procedures were performed by experts in specialist centres. The results of the study should therefore not be extrapolated to newborn babies or preterm infants, nor intubations in emergency settings. The results of a large trial of THRIVE during emergency intubation in older children are awaited (ACTRN12617000147381).

As always, there is more to be done to improve infant endotracheal intubation success and safety. The optimal gas flow and supplemental oxygen concentration are unknown. The best techniques to use in non-specialist centres, during difficult intubations, or by operators with less experience need to be clarified. The cost-effectiveness of new techniques should be studied. But with this new trial by Riva and colleagues,[11] progress has been made.

BJM and KAH are both authors on a recently published trial of nasal high-flow during endotracheal intubation in neonates (the SHINE trial). BJM is supported by a fellowship from the Medical Research Future Fund, Australia.

*Brett J Manley, Kate A Hodgson
brett.manley@thewomens.org.au

Newborn Research, The Royal Women's Hospital, Melbourne, VIC 3052, Australia (BJM, KAH); Department of Obstetrics and Gynaecology, The University of Melbourne, Melbourne, VIC, Australia (BJM, KAH); Murdoch Children's Research Institute, Melbourne, VIC, Australia (BJM)

1 Gerhardt T, Reifenberg L, Hehre D, Feller R, Bancalari E. Functional residual capacity in normal neonates and children up to 5 years of age determined by a N2 washout method. *Pediatr Res* 1986; **20:** 668–71.
2 Disma N, Virag K, Riva T, et al. Difficult tracheal intubation in neonates and infants. NEonate and Children audiT of Anaesthesia pRactice IN Europe (NECTARINE): a prospective European multicentre observational study. *Br J Anaesth* 2021; **126:** 1173–81.
3 Fiadjoe JE, Nishisaki A, Jagannathan N, et al. Airway management complications in children with difficult tracheal intubation from the Pediatric Difficult Intubation (PeDI) registry: a prospective cohort analysis. *Lancet Respir Med* 2016; **4:** 37–48.
4 Foglia EE, Ades A, Sawyer T, et al. Neonatal intubation practice and outcomes: an international registry study. *Pediatrics* 2019; **143;** e20180902.
5 Downes KJ, Narendran V, Meinzen-Derr J, McClanahan S, Akinbi HT. The lost art of intubation: assessing opportunities for residents to perform neonatal intubation. *J Perinatol* 2012; **32:** 927–32.
6 Lingappan K, Arnold JL, Fernandes CJ, Pammi M. Videolaryngoscopy versus direct laryngoscopy for tracheal intubation in neonates. *Cochrane Database Syst Rev* 2018; **6:** CD009975.
7 Abdelgadir IS, Phillips RS, Singh D, Moncreiff MP, Lumsden JL. Videolaryngoscopy versus direct laryngoscopy for tracheal intubation in children (excluding neonates). *Cochrane Database Syst Rev* 2017; **5:** CD011413.
8 Garcia-Marcinkiewicz AG, Kovatsis PG, Hunyady AI, et al. First-attempt success rate of video laryngoscopy in small infants (VISI): a multicentre, randomised controlled trial. *Lancet* 2020; **396:** 1905–13.
9 Humphreys S, Lee-Archer P, Reyne G, Long D, Williams T, Schibler A. Transnasal humidified rapid-insufflation ventilatory exchange (THRIVE) in children: a randomized controlled trial. *Br J Anaesth* 2017; **118:** 232–38.
10 Hodgson KA, Owen LS, Kamlin COF, et al. Nasal high-flow therapy during neonatal endotracheal intubation. *N Engl J Med* 2022; **386:** 1627–37.
11 Riva T, Engelhardt T, Basciani R, et al. Direct versus video laryngoscopy with standard blades for neonatal and infant tracheal intubation with supplemental oxygen: a multicentre, non-inferiority, randomised controlled trial. *Lancet Child Adolesc Health* 2022; published online Nov 24. https://doi.org/10.1016/S2352-4642(22)00313-3.

Raising the bar for measuring childhood adversity

Published **Online**
October 17, 2022
https://doi.org/10.1016/
S2352-4642(22)00301-7

Awareness about the harmful effects of adverse childhood experiences (ACEs) has increased in the past decade among paediatric providers and researchers. Hundreds of observational studies have documented the prevalence and consequences of childhood adversity,[1] showing that childhood adversity can at least double the risk of later disease in childhood, adolescence, and adulthood, and explain up to 40% of morbidity and premature mortality across the lifecourse.[1] Screening young people for ACEs and intervening could be key to buffering the effects of these experiences and reducing future morbidities.[2] Paediatric primary care is an appealing setting for such action to occur. However, substantial challenges in how to screen for, respond to, and address ACEs remain unresolved, raising the possibility that screening can do more harm than good.[3] To mitigate these harms, we offer four recommendations to consider when deploying adversity screening. These recommendations are based on data, accumulated in the past decade, on the current strengths and limitations of ACE measurement.

First, clarity is needed on what ACE scores do (and do not) measure. More than 30 tools are available for measuring childhood adversity exposure.[4] Summary scores of adversity exposure (or ACE scores) derived

iStock/frakes

from these measures can give providers a cross-sectional overview of the total number of adversities a child has experienced. However, studies published in the past 5 years suggest ACE scores might be poor predictors of individual disease risk and vary in prediction accuracy based on the reporter (eg, child *vs* parent report).[5] ACE scores alone are too primitive to help pediatricians identify specific children at risk, but can be a tool for initiating a dialogue about stress or health concerns related to ACEs.

Second, there needs to be capacity to deploy ACE screening tools safely and effectively. ACE screening involves asking sensitive questions about potentially traumatic experiences. Such queries introduce an inherent risk of triggers and retraumatisation.[6] ACE screening, therefore, requires a trauma-informed approach. Trauma-informed care means understanding the effect of trauma, recognising and responding to trauma symptoms, and actively avoiding triggers and retraumatisation when providing care. This type of care is an approach to interpersonal practice and organisational ethos that involves mobilising strengths and resilience factors—such as coping skills, social networks, or other internal or external assets—and being sensitive to secondhand trauma among staff. All staff need to be trained in trauma-informed care when deploying ACE screening. Clear response pathways integrating ACE screening into routine care need to quickly respond to issues identified during screening.

ACE screening can be challenging to integrate into routine paediatric primary care when on-site, integrated behavioural health services are unavailable. Providers who have implemented ACE screening consistently report absence of time and knowledge as key barriers to effective screening.[7] Health-care organisations need to build capacity for high-quality ACE screening to occur. They should innovate to embed ACE screening in routine care processes without undue burden on the provider. Involving interdisciplinary care team members (eg, nurse practitioners, physician assistants, social workers, medical assistants, and community health workers) could ensure sufficient time to offer trauma-informed ACE screening, as could linking screening tools with electronic health records.

Third, paediatric providers and health-care systems need to deploy screening at the right time and interpret screening results with context. Identifying specific young people at risk for harmful ACE sequelae requires multiple sources of data beyond ACE scores alone. Assessment protocols need to identify the effect and severity of events, traumatic stress symptoms, and other behavioural, developmental, and social problems. Together, these data can indicate a need for trauma-specific treatment or other interventions. ACE scores alone are not diagnostic, and might be better suited to broader clinical efforts, such as risk-stratifying patient populations into families who might need additional psychosocial assessment.

ACE screening might be more useful and better timed if it occurs after rather than before identification of general emotional or behavioural health concerns. Such sequencing might facilitate trauma-specific referrals during follow-up behavioural health assessment, and encourage efficient use of clinical resources directed towards ACE screening. Young people with high ACE scores and clinically significant behavioural symptoms might benefit from interventions that have an evidence base for addressing traumatic stress in children (eg, trauma-focused cognitive behavioural therapy; eye movement desensitisation and reprocessing).

Fourth, emerging evidence about the science of ACE measurement, including its limitations, should be used as the basis for action. A key criticism of ACE screening is the lack of widely available evidence-based interventions for clinical response, due in part to poor consensus over ACE measurement or what ACE scores mean.[8] There is no agreed definition of what constitutes a positive ACE screen in terms of cutoff points for measurable levels of exposure. Furthermore, clinical assessments of ACEs might be retraumatising or triggering if they are done too frequently, without interpersonal sensitivity, or without appropriate follow up. As mandatory reporters, clinical staff need to be able to differentiate childhood adversity from acute or chronic stressors, including household circumstances that do not constitute abuse or neglect. Clinical staff should avoid perpetuating racist and class-based stereotypes. Black children are disproportionately referred to child protective services when they encounter service systems. Bias training might help to uncover implicit blindspots among paediatric providers. Because science evolves, providers and systems need to be dynamic, with flexible mindsets that allow for ACE measurement

tools and processes to be updated, as new research discoveries are made.

In summary, paediatric providers can use emerging ACE measurement research to guide screening, primarily by understanding the current limitations of ACE screening and knowing how to act in a trauma-informed manner despite knowledge gaps. In ACE research, measurement advances are emerging that might provide guidance for more precise ACE screening in the future. Studies have explored the use of different biomarkers to measure the toxic effects of childhood adversity.[9] There is growing research on the role of ACEs typically experienced in marginalised populations, such as community violence exposure or racism.[2] Researchers are also investigating concurrent measurement of stress-buffering protective factors during ACE screening (ie, positive or benevolent childhood experiences, such as being surrounded by supportive adults and peers) as a counterpart to ACEs to mobilise family strengths and promote resilience.[10] Collectively, these ongoing research efforts might help build an improved quality, precise standard for measuring and responding to ACEs in clinical care.

We thank Dr Jack Shonkoff from The Harvard Center on the Developing Child for reviewing and commenting on early drafts of this manuscript. KC acknowledges fellowship support from the Gordon and Betty Moore Foundation (GBMF9048) and research funding from the Hearst Foundations for implementation of trauma-informed care in mental health unrelated to the contents of this article. ECD receives research funding from the US National Institutes of Health for research on the biological embedding of childhood adversity, and support as a senior fellow with The Harvard Center on the Developing Child for work on a childhood adversity and resilience initiative. AAB declares no competing interests.

*Kristen Choi, Alexy Arauz Boudreau, *Erin C Dunn*
edunn2@mgh.harvard.edu

School of Nursing and Department of Health Policy and Management, Fielding School of Public Health, UCLA, Los Angeles CA, USA (KC); Department of Pediatrics (AAB, ECC), Department of Psychiatry (ECD), and Center for Genomic Medicine (ECC), Massachusetts General Hospital, Boston, MA 021144, USA; Harvard Center on the Developing Child, Cambridge, MA, USA

1 Grummitt LR, Kreski NT, Kim SG, Platt J, Keyes KM, McLaughlin KA. Association of childhood adversity with morbidity and mortality in US adults: a systematic review. *JAMA Pediatr* 2021; **175:** 1269–78.
2 Thakur N, Hessler D, Koita K, et al. Pediatrics adverse childhood experiences and related life events screener (PEARLS) and health in a safety-net practice. *Child Abuse Negl* 2020; **108:** 104685.
3 Campbell TL. Screening for adverse childhood experiences (ACEs) in primary care: a cautionary note. *JAMA* 2020; **323:** 2379–80.
4 Oh DL, Jerman P, Purewal Boparai SK, et al. Review of tools for measuring exposure to adversity in children and adolescents. *J Pediatr Heal Care* 2018; **32:** 564–83.
5 Baldwin JR, Caspi A, Meehan AJ, et al. Population *vs* individual prediction of poor health from results of adverse childhood experiences screening. *JAMA Pediatr* 2021; **175:** 385–93.
6 Racine N, Killam T, Madigan S. Trauma-informed care as a universal precaution: beyond the adverse childhood experiences questionnaire. *JAMA Pediatr* 2020; **174:** 5–6.
7 Clark AM, Jones HM. Barriers to screening for adverse childhood experiences. *J Nurse Pract* 2022; **18:** 190–94.
8 Finkelhor D. Screening for adverse childhood experiences (ACEs): cautions and suggestions. *Child Abuse Negl* 2018; **85:** 174–79.
9 Davis KA, Mountain R V, Pickett OR, Den Besten PK, Bidlack FB, Dunn EC. Teeth as potential new tools to measure early-life adversity and subsequent mental health risk: an interdisciplinary review and conceptual model. *Biol Psychiatry* 2020; **87:** 502–13.
10 Bethell C, Jones J, Gombojav N, Linkenbach J, Sege R. Positive childhood experiences and adult mental and relational health in a statewide sample: associations across adverse childhood experiences levels. *JAMA Pediatr* 2019; **173:** 193007.

Restricting abortion access in the USA: implications for child and adolescent health

Published **Online** November 21, 2022 https://doi.org/10.1016/S2352-4642(22)00285-1

On June 24, 2022, the US Supreme Court revoked the constitutional right to abortion. Although public focus has been on the implications of this decision for women's reproductive rights, the devastating effect these laws will have on child and adolescent health must be considered as well.

Adolescents comprise a small portion of those who receive abortions, but they rely more on abortion care than any other group; approximately 50% of pregnancies in people younger than 15 years and 25% of pregnancies in those aged 15–19 years end in abortion, compared with only 12–13% among those aged 20–40 years.[1] This difference is because pregnancies among adolescents are disproportionately unplanned; adolescents might not have completed the cognitive development necessary to understand the consequences of unprotected sex, and often face physical, legal, and financial barriers to confidential access to contraception. Adolescent pregnancy is also associated with sexual coercion and intimate partner violence.[2]

Parents denied a wanted abortion are more likely to face economic hardship that might last for years, and are more likely to remain in relationships with abusive partners.[3,4] These consequences will be amplified in adolescent parents, who are already more likely to have pregnancy complications, postpartum depression, economic hardship, intimate partner violence, and rapid