How Much More Data Do We Need? Making the Case for Investing in Our Children

Rachel Berger, MD, MPH,[a] Erin Dalton, MS,[b] Elizabeth Miller, MD, PhD[a]

Child maltreatment is well recognized as one of the most significant contributors to pediatric morbidity and mortality throughout the world.[1,2] The effect of child maltreatment on morbidity and mortality in older adults has been documented for >20 years as demonstrated by the Adverse Childhood Experiences (ACEs) study.[3] The impact of maltreatment on teenage suicide and other mental health diagnoses is also well known.[4,5] To date, however, a direct relationship between maltreatment specifically, rather than the broader risk of ACES, and mortality in teenagers and young adults had not been reported.

In this issue of *Pediatrics*, Segal et al[6] evaluated this potential relationship by linking >50 administrative data sets from South Australia that included data from >300 000 children born between 1986 and 2003 who survived to age 16. The authors examined the relationship among multiple demographic factors, Child Protective Services (CPS) involvement, and mortality from 1990 to 2019. For the 20% of children with CPS contact before age 16, the nature of the contact was divided into 7 categories, which included "investigation only," "substantiation," and "removal to out-of-home care." The primary outcome was mortality across various levels of CPS involvement.

The results were striking. All-cause mortality rate was more than twofold higher among those with CPS involvement compared with those without. The highest adjusted mortality rate was almost fivefold higher among those who entered out-of-home care after age 3. "Poisoning, alcohol, drugs, mental illness," "suicide," and "natural causes" all contributed to the increase in all-cause mortality, although the most significant association was with "poisoning, alcohol, drugs, mental illness." The ability to link these contemporaneous data sets minimizes one of the significant limitations of the ACEs study: recall bias.

Consistent with the research of Putnam-Hornstein and Needell,[7] the authors found that a report to CPS, whether there was a substantiation, conferred an increased risk for all-cause mortality. The growing data that a report to CPS is in and of itself associated with risk for mortality should challenge the CPS system to approach each report as an opportunity to address potentially modifiable factors that may mitigate long-term morbidity and mortality rather than the current approach, which is often short-term and laser-focused on determining if an allegation should be substantiated.[8,9] That is, although a case may not be substantiated, such reports should prompt greater effort to connect families to additional supports and services. Closing a CPS investigation ought not be seen as the end, but rather as the start of the process of making warm hand-offs to other services that can provide an ongoing safety net to families. Children and families currently fall through the proverbial cracks because we have not

[a]*Department of Pediatrics, UPMC Children's Hospital of Pittsburgh, Pittsburgh, Pennsylvania; and* [b]*Allegheny County Department of Human Services, Pittsburgh, Pennsylvania*

DOI: https://doi.org/10.1542/peds.2020-031963

Accepted for publication Oct 19, 2020

Address correspondence to Rachel Berger, MD, MPH, Department of Pediatrics, UPMC Children's Hospital of Pittsburgh, 4401 Penn Ave, Pittsburgh, PA 15224. E-mail: rachel.berger@chp.edu

PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275).

FINANCIAL DISCLOSURE: The authors have indicated they have no financial relationships relevant to this article to disclose.

FUNDING: No external funding.

POTENTIAL CONFLICT OF INTEREST: The authors have indicated they have no potential conflicts of interest to disclose.

COMPANION PAPER: A companion to this article can be found online at www.pediatrics.org/cgi/doi/10.1542/2020-023416.

To cite: Berger R, Dalton E, Miller E. How Much More Data Do We Need? Making the Case for Investing in Our Children. *Pediatrics*. 2021; 147(1):e2020031963

invested in using evidence-based practice[10,11] to improve how CPS hands-off information to pediatricians, teachers, mental health providers, and others who then have the responsibility to keep children safe.

These data also support that involvement of CPS and related systems that support the health and well-being of vulnerable children cannot simply end at age 18. Although some CPS systems have allowed children to extend their involvement from their 18th to 21st birthday,[12] these data suggest that young adults, particularly those who entered out-of-home care in their school-aged years, may benefit from ongoing structured support, such as improved access to mental health care well beyond their 21st birthday. Such supports may also include housing stability, educational attainment, and employment skills.

The findings in this study also have implications for the health care system, including mental health and substance use treatment programs. The astronomic societal cost of child maltreatment is well studied.[13,14] To decrease costs, there must be a focus on improving detection of maltreatment at the earliest possible time when good outcomes are more likely; improving equitable access to medical care and medical expertise at the time of initial CPS investigations; ensuring that children, adolescents, and adults receive evidence-based, trauma-focused care at every encounter; and expanding access to mental health services and substance use treatment programs well into adulthood. Services that help families stay together safely and address structural inequities such as employment and housing instability may also promote resiliency and nurture protective factors.

It has become increasingly clear over the past two decades that maltreatment is among the most significant stressors a child can experience. This is demonstrated in thousands of peer-reviewed articles, documented in countless governmental reports, and seen on display almost daily in the lay press in obituaries, crime reports, and personal accounts. This study highlights our shameful societal failure to support child welfare–involved persons into adulthood to reduce the likelihood of serious morbidity and death. Perhaps this will be the alarm that is needed for legislators, policymakers, health insurers, health care delivery systems, CPS systems, and those systems that support child welfare to recognize the serious sequelae of child maltreatment as an issue of equity and justice. It is clearly time to invest in our most vulnerable children as soon as we recognize the potential for harm and to respond with alacrity and ongoing engagement with as many resources as possible.

ABBREVIATIONS

ACE: adverse childhood experience
CPS: Child Protective Services

REFERENCES

1. Gilbert R, Widom CS, Browne K, Fergusson D, Webb E, Janson S. Burden and consequences of child maltreatment in high-income countries. *Lancet*. 2009;373(9657):68–81
2. Jenny C, Isaac R. The relation between child death and child maltreatment. *Arch Dis Child*. 2006;91(3):265–269
3. Felitti VJ, Anda RF, Nordenberg D, et al. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The Adverse Childhood Experiences (ACE) Study. *Am J Prev Med*. 1998;14(4):245–258
4. Gomez SH, Tse J, Wang Y, et al. Are there sensitive periods when child maltreatment substantially elevates suicide risk? Results from a nationally representative sample of adolescents. *Depress Anxiety*. 2017;34(8):734–741
5. Angelakis I, Gillespie EL, Panagioti M. Childhood maltreatment and adult suicidality: a comprehensive systematic review with meta-analysis. *Psychol Med*. 2019;49(7):1057–1078
6. Segal L, Armfield JM, Gnanamanickam ES, et al. Child maltreatment and mortality in young adults. *Pediatrics*. 2020;147(1):e2020023416
7. Putnam-Hornstein E, Needell B. Predictors of child protective service contact between birth and age five: an examination of California's 2002 birth cohort. *Child Youth Serv Rev*. 2011;33(11):2400–2407
8. Campbell KA, Thomas AM, Cook LJ, Keenan HT. Longitudinal experiences of children remaining at home after a first-time investigation for suspected maltreatment. *J Pediatr*. 2012;161(2):340–347
9. Campbell KA, Cook LJ, LaFleur BJ, Keenan HT. Household, family, and child risk factors after an investigation for suspected child maltreatment: a missed opportunity for prevention. *Arch Pediatr Adolesc Med*. 2010;164(10):943–949
10. Fryman C, Hamo C, Raghavan S, Goolsarran N. A quality improvement approach to standardization and sustainability of the hand-off process. *BMJ Qual Improv Rep*. 2017;6(1):u222156.w8291
11. Müller M, Jürgens J, Redaèlli M, Klingberg K, Hautz WE, Stock S. Impact of the communication and patient hand-off tool SBAR on patient safety: a systematic review. *BMJ Open*. 2018;8(8):e022202
12. . US Government Accountability Office. States with approval to extend care provide independent living options for youth up to age 21. Washington, DC: US Government Accountability Office; 2019
13. Peterson C, Florence C, Klevens J. The economic burden of child maltreatment in the United States, 2015. *Child Abuse Negl*. 2018;86:178–183
14. Fang X, Brown DS, Florence CS, Mercy JA. The economic burden of child maltreatment in the United States and implications for prevention. *Child Abuse Negl*. 2012;36(2):156–165

How Much More Data Do We Need? Making the Case for Investing in Our Children

Rachel Berger, Erin Dalton and Elizabeth Miller

Pediatrics 2021;147;
DOI: 10.1542/peds.2020-031963 originally published online December 14, 2020;

How Much More Data Do We Need? Making the Case for Investing in Our Children

Rachel Berger, Erin Dalton and Elizabeth Miller

Pediatrics 2021;147;
DOI: 10.1542/peds.2020-031963 originally published online December 14, 2020;