Introduction to the Methods for Assessing the Impact of Screening in Childhood on Health Outcomes

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The National Institutes of Health (NIH) has a special interest group on childhood screening that is staffed jointly by the Eunice Kennedy Shriver National Institute of Child Health and Human Development and the Office of Disease Prevention in the Office of the NIH Director. After a series of internal meetings, the special interest group decided that the most compelling issue to tackle was the lack of an evidence base to support screening recommendations for exposures, behaviors, and conditions that are part of current routine pediatric care.

To stimulate methodologic innovation to address this problem, the NIH convened an in-person workshop in Bethesda, Maryland, on May 9–10, 2019, entitled “Methods for Assessing the Impact of Screening in Childhood on Health Outcomes.” Workshop objectives included (1) conceptualizing the universe of child health outcomes pertinent to screening; (2) identifying methodologic challenges in assessing child health outcomes; (3) discussing novel and rigorous approaches to assessing these outcomes; and (4) considering next steps for moving the research field forward. Workshop participants included experts from a range of disciplines, including medicine, nursing, dentistry, epidemiology, environmental health, sociology, demography, psychology, education, social work, health care policy, and economics.

Thirty-two speakers, moderators, and discussants from 26 universities, organizations, and federal agencies shared their expertise across the workshop’s 6 scientific sessions, which were planned by members of a scientific interest group* for a target in-person audience of ~100 scientists conducting research on or relevant to interventions during childhood and long-term outcomes. The meeting agenda and more information about the workshop can be found at https://www.nichd.nih.gov/about/meetings/2019/050919.

After opening remarks and an overview of methodologic challenges, the first session covered innovations in measuring optimal development in childhood.}

*Members of the childhood screening scientific interest group that planned this workshop included staff from 9 NIH Institutes and Centers, a medical officer from the Agency for Healthcare Research and Quality, and a member of the US Preventive Services Task Force.

Drs Bianchi and Murray drafted and approved the final manuscript as submitted and agree to be accountable for all aspects of the work.

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children (physiologic, psychological, and social aspects). The next session explored measuring well-being, quality of life, education, and other outcomes across developmental stages. The third session examined measuring the benefits and harms of screening to the child, family, and community. This was followed by a discussion on the unique aspects of cost-benefit analysis when screening is most likely to benefit the child or others. The last two sessions focused on innovative and rigorous study designs to assess screening outcomes. One considered nonrandomized controlled trials and the use of longitudinal and linked data systems to evaluate screening in clinical and community settings. The other session addressed natural experiments, computational science and predictive modeling, and big data, in the context of screening. Throughout the workshop, an implementation perspective was shared by experts from the US Preventive Services Task Force, the Community Preventive Services Task Force, and Bright Futures (the national health promotion and prevention initiative led by the American Academy of Pediatrics and supported by the US Department of Health and Human Services, Health Resources and Services Administration, and Maternal and Child Health Bureau).1,2

This supplement, which includes 8 articles authored by workshop participants and topic-area experts, is intended to provide researchers with information about workshop topics and suggested next steps. All articles were reviewed and approved by the Workshop Planning Group before publication. The supplement includes the following articles:

1. The Potential for Improving Population Health Effectiveness of Primary Care Screening: A Simulation Study (William Gardner, Katherine Bevans, and Kelly J. Kelleher);
2. An Ecological Model to Frame the Delivery of Pediatric Preventive Care (Corina Graif, John Meurer, and Margherita Fontana);
3. The Roadmap to Equitable Autism Identification (Kate E. Wallis);
5. Incorporating Longitudinal Surveillance into the Delivery of Pediatric Screening Services (Alex R. Kemper, Tiasha Letostak, and David C. Grossman);
6. Importance of Assessing Subjective Well-being to Future US Preventive Services Task Force Recommendations (Michael Silverstein, Alex R. Kemper, Jillian T. Henderson, and Iris Mabry-Hernandez);
7. Considering Screening When There May Be Minimal Direct Benefit to the Child (Mary Jean Brown and Alex R. Kemper); and

These articles are followed by an epilogue from the Workshop Planning Group on how the NIH and other stakeholders can support innovation to overcome methodologic challenges on screening in childhood. We are enormously grateful for the dedicated efforts put forth by the workshop organizers, attendees, and the authors who are included in this supplement. We look forward to seeing the results of the ideas promoted during the workshop and in the articles here applied to advance the science of pediatric screening, which will ultimately improve the care of children.

**ABBREVIATION**

NIH: National Institutes of Health

**REFERENCES**

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http://pediatrics.aappublications.org/content/148/Supplement_1/s1