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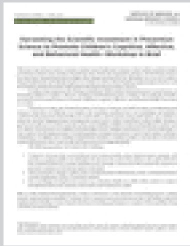

Harvesting the Scientific Investment in Prevention Science to Promote Children's Cognitive, Affective, and Behavioral Health: Workshop in Brief

ISBN
978-0-309-37165-0

8 pages
8.5 x 11
2015

Cyan James, Rapporteur; Forum on Promoting Childrenâ€™s Cognitive, Affective, and Behavioral Health; Board on Children, Youth, and Families; Institute of Medicine; National Research Council

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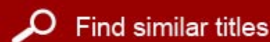
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Harvesting the Scientific Investment in Prevention Science to Promote Children's Cognitive, Affective, and Behavioral Health—Workshop in Brief

With more than 200 prevention-centered, evidence-based health interventions in their toolbox, pediatric health practitioners stand to reap a bounty of benefits for their clients and communities. But how should all these data be harvested and evaluated, particularly in light of the changes introduced by the Affordable Care Act (ACA) and the Mental Health Parity and Addiction Equity Act of 2008, as well as reduced funding, implementation barriers, and the demands of balancing public health against individual patient treatment choices?

To address these questions, the Institute of Medicine (IOM) and the National Research Council Forum on Promoting Children's Cognitive, Affective, and Behavioral Health hosted the workshop "Harvesting the Scientific Investment in Prevention Science to Promote Children's Cognitive, Affective, and Behavioral Health" from June 16–17, 2014.[1]

Chaired by Dr. Mary Jane Rotherham-Borus, bat-Yaacov Professor of Child Psychiatry and Biobehavioral Sciences, University of California, Los Angeles, the workshop considered how new technology and methods, combined with perspectives from health care, social welfare, school systems, and juvenile justice, can continue to shape the selection, implementation, and adaptation of preventive evidence-based interventions (EBIs). Speakers gave keynote addresses on (1) the economics, policy, and scalability of children's behavioral health interventions, and (2) evidence-based practices in children's mental health systems. Panelists presented on (1) systemic blockages to interventions' broad implementation, (2) implementation strategies and practices, and (3) intervention evaluation methodology. In addition, the workshop engaged forum members, workshop speakers, and attendees in breakout session discussions to delve more deeply into issues presented within the panels.

The following questions were raised at the workshop:

1. To improve outcomes, how can practitioners use existing scientific norms, implementation strategies, and practices to support quality care and improved outcomes for youth at the national, state, and local levels? How should practitioners consider adapting norms, strategies, and practices that promote the adoption of preventive measures to iteratively improve outcomes?
2. What potential key changes could be made to models that deal with financing, science, and implementation to better implement evidence-based interventions?
3. How can linkages be forged across sectors (e.g., education, health care, child welfare, justice) to support the implementation and evaluation of preventive interventions for youth?

EBIs are often implemented inadequately, owing to such factors as the demands of developing metrics, writing suitable implementation guidelines, working across organizational and professional silos, and finding sufficient implementation funding. A series of panels introduced workshop participants to a number of these problems along with their potential solutions.

[1] This Workshop in Brief summarizes the proceedings described within the Institute of Medicine/National Research Council (IOM/NRC) workshop summary *Harvesting the Scientific Investment in Prevention Science to Promote Children's Cognitive, Affective, and Behavioral Health* (IOM and NRC, 2014).

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Ways Can Be Found to Fund Prevention-Based Interventions

As Dr. Kelly Kelleher, Professor of Pediatrics and Public Health in the Colleges of Medicine and Public Health at Ohio State University, pointed out, prevention works. But prevention-based approaches are at the mercy of funding cycles, leadership changes, and reimbursement requirements, he continued. Without properly supportive infrastructure and professional development, effective interventions lose out and communities suffer. And though standardized outcome measures and accountability exist for adults, Kelleher noted that pediatric populations suffer from a lack of similarly standardized outcome measures. If these outcome measures were standardized, he said, Medicaid reimbursement and cross-agency collaboration could be markedly improved.

Without integrated behavioral health and primary care, we are not going to make a lot of progress.
—Kelly Kelleher, Ph.D.

Creating shared value between business and social agencies, Kelleher said, is "the only hope we have" for keeping good interventions alive and for scaling them appropriately, though these kinds of partnerships will require rigorous outcome measures and intensive data collection.

Kelleher cited the example of Partners for Kids, which serves as an accountable care organization filling the needs of 300,000 Ohio children by forging a successful partnership among managed-care organizations, hospitals, and physicians to streamline children's Medicaid insurance. Partners for Kids supports innovative, evidence-based interventions that span a gamut of services from school-based asthma therapy to bike co-ops. In places such as Appalachia where professionals are not as densely clustered, the program pays fees for desired outcomes. Though the effort of combining and analyzing claims data and electronic health data is rigorous, the interventions have been producing solid outcomes.

The Right Numbers in the Right Context Are Essential for Measurement and Evaluation

Dr. Eric Bruns, Associate Professor in the Department of Psychiatry and Behavioral Sciences, University of Washington School of Medicine, invited participants to consider behavioral health services, which are not always widely adopted but consume 38 percent of Medicaid child expenditures (a total of around $20 billion per year). In addition to this imbalance of resources, he mentioned the lack of pediatric behavioral health performance measures in the Healthcare Effectiveness Data and Information Set, which informs private insurance companies and the Centers for Medicare & Medicaid Services.

Metrics matter not only for postimplementation analysis, but also for EBI planning and implementation itself. Measures could be tailored to children's specific developmental stages, several group participants commented, and could also fulfill the needs of such stakeholders as managed care organizations.

We need to divert these dollars to upstream efforts.
—Eric Bruns, Ph.D.

Bruns addressed another prevailing problem: the fact that researchers and state agencies often incorrectly refer to an EBI's effect size instead of its reach. A program can have a small effect size but can have much greater impact in preventing undesirable outcomes, for example, if it is readily adopted and supported (as opposed to an intervention with a large effect size and significant barriers to uptake and retention.) So far, integrated care models, early intervention and prevention, and improved state-level policies have been working in Washington State, despite the barriers of high cost and unclear evaluation measures.

Bryan Samuels, Executive Director of Chapin Hall, reminded participants that numbers alone do not always tell the full story. What appeared to be a significant reduction of children in the child welfare system in the past decade, for example, was more the result of the Adoptions and Safe Families Act of 1997, which shifted services to the home environment without necessarily supporting children's emotional needs or gathering metrics to meet these needs.

To complicate the picture, Medicaid will not necessarily pay for the kinds of EDIs that address maltreatment, complex trauma, and other emotional and physical needs children in welfare systems are likely to have. Many

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systems-level administrators are not necessarily clinically trained, and this dearth of experience can make it more difficult to implement EBIs whose outcome aims actually address client needs—this potential harm is amplified when different agencies lack standardized, comparable outcome measures. As Samuels explained, state agencies “know how to purchase a unit of services but not the outcomes EBIs are designed to achieve.”

During discussion, individual workshop members listed a number of potential ways to address the challenges mentioned above, including

- Adding measures of psychological well-being to the measures of children’s behavior and academic achievement already in use—Sheppard Kellam, Professor Emeritus at Johns Hopkins University, said, for example, that these measures could be proximal measures for employment rates used in adult populations as a way to track progress.
- Formulating developmentally appropriate proximal measures to predict long-term health measures that are context-appropriate, actionable, and understandable (Richad Frank, HHS).
- Developing metrics, such as pediatric quality-adjusted life years, to convey return on investment from preventive EBIs (Dr. Kelleher).
- Incorporating the wider use of existing measures, such as the National Institutes of Health’s Toolbox, particularly if it is publicly available (Jeffrey Sugar, University of Southern California).

Frank listed three “buckets” of promising tactics: clinical preventive services, early intervention, and traditional public health. All three are still plagued by persistent problems including the slow diffusion lag from knowledge gains to implementation and the difficulty of bringing a successful EBI from the “boutique” level to “Walmart” scale.

Frank explained how expanding public and private insurance collaborations will help, as will delivery system reforms that unite new institutions, new incentives, and new resources. For example, 60 million Americans are set to benefit from increased mental health care offered through the ACA. Bundling care services with incentives for organizations to save money could theoretically also help, but such an effort must navigate a lack of well-defined quality standards. Skepticism over government spending and strict government standards might also impair the implementation of proven EBIs.

Social impact bonds, Frank proposed, could address these deficiencies, because they are intended to fund new government-designed programs’ upfront costs with private investments. They are challenging because their long-range effects and degrees of risk may not always entice investors, but responsive, quick-paying areas, such as juvenile justice, could be bundled with more slowly responding areas to sweeten bonds’ appeal.

Siloes Separate Agencies and Professionals Who Could Be Communicating

Child welfare and care fall into such domains as mental health, public health, and justice systems, which are very commonly separated, or siloed. Kellam suggested that siloed domains should integrate their services much more widely, and that eradicating these silos of expertise by encouraging agencies to practice data sharing and stronger communication could improve child outcomes.

The service gap between public health and primary care is a result of one of these silo effects, as Dr. David Hawkins, Social Work Endowed Professor of Prevention, University of Washington School of Social Work, pointed out. This is partially due, Frank responded, to how primary care follows a reimbursement model, unlike the model used by public health—this creates tension in multiple sectors, including whether preventive EBIs should be housed in schools, in communities, or within the primary medical system.

Frank testified that ACA funding is fueling the expansion of Medicaid services into areas traditionally considered the domain of public health, such as the practice of making social services referrals. One barrier to this incorporation of services is that schools—which make ideal settings for preventive screenings and assessments—do not typically benefit directly from the savings secured by effective EBIs.

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Health and Human Services (HHS) Funding Offers Alternative Support

The ACA and the Mental Health Parity and Addiction Equity Act, as well as specific legislation such as Title IV-E of the Social Security Act, all offer new or underused HHS funding opportunities to test and implement EBIs. Dr. C. Hendricks Brown, Professor, Departments of Psychiatry, Behavioral Sciences, and Preventive Medicine, Northwestern University, suggested looking beyond Medicaid waivers to waiver opportunities from the Substance Abuse and Mental Health Services Administration (SAMHSA).

The boundaries we have created are suboptimal for dealing with the world as it is, and we need to think about the world as it could be.
—C. Hendricks Brown, Ph.D.

With the provision of appropriate outcome measures, new health care systems built in response to ACA funds could increase affordability by implementing preventive programs. Several group members agreed: A strong business case for prevention programs is needed.

Dialogue Builds the Relationships That Balance EBI Fidelity and Adaptation

I would suggest never be afraid—if you're disseminating an evidence-based practice, never be afraid of adaptation.
—Dr. Charles Collins, Jr.

Dr. Charles Collins, Jr., Team Leader for the Science Application Team in the Capacity Building Branch of the Centers for Disease Control and Prevention's Division of HIV/AIDS Prevention, presented his team's strategic dissemination model for preventing HIV/AIDs, which involved partnering with key community and marketing organizations. His program folded in a few locally developed, robust interventions, chose a catchy name for dissemination, marketed to social sectors in a tailored way, and presented enough interventions to give individuals and communities choices. Adaptation starts a dialogue, Collins said, between the researchers or disseminators, who may be concerned about fidelity to the intervention, and the leaders who will implement the intervention and may want to customize it for their own communities. Letting communities adapt interventions as needed awards them ownership and makes it more likely they will sustain the program and circle back around to fidelity—"Fidelity," Collins reminded participants, "is gained in relationship."

Some Individual Agencies Are Practicing Evidence-Based Analytics and Overcoming Siloes

Dr. Frances Harding, Director of the Center for Substance Abuse Prevention at SAMHSA, explained how the agency is improving integration of services. Though it has faced many steep integration challenges, staff are formulating new ways to reach across internal siloes created by their various appropriations sectors; they are also shifting toward focusing on health and integration and toward working with primary care when appropriate while recognizing that not all exemplary interventions will dovetail appropriately with primary care. Factors impeding this kind of integration include undetected or untreated behavioral health problems, financing and payment structures, behavioral health carve-outs in managed care, and barriers to electronic data sharing across institutions and networks.

Dr. Alex Kemper, Professor of Pediatrics at Duke University, introduced the U.S. Preventive Services Task Force and explained how the Agency for Healthcare Research and Quality develops preventive recommendations aimed toward clinicians for child mental and behavioral health. The recommendations process is grounded in a careful literature review process supported by analytic modeling that addresses net benefits and harms to give each intervention a recommendation "grade." Kemper also presented on Bright Futures, a Health Resources and Services Administration program that makes recommendations on interventions targeted to different pediatric developmental periods.

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Systemic Structures Prevent Professionals from Communicating Well

Even when they do meet in person, personnel do not always share common vocabularies. Professionals working in different sectors often lack chances to share experiences across disciplines. For example, teachers often do not receive child mental health and prevention-based training; psychiatrists do not work in school environments. Kellam said that school nurses could particularly support prevention and mental health with proper training, given their availability and positioning within schools.

We should be measuring communities based on the facility of communities to grow children to reach their full potential.
—Dr. Sheppard Kellam

Trust and long-term commitment issues challenge transdisciplinary communication and integration, according to Dr. Lawrence Palinkas, Albert G. and Frances Lomas Feldman Professor of Social Policy and Health and Director, Behavioral, Health, and Society Research Cluster, University of Southern California School of Social Work, but qualitative methods could assist with trust building if they went beyond the scope of surveys or randomized controlled trials.

In response, individual participants suggested several specific ways agencies could improve their collaboration:

- To join federal and local resources, Medicaid and waiver programs need to align so that youth in the juvenile justice system, for example, can retain eligibility for Medicaid (Participant in Child Welfare Breakout, summarized by Dr. Palinkas).
- Performance pilots could provide structure for combining funding streams and forging research–practice partnerships (Melissa Brodowski, HHS).
- Agencies can integrate their budgets and coordinate with partner agencies, as exemplified by SAMHSA's recent work with HHS's Behavioral Health Coordinating Committee to coordinate the 11 agencies within HHS (Dr. Harding).

Financial Support Restrictions Complicate EBI Implementation

Data indicate that mental health budgets are withering, some workshop participants reported, and that the bulk of funds allocated to mental health issues in most states are primarily spent on adults and on treatment, respectively, rather than on children and prevention. When funds are spent on children, they often go to children with complex needs rather than to prevention or early intervention.

State funding drives most EBI implementation, but state requirements can vary greatly. Screening for a condition with the desire to treat it is different than screening for prevention, too, and this throws another wrench in the uniformity of standards and of EBI outcomes, a few members commented.

Several group members agreed that screenings would be useful if they could be tied into data tracking systems to highlight high-risk cases for expert review. Payment and guidelines around such practices as screenings must also set expectation properly for both researchers and communities—the practice of accurately calibrating expectations and of choosing the right incentives is very important, participants agreed during discussion.

Dr. Collins raised the point that researchers should also think more about the real-world conditions in which their interventions will be placed—will these work for everyone involved, particularly including the teacher expected to implement them, for example? Will powerful personalities aid or impede an EBI's adoption by a particular community? These factors, while not always widely acknowledged, play huge roles in how well a particular EBI performs.

Researchers could also do a better job of mastering qualitative methods and social skills and of using community brokers, who already have established trusted relationships within the community. The give-and-take is important—researchers need to give back, develop transition plans, and fulfill community needs, too, several workshop participants agreed. Some participants also shared the concern that legal issues can get in the way of sharing data and forming community if the law falls behind people's willingness to work together.

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Data Sharing Between Youth Agencies Is Important

We are trying to say the real task that lies ahead of us is how do we coordinate the generalized knowledge that is in theory and in randomized trials and the local knowledge that is in aggregated local cases and in an individual case of how someone is responding.
—Dr. Bruce Chorpita

Several participants expressed wide support for data sharing across all the domains affecting children. Kellam mentioned that 14 separate systems manage data related to youth, usually without connecting to the community level. The ACA, Kellam said, gives professionals an opportunity that may never come again to build a single information system to track juvenile needs across the scope of academic, behavioral, and health considerations.

Dr. Bruce Chorpita, Professor of Psychology at University of California, Los Angeles, noted that "about a third" of youth entering EBIs do not have their needs met because they are exceptions for whom no suitable EBIs have yet been built. Adaption, Collins chimed in, is another barrier, because EBIs are tested in academic settings that do not necessarily match community needs and must then be changed by blending behavioral science with local knowledge and needs assessment.

Dissemination is another challenge—relying on multiple dissemination partners rather than just a few could increase an intervention's success, Collins said, as long as good process measures, outcome monitoring, and consistent delivery of interventions are present. Dissemination would be greatly aided, several participants agreed, if stakeholders could refer to a clearinghouse for EBIs that included funding information and details on what EBI elements failed and why.

EBIs Can Be Rendered into Adaptable Modules for Better Outcomes

With the right systems of analysis, interventions can be "unbundled" into context-appropriate modules so communities do not always have to mirror the exact conditions under which the intervention was developed, Chorpita emphasized. Communities can instead adapt these modules to their own needs in a process Chorpita compared to using ingredients in slightly different combinations to get outcomes that work without exactly following the original recipe.

Sometimes we just need to make cookies out of whatever is in the cupboard.
—Dr. Bruce Chorpita

Chorpita demonstrated his point by introducing a knowledge management system he developed called Managing and Adapting Practice (MAP). MAP synthesizes research literature and subsequently recommends ways to tailor and dynamically combine preventive, youth-centered interventions to fit local community needs.

Behavioral Intervention Technology Leverages Personal Devices for Better Health

My take-home point is that technology is great, but humans really are important.
—Dr. David Mohr

Dr. David Mohr, Professor in the Northwestern University Feinberg School of Medicine's Departments of Preventive Medicine, Psychiatry, and Medical Social Sciences, presented on behavioral intervention technology (BIT), which uses mobile phones, computers, and sensors to promote health. Smartphone applications (apps) are among the most widespread and popular BIT EBIs, but most of them, Mohr said, are of poor quality and are neither widely evaluated nor widely used.

Though BIT has shown promise with Web-delivered programs such as the depression EBI MoodGYM, Mohr said relying on interventions housed solely online is not completely effective. Alternate communication channels, such as text messaging, has been shown useful for reminders and similar functions but is also not as effective when intended to provide a full intervention program.

In response to these findings, Mohr has developed a coaching model called supportive accountability that uses clear goals and personal coaching, combined with a user's motivation levels, to improve behavioral adherence.

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Effective BITs, he suggested, should consider adding in elements of peer networks—reminding users that their peers miss them, for example—and account for users being embedded within networks, so the intervention becomes part of the "fabric of people's lives." BITs are challenged, however, by their long development cycles—to overcome this Mohr suggested concentrating on rapid evaluation models and on evaluating principles of app development rather than apps themselves. Data sharing environments could help researchers share lessons learned and speed up their work, he added.

Measurements of EBI Effectiveness Can Be Tailored to Each Participating Community

Study designs are developing beyond the limitations of standardized randomized controlled trials and can now test individual "pieces" of a specific EBI so interventions can be shaped to fit specific populations more flexibly and efficiently. These study design methods, such as sequential multiple assignment randomized trials (SMART), can save money by dynamically matching specific subpopulations to very targeted interventions, Mohr explained.

Dr. Naihua Duan, Columbia University, emphasized that EBI objectives and procedures can be highly customized, because so much of the population can now access technology. More robust EBIs can be built, Duan continued, if communities receive technical assistance, methodological development, and training in statistical methods. As communities become better at collecting, managing, and analyzing their own data, it will become easier to "fit" them with appropriately calibrated, evidence-based EBIs that can be adjusted as needed. Brown emphasized each community's unique characteristics, which makes an argument for involving each community in developing EBIs to suit their own needs. To maximize an EBI's potential effectiveness, Duan added, communities using proper methodology can now serve as their own control groups, which would speed up EBI implementation and modification.

Dr. Rotherham-Borus concluded the meeting by thanking participants and outlining planning details for the next gathering.

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REVIEWERS: To ensure that it meets institutional standards for quality and objectivity, this workshop in brief was reviewed by **Kelly J. Kelleher,** The Research Institute at Nationwide Children's Hospital, and **Belinda E. Sims,** National Institute on Drug Abuse. **Chelsea Frakes,** Institute of Medicine, served as review coordinator.

SPONSORS: This workshop was partially supported by American Academy of Pediatrics; the American Board of Pediatrics; the American Orthopsychiatric Association; the American Psychological Association; the Annie E. Casey Foundation; Autism Speaks; the Centers for Disease Control and Prevention; the Department of Justice Office of Juvenile Justice and Delinquency Prevention; the Hogg Foundation for Mental Health; the National Institutes of Health; the Robert Wood Johnson Foundation; the Society for Child and Family Policy and Practice; the Society of Clinical Child and Adolescent Psychology; the Society of Pediatric Psychology; the Substance Abuse and Mental Health Services Administration; and the William T. Grant Foundation.

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