social phobia, generalized anxiety disorder, and separation anxiety disorders), disordered eating (anorexia and bulimia), enuresis, encopresis, mood disorders (major depression and mania), and disruptive behavioral symptoms[8] are also common.

Prevalence of mental and behavioral issues increase with age[12] and often continue into adulthood.[2,13,14] In one study, adolescents involved in foster care were about four times more likely to have attempted suicide and 5 times more likely to receive a drug dependence diagnosis in the preceding 12 months.[8] Nearly 25% of adolescents in foster care are diagnosed with posttraumatic stress disorder, twice the rate experienced by returning veterans, and more than 6 times the rate in the general public.[2,13,14]

Developmental Issues Among Children in Foster Care

Developmental and cognitive differences exist among children who have experienced early adversity. For the foster care population in general, language disorders, poor social-adaptive skills, and delayed fine motor skills predominate among younger children, whereas older children have higher rates of educational disorders, learning disabilities, behavioral disorders, and limited cognitive ability.[6] Recognition and prompt identification is important, as these issues can significantly impact a child's placement stability and ultimate long-term outcomes.[15]

Infancy and childhood represent a critical interaction period among physical, psychological, social and environmental factors, during which brain growth, and development is most active[16] and particularly vulnerable to trauma. Neurotransmitter networks formed during these critical years, influenced by negative environmental conditions like poor maternal nutrition, poor quality housing, and child maltreatment[16,17] have the potential to directly impair brain and physical development,[11,17] predisposing children to a constellation of developmental delays and impairment.

Cognitive Impairment

Altered brain development negatively affects a child's ability to learn, engage with peers, and ultimately perform academically. Complex trauma experiences can limit overall neurocognitive development and contribute to a lower IQ.[18] Exposure to early adversity results in lower cortisol levels, memory deficits,[19] and amplified difficulties with problem-solving. Cognitive scores are lower for children in foster care than non-adopted peers, often remaining lower through adolescence and adulthood.[20] Multiple variables including placement instability, resultant school disruptions, behavioral issues, and truancy also impede successful school performance, in part contributing to issues of grade retention, suboptimal education outcomes, and lower graduation rates among youth in foster care.[21] Early identification of these cognitive differences and awareness of the implications for learning in the school environment would support more appropriate classroom placement and effective accommodations to learning.

Social-Emotional Issues: Impaired Interactions and Emotional Regulation

Trauma and neglect, commonly experienced by children involved with child welfare, impairs emotional regulation, and manifests as symptoms of hypervigilance, hyperactivity, impulsiveness, apathy, and sleep disorders.[16] The prevalence of social-emotional problems among children in foster care increases with age.[22] Both inhibitory control and self-regulation are affected, resulting in altered cortisol production[19] and sensory processing differences. More than 40% of school-age children in foster placement require special education for severe attention difficulties, poor impulse control, and aggressive behavior that preclude placement and participation in a regular classroom.[6] Failure to establish solid attachment to a caretaker can have direct implications on placement stability. Emotional dysregulation can manifest as stronger behavioral responses[23] increasing degree of difficulty for parenting. Children may also demonstrate inhibitory control deficits,[24] which can manifest with behaviors such as hiding food, self-stimulation, and indiscrimination towards adults.

Lack of recognition of important emotional and behavioral problems can have a significant impact on children's placement stability and ultimate long-term outcomes.[15]

Language and Social Communication Impairments

Impaired language and social communication negatively affects social interactions and adversely affects emotional

self-regulation. Lack of stimulation pre-placement can negatively impact development of vocabulary and communication skills.[16] Psychosocial neglect may reduce early social reciprocity, lessening the child's desire and ability to initiate, sustain, or end verbal and non-verbal communication with others.[25] Hindered development of a "social mind"[26] decreases the ability to understand facial expression and emotion, impairing "social thinking" skills, and development of shared attention.[27] A resultant diminished ability to initiate and sustain social interactions may limit a child's understanding of the impact of their actions upon other's social view of the child.[28]

Gross and Fine Motor Deficits

Gross and fine motor skill impairments resulting from early adversity represent a need for evidence-based early intervention.[29] Lack of opportunity and exposure to toys and activities and prenatal toxic exposures delay motor development,[30] impacting ability to play, participate in activities of daily living, and impeding cognitive development.[31]

Barriers to Mental and Behavioral Health and Developmental Healthcare Delivery

Despite the significant prevalence and overwhelming evidence of need for services, studies consistently demonstrate that many health care needs go unmet for children in foster care, or that required services may not be provided in a timely fashion.[2,6,32,33] While the concept of unmet health needs may seem paradoxical, as most youth in foster and adoptive care have categorical eligibility for the Medicaid program, patterns of healthcare resource utilization demonstrate high medical service use and cost. Children placed in foster care use a disproportionate amount of mental health resources,[34–36] utilizing both inpatient and outpatient mental health services at rates 15 to 20 times greater than children of similar backgrounds.[6] Up to 90% of mental health service costs may be accounted for by 10% of the children in placement,[32,37] related to high costs of residential treatment, psychiatric facilities, and intensive services.[32]

In general, inaccurate diagnoses, limited access to high quality, community-based health interventions particularly effective for trauma-related symptoms (i.e., Parent-Child Interaction Therapy and Trauma Focused Cognitive Behavioral Therapy)[38] or symptoms of attachment disorders, and lack of permanency with multiple placements exist. These issues may exacerbate mental and behavioral issues.[2,6] Barriers of cost and provider time commitment, and the infrastructure, training, and clinical consultation needed to build capacity for these services, have limited the effectiveness and widespread dissemination.[39,40] See Table 1 for an overview of effective behavioral interventions for mental and behavioral issues.

For those with developmental issues, multiple placements directly hinder optimal and early screening to identify significant issues and delay needed services like Early Intervention.[11] Older youth are also affected, particularly since school-based services utilized to identify and treat developmental delays typically require a child be settled in placement long enough to recognize need for, and coordinate, service delivery. Although screens for developmental issues exist, there is limited familiarity with psychosocial issues and appropriate screening instruments,[22,41,42] for this population.

Use of Psychotropic Medications Among Youth in Foster Care

Psychotropic prescription medication use for treatment of mental and behavioral health disorders among the nation's youth has increased,[43–46] gaining acceptance as a mainstay of care.[76] Widespread use among youth in foster care is no exception, despite increased concern that this population is being excessively medicated.[47–49]

Persistent challenges with psychotropic medication prescribing among youth in foster care include polypharmacy and antipsychotic use. Rates of psychotropic polypharmacy exceeded 9% in multiple states[49] yet pediatric use has limited efficacy and scant safety evidence.[50] Although commonly approved indications include schizophrenia and bipolar disorder, the major growth in antipsychotic prescriptions has been for

The widespread use specifically of antipsychotics, one class of psychotropic drug, has undeniably increased among children in foster care.

sc, particularly for management of disrup-
rs present among non-indicated and often
mental health diagnoses like ADHD.[50]
is prescribing practice is concerning, given
evidence to support its use and risks for
bolic side effects (weight gain and type-2

ation in rates of psychotropic prescribing
s and within Medicaid service delivery
exists. This rising national trend of psy-
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s prompted recent national attention,
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d placement insta-
kely contribute to

Despite many barriers to effective healthcare delivery for children in foster care, outcomes among this population are malleable, and children facing adversity are resilient.

expedient solution to challenging behaviors.[3]
ficient collaboration between child welfare,
mental health systems may also contribute
chotic overprescribing.[32,52]

Summary

Children in foster care have diverse men
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untreated or ineffectively treated, may im
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developmental needs of children in placement will likely require innovative techniques built on proven interventions and dependent on multi-sector partnerships.[55]

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Medical Management and Trauma-Informed Care for Children in Foster Care

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Children enter foster care with a myriad of exposures and experiences, which can threaten their physical and mental health and development. Expanding evidence and evolving guidelines have helped to shape the care of these children over the past two decades. These guidelines address initial health screening, comprehensive medical evaluations, and follow-up care. Information exchange, attention to exposures, and consideration of how the adversities, which lead to foster placement, can impact health is crucial. These children should be examined with a trauma lens, so that the child, caregiver, and community supports can be assisted to view their physical and behavioral health from the perspective of what we now understand about the impact of toxic stress. Health care providers can impact the health of foster children by screening for the negative health consequences of trauma, advocating for trauma-informed services, and providing trauma-informed anticipatory guidance to foster parents. By taking an organized and comprehensive approach, the health care provider can best attend to the needs of this vulnerable population.

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Introduction

Children in foster care often have a significant health burden due to adversities experienced prior to and during placement.[1–4] Children in foster care are more likely than peers to have chronic illness, mental health concerns, and developmental challenges.[5] Exposures such as insufficient prenatal care, prematurity, or in utero toxins as well as chronic abuse/neglect have direct and indirect effects on the health and well-being of this population. The interplay of chronic or prolonged stress, physiologic response to that toxic stress, and behavioral adaptations to this stress impact the health of children over the life course.[6–8]

Standards previously published by the American Academy of Pediatrics (AAP) and Child Welfare League of America (CWLA) provide a framework, based on expert opinion, to guide health evaluations and healthcare for children in foster care.

There is a need for a comprehensive, trauma-informed approach to medical management. In this article, we will summarize the practice parameters for primary health care for children in foster care based on literature currently available.[9] Standards previously published by the American Academy of Pediatrics (AAP)[10] and Child Welfare League of America (CWLA)[11] provide a framework, based on expert opinion, to guide health evaluations and health care for children in foster care. Recommendations presented here include more recent literature and consensus to address current health epidemics including dental caries and obesity, and recent advances in our understanding of the impact of adversities on the health of children in foster placement.[12,13]

Medical Homes for Children in Foster Care

Children in foster care may experience fragmented, sub-optimal health care not only prior to placement, but

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TABLE 1. Attributes of quality health care for children in foster care

Attribute	Application
Information exchange	Standardized communication protocols and strategies, which allow for clear communication between medical provider and: Child welfare agency Current caregivers Schools and daycare providers Medical and mental health specialists
Access	Clear and easy access to medical provider office by child, foster family, and child welfare agency
Accurate assessment	Accurate and timely evaluation of physical and mental health needs of child in foster placement
Appreciation of impact of trauma	Medical providers are trained to recognize physical and emotional impact of trauma associated with abuse, neglect, and placement in foster care
Attentiveness to regulations	Medical providers and staff appreciate and respond to child welfare regulations and mandates, which impact medical care, communication, consent, and confidentiality
Alliance and collaboration	Collaboration with child welfare and community partners to address the special health care needs of children in foster care

also while in placement. Children in foster care with medical homes achieve better health outcomes, higher immunization rates, and higher primary care visits than those without a medical home.[14] Different models for provision of primary care have been successful, including continuity of care with the pre foster placement provider; evaluation in a specialized foster care clinic followed by ongoing care with a medical home; or becoming established in a new medical home for the initial evaluation and ongoing care. Once a child enters foster care, the pediatrician ideally should remain the same, despite any changes in foster placement or insurance coverage.[15] Table 1 outlines attributes of quality health care for children in foster care.

Education and counseling is a critical component of preventive health care encounters, especially for children in foster care.

Quality health care must consider the impact of adversity on health and development, and incorporate the trauma lens in the evaluation and management of these children.

Initial Health Screening

Standards and regulations for the initial screening are determined regionally and most suggest a medical evaluation within 7 days of entering foster care. The AAP recommends that children entering foster care should have a screening health evaluation within 72 h of placement, and that infants should be seen even sooner, within 24 h of placement if possible.[15] Various methods have been employed to address the initial health screening, including nurse screenings, emergency department clearance, chart review, and standard office visits.[16] The purpose of the initial screen is to identify health needs that require urgent medical attention such as chronic diseases requiring therapy, acute infections requiring treatment, signs of child maltreatment, immediate nutritional problems, acute mental health needs, or pregnancy.[9–11,14,15] Table 2 summarizes important components of the initial health screening.

Comprehensive Health Assessment

Within 30 days of the child's placement, a comprehensive health assessment should be performed.[15] If possible, the child's caseworker, foster caregiver, and, if appropriate, birth parent(s) should be present for this encounter.[9] Table 2 outlines key components of the health assessment. Immunization status can be difficult to assess when care has been discontinuous. Children entering foster care may be incompletely immunized, but visits to various health providers with poor record management may also lead to over-vaccination.[17] Strategies for obtaining immunization records include communication with previous medical providers, obtaining daycare or school records, and reviewing immunization registries. If records are unavailable by 60 days post-entry, immunizations should be commenced using the catch-up schedule from the Centers for Disease Control and Prevention.[18]

Anticipatory Guidance

Topics specific to foster care that should be discussed include adjustment to the new home, grief and separation issues, contact with birth parents, behavioral concerns, sleep problems, eating habits, and enuresis or

TABLE 2. Practice parameters for medical care of foster youth

Visit schedule	Components of the visit	Possible follow-up
Initial	History: chronic illness status medication availability significant developmental delay mental health emergencies Brief developmental and mental health screening including significant developmental delay major depression, suicidal thoughts violent behaviors Physical exam: vital signs and growth skin and hair for injury or infestation musculoskeletal genitourinary	Subspecialist for urgent health care needs Emergency department Psychiatric emergency department Child abuse specialist If physical abuse history or signs of recent physical trauma, appropriate imaging as recommended by the AAP (example: skeletal survey in children <2 years with suspected physical abuse)[22]
Comprehensive	History: identify and address health concerns of child, foster caregiver, and child welfare medical, behavioral, developmental, and social history information sharing between pediatrician, foster family, and child welfare sleep, eating, toileting, and behavior ask adolescents about use of tobacco, alcohol and other drugs. Physical: complete unclothed examination growth parameters Developmental and mental health screening Confirm/update immunization status Attention to oral exam/dental care as this is one of the most significant health issues for children in foster care Screening (Table 3) Anticipatory guidance AAP Bright Futures guidelines adjustment to new home visits with biologic parents sexuality, birth control, partner violence, and normalizing activities for adolescents	Comprehensive developmental evaluation Comprehensive mental health evaluation by trauma-informed mental health provider Dental examination Reproductive health specialist Nutrition counseling if abnormal growth parameters (note: obesity is now the most common growth abnormality detected upon entry into foster care)

encopresis.[9,19] Helping caregivers to understand the child's behaviors in the context of the adversities the child has experienced can be helpful. Resources from the American Academy of Pediatrics Bright Futures[19,20] can be useful.

Anticipatory Guidance for the Younger Child

General areas to be covered regarding younger children include developmentally appropriate play, physical activity and nutrition, positive parenting and discipline, injury prevention, and childcare arrangements.[20] For all children, but especially younger ones, visits with biologic parents can be difficult transitions. Preparing foster parents for this by identifying the visit as a stressor, recommending specific routines before and after visits (such as pizza and the same favorite movie every time the child returns from a visit), and identifying concrete ways to reassure the child during the transitions (making cards for mommy or looking at pictures of biologic and foster family) can significantly ease this process.

TABLE 3. Recommended screening for children and adolescents

Screening test	Age group
Hearing and vision	All
CBC	All
Lead	6 months–6 years
Tuberculosis	>3 months
HIV	All
Syphilis	All
Hepatitis C	All
Chlamydia and gonorrhea	Adolescents
Pregnancy	Adolescent females

Anticipatory Guidance for the Adolescent

For adolescents in foster care, there are rarely opportunities to discuss the issues of safety, sexuality, and teen risks. A particular focus by the pediatrician on family planning and sexual safety has the potential to make a significant impact for an adolescent in foster care. Specifically, teens may need guidance with sexuality/sexual safety, birth control, questions regarding sexual orientation, and partner violence. Independent living skills, educational or career plans, and supports should be considered for the teen aging out of foster care.[21]

Frequency of Primary Care Visits for Children in Foster Care

Consensus recommendations suggest preventive pediatric visits should be conducted on a more frequent schedule for the child in foster care because of the multiple environmental and social issues that can adversely impact their health.[15] A schedule of visits monthly for the first 6 months of age, every 2 months for ages 6–12 months, every 3 months for ages 1–2 years, and every 6 months thereafter, has been proposed and is being used in some settings.[9] There is limited literature evaluating the impact of this enhanced schedule, and current payor models can be a barrier. Potential solutions include Medicaid carve outs, grants, institutional or state supported programs,[16] telemedicine, use of physician extenders, and care coordinators.

Transfer of Medical Information for Children in Foster Care

Child welfare and the medical home should have a standardized method to obtain complete medical histories on children, as they enter foster care. This may require front office staff or child welfare personnel who have sufficient time and training in accessing health information. However, especially early in placement, pediatricians should be prepared to provide health services to children with little or no medical information available.[15]

Ideally, while in foster care, each child will have a centralized medical record/file at the foster care agency that is updated on a regular basis. Some jurisdictions have developed such abbreviated health records often referred to as "medical passports."[22,23] In order to function as a useful document, medical passports should contain:

(1) demographic information including contact information for current caregiver, birth parents, caseworkers, and legal advocates,
(2) health insurance information,
(3) documentation of past health care provided including specialists, hospitalizations, dental, mental health, and developmental care,
(4) schools and daycare centers, and
(5) essential health information such as growth records, immunization history, current medications, allergies, medical problem list, routine screening test results, list of durable medical equipment, and sexual health history for adolescents.

More effective solutions to health information problems will require the development of computerized databases that integrate data from a variety of sources and incorporate appropriate confidentiality protections.[23]

Impact of Trauma on Children in Foster Care

Science about the impact of adversity on children now informs the medical care of children in foster care. In order to develop and thrive, children need an environment in which a responsive, attentive caregiver meets their basic needs including nurturance, love, and protection. In this fundamental caregiver–child relationship, the child also depends on the caregiver to mediate and be a buffer for life's stressors.[12] When stressors are overwhelming or when caregivers are unable to help children buffer them, significant adversities can challenge the normal development of healthy

coping mechanisms, learning, emotional health, and physical health.[12,13,24]

Such un-buffered overwhelming stress leads to potentially maladaptive neuroendocrine changes that enable the child to protect her/himself from threats that are experienced and perceived in their world. When a child faces profound and chronic adversity such as abuse, neglect, and household dysfunction significant biologic changes can occur.[12,13] Excessive activation of the physiologic stress response system can lead to changes to: hypothalamic–pituitary–adrenal gland axis activation; epigenetic gene translation; altered immune response; and impaired neurodevelopment involving brain structures responsible for cognition, rational thought, emotional regulation, activity level, attention, impulse control, and executive function. This is expressed in the predictable behavioral, learning, and health problems, which are observed in many children in foster care.[25,26]

Trauma Screening

The health care visit allows ample opportunities to assess and address the impact of trauma. The pediatrician can probe for information about trauma by asking simple open-ended questions to the foster caregiver such as: "Do you know of any really scary or upsetting things that happened to (child's name) before he/she came to live with you?"[27] The pediatrician can also complete components of the medical evaluation with a trauma lens.

History and Review of Systems

Trauma's influence on the brain results in changes in bodily function. Sleep problems may include difficulty initiating or maintaining sleep, or experiencing nightmares. Children who have experienced trauma may demonstrate rapid eating, lack of satiety, food hoarding, or loss of appetite. Toileting problems include constipation, encopresis, enuresis, and regression of toileting skills.[28]

Physical Exam

Neuroendocrine changes can impact the immune and inflammatory response. In part, increased risk of infection, increased rates of asthma and allergy, and increased risk of metabolic syndrome can all be linked to trauma.[26–29] Adversities may act synergistically with environmental exposures to increase risk, placing those in foster care at greatest risk both in childhood and into adulthood.[30,31]

Developmental and Mental Health Screening

Routine screening may identify trauma responses that were protective in the dangerous situation the child came from, but if not viewed with a trauma lens, these behaviors can be misidentified as diagnoses such as depression, attention deficit hyperactivity disorder, oppositional deficient disorder, conduct disorder, bipolar disorder, or developmental delay.[32] The pediatrician must have a high index of suspicion for trauma in order to avoid diagnostic errors for children in foster care. Due to this concern, positive screens require further diagnostic evaluation before considering these diagnoses for treatment.

There are also formal trauma screening tools. It is important to consider the advantage and limitations of available tools.

(1) The Trauma Symptom Check List[27,33] is useful for identifying trauma symptoms including post traumatic stress disorder (PTSD), but it is time consuming and proprietary, thus can be costly.
(2) Nonproprietary screens for PTSD, such as the PTSD Checklist and UCLA PTSD-RI have not been updated to DSM-5 but are still specific to DSM-IV, and may be less helpful in identifying trauma symptoms outside of PTSD.
(3) Other screens such as the Child's Exposure to Violence Form or ACE screeners identify exposure to traumas. These may have limited value with children in foster settings, since they do not evaluate beyond exposure to trauma (which most in foster care have had) to differentiate which exposed children have symptoms and a need for services.

A full-trauma assessment by a trauma-informed mental health professional is recommended for all children entering foster care and should be initiated within 30–60 days of placement.[28] Pediatricians should become familiar with programs in their practice area, which provide evidence-based interventions for children who have experienced trauma such as trauma-focused cognitive behavioral therapy, and attachment, self-regulation, and competency.

formation on trauma-informed care resources in Table 4.

nformed Anticipatory e for Foster Caregivers

a traumatized child can pose challenges, aregivers will look to the pediatrician for guidance. The pediatrician should affirm responses and behaviors are to be exp represent a normal reaction to unhealthy have resulted in healthy and unhealthy co egies.[34] Caregivers who listen calmly, v child's emotions without reinforcing them, a the child of the caregiver's support and af help the child's brain and body to learn adaptive ways to respond to a new, safer en

Because usual parenting practices may not be effective with children who have suffered from trauma, it is important to give foster caregivers alternative, trauma-specific ways to respond. The AAP published a trauma-informed care guide for pediatricians that is helpful in this regard.[34] It can be helpful to provide trauma-specific anticipatory guidance even before symptoms occur, as outlined in Table 5.[34]

Conclusion

Children in foster care are at high risk for persistent and chronic physical, emotional, and developmental conditions because of multiple and cumulative adverse events in their lives. Child welfare agencies and pediatricians should work together to implement the standards for health care of children in foster care outlined by AAP and CWLA in the past, and informed by the science of today. Pediatricians can help improve the health and well-being of children in foster care by performing timely and thorough medical evaluations, providing continuity of care, playing an active advocacy role, and practicing trauma-informed care.

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Permanency and the Foster Care System

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Each year over 20,000 youth age out of the child welfare system without reaching a permanent placement in a family. Certain children, such as those spending extended time in foster care, with a diagnosed disability, or adolescents, are at the highest risk for aging out. As young adults, this population is at and increased risk of incarceration; food, housing, and income insecurity; unemployment; educational deficits; receipt of public assistance; and mental health disorders. We reviewed the literature on foster care legislation, permanency, outcomes, and interventions. The outcomes of children who age out of the child welfare system are poor. Interventions to increase permanency include training programs for youth and foster parents, age extension for foster care and insurance coverage, an adoption tax credit, and specialized services and programs that support youth preparing for their transition to adulthood. Future ideas include expanding mentoring, educational support, mental health services, and post-permanency services to foster stability in foster care placements and encourage permanency planning. Children in the child welfare system are at a high risk for physical, mental, and emotional health problems that can lead to placement instability and create barriers to achieving permanency. Failure to reach the permanency of a family leads to poor outcomes, which have negative effects on the individual and society. Supporting youth in foster care throughout transitions may mediate the negative outcomes that have historically followed placement in out-of-home care.

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Introduction

For children who have been abused, neglected, or have parents who are unable to support or care for them, foster care serves as a temporary safe haven until a permanent placement in a family is available. While the child welfare system works to find permanent placements for all children, some children will spend years with a foster family, or multiple foster families, before finding a permanent home. The median length of stay in foster care for children who are reunified with their biologic families is 8 months, but 13% of children in the child welfare system will never achieve permanency, particularly those who have been diagnosed with a disability, who entered care as a teenager, or who have been in care for more than 24 months.[1] Despite child welfare system efforts to achieve permanency, every year approximately 23,000 children age out of the foster care system.[1] Failure to achieve permanency has significant ramifications on the mental, physical, and emotional health of these children, which translates to poorer outcomes as they transition to adulthood outside the child welfare system. Improving adult outcomes for after foster care requires an understanding of the foster care system. This article reviews the epidemiology of permanency in the child welfare system, the outcomes of children who age out, and ideas for how to improve outcomes, particularly achieving permanency.

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Epidemiology

Over the past decade, there has been a 24% decline in the number of children in foster care, but in the past few years, that decline has slowed.[1,2] In fiscal year 2013, there were 402,000 children in the U.S. foster care system, with 255,000 entering the foster care system that year.[2] Of those 255,000 children, some may have entered and exited care multiple times

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throughout the year. While most children in out-of-home placement were awaiting reunification with their families, 102,000 were waiting for adoption and 51,000 were adopted before the year end.[2,3] When children are not eligible for reunification with their biological parents, adoption or legal guardianship is the primary goal. Since the passage of The Adoption and Safe Families Act (ASFA) in 1997, the number of adoptions from foster care has increased, from 36,896 in 1998 to 50,722 in 2000, which then stabilized over the next decade.[2,4]

The majority of children who enter foster care have been victims of maltreatment (70%); others have been involved in the juvenile delinquency system, have catastrophic medical disease, or uncontrolled mental health problems (30%).[5] The majority of these children have faced significant adversity prior to entering care. In addition to their own maltreatment, they may have been living with parents who struggle with serious mental health disease, substance abuse, and domestic violence.[6] These circumstances make this population highly vulnerable and at high risk for medical and mental health issues. These same factors also influence the child's ability to achieve stability in out-of-home placements, and impact the success of permanency planning and long-term outcomes.

Each year since 1998, the U.S. Department of Health and Human Services has produced a report on child welfare outcomes, to monitor and improve performance objectives for child welfare practices (Table 1). The emphasis on placement stability and permanence is noted in 4 out of 7 of the outcomes measures, showing a growing trend in support for remedying permanency issues in the child welfare system.

Types of Placement

Long-term adult outcomes, such as education, employment, physical health, mental health, risk-taking behaviors, and stresses and supports, are similar between those in kinship care and nonrelative care.[7]

TABLE 1. U.S. Department of Health and Human Services National Outcomes 2009–2012[1]

Reducing the recurrence of child abuse and/or neglect
Reducing the incidence of child abuse and/or neglect in foster care
Increasing the permanency for children in foster care
Reducing time in foster care to reunification without reentry
Reducing time in foster care to adoption
Increasing placement stability
Reducing placement of young children in group homes or institutions

However, achieving placement stability and rates of adoption differ between these groups.[8,9]

Kinship Care

Kinship care encompasses a variety of formal and informal living arrangements of children with relative caregivers. For research purposes, kinship care is defined as families receiving federal or state foster care payments for the care of their relative children.[10] Some studies include any adult to whom the child is related by a strong emotional connection, such as godparents or family friends.[8,11] These living arrangements may be coordinated by the child welfare system or privately arranged and in the latter case, more difficult to study. Compared to nonrelative caregivers, kinship caregivers are older, more likely to be single, and more likely to be employed outside the home.[7,11] Less is known about the demographics of the children placed in kinship care compared to those with nonrelative caregivers, but those in kinship care usually benefit from fewer placement changes while remaining in care longer.[7,12] Children in kinship care are equally likely to be reunified with their family as non-kinship foster care peers, but are less likely to be adopted and instead remain in guardianship care, so that ties with their biological parents are not terminated.[12] It may be that these kin caregivers already feel that they are related to the child and that the need for adoption is less necessary since they plan to care for the child until they are of age.[8]

Non-Kin Foster Care

Non-kin foster care represents up to 48% of children in the child welfare system.[13] Children who are unable to be placed with relatives remain in the responsibility of the state and are placed with recruited foster parents. As such, these foster parents are often held to higher standards than biological parents and the state trains, regulates, licenses, and monitors their parenting competency.[14] Non-kin foster parents tend to be better educated, less affluent, and as diverse as the general population.[15]

Group Homes or Institutions

The child welfare system seeks to place children in the least restrictive setting possible, yet up to 25% of youth have their first placement in a restrictive setting

such as a group home (33.2%) or residential treatment setting (37%).[1,13] The children placed in group homes or institutions tend to be older youth with behavioral or mental health issues.[1] A group home is a licensed or approved 24-h care small group setting with approximately 7–12 children and an institution is a facility operated by a public or private agency that provides 24-h care and/or treatment.[1] In 2009, 16% of youth in the child welfare system were in group homes or institutions and most of these youth were adolescents, who are more likely to age out of foster care without a permanent placement.[13] The National Survey of Child and Adolescent Well-Being (NSCAW II) Wave 2, a longitudinal study of 5821 youth between 2008 and 2011, examined well-being outcomes, including permanency, after exposure to the child welfare system.[9] In the NSCAW II study, 32% of youth in group homes or residential treatment programs achieved permanency.[9] Children living in group homes or residential treatment were more likely to have their parental rights terminated and to experience increased numbers of placements but were the least likely to be adopted compared to those in all other child welfare placements.[9] The frequent placement changes and infrequent contact with biological families that these high-risk youth face may limit the interpersonal relationships that are developed and decrease the chances of forming a connection with an adult that is likely to lead to a permanent placement.[9,16]

Permanency

Although there is a growing emphasis on permanency in the child welfare system, this concept is poorly understood by birth parents, adoptive parents, and youth.[17,18] A child achieves permanency when they are either reunified with family, living with other relatives, living with a legal guardian, or legally adopted.[1,19]

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Children can experience a great amount of instability in child welfare placement, which in turn, can affect their ability to later achieve permanency. Approximately 40% of children are moved within their first 6 months in placement, with teenagers experiencing multiple moves in that time frame.[9,20] Many factors contribute to foster care placement disruption, including characteristics of the child, their biological family, and the placement. Children who are higher risk for instability are those who are older, White, possess a chronic health or mental health diagnosis, have a delinquency history, or other behavioral problems.[13] While some children's placement instability may be triggered by behavior problems present upon entering care, behavior problems increase due to instability alone.[21] Children who enter care with a sibling in the child welfare system are more likely to experience placement disruptions, compared to children without siblings.[8] Not surprisingly, foster parents who are emotionally involved, well-trained and supported by their agency, and matched in temperament to the child are more likely to create a stable placement.[8]

Systems issues also contribute to placement instability, thereby jeopardizing permanency for children. In 1 study, 70% of placement changes were made due to system or policy mandates.[22] The child welfare system makes some placement changes in the best interest of the child, as is the case in moving from residential care to a family-based foster care, moving to a relative placement, or keeping sibling groups together.[22] Other changes occur due to system-related issues that may not best serve the child, such as closure of homes or lack of funding.[22] Frequent placement changes place considerable demand on caseworkers, who attempt to keep children with kin and siblings, place them in culturally-matched homes, and keep them in the same community as their biological home. These goals may not always be feasible in the urgency of an initial placement, which can result in the need for a subsequent placement.[22] In turn, the high workload that placement changes create leads to caseworker turnover- which itself can lead to additional placement disruptions.[8,19]

Aging Out

As of 2012, approximately 87% of children in foster care were discharged to a permanent home.[1,2] Of the 235,000 children who exited the foster care system in 2012, 58.7% were reunified, 6.8% were in guardianship care, 21.3% were adopted, and 9.8% were emancipated.[1] This means that each year approximately 23,000 youth age out, failing to reach

TABLE 2. Populations at risk for aging out

	Permanency rate (%)	Barriers to achieving permanency
Children with disabilities	77.7[1]	Higher level of care
Adolescents	64.4[1]	Higher risk behaviors: substance abuse and mental health conditions (27%), incarceration (35%), and giving birth/fathering children (7%)[1,62]
		Lack of agency motivation to place adolescents[62]
		Less willing to terminate ties with their birth families
		Lack of appreciation for permanency
Extended time in foster care (>24 months)	35.5	Placement instability
		Decreased trust in foster families due to history of failed placements

permanency before reaching adulthood.[1,23,24] Children with disabilities, older children, and those who have been in foster care longer achieve permanency at lower rates that the 87.3% of the general population in foster care (Table 2).[1]

Outcomes After Aging Out

Compared to their peers, foster care alumni have higher rates of incarceration, unintended pregnancy, food, housing, and income insecurity, unemployment, educational deficits, receipt of public assistance, and mental health problems (Table 3).[1,19,25–31] In many cases, the poor parent–child bonding that these children experience before entering care, and that sometimes persists while in care, carries over into problems during adulthood.[32]

The only large-scale longitudinal study of the transition to adulthood for foster youth after the Foster Care Independence Act of 1999 was the Midwest Evaluation of the Adult Functioning of Former Foster Youth, best known as The Midwest Study.[26,27] This evaluation of 732 youth between the age of 17 and 26 in Iowa, Wisconsin, and Illinois focused on youth as they age out of foster care and their young adult outcomes.[26,27] Much of what is known about the transition of youth from foster care to adulthood comes from this study, published in 2004. Some outcomes may be different now given that they do not include changes made after the Fostering Connections Act and Affordable Care Act were created.

Benefits of Foster Care

Some studies have shown that there are benefits to spending more time in foster care compared to institutional

TABLE 3. Outcomes after aging out of foster care

Delinquency and incarceration	28–31% report being arrested.[26,58,59]
	15% report being convicted of a crime.[58,59]
	20–30% report being incarcerated by 21 years old.[26,58,59]
Food, housing, and income security	Higher rates of food insecurity, difficulty paying rent or mortgages, and increased reports of economic hardship.[26]
	Near 50% of females and 25% of males receive government benefits, such as food stamps or public housing.[26]
Employment	40% of 19-year-old are employed, compared to 58.2% of peers.[26]
	Earnings tend to be $6,000–$10,000 per year lower on average and they are slower to progress in the job market.[26,58,63]
Education	More likely to be enrolled in college (37.2% vs 11.7%).[26,27]
	Equally likely to obtain a high school diploma or GED.[20]
	Less likely to have a bachelor's degree (1.8% vs 22.5%).[20]
	Only 16% reported receiving college application assistance and only 18% received financial aid application assistance.[44]
Homelessness	Between 11% and 36% will become homeless as they transition to adulthood, compared to 4% of their peers.[28,43]
Mental health	Over half have a least one mental health problem compared to 22% of the general population.[31]
	More experience post-traumatic stress disorder (PTSD) than Vietnam or Iraq war veterans.[31]
	One third reported suffering from depression, dysthymia, post-traumatic stress disorder, social phobia, alcohol abuse/dependence, or substance abuse/dependence.[26]
	47% received mental health services while in foster care, but only 21% report receiving mental health services after leaving the child welfare system.[25]
Pregnancy	Younger age at first conception and higher median number of sexual partners.[64]
	More likely than peers to become pregnant (50% vs 20%).[26]

care, highlighting the importance of placement in a family. In particular, improvements in academic achievement and gains in IQ were noted as possible benefits to extended foster care.[33,34] In 1 randomized controlled trial, Romanian children in foster care were significantly more likely to be securely attached than their peers raised in institutions.[35] Cashmore and Paxman[36] showed that youth who felt a sense of security in foster care were more likely to have positive outcomes. These studies show that a good, stable foster care placement can have positive effects on a vulnerable youth population compared to the alternatives of living in institutional or group care or in a home with neglect or maltreatment, but not necessarily compared to their peers. Unfortunately, most studies do not show long-term improvements in developmental outcomes, likely due to the history of trauma and insecure attachment that these children experience prior to their out-of-home placements.[37]

stable foster care placement can have positive effects on a vulnerable youth population compared to the alternatives of living in institutional or group care or in a home with neglect or maltreatment.

Children may benefit from staying in the child welfare system longer rather than be adopted in certain circumstances, although this is controversial. Examples of this include teenagers who do not want to dissolve ties with their biological families or adoptive families who wish to delay legal adoption to garner the benefits of state assisted college tuition.[38]

Interventions to Improve Outcomes in Foster Care

Preparation for Transition

The Fostering Connections to Success and Increasing Adoptions Act (P.L. 110-351) requires that in the 90-day period prior to aging out of care the states "provide the child with assistance and support in developing a transition plan that is personalized at the direction of the child, includes specific options on housing, health insurance, education, local opportunities for mentors, and workforce supports and employment services."[3] While federal law mandates that case managers provide adolescents with independent living training prior to transition, it does not specify how these services be provided, and therefore these services can be variably employed and may not always be designed with an adolescent's experience in mind.[39] So while the Fostering Connections Act makes transition planning a priority, more work is needed to make it relevant for adolescents and young adults and more than 90 days is needed to have a significant impact on successful transitions.

Insurance

Most children are covered by Medicaid while in the child welfare system, as states that receive federal reimbursement for foster care expenses under Title IV-E of the Social Security Act are required to provide this, and most states opt to cover those children who are not Title IV-E eligible anyway.[40,41] Previously, when children aged out of foster care, only 20% were eligible for public insurance, but the Foster Care Independence Act and Affordable Care Act have extended Medicaid coverage up to the age of 26, mirroring the coverage granted to their peers under their parents' health plan.[42]

Age Extension

Adolescence is the time when skills of independent living are learned so that separation from the protection of the family unit can be achieved. For youth in the child welfare system, who abruptly lose the support and protection of a family once they age out, the need to acquire independent living skills is even more salient. In the Midwest Study, those who remained in care until the age of 21 years were almost twice as likely to have ever attended college than their peers, as well as more likely to have higher earnings and delayed pregnancy.[20] Therefore, staying in the child welfare system longer serves to extend the family-life protection that others receive from their biologic families as they transition to adulthood.

Housing Programs

Given the prevalence of homelessness in foster care alumni, states can use the Department of Housing and Urban Development's Family Unification Program (FUP) to give youth 18-month housing vouchers and other services to help their transition to adulthood and home ownership.[29] Unfortunately, less than half of the

Public Housing Agencies operating FUP are providing vouchers to youth and youth make up only 14% of the total program participants as of 2012.[43] Public child welfare agencies seem to under-refer youth to the public housing agencies for FUP, likely due to lack of training on FUP, inadequate funding, administrative burden created by the 18-month time limit, and difficulty identifying FUP-eligible youth.[43] FUP has not yet been evaluated in its effectiveness in preventing homelessness after the 18-month voucher expires, but at minimum, it serves as a short-term solution.[43]

Job Training

In the Midwest Study, 25% of young adults who were employed after aging out of foster care indicated that they found their job through a job training program and 78% viewed such training as helpful.[27,44] Whether job training comes through caseworkers, foster parents, or other programs depends on the state.[25] The John H. Chafee Foster Care Independence Program supports services that prepare youth for transition including education, vocational training and employment, budgeting and financial management, health education, housing, and youth development.[27] Despite the reported training that these youth receive, 32% still feel ill-prepared for obtaining a job.[25]

Court-Appointed Special Advocates

A court-appointed advocate or a Guardian Ad Litem is a volunteer who acts as a third-party advocate on behalf of children with difficult or complex cases in the child welfare system. These advocates provide consistent support to the child and ensure that his/her voice is heard during the court proceedings, regardless of whether parents or caregivers are present.[8] While there are mixed reports about the effect of court-appointed advocates on child outcomes, they have been found to significantly decrease placement changes and therefore are likely to help a child achieve permanency.[8,45]

Training Foster Parents

Keeping Foster and Kin Parents Supported and Trained (KEEP) helps train and support foster parents, specifically in behavior management strategies, and is effective in decreasing problem child behaviors and increasing placement stability.[8] A majority (69%) of children adopted from foster care are adopted by their foster parent(s), which suggests that foster parents may be one of the best sources for creating permanency and education and support of the foster parents may help encourage them to do so.[46]

Awareness Campaigns

Some organizations, for example, the Dave Thomas Foundation for Adoption, use photos of children eligible for adoption to raise awareness of children who are awaiting adoptive families and to share real-life success stories of children already adopted. These campaigns seek to destigmatize adoption from foster care. Most parents who adopt have had some exposure to adoption, with 28% coming from television and 27% from internet sources.[38,47] Furthermore, the AdoptUsKids photolisting service has been shown have positive outcomes in 40% of children posted, who tended to be some of the hardest-to-place demographically, suggesting that this resource should be used more for children with few permanency resources available to them.[48]

Adoption Tax Credit

The Adoption Tax Credit seeks to help families adopt who otherwise may be unable to due to expenses. President Obama made this credit permanent with the signing of the American Taxpayer Relief Act of 2012.[49] The IRS adjusts the Adoption Tax Credit each year with the inflation rate and in 2015 the maximum benefit is $13,400. Adoption of a special needs child qualifies for the maximum tax credit regardless of actual adoption expenses. When the Adoption Tax Credit was first created, it was not being fully utilized, so the Fostering Connections Act made it required that adoptive parents be notified of their eligibility.[3,50] As of 2007, only 6% of foster care adoptions used the Adoption Tax Credit, which may be due to the overall low costs given that 56% of adoptive parents reported no associated costs and 39% reported being reimbursed for their adoption expenses by the child welfare system.[46]

Promising Future Approaches

Mentoring

Youth in foster care may lack a consistent adult in their lives to help them transition to adulthood. There is some support for informal mentors having a positive impact on early adult outcomes, such as educational attainment, suicidal risk, physical aggression, general health, and risk for having a sexually-transmitted

infection.[51] Given that youth in foster care have a history of disrupted and sometimes unhealthy attachments with parents or caregivers, finding a mentor relationship that is unlikely to be interrupted is important.[51] Volunteer mentoring programs are more likely to have mentors who are transiently involved, therefore an adult who is already a part of the youth's life may be a more stable and positive mentor relationship to encourage.[51] Consistency in jobs, sports teams, and churches, should be encouraged despite a child's placement outside their home to foster potential mentoring relationships. Youth who have a lifelong connection with an adult are 10 times more likely to achieve their goal of a permanency plan.[19]

Caseworker Training

Ryan et al. (2006) showed that children with multiple caseworkers had longer stays in foster care and that caseworker turnover decreased the likelihood of achieving permanency.[62] Therefore, the systematic issues that challenge caseworkers in the child welfare system, particularly decreasing caseloads and burnout, needs to be addressed. Furthermore, children who had caseworkers with a Masters in Social Work (MSW) spent less time (5.15 months on average) in foster care, but were no more likely to achieve reunification.[52] Recruiting more caseworkers with advanced degrees, decreasing caseloads, and minimizing caseworker burnout, may help children spend less time in foster care, which would fulfill one of the U.S. Department of Health and Human Services outcome goals.[1,52]

Mental Health Services

A history of mental health treatment and/or behavioral problems is a major cause of both placement instability and aging out of the child welfare system.[53] Despite a high need for mental health services in children with a history of maltreatment, only a quarter of those in the child welfare system receive these services.[54] There are a number of barriers in accessing mental health services, including restrictions on eligibility for treatment under Medicaid, availability of mental health providers, difficulty in screening for mental health disorders by primary care providers and schools, and limitations of foster parents as advocates in a complex system.[55] While most mental health and behavioral therapies occur in an outpatient or group setting, in the case of youth in foster care who have experienced trauma and family disruption, intensive in-home or community-based therapy may be the best.[53] Increasing Medicaid reimbursements, supporting a medical home for children in the child welfare system, intervening early in at-risk children, increasing school psychological assessments and individualized education plans for eligible children, and encouraging in-home or community-based programs are all strategies for potentially improving mental health services and outcomes for youth in foster care.[53–55]

Post-Permanency Services

Adoptive parents benefit from post-placement services such as respite care, camps, support groups, educational support, and assistance with finding and paying for residential treatment, given the often complex medical and mental health needs of children adopted from foster care.[4] Some states, like Ohio, have a post-adoption subsidy for special services that help adoptive parents afford some of the unique health needs of adoptive children.[38] Expanding such services to other states may help incentivize adoption of children with disabilities, who are at higher risk of not achieving permanency.[1,38]

Conclusion

Children enter the child welfare system for a variety of reasons, but almost universally from a place of trauma or neglect, making them a high-risk population even before they enter out-of-home placement.[5,6] Once removed from their home, these children face a variety of challenges, including disruptions in foster family,[20] school,[27] medical care,[56,57] and community. Children who are adopted from foster care tend to be younger,[4] while older and higher risk children may languish for years in the child welfare system before aging out. Reaching the end of their support from the child welfare system is wrought with challenges for these high-risk youth. Foster care graduates are more likely to be

Foster care graduates are more likely to be unemployed,[26] have unplanned pregnancies,[26] be arrested[58] or incarcerated,[26,58,59] be homeless,[20,31] and have lower educational achievement.[20,26,27]

unemployed,[26] have unplanned pregnancies,[26] be arrested [58] or incarcerated,[26,58,59] be homeless,[20,31] and have lower educational achievement.[20,26,27] Due to the poor outcomes seen in youth aging out of foster care, much attention has been directed at how best to serve this population, both before, during, and after their interaction with the child welfare system.

Understanding adolescent development is important in determining how best to support this demographic in transitioning to adulthood. As more young adults delay marriage and parenthood in favor of education attainment and career, a new developmental stage of "emerging adulthood" has been coined.[60,61] This stage ranges approximately from 18 to 25 years old, which is the time period that we ask youth in the child welfare system to transition to independent living, while this life stage for their peers is characterized by a self-centered exploration of identity and belonging in the world.[61] Legislation that helps support these emerging adults in foster care by extending their support services [20] and insurance,[6,54] and providing job training [27] allows them more time to navigate this transitional life stage in a more congruous nature with their peers.

The large numbers of children aging out of foster care without reaching permanency is not only a concern based on the poor outcomes noted previously, but there is also a significant economic impact of these poorly functioning young adults. The 23,000 youth who age out of foster care each year cost the general population nearly $8 billion, however, there is only $140 million of federal funding designated for this population.[59] Providing fiscal incentives for adoptive parents and legal guardians prior to these youth aging out may be one cost-effective strategy to promoting permanency.[4]

While foster care serves a critical role for children without a safe family environment, it has been shown over the past decades to be a suboptimal system for promoting healthy child development. There are many ways in which children and families should be supported throughout their time in the child welfare system, but most notably at the times of transition. Preparing children and families for these transitions, through education, support, and planning, can help reduce the negative outcomes that have historically followed out-of-home placements and help promote permanency.

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Mandates for Collaboration: Health Care and Child Welfare Policy and Practice Reforms Create the Platform for Improved Health for Children in Foster Care

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Improving the health of children in foster care requires close collaboration between pediatrics and the child welfare system. Propelled by recent health care and child welfare policy reforms, there is a strong foundation for more accountable, collaborative models of care. Over the last 2 decades health care reforms have driven greater accountability in outcomes, access to care, and integrated services for children in foster care. Concurrently, changes in child welfare legislation have expanded the responsibility of child welfare agencies in ensuring child health. Bolstered by federal legislation, numerous jurisdictions are developing innovative cross-system workforce and payment strategies to improve health care delivery and health care outcomes for children in foster care, including: (1) hiring child welfare medical directors, (2) embedding nurses in child welfare agencies, (3) establishing specialized health care clinics, and (4) developing tailored child welfare managed care organizations. As pediatricians engage in cross-system efforts, they should keep in mind the following common elements to enhance their impact: embed staff with health expertise within child welfare settings, identify long-term sustainable funding mechanisms, and implement models for effective information sharing. Now is an opportune time for pediatricians to help strengthen health care provision for children involved with child welfare.

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Introduction

Improving the health of children in child welfare requires close collaboration between the health care and child welfare systems. For decades, pediatricians have played an integral role working with child protective services (CPS) in the initial identification, evaluation, and diagnosis of child maltreatment. Despite the complex health needs of this population, concerted partnership between health care and child welfare systems, was historically largely limited to the CPS investigation period. However, propelled by recent health care and child welfare policy reforms, there are new mandates for accountability and integrated responses fostering greater collaboration between the health care and child welfare systems for the duration of time a child is involved in child welfare.

This article aims to provide a road map for health care systems looking to improve health care delivery and health care outcomes for children served by the child welfare system and in particular children in foster care. The first section provides the national health care and child welfare policy context. In particular, this section highlights recent trends in health care reform that foster greater accountability in outcomes, access to care, and integrated services for children in foster care. Concurrently, recent mandates in child welfare legislation require child welfare systems to ensure children in their care receive appropriate health care services. Reinforced by this policy environment, the next section discusses innovative workforce and financing strategies that jurisdictions have adopted to improve health care delivery and health care outcomes for children in foster care. The article concludes with recommendations on how jurisdictions can bolster the success of these cross-system efforts.

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National Policy Context

Health Care Policy Reforms Strengthen Medical Care for Children in Child Welfare

Recent health care reforms have focused on increased accountability of medical systems for health outcomes, greater access to care including mental health services, and improved integration of services. Some of these key reforms included provisions specifically focused on children in foster care. Other legislative actions, although not targeted to children in foster care, will significantly impact this population. Concurrent with national policy changes, the American Academy of Pediatrics (AAP) developed recommended standards of health care for children in foster care that are shaping the development of health care policy and service provision.

Accountability for Health Outcomes

Medical systems are facing increasing pressure to assume responsibility for the health outcomes of their patients and to develop a more patient-centered care delivery system with a focus on overall well-being, and a larger emphasis on preventative health and mental health services. Children in foster care are categorically eligible for Medicaid through Title IV-E of the Social Security Act, and are closely impacted by transformations in Medicaid related to accountability. In 2009, two federal laws shifted focus toward the accountability of health care systems, through measures on data tracking and measurement. The 2009 *Children's Health Insurance Program Reauthorization Act* established a federally funded program to develop and track new measures in health care delivery, including targeted measures for children in foster care.[1] In the same year, the *American Recovery and Reinvestment Act of 2009* contained the *Health Information Technology for Economic and Clinical Health* (*HITECH*) provisions.[2] *HITECH* encouraged the meaningful use of health information technology particularly within Medicaid, for the purposes of patient-centered care and innovative population health initiatives. The provisions incentivized providers to expand their use of electronic health records and implement new data security measures, which strengthened the potential for cross-systems data sharing and collaboration. The next year, the 2010 *Patient Protection and Affordable Care Act (ACA)* created incentives and rules for health care systems to view themselves as responsible for overall patient health rather than individual episodes of health care.[3]

A key part of the ACA was increased health care accessibility for children in child welfare.

Access to Care

A key part of the *ACA* was increased health care accessibility for children in child welfare, including children in foster care. The *ACA* directly expanded Medicaid eligibility for children involved with child welfare until 26 years of age regardless of income. Youth qualify if they were under the responsibility of the state when they turned 18 years of age (or older if the state's federal foster care assistance extends beyond that age), and if they were enrolled in Medicaid while in foster care. Additionally, the law increased health care accessibility by prohibiting insurance plans from denying coverage based on pre-existing conditions, especially important for children in child welfare, who are more likely than their peers to experience chronic health conditions.[3]

Parallel to increasing access to medical coverage, federal legislation over the last decade has also strengthened regulation around the importance of mental health coverage. Mental health parity was first established in the 1996 *Mental Health Parity Act*, which required large group insurance plans to offer the same annual and lifetime dollar limits to mental health coverage as offered for medical and surgical coverage.[4] The 2008 *Mental Health Parity and Addiction Equity Act* strengthened its predecessor by requiring group insurance plans, including Medicaid, to offer the same financial requirements and treatment limitations for mental health and substance use benefits, as for medical and surgical services.[5] However, insurers were not required to provide coverage for mental health and substance use services until the 2010 *ACA* named mental health and substance use as one of 10 essential health benefits. Although enforcement has been slow and varied across states, mental health parity will ultimately benefit a high percentage of children in child welfare and their parents who rely on Medicaid for mental health services.

Integration of Care

Driven by shifts in both accountability and financing structures, pediatricians are developing a more comprehensive approach to patient health, which includes the expansion of partnerships outside medicine such as with child welfare and social service staff. The *ACA* propelled growth in accountable care models like Oregon's coordinated care organizations (CCO). The CCO is held accountable for the health of a regional population, and is provided a more flexible budget to collaborate with social services like housing, drug treatment to improve outcomes for patients.[6] Further, the *ACA* increased flexibility on home and community-based waiver services, to encourage states to follow the example set by Louisiana, New York, and Colorado, in using the waiver to develop coordinated medical and mental health systems for children in child welfare.[7] With greater autonomy in financial discretion to jurisdictions, this provision has provided opportunity for innovative strategies to coordinate and expand access to services within the child welfare system.

The health care community's recognition of child maltreatment as a medical issue helped to shape the development of the child welfare system.

Standards for Health Care of Children in Foster Care

In 1997, recognizing that current health care models were inadequate in addressing the complex health care needs of children in foster care, the AAP convened a task force to develop recommended standards of health care for children in foster care. The second edition of the AAP's standards of health care for children in foster care, *Fostering Health*, published in 2005 recommends an enhanced health care visit schedule and receipt of care through a medical home for all children in foster care.[8] The AAP recommendations are intended to serve as a resource to policymakers as well as providers within the medical and child welfare systems.

Child Welfare Policies Expand Health Requirements

The health care community's recognition of child maltreatment as a medical issue helped to shape the development of the child welfare system. While society has long taken measures to protect children from maltreatment, the medical community did not regard child maltreatment as a medical issue until the 1950s, when the use of x-ray technology provided medical providers the diagnostic ability to detect skeletal injury in children coming into hospitals with trauma. In a landmark 1962 medical article on Battered Child Syndrome, researchers showed through the systematic use of x-ray technology that child maltreatment was far more common than previously known.[9] This new medical perspective of child maltreatment and its reach catalyzed a public outcry for action.

In 1974, Congress passed the *Child Abuse Prevention and Treatment Act (CAPTA)*, which defined a major new role for the federal government in responding to abuse and neglect. CAPTA provided federal support and direction for states' child abuse and neglect prevention, reporting, investigation, and treatment activities.[10] In 1997, the *Adoption and Safe Families Act* emphasized health and safety as a priority in placement decisions, and created a federal mechanism to monitor how well states meet national standards for child safety, permanency, and child and family well-being, including children's physical and mental health needs.[11]

it was not until 2008 with the Fostering Connections to Success and Increasing Adoptions Act (Fostering Connections) that federal law first explicitly articulated that child welfare agencies are responsible for child health outcomes.

The recent shifts in health care policy have been paralleled by child welfare reforms focused on improving the overall well-being of children in foster care with a specific emphasis on health and mental health services. However, it was not until 2008 with the *Fostering Connections to Success and Increasing Adoptions Act* (*Fostering Connections*) that federal law first explicitly articulated that child welfare agencies are responsible for child health outcomes. *Fostering Connections* encouraged greater child welfare–health care collaboration throughout all phases of a child welfare case. As a result, state child welfare systems were required to put a plan in place for screening, assessing, and treating the health care needs of children in foster care, and to develop this plan in consultation with a medical expert.[12]

Subsequent federal legislation and policy guidance continued to expand child welfare's focus on health with a growing emphasis on trauma, mental health, and healthy child development. The 2011 *Child and Family Services Improvement and Innovation Act* required state child welfare agencies to ensure the monitoring and treatment of emotional trauma related to child maltreatment, the oversight of psychotropic medications by children in foster care, and a plan to address the developmental needs of young children.[13] Successive U.S. Health and Human Services' information memorandums encouraged states to coordinate across health care and child welfare systems to meet these requirements through joint planning, funding, and staffing.[14–16] Last, the 2014 *Preventing Sex Trafficking and Strengthening Families Act* further expanded the focus on healthy child development to ensure foster parents permit children in their care to participate in developmentally appropriate activities outside the home. These "normalcy provisions" recognize that addressing children's healthy development goes beyond physical and mental health treatment and encompasses participation in developmentally appropriate activities throughout a child's involvement in child welfare services.[17]

These expanded health requirements are prompting state health care and child welfare systems to revisit how they collaborate for the duration of time a child is in custody of child welfare services, as child welfare agencies cannot fulfill these mandates without close partnership with medical providers, health insurers, and state-sponsored Medicaid. Collectively, these new standards point towards health care and child welfare systems that are better prepared to respond to the unique health needs of children who are abused and neglected, by increasing the accessibility of care on the front end, and by ensuring greater service coordination across medical, mental health, and child welfare providers throughout the child's involvement with the system.

Innovative Cross-System Workforce and Payment Models

The federal legislation described above directs states to better address the health care of children involved with the child welfare system through more accountable, collaborative models of care. As a result, there have been growing cross-system efforts; however, ensuring access to high quality health care for children in foster care remains a challenge. Despite the guaranteed Medicaid coverage for children in foster care and the AAP recommendations, barriers to health care delivery persist, including the low-cost margin available to most pediatric practices to provide their services, and the limits many practices have set on accepting new Medicaid patients.

Even more difficult is ensuring high quality health care services for children who remain in-home, who are the vast majority of children receiving ongoing child welfare services. These children have similarly high rates of health and mental health problems as children in foster care,[18,19] yet they do not have the same guaranteed access to Medicaid, nor do most medical programs target these children. Both groups of children may lack a consistent medical provider or their medical provider may have limited knowledge about child welfare, hindering care continuity and effective information sharing as children traverse through the child welfare system.[20,21]

Jurisdictions have developed the following innovative cross-system workforce and payment strategies to strengthen access to quality health care services and coordinated case planning for children involved with child welfare. The strategies include: (1) hiring child welfare medical directors, (2) embedding nurses in child welfare agencies, (3) establishing specialized health care clinics, and (4) developing tailored child welfare managed care organizations. It must be noted that while this section focuses primarily on physical health care services, ensuring access to high quality mental health care including access to evidence-based mental health services is also incumbent on the health care and child welfare systems. Because what may be effective in one jurisdiction may not be the right model for another, multiple strategies are identified.

Child Welfare Medical Directors

An increasing number of state and city child welfare agencies have hired child welfare medical directors to provide strategic leadership and in-house medical expertise related to meeting the health needs of children involved in child welfare. Child welfare medical directors serve a number of functions that typically include expert consultation on medically complex child welfare cases, consultation on clinical reviews of the children's physical health, oversight of the child welfare agency's health services, and acting

as a liaison to the health community. In 2010, 16 states reported having a child welfare medical director,[22] along with numerous large metropolitan areas including Baltimore, MD; Philadelphia, PA; and Chicago, IL. Several positions were established by legislation, others were created as a result of a lawsuit that involved children's health needs, and others were created by administrative directive.

In Baltimore, the medical director is overseen by HealthCare Access Maryland's Executive Team, in collaboration with the Department of Social Services and Mental Health systems. The medical director leads the city's Making All of the Children Healthy (MATCH) program, which uses interdisciplinary teams of nurse case managers, medical professionals, and mental health specialists to provide coordinated services to children in foster care. These services, which are funded jointly by the city and state child welfare agencies, include a comprehensive health assessment within 5 days of entering the system, medical case management for children with complex medical and behavioral needs, and coordinated routine exams.[23]

Embedding Nurses in Child Welfare Agencies

Embedding nurses into child welfare systems is used by states to provide health care management and care coordination for children in the child welfare system. The model is premised on the fact that child welfare staff do not have the time, or clinical expertise, to closely monitor and ensure the health needs of children in foster care. Nurse case managers embedded within the child welfare system may be responsible for monitoring children's health needs and coordinating appointments and referrals to specialists. Some programs provide a nurse case manager to oversee all children in care, like Utah's Department of Health's Fostering Healthy Children Program.[24] This program is funded using Medicaid case management resources, and embeds a nurse manager in the child welfare agency at a ratio of one nurse per 100 children. Other models, like Baltimore's MATCH program, assign a nurse case manager only to children in foster care with complex health conditions. It is important to note, that if funding is provided through Medicaid's administrative case management billing codes, then none of the services can be for direct health care provision.[23]

Nurse case managers embedded within the child welfare system may be responsible for monitoring children's health needs and coordinating appointments and referrals to specialists.

In the New Jersey Department of Children and Families, a nurse-led Child Health unit is embedded in each of the state's 47 child welfare offices. Funded through a state federal Medicaid administrative match, every child in foster care is assigned a nurse case manager, with a ratio of one nurse to 50 children. Nurses provide physical and mental health services, coordinate and disseminate relevant health records, and participate in family team meetings and home visits in collaboration with child welfare workers.[25,26]

Foster Care Health Clinics

Health care provision through a specialized clinic is a growing strategy being employed to meet the health needs of children in foster care. These specialized clinics provide children an evaluation, initial health screen, and a comprehensive health assessment upon entry into foster care. In Worcester, MA, the Foster Children Evaluation Services program within the University of Massachusetts Department of Pediatrics conducts health care evaluations upon entry into the foster care system, in collaboration with the Worcester Department of Children and Families. Other clinics serve as the initial entry point for the health evaluation and as the child's medical home, seeing all children in foster care for routine care (e.g., Starlight Pediatrics in Rochester, NY) or only children who lack a regular medical provider upon entry into care (e.g., Fostering Connections Program, Nationwide Children's Hospital, Columbus, OH). Programs are hospital-based or community-based. Medicaid-eligible services are covered, however, services that exceed the current Medicaid schedule of services (e.g., a health examination when a child enters foster care, if the child had one in the last calendar year) may not be supported, and need to supplemented through state, county, or private funding. Currently, all the clinics in this model are locally run, and have not yet been brought to scale state-wide, or even within their local jurisdictions. Research findings show that that medical care provided through a foster care clinic enhances communication between caseworkers, foster

parents, and medical providers.[27] Through its active attention to screening and assessment, this model has also been shown to increase prompt identification and treatment of children with mental health needs and developmental disorders.[28,29]

Special Child Welfare Managed Care Organizations

Recognizing that children in foster care have an elevated health risk profile, a number of states have worked with managed care organizations (MCOs) to expand health care access and quality. MCOs pay a capitated rate per client assuming the risk for the members enrolled in its plan. This contrasts with the traditional fee for service model that pays for each episode of care. One payment strategy is moving all children in foster care to a standalone, specialized MCO. This model differs from the more common approach where children in foster care are dispersed between the state's broader Medicaid MCO plans, and are only a small subset of the plan's overall membership. Texas was the first state to adopt a standalone MCO. Texas' STAR Health program, managed by Superior Health Plan Network, provides health, behavioral health, and dental care; an electronic health passport; 24-h nursing phone consultation; and care management. Another approach is the creation of a preferred provider organization (PPO) with enhanced reimbursement for medical providers accepting children in foster care, as was established in Illinois. Since the PPO's initiation in Illinois, there has been a significant increase in the number of children receiving immunizations, attending well-child visits, and having an identified primary care physician.[30]

Recommendations and Conclusion

Recent changes to health care and child welfare polices foster greater cross-systems collaboration throughout a child's involvement with child welfare. This legislation has propelled a growing recognition by federal and state policymakers and practitioners of the need for improved collaboration between health care and child welfare systems to achieve shared outcomes. Some jurisdictions have a long track record with cross-systems efforts to meet children in foster care's unique health needs through co-located workforce models and new Medicaid payment models. Other jurisdictions' efforts are much more recent. As health care and child welfare systems increasingly work to meet the health needs of this population, the following core elements are highlighted as critical to the models discussed above.

Support Specialization, and Make Sure Specialists are Available to Generalists

Across the models, children are served better when specialized health care expertise is embedded within child welfare (e.g., nurse case managers and child welfare medical directors). While these models recognize that most services can be, and are best, provided by frontline caseworkers and general medical providers, complex cases require specialized expertise. How and when to bring in the expert consultation requires the development of protocols and training that structures the workforce to most efficiently and effectively deliver services.

Ensure Effective Information Sharing

Increasingly, models that are impactful have developed streamlined mechanisms to share information between agencies and across the child's team. The adoption of electronic health passports for children in foster care gives their medical providers increased access to health information. Through memorandums of understanding (MOUs), consents on entry into foster care, and a greater understanding of where HIPAA does and does not provide a barrier to information sharing, the effective use of data can support improved case planning and collaboration across the child's child welfare team. Furthermore, if these data sharing agreements are mutually agreed upon and established, there remains a need to enable the fluidity of data sharing across interdisciplinary systems.

Identify Long-Term Sustainable Funding Mechanisms

The challenge is to design models that can be sustained long-term, and developed with existing state and federal funding streams. One of the key strategies must be to utilize Medicaid funding where possible. Models that blend child welfare and Medicaid funding, such as Utah's use of Medicaid administrative case management funds to provide embedded nurses in child welfare offices, provide an example of strategies to support program sustainability. Unfortunately, many

of the programs discussed above were developed as a result of a lawsuit or health tragedy, which amplified the need for action. However, changes in health care and child welfare policies propel a path for more sustainable funding.

With the current transformations underway in the payment and delivery of both health care and child welfare services, now is an opportune time for action by states and local jurisdictions to strengthen the health care provision for children involved with child welfare. Considering the foundation set by federal policy reform and innovative state strategies, the next ten years portends great advances in collaborative models. With this stronger partnership, improved child health for children involved with child welfare services can be ensured.

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