# The Family is the Patient: Promoting Early Childhood Mental Health in Pediatric Care

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Advances in developmental psychology, child psychiatry, and allied disciplines have pointed to abstract events and experiences in the early years as the origin of many adult mental health challenges. Yet, children's mental health services still largely lack a developmental or prevention-focused orientation, with most referrals to mental health professionals occurring late, once problems are well established. An early childhood mental health system rooted in the principles of life-course health development would take a very different approach to designing, testing, and implementing prevention and intervention strategies directed toward early child mental health. Priorities for such a system include supporting healthy family environments, parent-child and family relationships, parents' emotional/behavioral health, and family routines as a means of providing the best possible neurobiological foundation for mental health across the life span. The system would include proactive, trauma-informed, multidisciplinary care, with integrated mental health and social services support embedded in pediatric primary care settings. Novel intervention approaches in need of further research include 2-generational dyadic interventions designed to improve the mental health of parents and children, mental health-oriented telemedicine, and contingency management (CM) strategies. Integral to this Life Course Health Development reformulation is a commitment by all organizations supporting children to primordial and primary prevention strategies to reduce racial and socioeconomic disparities in all settings. We contend that it is the family, not the individual child, that ought to be the identified target of these redesigned approaches, delivered through a transformed pediatric system with anticipated benefits for multiple health outcomes across the life course.

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Mental health in America is a major concern. Approximately 1 in 5 American adults has experienced a mental illness. 1 Rising rates of mental health concerns among teens and young adults suggest that this may represent the "tip of an iceberg" of distress among young people.<sup>2</sup> Adverse childhood experiences (ACEs) are associated with most adult mental and physical health conditions. Circumstances that affect family functioning (eg, parental mental illness, parental interpersonal violence, parental incarceration, child maltreatment, and neglect) can be particularly impactful, resulting in persistent changes in children's responses to stress through epigenetic alterations and changes to physiologic, immune, and metabolic functioning,<sup>3-6</sup> increasing the risk of future health problems.<sup>7,8</sup> Half of all mental health concerns start by the mid-teens and three-quarters by the mid-20s, with early signs of distress often either overlooked or regarded as not sufficiently troubling to warrant referral to existing services. 9 The development of mental illness is also increasingly being identified in preschool-aged and younger children. 10 Persistently inadequate attention to the emergence of these problems in childhood underscores a critical need to identify, and ideally prevent, mental health problems earlier in life. In contrast, positive mental health early in life appears to support later positive interpersonal relationships, as well as lifelong mental and physical health. 11,12 The answers to increasingly common and disabling adult mental health problems lie, at least in part, in efforts to improve mental health prevention, promotion, and intervention earlier in the life span.8,13

The coronavirus disease 2019 pandemic has placed multiple additional stressors on all families,

but especially on poorer families and families of color, including loss of employment, increased food insecurity, 14-16 fear and experience of illness, and separation from loved ones. These stressors come at a time when access to usual sources of support, including childcare, home visiting, schools, physical and mental health services, and specialized services such as substance use treatment<sup>15,16</sup> have fallen. Rates of anxiety and depression appear to have risen among adults and adolescents during the pandemic, and although we lack good metrics to monitor the impact of these stressors on early childhood mental health, it may in fact be heightened, with potential long-lasting effects. These "hidden effects" on early childhood mental health run the risk of remaining invisible and unaddressed. Much of the existing system of mental health services for children, largely modeled after adult services with somewhat limited adaptations, adopts a "wait and see" approach, in which treatment is triggered only once symptoms develop. Anticipatory guidance, has, for the most part, been left to pediatricians who are continually provided shorter and shorter time with parents during well-visits and are expected to deliver increased amounts of information.<sup>17</sup> Programs such as the Health Resources and Services Administration's Maternal, Infant, and Early Childhood Home Visiting Program provide a twogenerational approach to supporting healthy families through home visits during pregnancy and early childhood, but currently serve only a small proportion of at-risk families. 18 The imprecision of current diagnostic methodology, and the absence of data delineating the homotypic or heterotypic continuity of psychiatric diagnoses identified early in life<sup>19</sup> and across generations, raises considerable challenges to intervention

approaches that are implemented only once diagnostic criteria and functional impairment are identified.

The Life Course Health Development (LCHD) approach suggests that a person's mental health development can be represented as a trajectory that is affected over time by risk and protective factors, arrayed in a multilayered relational developmental ecosystem.<sup>20–22</sup> The early years are viewed as a time of heightened neuroplasticity, punctuated by specific sensitive periods, which represent key developmental windows during which the physiologic effort to "rewrite" neural connections is lessened. As such, prevention or intervention efforts during these time periods are likely uniquely powerful windows of opportunity for correcting early deviations from mental well-being, potentially shifting mental health trajectories for life. We contest that the optimal time for intervention is not once symptoms have developed, but much earlier before the neurobiological circuits and physiologic responses associated with early adversity become embedded, interwoven with altered behavioral and social-emotional regulation, and ultimately less modifiable. Moreover, the LCHD emphasizes that family, community, and systemic level factors combine to form a type of "developmental scaffolding," which interacts with each child's own biobehavioral system in complex, bidirectional ways. When the scaffolding works well, it can help keep mental health development on track, even in the face of some risks; when not working well, the impact of stressors may be magnified. Consequently, intervention efforts need to address these multilevel factors in ways that enable parents to provide the critical nurturing, responsive care necessary to

support the child's healthy mental development and resilience.

An early childhood mental health service system that was "developmental by design," fashioned according to LCHD principles, 23,24 would be very different to the existing system. The current approach involves fragmented and reactive interventions delivered in locations or via delivery platforms that can be heavily stigmatized and organized in ways that are not user-friendly for families. Instead, a new developmental system would aim to provide interventions that optimize mental health from the start, supporting emerging developmental biobehavioral processes that underlie adaptive responses to environmental conditions. These interventions would have a longitudinal focus, aiming to optimize mental well-being, not just in the short term, but for life.<sup>25</sup> They would focus on equipping children with much-needed social-emotional and cognitive regulatory skills, avenues to sustain social networks and support, and self-efficacy: all factors hypothesized to be crucial to lifelong resilience. Interventions would be designed to address multiple levels of the ecosystem, including the family, community, and global environments in which children live, learn, play, and grow, and would be integrated across services and systems to produce a seamless approach to mental health development. Integral to this approach is a commitment to primordial and primary prevention strategies tackling social and environmental conditions that contribute to racial and socioeconomic disparities,<sup>26,27</sup> accompanied by broader health equity strategies which acknowledge that some family circumstances will need more complex and comprehensive early supports to produce more equitable outcomes. In this article, we describe 6 core principles of early

childhood mental health to guide intervention development, 5 novel intervention approaches, and new options for financing and service organization that could form the basis of a transformative system of mental health development.

#### **CORE PRINCIPLES AND PRIORITIES**

#### Child Emotional/Behavioral Health Depends Upon a Healthy Family Environment

Understanding and addressing the family context in which children are being raised is critical to supporting their healthy brain development and providing them with effective mental health supports. This is especially important when the family environment risks creating ACEs. Listening to a family's own perspectives on their circumstances and acknowledging their own goals for their children maintains cultural humility and allows the provider to be responsive to parents and the family context, factors key to addressing persistent disparities in pediatric mental health.12 Parents' use of adaptive coping strategies, positive parenting behaviors, and cultivation of strong relationships with their child all support the children's acquisition of brain-based, socioemotional, regulatory capacities and enhances physical and mental health across the lifespan. Conversely, maladaptive parental responses to stress, noncontingent or punitive parenting behaviors, absence of a nurturing parent-child relationship, intrafamilial violence, and parent psychopathology and/or addiction adversely impact children's healthy mental development.<sup>28</sup> Intervening to support child mental health entails supporting positive caregiving relationships in the child's family context that may require actions to support parents', or other caregivers', mental health.

#### Healthy Family Environments Emerge from Healthy Early Relationships

Early relational health (ERH) arises from positive, nurturing, and stimulating early relationships that build the foundations for a lifetime of relational and mental health.<sup>29,30</sup> Positive, attuned, and nurturing caregiver-child interactions impact the developing brain in ways that enhance adaptive responses to stress and help to foster the development of resilient coping strategies. Healthy early relationships are dyadic, responsive, and contingent. They are not unidirectional, static, or just about teaching the child, but depend on a back-and-forth, reciprocal dynamic interaction. They are positive and supportive, predictable and stable, and secure and safe, although the form and dynamics may vary across different cultures and individuals.<sup>29</sup> The family's ability to provide a healthy environment in which these early relationships can flourish is also impacted by the availability of additional sources of social support, including extended family, friends, educators, coaches, and community members, as well as having adequate economic and environmental resources, including a reliable source of health care.

#### Parental Emotional/Behavioral Health is Essential for a Healthy Family Environment

Parental emotional and behavioral health difficulties can impair the quality of parenting with pronounced implications for early child mental and emotional development. Heightened negativity, lack of sensitive contingent responding, and ineffective discipline are sometimes found among parents facing significant stressors or who have difficulty with emotion regulation or diagnosed mental illness. Treating the mental health symptoms of

parents may significantly improve child functioning and reduce symptoms in children, even without providing child treatment. Effectively treating children's mental health concerns similarly may improve parents' well-being. A strong argument can be made for a dyadic, or a family, approach to identified emotional and behavioral difficulties in children where the family or, at a minimum, the parent-child dyad is the unit of treatment.33 A redesigned early childhood mental health system needs to acknowledge the foundational nature of these bidirectional relational interactions between parents and caregivers and support interventions that serve families, not just children.<sup>28</sup>

## **Healthy Family Routines Promote Healthy Family Environments**

Parents of young children engage in family routines and practices that have powerful health consequences, such as morning and bedtime routines, media consumption, grocery shopping, food preparation, and mealtimes. Although these routines comprise the fundamental matrix of family life, parents may not appreciate their value and receive little guidance or support in providing them. Interventions that enhance health-promoting routines and practices, such as dental hygiene, exercise routines, healthy food choices, regular family meetings, reading together, and shared external experiences that include trips to the playground or park, have benefits for the health of families with young children. Their value lies not only in the experience, but also in the surrounding relational context that gives these experiences emotional meaning and serves as an innovative route to embedding health-promoting habits and routines that can last for life. Strengthening individualized support for these health-promoting

family routines, cultural practices, and rituals has profound life-course implications for mental health and well-being. These processes have been implicated as key components of resilience in families exposed to adversity. 32,34–37

# Trauma-Informed Care Settings Promote the Health and Well-Being of Children and Families

A meaningful portion of physical and mental health problems across the lifespan originate in exposure to early adversity and trauma. Traumainformed care in pediatric settings may reduce the impact of adversaries or, at a minimum, not exacerbate them. Providing this care includes a systematic approach to inquiry about trauma and adversity exposure, such as ACE screening, sensitive and empathic responding when trauma is identified, careful avoidance of retraumatization during health care visits, and support of cross-system collaboration to meet families' needs. 38,39 Low-burden, low-cost, easy-to-implement practice patterns among the full range of staff in health care settings (addressing the concerns listed above) improve families' experiences in receiving care and improve outcomes. 40,41

#### Integrating Mental Health Care and Social Services Within Pediatric Primary Care Can Advance Child and Family Health

Pediatric health providers must forcefully advocate for greater alignment, coordination, and colocation of mental health services across family-serving sectors, including pediatric health care, public health services, early child care and education, child welfare, and family support services. This approach is essential to achieving the full vision of a child's "medical home," introduced by the American Academy of Pediatrics in 1992, as "a family-centered partnership within a community-based system that

provides uninterrupted care with appropriate payment to support and sustain optimal health outcomes."42 Most emergent child mental health concerns can be identified in the pediatric medical setting, provided staff receive appropriate training, but effective intervention requires cross-sector collaboration across health, social, and education sectors. Efforts to expand the services offered in pediatric primary care through programs such as Healthy Steps<sup>43</sup> and Help Me Grow,<sup>44</sup> which are designed to improve community links and referrals for children experiencing developmental issues, could be adapted to integrate additional aspects of mental health intervention for both children and parents, rather than relying solely on referrals to outside agencies or providers. Changes in documentation practices and interprofessional communication within pediatric primary care are important components to provide care according to a life-course model. For example, linking family health records across medical charts enhances family-based care. If a child's pediatric medical chart included results of parental mental health screening, assessment, and referral, the pediatric medical team would be better equipped to provide comprehensive care to the child and family. Additionally, practice-based communication strategies can enhance effective multidisciplinary care; the strategic use of digital tools, and both virtual and in-person team meetings, enhances collaboration between mental health and pediatric providers.

The ability of pediatric health providers to generate this type of integrated response to identified problems will be limited unless there is a purposeful attempt to redesign the entire early childhood health system, as is starting to occur in states such as Colorado. 45 The

concept of the pediatric medical home may need to expand to that of a "family-health home," which has expertise and capacity to respond to identified issues early, in ways that focus on enhancing optimal family health, realizing a new vision for child health development.

#### Novel Intervention Approaches to Supporting Early Childhood Mental Health

#### Focus on the Relationship

The early caregiving relationship is essential to the promotion of child social-emotional well-being. Bowlby's and Ainsworth's theories posited that the early attachment relationship, wherein the mother served as a secure base from which the infant could explore the world, was critical to the development of later relationships and the ability of the infant to navigate future changes and stressors. 46,47 Subsequent research affirmed that a range of caring adults, including fathers, grandparents, and other caregivers, can be crucial attachment figures in young children's lives. 48 As evidence of the biological and physiologic underpinnings of attachment became recognized, theories such as biobehavioral synchrony have identified early caregiving relationships as modulating development of key stress-response systems, (autonomic nervous system and hypothalamic pituitary adrenal axis) that contribute to both socioemotional functioning and risk for psychopathology.<sup>49</sup>

Two-generation interventions that aim to strengthen children's mental health can, in addition, address caregivers' own difficulties when the overarching goal is to improve interactions between caregivers and children. A key intervention target is reflective functioning (RF), the capacity to understand one's own and one's child's feelings, needs, and motivations, and to understand how

these inner states affect behavior. Caregivers who have experienced extensive psychological trauma, yet who demonstrate high RF, are more likely to have securely attached children; conversely, caregivers with low RF may demonstrate hostile, withdrawn parenting and have children with lower social competence. 52

It is important to note here that clinical medicine is, first and foremost, oriented to identification and intervention for established acute and chronic conditions. There is an important shift in orientation that would need to occur if more attention is given to the preventive family-oriented approaches described below. Furthermore, the importance of developmental and trauma screening (parent and child) should be emphasized, as well, because this provides an important workflow to bring specific family and child issues into immediate view. Brief trauma screeners, such as the ACEs questionnaire (https:// www.acesaware.org/wp-content/ uploads/2020/02/ ACE-Questionnaire-for-Adults-Identified-English.pdf) for adults and the Building Resilience and Nurturing Children (BRANCH) trauma screener (https://app.box. com/s/c4u3ev98srzvo291duhlv 8l76p437sjo) and/or symptom screener (https://app.box.com/s/ ruu9ta4il19ou5nsi1fyga7gwflbha3b) for young children, would afford providers the information necessary to choose possible referral paths. Of course, such shifts of emphasis require the commensurate pragmatic changes in incentives, financing, and organization that we discuss in a subsequent section.

Table 1 lists several important interventions that have shown promising results in enhancing child and parent mental health outcomes in the context of early exposure to trauma and adversity. This is not an

exhaustive list, but offers examples of short- and longer-term individual, dyadic, and group interventions. It offers providers options after screening for mental health and trauma histories among patients and families.

# Mental Health-Oriented Telemedicine for Young Families

Emerging data support the efficacy of telemedicine delivery of child psychiatry, health-promotion messaging, and illness-prevention programs<sup>64</sup>; however, the picture is less clear in terms of patients' preferences for telehealth and the efficacy of telehealth psychotherapy.

Comparable results to face-to-face services have been reported for parent-management training for autistic young children,<sup>65</sup> Parents as Teachers, 66 and the universal Welcome Baby program for pregnant women. 67 In a study of >750 child psychiatry visits, >70% of providers and families felt the quality of care and personal connections were either the same or better over telehealth,<sup>68</sup> with similar findings from a survey of mental health clinicians working with families with parental substance use disorders who pivoted, during the pandemic, to shorter, but more frequent, encounters delivered via phone, video, or text. Parents, on the other hand, expressed both appreciation and frustration with transitioning from in-person to virtual sessions, suggesting that rigorous testing is needed to determine acceptability and characterize best practices. The use of telehealth for psychotherapy may be especially valuable for practices with limited clinicians and/or the need to cover a significant geographic area (eg, rural coverage).

#### CM Approaches

CM is a behavior modification intervention which reinforces or

 TABLE 1 Examples of Programs Promoting Early Childhood Mental Health

Intervention	Length of Program	Location of Program	Qualifications of Intervener	Description
Child—Parent Psychotherapy <sup>53</sup>	Weekly; varies—average is 50 wk (NCTSN.org)	In-home, outpatient, community clinic	Mental health professionals: a master's- or doctoral- level psychologist, a master's-level social worker or counselor, or a supervised trainee	Developed as a dyadic, attachment-based treatment of young children exposed to interpersonal violence. Sessions with caregiver alone and with caregiver and young child. Now used with children aged birth—6 exposed to various types of trauma, including community violence and disasters.
Minding the Baby <sup>54</sup>	Begins in pregnancy and continues through the child's second birthday; typically 1-h-long weekly home visits through the child's first birthday; bimonthly during the child's second year of life	Birth family home, community daily living setting, outpatient clinic, community-based agency, shelter	2-person team made up of pediatric nurse practitioner and licensed clinical social worker: recommends a master's degree for each; requires a master's degree for supervisors	A social worker and nurse practitioner work as an interdisciplinary team to support a family's development together. More specifically, promotes reflective parenting, secure attachment, maternal and child health, mental health, and self-efficacy with first-time young mothers and their families.
Attachment and Biobehavioral Catch-Up <sup>55</sup>	Weekly, 10 sessions	Home visits	Parent coach education recommendations and requirements determined by local agencies; no requirements for parent coach caseload limits; supervisor education recommendations and requirements determined by local agencies	Supports infants and toddlers who have experienced early adversity, such as neglect or a change in caregivers. Parent coaches help caregivers learn to follow their children's lead with delight, behave in nurturing ways when children are distressed, and avoid behaving in frightening or intrusive ways.
Parent–Child Interaction Therapy <sup>56</sup>	12-20 sessions	In a playroom while the therapist is in an observation room watching you interact with your child through a 1-way mirror and/or live video feed	Master's degree or higher, or an international equivalent of a master's degree, in a mental health field, and must be an independently licensed mental health service provider or psychology doctoral student	An evidence-based treatment of young children with behavioral problems conducted through "coaching" sessions during which parent and child are in a playroom while the therapist is in an observation room watching the dyadic interaction through a 1-way mirror and/or live video feed. Parents wear a "bug-in-the-ear" device through which the therapist provides in-the-moment coaching on skills to help parents learn to manage their child's behavior.

TABLE 1 Continued

Intervention	Length of Program	Location of Program	Qualifications of Intervener	Description
Building Resilience Through Intervention: Growing Healthier Together <sup>57,58</sup>	Weekly, 12–30 sessions with parent–young child dyad and individual sessions with parent	Prenatal clinic, outpatient or residential substance use treatment program, home visitation, primary care	Master's-level infant mental health clinician also trained in substance use treatment	Attachment-based, trauma- responsive therapeutic intervention for caregivers with substance use disorder/opioid use disorder and their infants/young children. Aims to improve parenting capacities, parent—child relationship and parental mental health, decrease child maltreatment, and promote healthy child development.
Maternal—Infant and Early Childhood Home Visiting Program <sup>59</sup>	Flexibility to tailor a program to serve specific needs of community; identify target populations, conduct needs assessment, and select home visiting service delivery model(s) that best meet local needs	Nineteen home-visiting models meet the U.S. Department of Health and Human Services' criteria for evidence of effectiveness and are eligible for state and territory Maternal—Infant and Early Childhood Home Visiting Program <sup>59</sup> funding	Requirements for home-visitors vary by program from associate to master's degrees.	Broadly, designed to improve outcomes for at-risk young children and families through evidence-based home-visiting programs. Many approved programs share characteristics, yet approaches vary (eg, some start in pregnancy and others after the birth of child). Trained home visitors meet regularly with families with young children, building strong positive relationships.
Building Resilience and Nurturing Children <sup>60</sup>	Three phases; 4–6 sessions	Primary care pediatric setting	Developed for integrated master's-level behavioral health clinicians who practice in primary care pediatric settings	Brief, trauma-informed intervention for families with children <6 y old.  Designed to be delivered flexibly in 4–6 sessions in primary care pediatrics; utilizes a reflective, trauma-informed perspective that prioritizes caregiver engagement and
Play Nicely <sup>61</sup>	Introduction, 5–10 min; 50-min interactive multimedia program, and Play Nicely: The Healthy Discipline Handbook	Parents can view at home, in clinics, or other settings	Can be self-taught; anyone who cares for young children aged 1—10 y. Multimedia program has separate versions for parents, teachers, and health care professionals	expertise. Brief, population-based intervention designed to prevent violence and mitigate toxic stress; presents 20 options to respond to an aggressive child. Learners view options that are of the most interest to them.
Circle of Security <sup>62</sup>	Two models: Circle of Security parenting-group sessions over 8+ wk; Circle of Security intensive- group sessions over 20+ wk	Outpatient clinic, community- based agency/organization/ provider, group or residential care, early care	COSP: nonlicensed facilitator; COS-I: licensed clinician. Supervisors are licensed mental health providers who have completed training.	Innovative group intervention for caregivers designed to improve the developmental pathway of young children and their parents; attachment-based parenting education program that helps caregivers better understand and build on their relationships with their children.

**TABLE 1** Continued

Intervention	Length of Program	Location of Program	Qualifications of Intervener	Description
Mom Power <sup>63</sup>	Ten-week, 13 sessions (10 weekly groups, 3 individual sessions)	Mom and young child groups held in adjacent, yet separate spaces in community organizations/ agencies	Intervention led by 2 trained cofacilitators, at least 1 of whom is a master's-level mental health clinician who serves as the lead facilitator. Cofacilitator can be a trainee in a related discipline (eg, psychiatry, social work, psychology, early education).	Weekly groups using a strengths-based, empowering framework to increase positive parenting and self-care skills, make connections, and engage with resources for mothers and young children living with adversity.

COS-I, Circle of Security-Intensive Model; COSP, Circle of Security Parenting Program.

rewards, with money or vouchers, for example, positive behavioral change. It has shown promising results in substance use disorder treatment, weight management, and college-age emotional behavioral health services.<sup>69,70</sup> Largely used to decrease negative behaviors, its role in promoting positive behaviors is less well studied.<sup>71–73</sup> Raising a child is challenging, and few parents have previous knowledge of how to do that successfully. Paying parents to engage in programs that educate them about typical developmental stages and positive parenting, and to accept care for their own emotional-behavioral problems, could enable better attunement to young children's developmental needs and improved RF skills, leading to better early childhood emotional regulation.<sup>74</sup> Additionally, incentivizing older children to engage in health-promoting behaviors such as daily walking, music practice, reading, and good sleep hygiene has been found to contribute to improved emotional and physical health, as well as improved cognitive performance.75,76

New research challenges ethical concerns that payments could lead to an unhealthy reliance on incentives. Rewarding young children to engage in healthy, brainbuilding activities leads directly to changes in the structure and function of the human brain, laying

down new neural pathways that solidify the habits learned in behavioral change programs, 77 suggesting that incentives can eventually be withdrawn. Further, economists have argued that investing in health promotion, illness prevention, and family-based interventions early in a child's life will lead to profound savings to the health care, educational, and justice systems. 78

#### "Warm line" Consultation Programs

Models of integrated care within the pediatric medical home, including phone consultations with child psychiatrists and warm line telephone consultation programs for families, have been developing over the last decade, in many instances to address the increasing prescription of psychotropic medications and the national shortage of child and adolescent psychiatrists. 79,80 These programs have achieved large reductions in the use of high-dose antipsychotics among children <12.81 Many programs also offer care coordination, consultation on behavior management interventions, and recommendations for schoolbased supports. Some have specific expertise and supports to address early childhood and perinatal mental health in the pediatric clinic setting. These consultation programs have documented high satisfaction by both consultants and primary care providers (PCP) and have increased PCP confidence in

managing mildto-moderate mental health problems. More research is needed, however, on their impact on clinical outcomes for both the individual child and the family.<sup>82–84</sup>

#### Colocation and Integration of Behavioral Health in Primary Care Settings

Colocation of mental health supports, including infant mental health professionals and child psychologists within larger pediatric practices, can be a cost-effective way to increase access to behavioral health services, potentially decreasing utilization of emergency department services. Promising results from collaborative care models used on a small scale in pediatric practices<sup>85</sup> need to be tested in expanded trials. More innovative models, in which parent mental health issues could be directly addressed and treated through the pediatric practice, also merit study. Federally qualified health centers provide a compelling example of a service and payment structure that follows a life-course approach to integrated mental health care.86 Select federally qualified health centers feature colocated mental health clinicians and care managers able to provide promotion, prevention, and intervention services beginning in the preconception period and continuing through pregnancy and postpartum, with clear transition plans dictated by clinical need. This

model has the flexibility to respond to emergent concerns regarding the mental health of parents, children, and the entire family.

#### **FINANCING AND ORGANIZATION**

None of these promising intervention approaches will be effective at improving child and family mental health unless they can be spread and scaled across whole populations. This will require 4 sets of policy changes:

### Sustainable Financing for Enhanced Care Models

For new interventions to be sustainably integrated into practice, providers must at least break even financially while delivering them. Much of health care is paid for through a fee-for-service model, which typically does not pay for interventions promoting ERH. Wellvisit codes allow billing for anticipatory guidance (eg, advice on using a car seat), but not for the provision of sustained or comprehensive family-focused mental health supports. Providers can generally only bill for extensive family counseling when they assign a diagnosable mental health condition, largely defeating opportunities for early prevention. To address this, federal and state Medicaid agencies can pursue new billing codes or revise existing payment policies to align billing with ERH promotion. For example, Washington State Medicaid created special fee-for-service codes to cover evidence-based, whole-family mental health programs.<sup>87</sup> California Medicaid allowed PCPs to bill for several sessions of whole-family mental health intervention without a diagnosis, with more sessions for a documented mental health risk factor.88 Michigan Medicaid reimburses for evidence-based models of infant-home visiting that were built on a paradigm of promoting ERH and demonstrated

promising results.<sup>89</sup> Funding for interventions to promote ERH could also be included in per-member, per-month payments to PCPs, aligning with trends toward financing comprehensive medical home models in pediatrics.<sup>90,91</sup>

#### Strong Incentives for Implementation and Improvement

Stronger financial incentives are needed to promote broad adoption of interventions aiming to optimize early childhood mental health, including increased reimbursement rates for early relational and mental health promotion in standard pediatric practices. Payers using value-based reimbursement could offer financial rewards to providers who achieve desired levels of performance on metrics that reflect effective whole-family mental health promotion. This might include activities such as screening and follow-up for child or caregiver psychosocial needs, or for achieving risk-adjusted improvements on standardized measures of family psychosocial functioning. Lifecourse-linked, value-based payments could be tied to the expected long-term savings achieved in reduced family health care utilization.<sup>92</sup> Tying incentives to ERH promotion could improve care and encourage innovation. Ideally, such changes would take place in both public and privately funded health care systems. Well-placed incentives could focus new resources appropriately toward prevention without detracting from imperatives for treatment.

#### Provision of Implementation Supports for Organizations Moving Beyond Their Existing Capacity

In addition to financial supports, technological implementation supports, including adaptive uses of technology, enhancement of webbased platforms, and adoption of novel communication modalities between families and providers, can all play a role in assisting organizations to expand their existing capacity to provide early childhood mental health supports. This can include making screening available virtually or as part of measurement-based care.

### Subsidized Training to Build a Robust Workforce

Incentives and sustainability are critical, but a trained workforce is necessary to effectively implement whole-family relational and mental health promotion at scale. State licensing and scope of practice regulations may need to be changed and payment policies should allow billing from all appropriately trained provider types, including nonclinical staff, such as family advocates, using a variety of modalities, such as telehealth, to serve patients and families. Federal and state governments can support technical assistance, training, and learning collaboratives for professionals and nonprofessionals alike. Governmentsupported collaborations with colleges and universities can integrate ERH content into the curriculum of different provider types. These can be paired with other types of incentives, such as loan forgiveness, to quickly increase the workforce able to promote whole-family mental health.

In addition to the training and financing of the workforce, there is the critical issue of how to deploy the nonmedical components of such an enhanced workforce. Pediatric practices have serious constraints, such as available space, the high cost of that space, the tailoring of practice patterns that would incorporate a more diverse group of service providers, and intricacies of billing for services during single or multiple visits. Alternatively, if the enhanced workforce is deployed outside of pediatric practices, the establishment of the strong

partnerships necessary to provide a seamless experience for families is a formidable challenge. Finally, as the coronavirus disease 2019 pandemic has revealed, the acceptance of lowpaying jobs has diminished in a meaningful way and the salary structure of these prevention and intervention resources has to match with emerging economic forces. The use of trained nonclinical staff is especially critical to ensure that prevention remains a priority; nonclinical staff can focus on prevention without relying on the already overextended mental health workforce, and can allow mental health specialists to practice at the top of their licensure.

Notably, existing law already protects children's access to effective mental health care and many of the policy options examined may actually be legally required. A series of federal statutes and regulations, including the Early Pediatric Screening, Diagnostic, and Treatment benefit in Medicaid; Essential Health Benefits in the Affordable Care Act; the mental health parity law; and network adequacy regulations, require that almost all children have meaningful access to comprehensive benefits for prevention and early intervention for mental health. 93 Unfortunately, these policies are rarely of sufficient detail and they have not been well enforced.

#### **FUTURE DIRECTIONS**

Soaring levels of child, parent, and family-based emotional behavioral struggles have led to increasing rates of unmet needs for children with psychiatric illness.

Pediatricians are deeply concerned and frustrated, both with the severity and frequency of psychopathology they see daily. We hold that a lack of access to integrated family-based relational health care has contributed to an

overutilization of psychoactive medications as a consequence of inadequate access to other, often more appropriate and effective, nonpharmacologic treatments. Adopting an LCHD approach, it is time for the collective fields of pediatric and family medicine, child and adolescent psychology and psychiatry, social work, and our partners in early childhood education to respond to the needs of children and families. Here are recommendations that should be considered, studied, and, if appropriate, brought to scale.

Integrated care: Fully integrated health care models should be built into the medical home. This team should include pediatricians and/or family doctors, care managers, nurse practitioners, child psychologists and psychiatrists, and, most importantly, our colleagues in social work and early childhood education.<sup>32</sup> We must increase the capacity of the medical home to support multigenerational mental health needs, address social determinants of health through new partnerships with community health workers and services and create linkages across family-serving systems.

Social justice: All practices need to be culturally responsive, antiracist, and health equity-oriented.94 Adopting family-centered approaches, and working with diverse communities as equal partners in the codesign of interventions that are tailored to meet individual needs while rooted in the life-course evidence base. represents a promising approach to improving early childhood mental health for all. This updated vision seeks to promote health equity and reduce disparities across populations, including disparities exacerbated by the impact of racism upon child and family health. 94

Health development: Although pediatric care has long embraced

anticipatory guidance as a cornerstone of practice, on its own it is insufficient to support positive early childhood mental health development. Although parentingskills training offers promise,<sup>95</sup> much more research is needed into the long-term impacts of these programs: identifying those components with the greatest impact,<sup>96</sup> determining whether they should be incentivized, <sup>71</sup> investing in cultural adaptation, and exploring opportunities for universal delivery to first-time parents in both health care- and community-based settings, such as faith-based organizations or child care centers. For families facing overwhelming social and economic challenges, parenting programs would be just one important component of a multilevel approach in which stacked interventions at systemic, community, and family levels combine to focus on the development of children's mental health.

Novel approaches: Telemedicine platforms that deliver parenting education, health coaching, and efficacious child psychiatry, psychology, and social work interventions may be equal or, in certain circumstances, superior to in-person visits. New digital applications could be developed that combine effective parenting, health promotion, and intervention strategies, while remaining familyfocused. These apps can include digital, incentivized CM using game theory approaches and provide the possibility of 24 hour-a-day health access for all. Such apps already exist in the fields of mindfulness, exercise, sleep, nutrition, and parent-child relationship development. Digital health interventions are likely to be a permanent feature of health care. Their development must be guided

by rigorous research rather than profit considerations.

#### **CONCLUSIONS**

Recent advances in life-course health science point to ERH as foundational for lifelong mental health. Rising levels of mental health issues among young children, adolescents, and adults suggest that early childhood mental health is not receiving sufficient attention. Optimizing the mental health of young children through integrated, multilevel interventions to support mental health equity requires a reconceptualization of the early childhood systems to be developmental by design. 24 We

propose an expansion of the pediatric medical home model to that of a family health home that moves away from exclusively childfocused interventions to those that focus on family health and wellbeing as a foundational component of this system. We propose a series of principles on which this system can be based. The model meets parents and children in the digital space, as well as face-to-face, is socially and culturally responsive, takes an LCHD approach, strives to be socially just, and makes sound economic sense. Emerging from the pandemic, an openness to "doing things differently," coupled with a greater awareness of the need to

pursue a health-equity agenda, means that there may never be a better time to adopt these principles and build the early childhood mental health service system that children need.

#### **ABBREVIATIONS**

ACE: adverse childhood experience

CM: contingency management ERH: early relational health LCHD: Life Course Health Development

PCP: primary care provider RF: reflective functioning

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#### REFERENCES

- Mental Health America. The Prevalence of Mental Illness. Available at: https://www. mhanational.org/issues/2021/mentalhealth-america-prevalence-data. 2021. Accessed May 1, 2021
- Twenge JM, Martin GN, Campbell WK. Decreases in psychological well-being among American adolescents after 2012 and links to screen time during the rise of smartphone technology. *Emotion*. 2018;18(6):765–780
- Cole SW, Conti G, Arevalo JM, Ruggiero AM, Heckman JJ, Suomi SJ. Transcriptional modulation of the developing immune system by early life social adversity. *Proc Natl Acad Sci USA*. 2012; 109(50):20578–20583

- Bunea IM, Szentágotai-Tătar A, Miu AC. Early-life adversity and cortisol response to social stress: a meta-analysis. *Transl Psychiatry*. 2017;7(12):1274
- McEwen BS. Understanding the potency of stressful early life experiences on brain and body function. *Metabolism*. 2008;57(Suppl 2):S11–S15
- Maniam J, Antoniadis C, Morris MJ.
   Early-life stress, HPA axis adaptation, and mechanisms contributing to later health outcomes. Front Endocrinol (Lausanne). 2014;5:73
- 7. Kessler RC, McLaughlin KA, Green JG, et al. Childhood adversities and adult psychopathology in the WHO World Mental Health Surveys. *Br J Psychiatry*. 2010;197(5):378–385

- 8. Fryers T, Brugha T. Childhood determinants of adult psychiatric disorder.

  Clin Pract Epidemiol Ment Health.

  2013;9:1–50
- 9. Kessler RC, Amminger GP, Aguilar-Gaxiola S, Alonso J, Lee S, Ustün TB. Age of onset of mental disorders: a review of recent literature. *Curr Opin Psychiatry.* 2007; 20(4):359–364
- 10. Zeanah CH, Carter AS, Cohen J, et al. Diagnostic classification of mental health and developmental disorders of infancy and early childhood: DC:0—5: selective reviews from a new nosology for early childhood psychopathology. *Infant Ment Health J*. 2016;37(5):471—475

- Cohen S, Pressman SD. Positive affect and health. Curr Dir Psychol Sci. 2006; 15(3):122–125
- Jones NL, Gilman SE, Cheng TL, Drury SS, Hill CV, Geronimus AT. Life course approaches to the causes of health disparities. Am J Public Health. 2019; 109(S1):S48–S55
- Jones PB. Adult mental health disorders and their age at onset. Br J Psychiatry Suppl. 2013;54(S54):s5–s10
- Save the Children. Save the children report. Available at: https://www. savethechildren.org/us/about-us/ resource-library/us-childhood-report. Accessed May 1, 2021
- Finkelhor D. Trends in adverse childhood experiences (ACEs) in the United States. Child Abuse Negl. 2020;108:104641
- 16. Mersky JP, Choi C, Plummer Lee C, Janczewski CE. Disparities in adverse childhood experiences by race/ethnicity, gender, and economic status: Intersectional analysis of a nationally representative sample. *Child Abuse Negl.* 2021;117: 105066
- 17. Halfon N, Stevens GD, Larson K, Olson LM. Duration of a well-child visit: association with content, family-centeredness, and satisfaction. *Pediatrics*. 2011;128(4): 657–664
- Denmark N, Peplinski K, Sparr M, et al. Introduction to the special issue on taking home visiting to scale: findings from the maternal, infant, and early childhood home visiting program state-led evaluations. [Published correction appears in Matern Child Health J. 2018;22:114]. Matern Child Health J. 2018;22(Suppl 1):1–2
- Picoito J, Santos C, Nunes C.
   Heterogeneity and heterotypic continuity
   of emotional and behavioural profiles
   across development. Soc Psychiatry
   Psychiatr Epidemiol. 2021;56(5):807–819
- Halfon N, Hochstein M. Life course health development: an integrated framework for developing health, policy, and research. *Milbank O.* 2002;80(3):433–479, iii
- Halfon N, Larson K, Lu M, Tullis E, Russ S. Lifecourse health development: past, present and future. *Matern Child Health J.* 2014;18(2):344–365
- 22. Halfon N, Forrest CB, Lerner RM, et al, eds. *Handbook of Life Course Health*

- Development. Cham, Switzerland: Springer International Publishing AG; 2018. Available at: https://www.ncbi.nlm. nih.gov/books/NBK543707/
- 23. Halfon N, Forrest CB. The emerging theoretical framework of life course health-development. In: Halfon N, Forrest CB, Lerner RM, Faustman E, eds. Handbook of life course health development. New York: Springer; 2018:19–43
- 24. Halfon N, Russ S, Schor E. The emergence of life course intervention research: optimizing health development and child well-being. *Pediatrics*. 2021;149(suppl 6):e2021053509C
- Russ SA, Hotez E, Berghaus M, et al. What makes an intervention a life course intervention? *Pediatrics*. 2021;149(suppl 6): e2021053509D
- 26. Kisling LA, Das M. J. Prevention Strategies. *StatPearls*. Treasure Island, FL: StatPearls Publishing, 2021. [Internet]. Available at: https://www.ncbi.nlm.nih. gov/books/NBK537222/
- 27. Weintraub WS, Daniels SR, Burke LE, et al. American Heart Association Advocacy Coordinating Committee; Council on Cardiovascular Disease in the Young; Council on the Kidney in Cardiovascular Disease; Council on Epidemiology and Prevention; Council on Cardiovascular Nursing; Council on Arteriosclerosis; Thrombosis and Vascular Biology; Council on Clinical Cardiology, and Stroke Council. Value of primordial and primary prevention for cardiovascular disease: a policy statement from the American Heart Association. *Circulation*. 2011;124(8):967–990
- 28. Biel MG, Tang MH, Zuckerman B. Pediatric mental health care must be family mental health care. *JAMA Pediatr*: 2020;174(6):519–520
- 29. Frame Works Institute. Building relationships: framing early relational health. Available at: https://www.frameworksinstitute.org/publication/building-relationships-framing-early-relational-health/. Accessed May 1, 2021
- 30. Willis D. Advancing a family centered community health system: A community agenda focused on child health care, early relationships and equity. Available at: https://cssp.org/wp-content/uploads/ 2020/09/FCCHS-A-CSSP-Vision-Statement.pdf Accessed May 1, 2021

- 31. Berg-Nielsen T, Vikan A, Dahl AA.
  Parenting related to child and parental psychopathology: a descriptive review of the literature. *Clin Child Psychol Psychiatry*. 2002;7(4):529–552
- 32. Hudziak J, Ivanova MY. The Vermont Family Based Approach: family based health promotion, illness prevention, and intervention. *Child Adolesc Psychiatr Clin N Am.* 2016;25(2):167–178
- Mnuchin S. Families and Family Therapy.
   Cambridge, Massachusetts: Harvard
   University Press; 1974
- 34. Ager A, Stark L, Akesson B, Boothby N. Defining best practice in care and protection of children in crisis-affected settings: a Delphi study. *Child Dev.* 2010;81(4):1271–1286
- Masten AS, Narayan AJ. Child development in the context of disaster, war, and terrorism: pathways of risk and resilience. Annu Rev Psychol. 2012;63:227–257
- Masten AS, Obradovic J. Disaster preparation and recovery: lessons from research on resilience in human development. *Ecology and Society*. Available at: www.ecology andsociety.org/ vol13/iss1/art9/. Accessed xx, xx, xxxx
- 37. Masten AS. Global perspectives on resilience in children and youth. *Child Dev.* 2014;85(1):6–20
- 38. Choi KR, McCreary M, Ford JD, Rahmanian Koushkaki S, Kenan KN, Zima BT. Validation of the traumatic events screening inventory for ACEs. *Pediatrics*. 2019;143(4):e20182546
- Finkelhor D. Screening for adverse childhood experiences (ACEs): cautions and suggestions. *Child Abuse Negl.* 2018;85:174–179
- 40. Marsac ML, Kassam-Adams N, Hildenbrand AK, et al. Implementing a trauma-informed approach in pediatric health care networks. 2016;170(1):70–77
- 41. Oral R, Ramirez M, Coohey C, et al. Adverse childhood experiences and trauma informed care: the future of health care. *Pediatr Res.* 2016;79(1–2):227–233
- 42. American Academy of Pediatrics. AAP agenda for children: medical home. Available at: https://www.aap.org/en-us/about-the-aap/aap-facts/AAP-Agendafor-Children-Strategic-Plan/Pages/AAPAgenda-for-Children-Strategic-

- Plan-Medical-Home.aspx. Accessed May 1, 2021
- 43. Piotrowski CC, Talavera GA, Mayer JA. Healthy steps: a systematic review of a preventive practice-based model of pediatric care. J Dev Behav Pediatr. 2009;30(1):91–103
- 44. Bogin J. Enhancing developmental services in primary care: the Help Me Grow experience. *J Dev Behav Pediatr*: 2006;27(1 Suppl):S8–S12, discussion S17–S21, S50–S52
- 45. Colorado Health Institute. Risk, reach and resources: an analysis of Colorado's early childhood mental health investments. Available at: https://www.coloradohealthinstitute.org/research/risk-reach-and-resources. Accessed May 1, 2021
- 46. Bowlby J. Attachment: Attachment and Loss. Volume 1. London: The Hogarth Press: 1972
- 47. Ainsworth MD. Infant-mother attachment. *Am Psychol.* 1979;34(10):932–937
- 48. Benoit D. Infant–parent attachment: definition, types, antecedents, measurement and outcome. *Paediatr Child Health*. 2004;9(8):541–545
- 49. Feldman R. Parent-infant synchrony: a biobehavioral model of mutual influences in the formation of affiliative bonds.

  Monogr Soc Res Child Dev. 2012;77(2): 42–51
- 50. Slade A. Parental reflective functioning: an introduction. *Attach Hum Dev.* 2005;7(3):269–281
- 51. Camoirano A. Mentalizing makes parenting work: a review about parental reflective functioning and clinical interventions to improve it. *Front Psychol*. 2017;8:14
- 52. Grienenberger J, Kelly K, Slade A.

  Maternal reflective functioning,
  mother-infant affective communication,
  and infant attachment: exploring the link
  between mental states and observed
  caregiving behavior in the intergenerational transmission of attachment. Attach
  Hum Dev. 2005;7(3):299–311
- 53. Lieberman AF, Ippen CG, Van Horn P. "Don't Hit My Mommy!": A Manual for Child—Parent Psychotherapy With Young Children Exposed to Violence and Other Trauma, 2nd ed. Xxx,xxx: Zero to Three; 2015

- 54. Sadler LS, Slade A, Close N, et al. Minding the Baby: enhancing reflectiveness to improve early health and relationship outcomes in an interdisciplinary home visiting program. *Infant Ment Health J*. 2013;34(5):391–405
- Dozier M, Bernard K, Roben CK.
   Attachment and Biobehavioral Catch-Up.
   In: The Handbook of Attachment-Based Interventions. 2017:27–49
- 56. Gurwitch RH, Salem H, Nelson MM, Comer JS. Leveraging Parent—Child I nteraction Therapy and telehealth capacities to address the unique needs of young children during the COVID-19 public health crisis. *Psychol Trauma*. 2020:12(S1):S82—S84
- 57. Paris R, Herriott A, Holt M, Gould K. Differential responsiveness to a parenting intervention for mothers in substance abuse treatment. *Child Abuse* Negl. 2015;50:206–217
- 58. Paris R, Sommer A, Marron B. Project BRIGHT: an attachment-based intervention for mothers with substance use disorders and their young children. *Motherhood in the Face of Trauma*. Cham, Switzerland: Springer International Publishing AG; 2018:181–196
- 59. Health Resources and Services Administration (HRSA). The maternal, infant, and early childhood home visiting program (MIECHV). Available at: https://mchb.hrsa.gov/maternal-child-health-initiatives/home-visiting-overview. 2021. Accessed May 1, 2021
- Team Up for Children. BRANCH report. Available at: http://teamupforchildren. org/news/branch-report. 2021. Accessed May 1, 2021
- 61. Children's Hospital Vanderbilt. Play nicely: the healthy discipline program. Available at: https://www.childrenshospital vanderbilt.org/information/playnicely-healthy-discipline-program. 2021. Accessed May 1, 2021
- 62. Powell B, Cooper G, Hoffman K, et al. *The Circle of Security Intervention: Enhancing Attachment in Early Parent-Child Relationships.* Guilford Publications; 2013
- 63. Muzik M, Rosenblum KL, Alfafara EA, et al. Mom power: preliminary outcomes of a group intervention to improve mental health and parenting among high-risk

- mothers. *Arch Women Ment Health*. 2015;18(3):507–521
- 64. Folk JB, Schiel MA, Oblath R, et al. The transition of academic mental health clinics to telehealth during the COVID-19 pandemic. *J Am Acad Child Adolesc Psychiatry*. 2022;61(2):277–290.e2
- 65. Sadeghi S, Pouretemad HR, Shalani B. Internet-based versus face-to-face intervention training for parents of young children with excessive screen-time and autism spectrum disorder—like symptoms: a comparative study [Published online ahead of print March 8, 2021]. Int J Dev Disabil. doi: https://doi.org/10.1080/20473869.2021.1895699
- 66. Traube DE, Hsiao HY, Rau A, et al. Advancing home-based parenting programs through the use of telehealth technology. *J Child Fam Stud.* 2020;29:44–53
- 67. Bock MJ, Kakavand K, Careaga D, Gozalians S. Shifting from in-person to virtual home visiting in Los Angeles County: impact on programmatic outcomes. *Matern Child Health J.* 2021;25(7):1025–1030
- 68. Foreman K, Hudziak J, Curl A, et al. COVID-19 Telehealth satisfaction ratings in clinicians and patient families. *J Am Acad Child Adolesc Psychiatry*. In press
- Higgins ST, Petry NM. Contingency management. Incentives for sobriety. Alcohol Res Health. 1999;23(2):122–127
- 70. McPherson SM, Burduli E, Smith CL, et al. A review of contingency management for the treatment of substance-use disorders: adaptation for underserved populations, use of experimental technologies, and personalized optimization strategies. Subst Abuse Rehabil. 2018:9:43–57
- 71. Yu CH, Guarna G, Tsao P, et al. Incentivizing health care behaviors in emerging adults: a systematic review. *Patient Prefer Adherence*. 2016;10:371–381
- 72. Washio Y, Humphreys M, Colchado E, et al. Incentive-based intervention to maintain breastfeeding among low-income Puerto Rican mothers. *Pediatrics*. 2017;139(3):e20163119
- 73. Relton C, Strong M, Thomas KJ, et al. Effect of financial incentives on breastfeeding: a cluster randomized clinical trial. *JAMA Pediatr*: 2018;172(2):e174523

- 74. Ivanova MY, Dewey L, Swift P, Weinberger S, Hudziak J. Health promotion in primary care pediatrics: initial results of a randomized clinical trial of the Vermont family-based approach. *Child Adolesc Psychiatr Clin N Am.* 2019;28(2):237–246
- 75. Morris TP, Ai M, Chaddock-Heyman L, McAuley E, Hillman CH, Kramer AF. Relationships between enriching early life experiences and cognitive function later in life are mediated by educational attainment. *J Cogn Enhanc*. 2021; 5:449–458
- 76. Gorham LS, Jernigan T, Hudziak J, Barch DM. Involvement in Sports, Hippocampal Volume, and Depressive Symptoms in Children. *Biol Psychiatry Cogn Neurosci Neuroimaging*. 2019;4(5):484–492
- 77. Morris TP, Chaddock-Heyman L, Ai M, et al. Enriching activities during child-hood are associated with variations in functional connectivity patterns later in life. *Neurobiol Aging*. 2021;104:92–101
- 78. Heckman JJ. The economics of inequality: the value of early childhood education.

  Am Educ. 2011:31–47
- Olfson M, Druss BG, Marcus SC. Trends in mental health care among children and adolescents. *N Engl J Med.* 2015; 372(21):2029–2038
- 80. Klein S, Hostetter M. The Commonwealth Fund. In focus: integrating behavioral health and primary care. Available at: www.commonwealthfund.org/publications/newsletters/quality-matters/2014/August-September/in-focus.

  Accessed May 1, 2021
- Barclay RP, Penfold RB, Sullivan D, Boydston L, Wignall J, Hilt RJ. Decrease in statewide antipsychotic prescribing after implementation of child and adolescent psychiatry consultation services. *Health Serv Res.* 2017;52(2):561–578

- 82. Fallucco EM, Landy RE, Leung K, Robertson Blackmore E. Child psychiatry consultation clinic for pediatricians: long-term outcomes. *Clin Pediatr (Phila)*. 2021;60(8):350–362
- 83. Hilt RJ, Romaire MA, McDonell MG, et al. The partnership access line: evaluating a child psychiatry consult program in Washington State. *JAMA Pediatr*: 2012;167(2):1–7
- 84. Hilt RJ, Barclay RP, Bush J, Stout B, Anderson N, Wignall JR. A statewide child telepsychiatry consult system yields desired health system changes and savings. *Telemed J E Health*. 2015;21(7):533–537
- Archer J, Bower P, Gilbody S, et al. Collaborative care for depression and anxiety problems. *Cochrane Database* Syst Rev. 2012;10:CD006525
- Kaliebe KE. The future of psychiatric collaboration in federally qualified health centers. *Psychiatr Serv.* 2016;67(8):827–829
- 87. Walker SC, Sedlar G, Johnson WL, et al. University of Washington. Reporting guide for research and evidence-based practices in children's mental health. Available at: https://www.hca.wa.gov/assets/program/ebp-reporting-guides.pdf. Accessed May 1, 2021
- 88. California Department of Health Care Services. Psychological services. Available at: https://files.medical.ca.gov/pubsdoco/ publications/masters-mtp/part2/psychol. pdf. 2020. Accessed May 1, 2021
- 89. Rosenblum KL, Muzik M, Jester JM, et al. Michigan Collaborative for Infant Mental Health Research. Community-delivered infant-parent psychotherapy improves maternal sensitive caregiving: Evaluation of the Michigan model of infant mental health home visiting. *Infant Ment Health J.* 2020;41(2):178–190

- Price J, Brandt ML, Hudak ML. Committee on Child Health Financing. Principles of financing the medical home for children. *Pediatrics*. 2020:145(1):e20193451
- 91. Cohen RD, Guyer J, Lam A, et al. Fostering Social and Emotional Health Through Pediatric Primary Care: A Blueprint for Leveraging Medicaid and CHIP to Finance Change. Washington, DC: Center for the Study of Social Policy; 2019. Available at: https://cssp.org/resource/medicaidblueprint/
- 92. Counts NZ, Mistry KB, Wong CA. The need for new cost measures in pediatric value-based payment. *Pediatrics*. 2021;147(2):e20194037
- 93. National Academies of Sciences, Engineering, and Medicine. Policy Strategies. In: Fostering Healthy Mental, Emotional, and Behavioral Development in Children and Youth: a National Agenda. Washington, DC: National Academies Press (US); 2019
- 94. Trent M, Dooley DG, Dougé J. Section on Adolescent Health; Council on Community Pediatrics; Committee on Adolescence. The impact of racism on child and adolescent health. *Pediatrics*. 2019;144(2): e20191765
- 95. Vlahovicova K, Melendez-Torres GJ, Leijten P, Knerr W, Gardner F. Parenting programs for the prevention of child physical abuse recurrence: a systematic review and meta-analysis. *Clin Child Fam Psychol Rev.* 2017;20(3): 351–365
- 96. Barlow J, Herath NI, Bartram Torrance C, Bennett C, Wei Y. The Neonatal Behavioral Assessment Scale (NBAS) and Newborn Behavioral Observations (NBO) system for supporting caregivers and improving outcomes in caregivers and their infants. Cochrane Database Syst Rev. 2018;3(3): CD011754