ABCT ASSOCIATION for BEHAVIORAL and COGNITIVE THERAPIES

ISSN 0278-8403
VOLUME 40, NO. 7 • OCTOBER 2017

the Behavior Therapist

SPECIAL ISSUE

& Dissemination Implementation

Co-Editors: Sarah Kate Bearman & Alyssa Ward

[Contents continued on p. 232]

Introduction to the Special Issue

Coming of Age (Professionally) in the Age of Dissemination and Implementation

Sarah Kate Bearman, *The University of Texas at Austin*

Alyssa Ward, *Children's Hospital of Richmond, Virginia Commonwealth University*

AS CLINICAL PSYCHOLOGY DOCTORAL STUDENTS in the early 2000s, we had strikingly similar experiences. We both studied the results of landmark CBT efficacy trials in our coursework, learned (almost exclusively) cognitive and behavioral therapies in our training programs, practiced them in our training clinics with the helpful guidance of expert supervisors, and then did our best to continue to use these practices as we progressed into community clinical placements and internship. As we two moved from relatively ideal academic settings into increasingly complex service settings, we had the same epiphanies: *Huh. No one here is using CBT manuals*. And also, *What should I do for this client, who has multiple comorbidities and also misses a ton of sessions?* Not to mention *When am I going to find time to prepare for session when I have so many clients scheduled back-to-back?* and the ever popular: *This is so much harder than I thought it was going to be.*

These aren't unique realizations—the "research-practice gap" in mental health has been so well documented that we've each personally heard the expression "mind the gap" used in more scholarly talks than we can count. We'd bet that most folks can relate to some of

[continued on p. 233]

the Behavior Therapist

Published by the Association for Behavioral and Cognitive Therapies
305 Seventh Avenue - 16th Floor
New York, NY 10001 | www.abct.org
(212) 647-1890 | Fax: (212) 647-1865

Subscription information: *tBT* is published in 8 issues per year. It is provided free to ABCT members. Nonmember subscriptions are available at $40.00 per year (+$32.00 airmail postage outside North America). ***Change of address:*** 6 to 8 weeks are required for address changes. Send both old and new addresses to the ABCT office.

Contents, *continued*

A Note on the Special Issue

Excerpts of interviews with senior-level researchers appear throughout this special issue. The full interviews are available on-line at **http://www.abct.org/docs/PastIssue/40n7sup.pdf**

INSTRUCTIONS *for* AUTHORS

The Association for Behavioral and Cognitive Therapies publishes *the Behavior Therapist* as a service to its membership. Eight issues are published annually. The purpose is to provide a vehicle for the rapid dissemination of news, recent advances, and innovative applications in behavior therapy.

- Feature articles that are approximately 16 double-spaced manuscript pages may be submitted.
- Brief articles, approximately 6 to 12 double-spaced manuscript pages, are preferred.
- Feature articles and brief articles should be accompanied by a 75- to 100-word abstract.
- Letters to the Editor may be used to respond to articles published in *the Behavior Therapist* or to voice a professional opinion. Letters should be limited to approximately 3 double-spaced manuscript pages.

Submissions must be accompanied by a Copyright Transfer Form (which can be downloaded on our website: http://www.abct.org/Journals/?m=mJournal&fa=TBT): *submissions will not be reviewed without a copyright transfer form*. Prior to publication authors will be asked to submit a final electronic version of their manuscript. Authors submitting materials to *tBT* do so with the understanding that the copyright of the published materials shall be assigned exclusively to ABCT. Electronic submissions are preferred and should be directed to the editor, Kate Wolitzky-Taylor, Ph.D., at **KBTaylor@mednet.ucla.edu.** Please include the phrase ***tBT submission*** and the author's last name (e.g., ***tBT Submission - Smith et al.***) in the subject line of your e-mail. Include the corresponding author's e-mail address on the cover page of the manuscript attachment. Please also include, as an attachment, the completed copyright transfer document.

these experiences: trying to identify the appropriate treatment for a client whose profile just isn't a perfect fit for the treatments to which you've got access or have had any training, or running into practical challenges delivering an intervention with fidelity and making on-the-fly adjustments you wonder if the developer would frown upon. Indeed, these very challenges have been summarized in numerous papers (see, for example, Bickman, 2008; Hoagwood, Burns, Kiser, Ringeisen, & Schoenwald, 2001; Weisz & Jensen-Doss, 2001). For us, the struggles we personally experienced trying to realize our own evidence-based training in our practices made us curious. That's how we both ended up as postdoctoral fellows in the Child STEPs Clinic Treatment Project (CTP; Schoenwald, Kelleher, & Weisz, 2008) from (jointly) 2005–2013 (to be fair, Alyssa couldn't resist the chance to move to Hawaii).

The Child STEPs CTP was the first study of its kind, and represented an ambitious effort by our fellowship mentors, John R. Weisz and Bruce F. Chorpita, to test a flexible, transdiagnostic approach to the treatment of child anxiety, depression, and disruptive conduct against well-tested standard manuals for each, as well as against usual care, in community mental health agencies and schools (Chorpita et al., 2013; Weisz et al., 2012). Technically, Child STEPs CTP was an effectiveness trial. In a 2001 article entitled "Effectiveness, Transportability, and Dissemination of Interventions: What Matters When?", Schoenwald and Hoagwood noted, "The fledgling area of research on the transportability of efficacious treatments to usual-care settings is a precursor to dissemination research" (p. 1192). Only a few years after those authors identified this "fledgling" area as one in need of study, Child STEPs CTP formally tested—on a large scale with a diverse set of referred youth and community therapists—the ways in which traditional cognitive and behavioral therapy "recipes" could be combined and reimagined to benefit youths and families. To this day, we feel lucky to have been in that test kitchen (many times covered in flour, managing hot ovens, setting off smoke alarms—you get the analogy. . .).

If we started this article—and our professional careers—immersed in the important foundational work of CBT efficacy, then Child STEPs represents the effectiveness phase of our development, bringing us face-to-face with a number of the dimensions and variables that are key to testing dissemination models, as suggested by Schoenwald and Hoagwood (2001). This table (p. 1194) identifies characteristics related to the intervention, therapists, clients, service delivery, organization, and service system. Efforts are typically made within effectiveness research to minimize the impact of variations on these variables on the outcomes of treatment, but for many of us, these were some of the most provoking questions. Are therapists resistant to using evidence-based practices, or do they just not like the idea of manuals (Borntrager, Chorpita, Higa-McMillan, & Weisz, 2009)? What strategies foster knowledge exchange between treatment researchers and clinic therapists (Palinkas et al., 2009)? What types of supervisory support most impact therapist practice (Bearman et al., 2013)? Are therapists accurate reporters of the practices that they use in a given session (Ward et al., 2013)? How do differences in treatment design relate to therapist satisfaction (Chorpita et al., 2015), or client use of services once treatment has ended (Park et al., 2016)? There are many more, and we and our colleagues have presented aspects of this research here at ABCT for the past decade. Other questions, raised by our work on Child STEPs, inspired the work many of us are doing now.

To be clear, we are not suggesting that everyone woke up to the importance of the dissemination and implementation of CBT at the same time as we did in the early 2000s—indeed, what we now call D&I in mental health has been shaped by the work in other fields and disciplines, as well as by mental health services researchers whose attention to these issues predates our own (see Becker, Nakamura, Young, & Chorpita, 2009, for a brief review). However, as academic researchers we "came of age" just at the time when the science of dissemination and implementation moved from being of interest for a few—the innovators and early adopters, if you will (Rogers, 2003)—and began to gain a foothold among the majority. As described in Norton, Lungeanu, Chambers, and Contractor (2017), the past decade has seen the amount of scholarship in this area increase dramatically, and numerous metrics point to the rapid growth of interest in this area: a specialty journal (*Implementation Science*), professional societies and conferences, several training institutes, and a number of other opportunities for people to learn about and become involved in the science and practice of dissemination and implementation. D&I, it seems, has arrived.

This is clearly reflected here at ABCT and its membership. At the 2008 ABCT Convention, the Dissemination and Implementation Science Special Interest Group (DIS SIG) was formed and, in 2009, some of the founding members wrote about the rationale, goals, and implications of D&I for our organization in this publication (Becker et al., 2009). The preliminary goals of the SIG were to (a) help members network with like-minded colleagues; (b) collaborate with stakeholders to identify what works for them, what they need, and how best to provide evidence-based practices (EBPs); and (c) communicate the benefits of EBPs in order to increase stakeholder demand for effective treatments. The DIS

the Behavior Therapist *posed questions to several senior-level researchers in order to gain insight into their perspectives, visions, and recommendations related to the D&I of evidence-based psychological practice. We held interviews with*:

- **David M. Clark, D.Phil.**, University of Oxford/National Clinical & Informatics Advisor for Improving Access to Psychological Therapies (IAPT)
- **Bruce F. Chorpita, Ph.D.**, University of California, Los Angeles
- **Ann F. Garland, Ph.D.,** University of San Diego
- **Rochelle F. Hansen, Ph.D.,** Medical University of South Carolina/National Crime Victims Research and Treatment Center (NCVC)
- **Shannon Dorsey, Ph.D.**, University of Washington

Some of their most thought-provoking answers, edited for length and clarity, are included throughout this special issue. Visit **http://www.abct.org/docs/PastIssue/40n7sup.pdf** to view their full responses to all interview questions online.

SIG has grown significantly in its membership and impact since its inception, including a highly attended preconference session each year. Many of its early members have gone on to develop full programs of research related to D&I and have taken on leadership in other D&I-specific organizations such as the Society for Implementation Research Collaboration (https://societyforimplementationresearchcollaboration.org). In the 50th Anniversary issue of *tBT*, former SIG Chair Amanda Jensen-Doss noted that the SIG had grown to be one of the largest in the organization with 250 members (Jensen-Doss, A., 2016). At the recent Golden 50th Anniversary convention, Dissemination & Implementation was one of the themes. Finally, the original Senior Advisor of the DIS SIG, Bruce Chorpita, was just elected President of ABCT.

This special issue seeks to build on the momentum D&I has gained within the last decade at ABCT and to feature new work that we hope will inspire continued interest and collaboration across the organization. Dissemination and implementation of CBT is at the heart of ABCT's mission—recall that our professional home was once named the "Association for Advancement of Behavior Therapy"—presumably, advancing it in the hopes of reducing suffering and improving lives. Though our name has changed, the goal of increasing the reach and impact of the therapies we study remains central. Dissemination and implementation research seeks to apply rigorous science to the understanding of how we advance CBT and, more generally, effective interventions. Each of the articles in this special issue highlights some facet of this goal.

We hoped to make this issue accessible and relevant, and hope it will spark members' interest in the integration of D&I with their work. D&I methods are relevant to so much of what we do—not only as researchers, but as clinicians, supervisors, and administrators. At the start, you will be invited to take a quiz to check your D&I IQ, cleverly composed through the lab of the current DIS SIG Chair, Rinad Beidas (Stewart et al., p. 238). The special issue will then feature articles that touch on a variety of methods and questions central to D&I. Lyon and Lewis (p. 241) lead us off by describing an implementation strategy involving measurement feedback systems in the context of developing "minimal interventions necessary for change" (MINCs). This measurement theme is carried forward into the next piece by Halko, Stanick, Powell, and Lewis (p. 248), which describes efforts to inject stakeholder perspectives into implementation measures to improve the chances that measures developed will be pragmatic and therefore utilized in community settings. This article is also a peek into these authors' larger goals—to develop a repository of implementation measures to support both researchers and practitioners in their work. Landes, Matthieu, Smith, and Rodriguez (p. 251) provide a broad description of their efforts to implement Dialectical Behavior Therapy within the Veterans Administration system, including some specific examples of barriers and solutions. For anyone interested in implementing a well-tested intervention in a new setting, this article provides an example of a large-scale effort while acknowledging and processing barriers that are relevant to almost any clinical setting.

Another important aspect of advancing effective treatments like CBT is via disruptive innovation, identifying the most robust aspects of interventions and "reengineering" them to reduce burden and increase influence (Rotheram-Borus, Swendeman, & Chorpita, 2012). This is the approach taken by Schleider and Weisz (p. 256), who review the evidence for single-session interventions (SSIs) from other disciplines and from a meta-analysis of 50 studies showing the effect of SSIs on youth psychopathology. They describe the potential of SSIs for scaling-up services for youth, as well as potential difficulties with that approach. An example of exploring service delivery is provided by Dopp, Wolkowicz, Mapes, and Feldner (p. 261), who describe implementation of telepsychology within a training clinic and make use of a popular implementation framework (Exploration, Preparation, Implementation, Sustainment [EPIS]; Aarons, Hulburt, & Horwitz, 2011). Finally, two perspectives on one of the most common implementation barriers—therapist attrition—will be presented: Creed, Rosenbaum, and Centeno (p. 267) use a case example from the Beck Community Initiative to illustrate how the systematic measurement of three aspects of therapist attrition during implementation efforts—definition, timing, and reasons—could better inform retention efforts at different phases; and, using data from the New York State–sponsored Managing and Adapting Practice (MAP) rollout, Vardanian and colleagues (p. 273) test the impact of targeted, structural adaptations made to improve engagement and reduce therapist attrition.

Throughout this issue, you will also find excerpts from interviews with leaders in the area of D&I, lending their perspective on a variety of topics. We are grateful to Bruce Chorpita, David Clark, Shannon Dorsey, Ann Garland, and Rochelle Hanson for generously taking the time to answer our questions. Their collective efforts have blazed trails with regards to treatment redesign, large-scale implementation, international training and dissemination, the rigorous study of usual-care services, and the use of community-based learning collaboratives, to name only a few of their contributions. For the sake of brevity, some of their responses aren't included, but please go to **http://www.abct.org/docs/PastIssue/40n7sup.pdf** to see all of their answers and be inspired, as we were. On that note, should this issue and its contents peak your interest in learning more, we encourage you to join us at the DIS SIG meeting in San Diego this November, and to learn more about D&I through the SIG Website: http://groupspaces.com/DISSIG.

In a classic article, Thorenson and Coates (1978) describe behavior therapy as the once "rebellious son" who, at the time of their writing, had come of age as a "legitimate professional approach" (pp. 2, 29). We feel fortunate to have come of age professionally just as the study of dissemination and implementation of CBT took its place alongside other essential aspects of CBT science and practice. We look forward to the role that ABCT, and all of you, will play in its future.

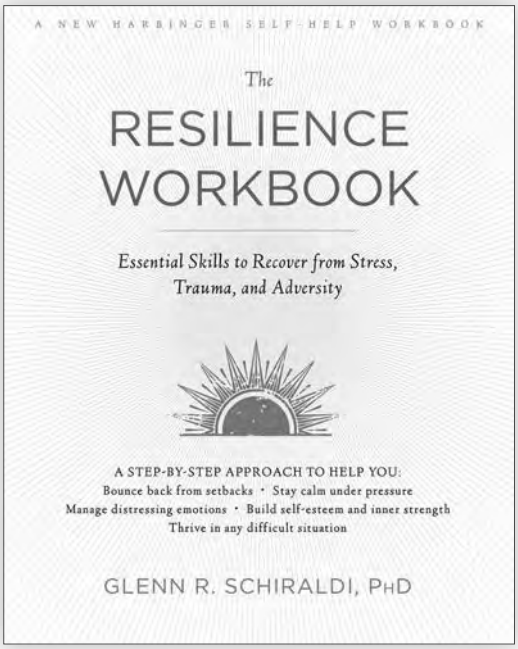
References

Aarons, G. A., Hurlburt, M., & Horwitz, S. M. (2011). Advancing a conceptual model of evidence-based practice implementation in public service sectors. *Administration and Policy in Mental Health, 38*(1), 4–23. http://doi.org/10.1007/s10488-010-0327-7

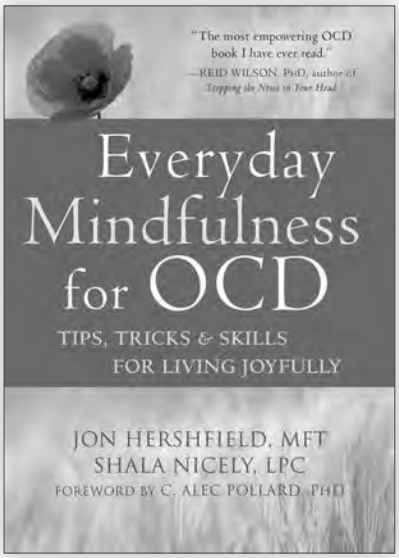
Bearman, S. K., Weisz, J. R., Chorpita, B. F., Hoagwood, K., Ward, A., Ugueto, A. M., & Bernstein, A. (2013). More practice, less preach? The role of supervision processes and therapist characteristics in EBP implementation. *Administration and Policy in Mental Health and Mental Health Services Research, 40*(6), 518-529. doi:10.1007/s10488-013-0485-5

Becker, K. D., Nakamura, B. J., Young, J., & Chorpita, B. F. (2009). What better place than here? What better time than now? ABCT's burgeoning role in the dissemination and implementation of evi-

Essential New Resources
for Your Practice

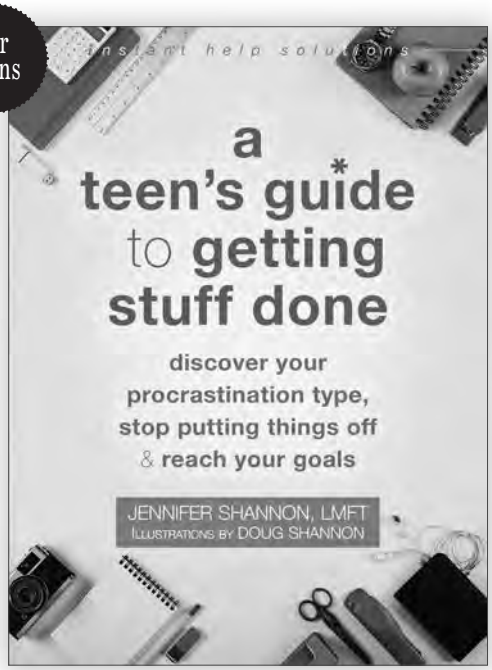


ISBN: 978-1626259409 | US $24.95

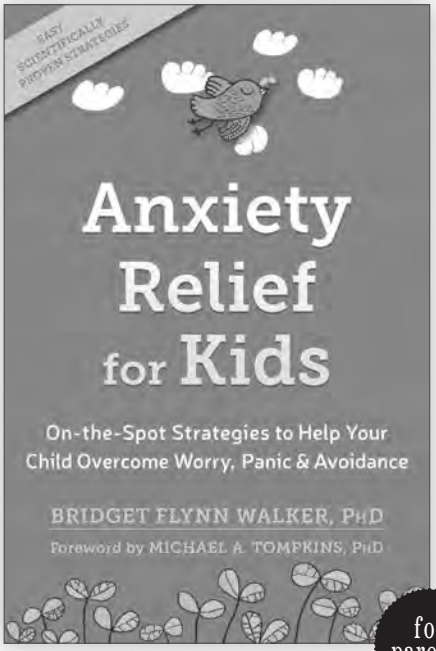


ISBN: 978-1626258921 | US $16.95

for teens



ISBN: 978-1626255876 | US $16.95



ISBN: 978-1626259539 | US $16.95

for parents

Instant Help Books
An Imprint of New Harbinger Publications

newharbingerpublications
1-800-748-6273 / newharbinger.com

dence-based practices. *the Behavior Therapist, 32*(5), 89-96.

Bickman, L. (2008). A Measurement Feedback System (MFS) is necessary to improve mental health outcomes. *Journal of the American Academy of Child and Adolescent Psychiatry, 47*(10), 1114–1119. http://doi.org/10.1097/CHI.0b013e3181825af8

Borntrager, C. F., Chorpita, B. F., Higa-McMillan, C., & Weisz, J. R. (2009). Provider attitudes toward evidence-based practices: Are the concerns with the evidence or with the manuals?. *Psychiatric Services, 60*(5), 677-681. doi:10.1176/appi.ps.60.5.677

Chorpita, B. F., Weisz, J. R., Daleiden, E. L., Schoenwald, S. K., Palinkas, L. A., Miranda, J., ... Gibbons, R. D. (2013). Long-term outcomes for the Child STEPs randomized effectiveness trial: A comparison of modular and standard treatment designs with usual care. *Journal of Consulting and Clinical Psychology, 81*(6), 999-1009. doi:10.1037/a0034200

Chorpita, B. F., Park, A., Tsai, K., Korathu-Larson, P., Higa-McMillan, C. K., Nakamura, B. J., ... Krull, J. (2015). Balancing effectiveness with responsiveness: Therapist satisfaction across different treatment designs in the Child STEPs randomized effectiveness trial. *Journal of Consulting and Clinical Psychology, 83*(4), 709-718. doi:10.1037/a0039301

Creed, T. A., Rosenbaum, D. L., & Centeno, D. C. (2017). Understanding and targeting attrition in implementation of evidence based practices: A CBT case example. *the Behavior Therapist, 40*(7), 267-272.

Dopp, A. R., Wolkowicz, N. R., Mapes, A. R., & Feldner, M. T. (2017). Implementation of telepsychology services in a university training clinic: Process and lessons learned. *the Behavior Therapist*, *40*(7), 261-267.

Halko, H., Stanick, C., Powell, B., & Lewis, C. (2017). Defining the "pragmatic" measures construct: A stakeholder-driven approach. *the Behavior Therapist, 40*(7), 248-251.

Hoagwood, K., Burns, B. J., Kiser, L., Ringeisen, H., & Schoenwald, S. K. (2001). Evidence-based practice in child and adolescent mental health services. *Psychiatric Services, 52*(9), 1179-1189. doi:10.1176/appi.ps.52.9.1179

Landes, S. J., Matthieu, M. M., Smith, B. N., & Rodriguez, A. L. (2017). Strategies to overcome barriers to implementing dialectical behavior therapy in the Department of Veterans Affairs: Perspectives from a national program evaluation. *the Behavior Therapist, 40*(7), 251-255.

Lyon, A. R., & Lewis, C. C. (2017). Feedback systems to support implementation of measurement-based care. *the Behavior Therapist, 40*(7), 241-247.

Norton, W.E., Lungeanu, A., Chambers, D.A., Contractor, N. (2017). Mapping the growing discipline of dissemination and implementation science in health. *Scientometrics* [Advanced online publication] doi: 10.1007/s11192-017-2455-2

Palinkas, L. A., Aarons, G. A., Chorpita, B. F., Hoagwood, K., Landsverk, J., & Weisz, J. R. (2009). Cultural exchange and the implementation of evidence-based practices: Two case studies. *Research on Social Work Practice, 19*(5), 602-612. doi:10.1177/1049731509335529

Park, A. L., Tsai, K. H., Guan, K., Reding, M. J., Chorpita, B. F., & Weisz, J. R. (2016). Service use findings from the child STEPs effectiveness trial: Additional support for modular designs. *Administration and Policy in Mental Health and Mental Health Services Research, 43*(1), 135-140. doi:10.1007/s10488-015-0625-1

Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York: Free Press.

Rotheram-Borus, M. J., Swendeman, D., & Chorpita, B. F. (2012). Disruptive innovations for designing and diffusing evidence-based interventions. *American Psychologist, 67*(6), 463-476. doi:10.1037/a0028180

Schleider, J. L., & Weisz, J. R. (2017). Can less be more? The promise (and perils) of single-session youth mental health interventions. *the Behavior Therapist, 40*(7), 256-261.

Schoenwald, S. K., & Hoagwood, K. (2001). Effectiveness, transportability, and dissemination of interventions: What matters when? *Psychiatric Services, 52*(9), 1190-1197. doi:10.1176/appi.ps.52.9.1190

Schoenwald, S. K., Kelleher, K., & Weisz, J. R. (2008). Building bridges to evidence-based practice: The MacArthur Foundation Child System and Treatment Enhancement Projects (Child STEPs). *Administration and Policy in Mental Health and Mental Health Services Research, 35*(1-2), 66-72. doi:10.1007/s10488-007-0160-9

Stewart, R. E., Becker Haimes, E. M., Maddox, B. B., Okamura, K., Benjamin Wolk, C., & Beidas, R. S. (2017). Test your implementation science IQ. *the Behavior Therapist, 40*(7), 238-240.

Thoreson, T.E., & Coates, T.J. (1978). What does it mean to be a behavior therapist? *The Counseling Psychologist, 7*, 3-21.

Vardanian, M. M., Horwitz, S. M., Storfer-Isser, A., Wang, N., Gleacher, A., Hoagwood, K., & Olin, S. S. (2017). A second look at dropout rates from state-sponsored MAP trainings: Can targeted adaptations improve retention in evidence-based practice trainings? *the Behavior Therapist, 40*(7), 273-282.

Ward, A., Regan, J., Chorpita, B., Starace, N., Rodriguez, A., Okamura, K. (2013). Tracking evidence based practice with youth: Validity of the MATCH and standard manual consultation records. *Journal of Clinical Child & Adolescent Psychology, 42*(1), 44–55.

Weisz, J. R., & Jensen-Doss, A. L. (2001). Child and adolescent psychotherapy in research and practice contexts: Review of the evidence and suggestions for improving the field. *European Child & Adolescent Psychiatry, 10*(Suppl1), 12-18.

Weisz, J.R., Chorpita, B.F., Palinkas, L.A., Schoenwald, S.K., Miranda, J., Bearman, S.K., . . . Research Network on Youth Mental Health. (2012). Testing standard and modular designs for psychotherapy with youth depression, anxiety, and conduct problems: A randomized effectiveness trial. *Archives of General Psychiatry, 69*, 274-282.

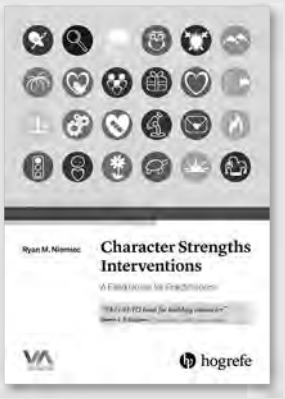
. . .

Drs. Bearman and Ward wish to sincerely thank Shannon Blakey for her assistance with this issue.

The authors have no funding or conflicts of interest to disclose.

Correspondence to Sarah Kate Bearman, Ph.D., University of Texas at Austin, Department of Educational Psychology, 1912 Speedway D5800, Austin, TX 78712, skbearman@austin.utexas.edu; or Alyssa M. Ward, Ph.D., Virginia Commonwealth University, School of Medicine, Department of Pediatrics, PO Box 980529, Richmond, VA 23284, alyssa.ward@vcuhealth.org.

New Resources for Psychologists



Ryan M. Niemiec

Character Strengths Interventions

A Field Guide for Practitioners

2018, xx + 300 pp.
US $59.00
ISBN 978-0-88937-492-8

"The GO-TO book for building character," Martin E. P. Seligman

The definitive, practical handbook on positive psychology and character strengths for practitioners working in coaching, psychology, education, and business – with more than 70 interventions, each backed by scholarly references and with easy-to-use handouts!

Nicola Baumann / Miguel Kazén / Markus R. Quirin / Sander L. Koole (Editors)

Why People Do the Things They Do

Building on Julius Kuhl's Contributions to the Psychology of Motivation and Volition

2018, xii + 434 pp.
US $87.00
ISBN 978-0-88937-540-6

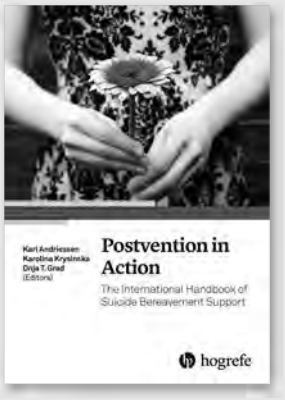
Motivation and volition are issues that everyone grapples with in facing the challenges of everyday life. This unique and comprehensive book by leading international researchers takes a genuinely integrative view on motivation and volition from the perspective of personality systems interactions (PSI) theory of Julius Kuhl.

Ric M. Procyshyn / Kalyna Z. Bezchlibnyk-Butler / J. Joel Jeffries (Editors)

Clinical Handbook of Psychotropic Drugs

22nd ed. 2017, iv + 432 pp. + 57 pp. of printable PDF patient information sheets
US $99.80
ISBN 978-0-88937-496-6

The classic reference to psychotropic medications, with substantial revisions and updates: packed with new and expanded comparison charts, the latest drugs, completely revised sections on ECT and pharmacogenomics, and much more!



Karl Andriessen / Karolina Krysinska / Onja T. Grad (Editors)

Postvention in Action

The International Handbook of Suicide Bereavement Support

2017, xviii + 424 pp.
US $94.00
ISBN 978-0-88937-493-5

This unique and comprehensive handbook, authored by nearly 100 international experts, including researchers, clinicians, support group facilitators, and survivors, presents the state of the art in suicide bereavement support, providing useful lessons and inspiration for extending and improving postvention in new and existing areas.

Hogrefe Publishing
30 Amberwood Parkway
Ashland, OH 44805, USA
Tel. 800 228-3749 (toll-free in North America)
Fax 419 281-6883
customerservice@hogrefe.com
www.hogrefe.com

hogrefe

Test Your Implementation Science IQ! *

Rebecca E. Stewart, Emily M. Becker Haimes, Brenna B. Maddox, Kelsie Okamura, Courtney Benjamin Wolk, and Rinad S. Beidas, *University of Pennsylvania*

What Is Your Implementation Science IQ?

Circle TRUE or FALSE

1. **Dissemination and implementation are synonyms.**
   TRUE FALSE

2. **Implementation science is specific to behavioral health.**
   TRUE FALSE

3. **Implementation science = effectiveness research.**
   TRUE FALSE

4. **Training is an implementation strategy.**
   TRUE FALSE

5. **An implementation project ends when funding ends.**
   TRUE FALSE

6. **I'm a treatment researcher. Implementation science isn't relevant to me.**
   TRUE FALSE

**Answers and scoring on p. 240*

INTEREST IN IMPLEMENTATION SCIENCE has increased substantially in recent years. Evidence of this growing focus includes conferences sponsored by the National Institutes of Health (NIH) and the Society for Implementation Research Collaborative, standing program announcements at NIH, dedicated implementation science journals, and special interest groups in many professional societies. There is also increased attention paid to implementation science among ABCT membership. While excited by this rapid growth, we have noticed some lingering questions about the scope of the field. Rather than pen an overview article, which has been done well already in this publication (Becker, Nakamura, Young, & Chorpita, 2009) and elsewhere (Bauer, Damschroder, Hagedorn, Smith, & Kilbourne, 2015), we present this quiz as a fun way for you to test your implementation science IQ and for us to discuss common misconceptions about the field. Rate each question true/false and then read on to learn more. Keep reading this issue to find a key (next page) where you may calculate your results and see where your implementation science IQ falls!

Explanations

1. Dissemination and Implementation Are Synonyms.

Answer: *False*. While dissemination and implementation are sometimes used interchangeably, they represent two equally important but different constructs. Both share the common goal of increasing the use of evidence-based practice, although their approach is distinct. Dissemination is the act of communicating and spreading evidence-based practice principles to a targeted and specific audience. Such methods may include journal articles (meta-analyses, overviews, practice guidelines), press coverage, targeted mailings, campaigns, and even formal advertising. Dissemination research has a goal of understanding the most effective ways of widely spreading and sustaining knowledge of evidence-based practice. In contrast, implementation is the active process of integrating evidence-based practices within a clinical setting. The goal of implementation is to do more than increase awareness and spread information, but to actively intervene in order to increase use of the evidence-based practice. Implementation strategies may include targeted training to increase knowledge of evidence-based practice, creating incentives for evidence-based practice use, or allocating organization time and resources to supervision in evidence-based practice (Powell et al., 2015). Implementation research has a goal of identifying effective strategies to improve patient outcomes and public health.

2. Implementation Science Is Specific to Behavioral Health

Answer: *False*. Implementation science is transdisciplinary. "No one discipline is 'home' to implementation research" (Proctor et al., 2011, p. 71). In fact, a single research team in implementation science usually includes individuals of many backgrounds, such as health services researchers, mixed methods experts, health economists, organizational scientists, business administrators, clinicians, and patients (Bauer et al., 2015). No one discipline alone can address the complex challenges in disseminating and implementing evidence-based practice.

3. Implementation Science = Effectiveness Research

Answer: *False*. Effectiveness research focuses on testing treatments in real-world settings. The focus is on the external validity of a treatment trial beyond the research clinic, thus effectiveness studies are less tightly controlled than treatment efficacy trials. The main outcomes of interest in effectiveness research are generally about client symptom reduction and quality of life. On the other hand, implementation research focuses on the uptake or adoption of practices by providers and/or service systems. Main outcomes are typically at the provider or system levels. For example, common implementation outcomes include fidelity (i.e., the degree to which an intervention is delivered as intended) and penetration (i.e., the integration of a practice in a setting; see Proctor et al., 2011). Implementation science methods and effectiveness research can go hand-in-hand. For example, you might be interested in looking at both patient and implementation outcomes in a hybrid trial. There are specific study designs and recommendations around marrying effectiveness and implementation science research (see Curran, Bauer, Mittman, Pyne, & Stetler, 2012, for greater detail).

4. Training Is an Implementation Strategy.

Answer: *True*. Implementation strategies refer to the active strategies that are used to increase the adoption, implementation, and sustainment of evidence-based practices (Powell et al., 2015). Training is one type of implementation strategy that broadly falls within the category of education implementation strategies (Powell et al., 2015). Early on, as implementation science was developing, many research groups focused on the role of training as an implementation strategy. This body of work has led to a recognition that although training is necessary, it is not sufficient. In other words, training clinicians in a new practice is likely to change their knowledge and attitudes, but not their behavior (Beidas & Kendall, 2010). In order to enact behavior change, implementation strategies that address multiple ecological levels, including the therapists and the organizations and systems that they work within, are necessary.

5. Implementation Trials End When Funding Ends

Answer: *False*. While sustainability (i.e., the continuation of a practice) may be less studied than initial adoption or implementation (Wiltsey Stirman et al., 2012), it is a sine qua non of implementation science. An implementation trial will design and prioritize a sustainability plan beyond the funding period. This is often accomplished through community partnerships to develop local expertise to sustain the implementation once funding has ended. Sustainability is an area of priority for future studies.

6. I'm a Treatment Researcher: Implementation Science Isn't Relevant to Me

Answer: *False*. Implementation science can greatly inform a treatment researcher's work. For example, a treatment developer may be interested in ways to maximize the fit between his or her intervention and the community settings in which it will ultimately be delivered. This researcher could also look to the field of user-centered design (Lyon & Koerner, 2016), which is an approach to product development that focuses on gaining deep information about who will ultimately use the product, to design a treatment with long-term sustainability in existing service delivery systems. Implementation research often involves a partnership of treatment developers, health services researchers, and other disciplines (Proctor et al, 2009).

References

Bauer, M. S., Damschroder, L., Hagedorn, H., Smith, J., & Kilbourne, A. M. (2015). An introduction to implementation science for the non-specialist. *BMC Psychology, 3*, 32. https://doi.org/10.1186/s40359-015-0089-9

Becker, K., Nakamura, B. J., Young, J., & Chorpita, B. F. (2009). What better place than here, what better time than now? ABCT's burgeoning role in the dissemination and implementation of evidence-based practices. *the Behavior Therapist, 30*, 89-96.

Beidas, R. S., & Kendall, P. C. (2010). Training therapists in evidence-based practice: A critical review of studies from a systems-contextual perspective. *Clinical Psychology: Science and Practice, 17*(1), 1–30. https://doi.org/10.1111/j.1468-2850.2009.01187

Curran, G. M., Bauer, M., Mittman, B., Pyne, J. M., & Stetler, C. (2012). Effectiveness-implementation hybrid designs: Combining elements of clinical effectiveness and implementation research to enhance public health impact. *Medical Care, 50*(3), 217–226. https://doi.org/10.1097/MLR.0b013e3182408812

Lyon, A. R., & Koerner, K. (2016). User-centered design for psychosocial intervention development and implementation. *Clinical Psychology: Science and Practice, 23*(2), 180–200. https://doi.org/10.1111/cpsp.12154

Powell, B. J., Waltz, T. J., Chinman, M. J., Damschroder, L. J., Smith, J. L., Matthieu, M. M., … Kirchner, J. E. (2015). A refined compilation of implementation strategies: Results from the Expert Recommendations for Implementing Change (ERIC) project. *Implementation Science, 10*, 21. https://doi.org/10.1186/s13012-015-0209-1

Proctor, E. K., Landsverk, J., Aarons, G., Chambers, D., Glisson, C., & Mittman, B. (2009). Implementation research in mental health services: An emerging science with conceptual, methodological, and training challenges. *Administration and Policy in Mental Health, 36*(1), 24–34. https://doi.org/10.1007/s10488-008-0197-4

Proctor, E., Silmere, H., Raghavan, R., Hovmand, P., Aarons, G., Bunger, A., … Hensley, M. (2011). Outcomes for implementation research: Conceptual distinctions, measurement challenges, and research agenda. *Administration and Policy in Mental Health, 38*(2), 65–76. https://doi.org/10.1007/s10488-010-0319-7

Wiltsey Stirman, S., Kimberly, J., Cook, N., Calloway, A., Castro, F., & Charns, M. (2012). The sustainability of new programs and innovations: A review of the empirical literature and recommendations for future research. *Implementation Science, 7*, 17. https://doi.org/10.1186/1748-5908-7-17

Add up the number of correct questions and see where your score* falls below!

Score of 1–2

You're an implementation science newbie! You are relatively new to the rapidly developing and exciting field of implementation science. Your implementation science score suggests that you might enjoy perusing some online resources, such as this primer on implementation science (https://cancercontrol.cancer.gov/is/) or the Consortium for Implementation Science (http://consortiumforis.org). You can also check out some recently published articles in Implementation Science, such as "An introduction to implementation science for the non-specialist" by Bauer and colleagues (2015). Consider joining the ABCT Dissemination and Implementation Science SIG (http://societyforimplementationresearchcollaboration.org/dissig) to gain more exposure to the exciting world of implementation science!

Score of 3–4

Your implementation science IQ demonstrates that you have a solid grasp of implementation science principles and how they apply to psychological services and research. Consider continuing to advance your knowledge of IS in mental health by attending specialized conferences and applying for training opportunities, such as the Society for Implementation Research Collaboration, the NIH Annual Conference on the Science of Dissemination and Implementation Science, or the Training Institute for Dissemination and Implementation Research in Health (TIDIRH). If you are not already a member, considering joining the ABCT Dissemination and Implementation Science SIG (http://societyforimplementationresearchcollaboration.org/ dissig) to meet other like-minded colleagues and continue to develop your implementation science expertise!

Score of 5–6

Your implementation science IQ is off the charts! Your score suggests that you are an implementation science champion. If you don't already do so, consider sharing your expertise by joining the ABCT Dissemination and Implementation Science SIG (http://societyforimplementationresearchcollaboration.org/dissig). You may also benefit from advanced training opportunities, such as the Implementation Research Institute (http://iristl.org).

. . .

While writing this, Rinad Beidas was funded by K23 MH 099179 and Rebecca Stewart was funded by F32 MH103960.

Correspondence to Rinad Beidas, Ph.D., University of Pennsylvania, Department of Psychiatry, 3535 Market Street, Philadelphia, PA 19104; rbeidas@upenn.edu

ANSWER KEY

1. False
2. False
3. False
4. True
5. False
6. False

*Instrument not psychometrically validated—please interpret your scores with caution.

Feedback Systems to Support Implementation of Measurement-Based Care

Aaron R. Lyon, *University of Washington*

Cara C. Lewis, *Kaiser Permanente Washington Health Research Institute*

IT IS NOW WELL ESTABLISHED that evidence-based practices (EBP)—identified via rigorous empirical testing—are rarely used in routine community service settings with the frequency or integrity necessary to achieve their anticipated therapeutic effects (Balas & Boren, 2000; Institute of Medicine and National Research Council, 2014). Efforts to increase the use of EBP include the development and testing of discrete implementation strategies (Powell et al., 2015) as well as identifying relatively simple and scalable minimal interventions necessary for change (MINCs) that may encounter fewer barriers to adoption and eventual sustainment than more complex intervention protocols (Glasgow & Riley, 2013). The current paper describes findings from a comprehensive evaluation of a digital implementation strategy—measurement feedback systems—to support a candidate MINC, measurement-based care.

Measurement-Based Care

Measurement-based care (MBC) is the use of data collected throughout treatment to inform clinical care and drive collaborative decision-making between clinicians and service recipients (Scott & Lewis, 2015). MBC is generally synonymous with terms such as *routine outcome monitoring, patient-reported outcomes monitoring, outcome-informed therapy, and feedback-informed treatment* (Bickman, Lyon, & Wolpert, 2016). At their core, all of these practices focus on the collection of data and incorporation of those data into clinical decisions. Regardless of the label, a considerable body of evidence supports the effectiveness of MBC in enhancing intervention processes (e.g., improved patient–clinician relationships, client-centered services, service engagement) and treatment outcomes for adults and youth (Bickman, Kelley, Breda, de Andrade, & Riemer, 2011; Carlier et al., 2012; Cashel, 2002; Douglas et al., 2015; Jewell, Handwerk, Almquist, & Lucas, 2004; Rettew, Lynch, Achenbach, Dumenci, & Ivanova, 2009). In pharmacotherapy, MBC exerts its effect by expediting the rate at which clinicians increase medication doses and changes (Guo et al., 2015). In psychotherapy, MBC appears to quicken the rate at which clinicians focus session content on specific key topics (Douglas et al., 2015).

Due in part to its client-centeredness, MBC is also critical to achieving a precision medicine agenda in mental and behavioral health. Bickman, Lyon, and Wolpert (2016) recently described the role of MBC practices—and measurement feedback systems—in achieving "precision mental health" by generating sufficient psychosocial data to drive precision in initial assess-

ment, monitoring over time, and feedback to service providers and recipients. There is indeed a larger national movement toward value-based, or measurement-based, care with federal agencies such as the Centers for Medicare and Medicaid requiring that Physician Quality Reporting Systems be in use (Centers for Medicare & Medicaid Services, 2013). Furthermore, with behavioral health integration on the rise, MBC will facilitate cross-talk and coordination of care among providers and align with traditional medical approaches to routinely measuring vital signs at each visit.

Despite its demonstrated effectiveness, scalability, and alignment with contemporary health care movements, MBC is rarely used by most mental health clinicians. Studies have repeatedly underscored that practices such as initial assessment administration, ongoing monitoring of key problem domains, and incorporation of resulting data into practice occur rarely (Gilbody, House, & Sheldon, 2002; Hatfield & Ogles, 2004; Jensen-Doss et al., 2016; Lyon, Ludwig, et al., 2016; Palmiter, 2004). Although there are many reasons why MBC is not commonly used in practice, barriers such as the perceived difficulty of selecting, administering, and scoring instruments have been identified as common contributors (Connors, Arora, Curtis, & Stephan, 2015; Jensen-Doss & Hawley, 2010).

There has been a big increase in the number of scholarly articles published on topics related to D&I in the last decade. To what do you attribute this increase?

Dr. Chorpita: It has been more than 20 years since the APA Task Force on Psychological Intervention Guidelines and the Task Force on Promotion and Dissemination of Psychological Procedures revolutionized how we think about evidence-based treatments in mental health. During this time, researchers, policymakers, and many communities have realized that there is still a significant gap between what is known in treatment research and what is producing a public health benefit. It naturally raises questions about why this significant investment in research has not yielded the expected return, and there are now new funding lines, journals, policy organizations and workgroups, and academic positions dedicated to answering this socially important question. It's my opinion that closing that gap is the responsibility of our current generation of researchers—that is, those of us who stand on the shoulders of researchers who developed and tested treatments for the past 50 years. ABCT has an incredible legacy, but its members now have an incredible responsibility.

Dr. Garland: The increased attention to D&I seems like a natural evolution from the clinical research which significantly advanced development and testing of efficacious interventions. D&I evolved to some extent out of Health Services research, which has a similar trans-disciplinary history. As we all recognized the real challenges of broad adoption and effective implementation of those interventions, the explicit attention to D&I research gained prominence. The researchers, policymakers, and practitioners who were highlighting the gap between clinical research and actual community-based practice were effective in driving the ascent of D&I research. Structural or institutional developments, such as the establishment of the Implementation Science journal and specific review committees within NIH certainly helped to build research in the field.

Dr. Hanson: Rock star researchers—and I'm totally sincere about this. There is an incredible passion and dedication among the D/I researchers I've met over the past few years, including those earlier in their careers, as well as mid-level academicians, and senior scientists who have dedicated so much of their career to mentoring others (e.g., Greg Aarons, Enola Proctor, John Landsverk, Sonja Schoenwald, Patti Chamberlain, Brian Mitman). There are too many to name individually (and I wouldn't want to leave anyone out), but I believe they are making incredible contributions and have helped fuel the interest in D/I research and the significant jump in publications.

D&I Spotlight Interviews: **http://www.abct.org/docs/PastIssue/40n7sup.pdf**

Measurement Feedback Systems

Digital technologies that can support selection, administration, scoring, interpretation, and feedback about assessments of symptoms and functioning reflect a key implementation strategy for the large-scale use of MBC in community contexts (Lyon & Lewis, 2016). Most technologies with these capabilities may be classified as measurement feedback systems (MFS)—digital technologies with the ability to capture service recipient data from regular assessment of treatment progress (e.g., functional outcomes, symptom changes) or processes (e.g., therapeutic alliance, services delivered) and then deliver that information to clinicians (Bickman, 2008). Recent findings suggest that short-term training plus access to digital MFS can result in significant and sustained improvements in adult (Persons, Koerner, Eidelman, Thomas, & Liu, 2016) and youth-focused (Lyon, Pullmann, et al., 2017) clinicians' use of MBC practices.

Health Information Technologies: Academic and Commercial Evaluation

Despite growing attention to MFS in mental and behavioral health, there have been no efforts to systematically identify and evaluate these technologies. This has inhibited information and idea sharing and led to potentially redundant development efforts across teams. The Health Information Technologies: Academic and Commercial Evaluation (HIT-ACE) methodology reflects a general approach to the systematic evaluation of classes of digital technologies in health care (Lyon, Lewis, Melvin, et al., 2016), which our research team has recently applied to MFS. The HIT-ACE methodology explicitly incorporates technologies from the commercial sector where products are often highly innovative, but with little empirical evidence, and from the academic sector where products are typically slow to reach the marketplace (if at all). The primary goal of HIT-ACE is to evaluate the full landscape of a given class of technology across four phases: (1) Coding commercial and academic materials, (2) Developer/purveyor

interviews, (3) Linking digital technology capabilities to putative implementation mechanisms, and (4) Experimental testing of capabilities and mechanisms (described briefly below; see Lyon, Lewis, Melvin, et al., 2016, for more detail). Figure 1 displays this full process.

Phase 1: Coding Materials

The first phase of HIT-ACE is intended to produce a user-friendly and relatively inexpensive synthesis of a well-specified technology space in a way that highlights the academic and commercial gaps. It involves identifying all available examples of the target technology, associated information (typically websites but sometimes peer-reviewed articles are available), and development and application of a theory-driven coding scheme to describe its capabilities. Systematic searches of the academic literature and commercial websites (using common online search engines) are completed in addition to snowball sampling using existing professional networks and emails to experts (i.e., researchers, digital technology developers, users). Relevant theories and frameworks used to guide the development of the coding scheme include those focused on (a) developing compelling and effective products, such as user-centered design (Courage & Baxter, 2004); (b) the ways in which a technology (e.g., MFS) can facilitate implementation of effective clinical practices (e.g., MBC); and (c) the intended functions of the target technology. For the third type of framework, when applied to MFS, feedback theories (e.g. (Kluger & DeNisi, 1996; Riemer, Rosof-Williams, & Bickman, 2005) are among the most relevant.

Phase 2: Developer Interviews

Through semistructured interviews with system developers or purveyors, HIT-ACE Phase 2 confirms Phase 1 coding results and gathers more detailed information about capabilities, development processes, and implementation procedures. Because many of these systems emerge from the commercial sector, this phase is necessary because the websites that yield the data gleaned from Phase 1 typically provide limited consumer-targeted information. Prior to conducting Phase 2 interviews, Phase 1 coding summaries are distributed to respondents for review in order to facilitate clarification and correction of the information collected.

Phase 3: Linking Capabilities to Implementation Mechanisms

With the constantly evolving technological landscape there is seemingly limitless potential for the capabilities of these digital technologies. However, parsimonious design is typically considered to be critical to creating engaging and effective interfaces (Norman, 1988). In order to hone development of the key capabilities that support implementation of the target EBP, the mechanisms through which the capabilities exert their effect must be identified. Phase 3 aims to reveal putative mechanisms and associated capabilities. To

do this, it incorporates a Discovery and Linking Process that first identifies mechanisms and then links through to the capabilities identified and confirmed in Phases 1 and 2.

Phase 4: Testing Capabilities and Mechanisms

The final phase of HIT-ACE addresses questions about the specific, causal impact of a technology's capabilities on mechanisms linked in Phase 3. This is accomplished via a series of microtrials, defined as rapid tests of the effects of well-defined manipulations (e.g., of a technology's capabilities) on proximal outcomes or mechanisms, such as provider practice changes (Howe, Beach, & Brody, 2010). The results of these tests would reveal core capabilities necessary to drive implementation of the EBP.

Summary of Key MFS Phase 1 HIT-ACE Findings

Here, we describe the primary findings from the application of first phase of HIT-ACE to MFS. These findings are presented in more detail in Lyon, Lewis, Boyd, et al., (2016). Phase 1 of the HIT-ACE methodology generates a coding system, which in this case produced 56 capabilities (categories included: feedback, data, customizability, tracking) and characteristics (categories included: technology [e.g., compliance with technology standards], training/technical support, administration and use, system acquisition, and accessibility). Capabilities were distinguished from characteristics in that capabilities were defined as the system's ability to perform or achieve certain actions while characteristics were other distinguishing traits, qualities, or properties. Results from the HIT-ACE informed search process yielded 49 unique MFS and suggested relatively linear grown since the first systems emerged in the mid-1990s.

During the review, systems were only given "credit" for a particular capability or characteristic when the materials describing it (i.e., academic articles or commercial websites) explicitly indicated its presence. Findings surrounding MFS capabilities and characteristics revealed substantial variability with only 12 of the 56 identified in at least 50% of the systems reviewed. Although HIT-ACE does not make any assumptions about the criticality of capabilities based on their frequency of occurrence, some of the most common capabilities included: (a) tracking standardized outcomes (94%), (b) being cloud-based (84%), (c) having a library of measures to choose from (72%), (d) displaying outcomes graphically (69%), (e) generating summary reports (69%), and (f) aggregating data at multiple levels (61%). Interestingly, very few MFS were integrated into electronic health records (n = 2 [i.e., 4%]). More specific exploration about the nature of data aggregation capabilities (f above) indicated that it was most common for systems to allow for aggregation of multiple data points within a single service recipient (29% of all systems), followed by service site or system-level aggregation (23%), aggregation at the provider or caseload level (14%), and aggregation across multiple providers (e.g., within a treatment team).

Discussion

The Phase 1 HIT-ACE findings described above document what appear to be the most common features of MFS technologies in mental and behavioral health. The prototypical MFS tracks standardized outcomes—drawn from a library of measures—via a cloud-based interface and graphs outcomes, often in summary reports. Data aggregation is also the norm, although there is substantial variability surrounding level of aggregation. Below, we discuss the implications of a subset of these findings, as well as avenues for further research.

Standardized (and Individualized) Assessment

The vast majority of MFSs (94%) track standardized outcomes. However, a much smaller number (29%) have the ability to track individualized outcomes. While standardized (a.k.a., nomothetic) assessment focused on interindividual information that facilitates comparison of a client to the larger population of clients, individualized (a.k.a., idiographic) assessment focuses on intra-individual variability, which allows a client to be compared to themselves (most frequently over time; Lyon, Connors, et al., 2017). The emphasis on standardized assessment in MFS is consistently the overall orientation of the mental and behavioral health field toward standardized assessment in MBC, but may overlook the value of individualized approaches. This is unfortunate considering the growing body of work that supports the value of individualized progress monitoring in practice. For instance, recent studies have indicated that clinicians find individualized assessment approaches to be at least as useful as standardized approaches in their practice (e.g., Connors et al., 2015; Lyon, Ludwig, et al., 2016). In fact, in head-to-head comparisons of standardized and individualized assessments, a national sample of mental health clinicians showed a strong preference for individualized methods (Jensen-Doss et al., under review). One recent study of youth service recipient perspectives also documented a preference for individualized assessment (Duong, Lyon, Ludwig, Wasse, & McCauley, 2016). As individualized assessment approaches (Weisz et al.,

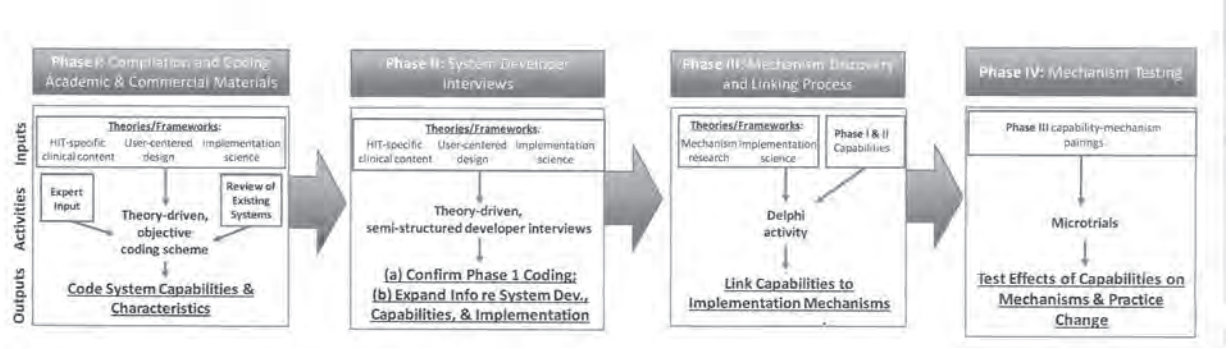


Figure 1. Phases of HIT-ACE methodology
Figure originally published in Lewis et al. (2016). Health Information Technologies - Academic and Commercial Evaluation (HIT-ACE) methodology: Description and application to clinical feedback systems. *Implementation Science, 11*(1), 128.

2011) are increasingly integrated into clinical trials of mental health interventions, MFS may be wise to follow suit and make this capability more accessible to practitioners.

Graphical Feedback

Sixty-nine percent of the systems reviewed provided graphical feedback. This is encouraging, that visual feedback improves the likelihood that the feedback will be remembered (Miller & Watkins, 2010) and that high-quality feedback may increase the potency of MBC. Nevertheless, while visualizing data is critical, effective data visualizations can be notoriously elusive (Chen, 2010) and the quality of the graphical feedback actually displayed by MFS technologies is largely unknown. Future MFS research should focus on maximizing the effectiveness and interpretability of feedback through unambiguous visualizations.

Data Aggregation

Although well over half (61%) of MFS had the ability to aggregate data, these capabilities appear somewhat limited. In particular, with only 23% allowing for system-level aggregation and only 14% allowing for provider-level aggregation, as a whole these technologies appear to have only a limited ability to support implementation strategies such as audit and feedback. Audit and feedback is an evidence-based process through which individual or system-level performance is assessed and compared to targets to facilitate adherence to specified professional standards (Ivers et al., 2012). Data aggregation is a critical piece of this, either to provide a source of potential standards (i.e., system-level aggregation) or to allow for an individually focused feedback process (i.e., individual level). This may be unfortunate, given that the MFS have often been championed based, in part, on their ability to serve as a foundation upon which newly implemented, innovative services may be evaluated.

Future Directions

Our team is continuing to pursue subsequent phases of the HIT-ACE method in our review of MFS to support MBC in mental and behavioral health. This includes analysis of Phase 2 developer interviews focused on development and implementation processes. As one component, we will evaluate the extent to which principles of user-centered design were explicitly considered when developing each system. We will also be able to report on the extent to which developers consider the implementation context and key outcomes during the development process. Furthermore, based on the linear growth we have seen over the past two decades, we expect that six to seven new systems have likely emerged since the original search concluded in December of 2014. Digital technologies progress rapidly and an updated search may be necessary as the HIT-ACE MFS project continues. Additional important directions for research include applying HIT-ACE in additional service sectors or to different platforms such as electronic health records. Finally, although MFS are considered an implementation strategy, they themselves require additional strategies to support their sustained use. More work is needed to evaluate what constellation of strategies may optimize the use of these technologies.

Application to other sectors. Although the current project focused exclusively on MFS in mental and behavioral health, technologies that support practice changes are plentiful across human service sectors ranging from education (e.g., May et al., 2003) to dentistry (e.g., Hill, Stewart, & Ash, 2010). Despite being developed for use within health care, we anticipate that most elements of the HIT-ACE methodology are likely to generalize to other sectors. Out of the three theoretical domains that provide the foundation for Phase 1 coding, implementation and user-centered design models or frameworks are likely to be relevant to a wide range of technologies. Feedback theories, on the other hand, may be replaced with other frameworks specific to the function of the digital technology, based on the application. For example, for technologies designed primarily to facilitate information sharing among professionals or between providers and patients, communication theories (e.g., Miller, 2002) may be the most appropriate. Nevertheless, there are numerous applications of HIT-ACE that may continue to prominently feature feedback theories. For example, primary and secondary schools in the United States frequently use data systems to track student academic achievement and, increasingly, student behavior (May et al.). The ways in which feedback to educators is supported by these technologies would be highly relevant to the application of HIT-ACE to this space.

Implementing the implementation strategy. Although we conceptualize MFS as a key strategy to support MBC implementation, we simultaneously acknowledge that MFS alone would not be sufficient for full integration and sustainment. Recent studies highlight the importance of additional strategies such as training to improve attitudes and provider self-efficacy (e.g., Edbrooke-Childs, Wolpert, & Deighton, 2016; Willis, Deane, & Coombs, 2009) directly incentivizing MBC (Hatfield & Ogles, 2007); identifying and utilizing local champions (Boswell, Kraus, Miller, & Lambert, 2015; Gleacher et al., 2016; Marty, Rapp, McHugo, & Whitley, 2008); engaging leadership (e.g., Steinfeld, Franklin, Mercer, Fraynt, & Simon, 2016; Gleacher et al., 2016; Saeed, Bloch, & Silver, 2015); adjusting the infrastructure (Borntrager & Lyon, 2015); and providing technical assistance. More work is needed to determine the key set of strategies to support MFS and MBC implementation.

Conclusion

MBC is being touted as a key MINC for behavioral health, with consistent and robust findings that MBC-informed treatment outperforms usual care, often with large effects. Despite these findings—and an associated rise in policies to encourage MBC—few clinicians integrate MBC into their practice. However, exciting advances in technology have revealed MFS as a key strategy for supporting MBC implementation. With the majority of MFS coming from the commercial sector, and relatively little empirical work to guide their selection, we generated HIT-ACE as a methodology to guide the compilation and evaluation of digital technologies in health care. More work is needed to inform future MFS development and optimize MBC implementation with an eye toward exploring mechanisms of change.

References

Balas, E. A., & Boren, S. A. (2000). Managing clinical knowledge for health care improvement. *Yearbook of Medical Informatics 1*, 65-70.

Bickman, L. (2008). A measurement feedback system (MFS) is necessary to improve mental health outcomes. *Journal of the American Academy of Child and Adolescent Psychiatry, 47*(10), 1114-1119. doi:10.1097/CHI.0b013e3181825af8

Bickman, L., Kelley, S. D., Breda, C., de Andrade, A. R., & Riemer, M. (2011). Effects of routine feedback to clinicians on mental health outcomes of youths: Results of a randomized trial. *Psychiatrics Services, 62*(12), 1423-1429. doi: 10.1176/appi.ps.002052011

Bickman, L., Lyon, A. R., & Wolpert, M. (2016). Achieving precision mental health through effective assessment, monitoring, and feedback processes: Introduction to the Special Issue. *Administration and Policy in Mental Health and Mental Health Services Research, 43*(3), 271-276. doi:10.1007/s10488-016-0718-5

Borntrager, C., & Lyon, A. R. (2015). Monitoring client progress and feedback in school-based mental health. *Cognitive Behavioral Practice, 22*(1), 74-86. doi: 10.1016/j.cbpra.2014.03.007

Boswell, J. F., Kraus, D. R., Miller, S. D., & Lambert, M. J. (2015). Implementing routine outcome monitoring in clinical practice: Benefits, challenges, and solutions. *Psychotherapy Research, 25*(1), 6-19. doi:10.1080/10503307.2013.817696

Carlier, I. V., Meuldijk, D., van Vliet, I. M., van Fenema, E. M., van der Wee, N. J., & Zitman, F. G. (2012). Empirische evidence voor de effectiviteit van routine-outcome monitoring; een literatuuronderzoek [Empirical evidence for the effectivenessof Routine Outcome Monitoring. A study of the literature]. *Tijdschrift voor Psychiatre, 54*(2), 121-128.

Cashel, M. (2002). Child and adolescent psychological assessment: Current clinical practices and the impact of managed care. *Professional Psychology: Research and Practice, 33*(5), 446-453. doi:10.1037/0735-7028.33.5.446

Centers for Medicare & Medicaid Services (2013). *Physician Quality Reporting System (PQRS) Overview*. Retrieved from https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/PQRS/Downloads/PQRS_OverviewFactSheet_2013_08_06.pdf

Chen, C. (2010). Information visualization. Wiley Interdisciplinary Reviews: *Computational Statistics, 2*(4), 387-403. doi:10.1002/wics.89

Connors, E. H., Arora, P., Curtis, L., & Stephan, S. H. (2015). Evidence-based assessment in school mental health. *Cognitive and Behavioral Practice, 22*(1), 60-73. doi: 10.1016/j.cbpra.2014.03.008

Courage, C., & Baxter, K. (2004). *Understanding your users: A practical guide to user requirements methods, tools, and techniques.* San Francisco, CA: Morgan Kaufmann Publishers.

Douglas, S. R., Jonghyuk, B., de Andrade, A. R., Tomlinson, M. M., Hargraves, R. P., & Bickman, L. (2015). Feedback mechanisms of change: How problem alerts reported by youth clients and their caregivers impact clinician-reported session content. *Psychotherapy Research, 25*(6), 678-693. doi:10.1080/10503307.2015.1059966

Duong, M. T., Lyon, A. R., Ludwig, K., Wasse, J. K., & McCauley, E. (2016). Student perceptions of the acceptability and utility of standardized and idiographic assessment in school mental health. *International Journal of Mental Health Promotion, 18*(1), 49-63. doi:10.1080/14623730.2015.1079429

Edbrooke-Childs, J., Wolpert, M., & Deighton, J. (2016). Using Patient Reported Outcome Measures to Improve Service Effectiveness (UPROMISE): Training clinicians to use outcome measures in child mental health. *Administration and Policy in Mental Health and Mental Health Services Research, 43*(3), 302-308. doi:10.1007/s10488-014-0600-2

Gilbody, S. M., House, A. O., & Sheldon, T. A. (2002). Psychiatrists in the UK do not use outcomes measures. National survey. *British Journal of Psychiatry, 180*, 101-103.

Glasgow, R. E., & Riley, W. T. (2013). Pragmatic measures: What they are and why we need them. *American Journal of Preventative Medicine, 45*(2), 237-243. doi: 10.1016/j.amepre.2013.03.010

Gleacher, A. A., Olin, S. S., Nadeem, E., Pollock, M., Ringle, V., Bickman, L., . . . Hoagwood, K. (2016). Implementing a measurement feedback system in community mental health clinics: A case study of multilevel barriers and facilitators. *Administration and Policy in Mental Health and Mental Health Services Research, 43*(3), 426-440. doi: 10.1007/s10488-015-0642-0

Guo, T., Xiang, Y. T., Xiao, L., Hu, C. Q., Chiu, H. F., Ungvari, G. S., . . . Wang, G. (2015). Measurement-based care versus standard care for major depression: A randomized controlled trial with blind raters. *American Journal of Psychiatry, 172*(10), 1004-1013. doi:10.1176/appi.ajp.2015.14050652

Hatfield, D. R., & Ogles, B. M. (2004). The use of outcome measures by psychologists in clinical practice. *Professional Psychology: Research and Practice, 35*(5), 485-491. doi:10.1037/0735-7028.35.5.485

Hatfield, D. R., & Ogles, B. M. (2007). Why some clinicians use outcome measures and others do not. *Administration and Policy in Mental Health and Mental Health Services Research, 34*(3), 283-291. doi:10.1007/s10488-006-0110-y

Hill, H. K., Stewart, D. C., & Ash, J. S. (2010). Health information technology systems profoundly impact users: A case study in a dental school. *Journal of Dental Education, 74*(4), 434-445.

Howe, G. W., Beach, S. R., & Brody, G. H. (2010). Microtrial methods for translating gene-environment dynamics into preventive interventions. *Prevention Science, 11*(4), 343-354. doi:10.1007/s11121-010-0177-2

Institute of Medicine (IOM) and National Research Council. (2014). *Strategies for Scaling Effective Family-Focused Preventive Interventions to Promote Children's Cognitive, Affective, and Behavioral Health: Workshop Summary*. M. Patlak (Ed.) doi:10.17226/18808

Ivers, N., Jamtvedt, G., Flottorp, S., Young, J. M., Odgaard-Jensen, J., French, S. D., . . . Oxman, A. D. (2012). Audit and feedback: Effects on professional practice and healthcare outcomes. *Cochrane Database Syst Rev* (6), CD000259. doi: 10.1002/14651858.CD000259.pub3

Jensen-Doss, A., Haimes, E. M. B., Smith, A. M., Lyon, A. R., Lewis, C. C., Stanick, C. F., & Hawley, K. M. (2016). Monitoring treatment progress and providing feedback is viewed favorably but rarely used in practice. *Administration and Policy in Mental Health and Mental* Health Services Research. Advance online publication, 1-14. doi: 10.1007/s10488-016-0763-0

Jensen-Doss, A., & Hawley, K. M. (2010). Understanding barriers to evidence-based assessment: Clinician attitudes toward standardized assessment tools. *Journal of the American Academy of Child and Adolescent Psychiatry, 39*(6), 885-896. doi: 10.1080/15374416.2010.517169

Jensen-Doss, A., Smith, A. M., Becker, E. M., Ringle, V., Walsh, L., Nada, M., . . . Lyon, A. R. (under review). *Individualized progress measures are more acceptable to clinicians than standardized progress measures: Results of a national survey.*

Jewell, J., Handwerk, M., Almquist, J., & Lucas, C. (2004). Comparing the validity of clinician-generated diagnosis of conduct disorder to the diagnostic interview schedule for children. *Journal of the American Academy of Child and Adolescent Psychiatry, 33*(3), 536-546. doi:10.1207/s15374424jccp3303_11

Kluger, A. N., & DeNisi, A. (1996). The effects of feedback interventions on performance: A historical review, a meta-analysis, and a preliminary feedback intervention theory. *Psychological Bulletin, 119*(2), 254-284. doi:10.1037/0033-2909.119.2.254

Lewis, C. C., Lyon, A. R., Melvin, A., Boyd, M., Nicodimos, S., Liu, F., & Jungbluth, N. (2016). Health Information Technologies - Academic and Commercial Evaluation (HIT-ACE) methodology: Description and application to clinical feedback systems. *Implementation Science, 11*(1), 128. doi 10.1186/s13012-016-0495-2

Lyon, A. R., Connors, E., Jensen-Doss, A., Landes, S. J., Lewis, C. C., McLeod, B. D., . . . Weiner, B. J. (2017). Intentional research design in implementation sci-

ence: Implications for the use of nomothetic and idiographic assessment. Translational Behavioral Medicine. [Advance online publication]. doi:10.1007/s13142-017-0464-6

Lyon, A. R., & Lewis, C. C. (2016). Designing health information technologies for uptake: Development and implementation of measurement feedback systems in mental health service delivery. Introduction to the Special Section. *Administration and Policy in Mental Health and Mental Health Services Research, 43*(3), 344-349. doi:10.1007/s10488-015-0704-3

Lyon, A. R., Lewis, C. C., Boyd, M. R., Hendrix, E., & Liu, F. (2016). Capabilities and characteristics of digital measurement feedback systems: Results from a comprehensive review. *Administration and Policy in Mental Health and Mental Health Services Research, 43*(3), 441-466. doi:10.1007/s10488-016-0719-4

Lyon, A. R., Lewis, C. C., Melvin, A., Boyd, M., Nicodimos, S., Liu, F. F., & Jungbluth, N. (2016). Health information technologies-academic and commercial evaluation (HIT-ACE) methodology: Description and application to clinical feedback systems. *Implementation Science, 11*(1), 128. doi:10.1186/s13012-016-0495-2

Lyon, A. R., Ludwig, K., Wasse, J. K., Bergstrom, A., Hendrix, E., & McCauley, E. (2016). Determinants and functions of standardized assessment use among school mental health clinicians: a mixed methods evaluation. *Administration and Policy in Mental Health and Mental Health Services Research, 43*(1), 122-134. doi:10.1007/s10488-015-0626-0

Lyon, A. R., Pullmann, M. D., Whitaker, K., Ludwig, K., Wasse, J. K., & McCauley, E. (2017). A digital feedback system to support implementation of measurement-based care by school-based mental health clinicians. *Journal of the American Academy of Child and Adolescent Psychiatry*. [Advance online publication], 1-12. doi: 10.1080/15374416.2017.1280808

Marty, D., Rapp, C., McHugo, G., & Whitley, R. (2008). Factors influencing consumer Outcome Monitoring in implementation of evidence-based practices: Results from the National EBP Implementation Project. *Administration and Policy in Mental Health and Mental Health Services Research, 35*(3), 204-211. doi:10.1007/s10488-007-0157-4

May, S., Ard III, W., Todd, A. W., Horner, R. H., Glasgow, A., & Sugai, G. (2003). *School-wide information system.* Educational and Community Supports, University of Oregon, Eugene.

Miller, J. A., & Watkins, M. W. (2010). The use of graphs to communicate psychoeducational test results to parents. *Journal of Applied School Psychology, 26*(1), 1-16. doi:10.1080/15377900903175911

Miller, K. (2002). *Communication theories: Perspectives, processes, and contexts*. Boston, MA: McGraw-Hill.

Norman, D. A. (1988). *The design of everyday things*. New York, NY: Basic Books.

Palmiter, D. J., Jr. (2004). A survey of the assessment practices of child and adolescent clinicians. *American Journal of Orthopsychiatry, 74*(2), 122-128. doi:10.1037/0002-9432.74.2.122

Persons, J. B., Koerner, K., Eidelman, P., Thomas, C., & Liu, H. (2016). Increasing psychotherapists' adoption and implementation of the evidence-based practice of progress monitoring. *Behaviour Research and Therapy, 76,* 24-31. doi:10.1016/j.brat.2015.11.004

Powell, B. J., Waltz, T. J., Chinman, M. J., Damschroder, L. J., Smith, J. L., Matthieu, M. M., . . . Kirchner, J. E. (2015). A refined compilation of implementation strategies: Results from the Expert Recommendations for Implementing Change (ERIC) project. *Implementation Science, 10*, 21. doi:10.1186/s13012-015-0209-1

Rettew, D. C., Lynch, A. D., Achenbach, T. M., Dumenci, L., & Ivanova, M. Y. (2009). Meta-analyses of agreement between diagnoses made from clinical evaluations and standardized diagnostic interviews. *International Journal of Methods in Psychiatric Research, 18*(3), 169-184. doi:10.1002/mpr.289

Riemer, M., Rosof-Williams, J., & Bickman, L. (2005). Theories related to changing clinician practice. *Child and Adolescent Psychiatric Clinics of North America, 14*(2), 241-254, viii. doi:10.1016/j.chc.2004.05.002

Saeed, S. A., Bloch, R. M., & Silver, S. (2015). Role of leadership in narrowing the gap between science and practice: Improving treatment outcomes at the systems level. *Psychiatric Quarterly, 86*(3), 311-323. doi:10.1007/s11126-015-9372-4

Scott, K., & Lewis, C. C. (2015). Using measurement-based care to enhance any treatment. *Cognitive and Behavioral Practice, 22*(1), 49-59. doi:10.1016/j.cbpra.2014.01.010

Steinfeld, B., Franklin, A., Mercer, B., Fraynt, R., & Simon, G. (2016). Progress monitoring in an integrated health care system: Tracking behavioral health vital signs. *Administration and Policy in Mental Health and Mental Health Services Research, 43*(3), 369-378. doi:10.1007/s10488-015-0648-7

Weisz, J. R., Chorpita, B. F., Frye, A., Ng, M. Y., Lau, N., Bearman, S. K., . . . Research Network on Youth Mental Health. (2011). Youth top problems: using idiographic, consumer-guided assessment to identify treatment needs and to track change during psychotherapy. *Journal of Consulting and Clinical Psychology, 79*(3), 369-380. doi:10.1037/a0023307

Willis, A., Deane, F. P., & Coombs, T. (2009). Improving clinicians' attitudes toward providing feedback on routine outcome assessments. International *Journal of Mental Health Nursing, 18*(3), 211-215. doi:10.1111/j.1447-0349.2009.00596.x

. . .

The research described in this publication was supported in part by funding from the Seattle Children's Research Institute's Center for Child Health, Behavior, and Development. Additional funding was provided by grants K08 MH095939 (Lyon) and R01 MH103310 (Lewis) awarded from the National Institute of Mental Health.

Correspondence to Aaron Lyon, Ph.D., University of Washington Dept. of Psychiatry & Behavioral Sciences, Division Public Behavioral Health & Justice Policy, 2815 Eastlake Avenue East, Suite 200, Seattle, WA 98102; lyona@uw.edu.

Defining the "Pragmatic" Measures Construct: A Stakeholder-Driven Approach

Heather Halko, *University of Montana*

Cameo Stanick, *Hathaway-Sycamores Child and Family Services, Pasadena, CA*

Byron Powell, *University of North Carolina at Chapel Hill*

Cara Lewis, *Kaiser Permanente-Group Health Research Institute, Seattle*

ALTHOUGH DISSEMINATION and implementation science has made progress that will aid in addressing the research-to-practice gap (e.g., 60+ theories, models, frameworks, [Tabak, Khoong, Chambers, & Brownson, 2012]; a compilation of implementation strategies, [Powell et al., 2015]; training approaches to build capacity [Proctor & Chambers, 2016]), poor quality and impractical measures inhibit our ability to advance key aims (Grimshaw et al., 2006). For instance, despite the existence of psychometrically valid and reliable measures of organizational context (Glisson et al., 2008; Lewis, Weiner, Stanick, & Fischer, 2015), the ability of stakeholders to leverage such measures to inform whether and how to proceed with an implementation is far from being realized. In fact, implementation science measures are rarely employed independently by stakeholders, despite their potential for informing the implementation of EBPs within community practice (Stanick et al., 2017). This could be attributed to several factors, including the fact that implementation measures are often designed within a research setting without specific attention to whether they are practical (i.e., pragmatic) for community use; and measures can be lengthy, expensive, and have complicated scoring procedures. If measures are not made to be more pragmatic, stakeholders (e.g., practitioners, policy/decision makers) will continue to struggle to take advantage of the best science to inform their implementation of EBPs (Glasgow & Riley, 2013). Therefore, creating and innovating tools to support the process by which invested stakeholders implement EBPs in real-world settings is a critical task for implementation science within behavioral health.

"Pragmatic measures," originally conceptualized by Glasgow and Riley (2013), is a relatively new idea or construct that pushes us to consider measure qualities beyond the traditional psychometric characteristics to ensure their utility for stakeholders on the ground. Initially conceptualized for clinical outcome measures, Glasgow and Riley (2013) stated that pragmatic measures should be "relevant to stakeholders" and "feasible to use in most real-world settings to assess progress" (p. 237), and added that pragmatic measures would be important to facilitating quality improvement and progress on public health goals, such as improved use of EBPs in community care. They identified several specific criteria as "required" characteristics of a pragmatic measure: important to stakeholders, low burden for respondents and staff, actionable, and sensitive to change. While these criteria have clear face validity, they were generated primarily through a review of literature, but not informed by stakeholder input or feedback. It remains unclear whether stakeholders would agree that these criteria define pragmatic measures or if they are an inclusive set of pragmatic measure qualities.

What follows is a brief summary of our methods for attempting to define the pragmatic construct utilizing stakeholders to operationalize the definition, as it relates to implementation measurement. Our goal is to generate reliable, valid, stakeholder-driven rating criteria for assessing the construct. With a pragmatic measures rating criteria in place, measure developers could be cognizant of these criteria in their initial development work and researchers conducting systematic reviews could assess pragmatic measure strength. We are currently engaged in a multiphase process, including (1) a systematic literature review and stakeholder interviews, (2) a concept mapping task, (3) a modified Delphi activity, and (4) test-retest reliability and known-groups validity testing, to achieve our goal. Construction of pragmatic measures rating criteria will inform a long-term goal, defined by Lewis and colleagues (2015), to develop a repository of measures that reflects, a "comprehensive battery of reliable, valid, and pragmatic measures for researchers and stakeholders to advance both implementation science and practice" (p. 2).

Literature Review and Stakeholder Interviews

To ensure the pragmatic measures construct reflects the best available science, a systematic review of the literature was completed to identify a list of terms related to the pragmatic measures construct across diverse fields utilizing the PsycINFO and PubMed databases. Titles and abstracts were reviewed, 11 potentially relevant articles were examined, and 8 articles were identified as describing aspects of pragmatic as an assessment construct. A close review of these articles generated a list of 37 terms/phrases related to or synonymous with pragmatic or practical measurement (e.g., brief, low cost, easy to interpret).

Interviews were conducted with a panel of international stakeholders to ensure the pragmatic rating criteria were stakeholder-driven and informed. Purposeful sampling techniques (Palinkas et al., 2015) were used to recruit seven stakeholders with implementation science expertise from multiple service contexts and roles. Interview questions were drafted utilizing the literature review described above and in consultation with Palinkas (personal communication, May, 2015), a qualitative and implementation science expert. Interview transcripts were coded using a grounded theory and emergent-themes coding protocol (Strauss & Corbin, 1998), as well as a constant comparative approach to uncover similarities and differences between the interview materials and results of the literature search (Benton, 1991; Morgan, 1993). Qualitative coding results produced 39 domains of pragmatic measures (e.g., short), 11 more specific dimensions of those domains (e.g., less than 15 minutes), and 16 antonyms of pragmatic as it related to measurement (e.g., time consuming).

The terms/phrases from the literature review and stakeholder interviews were combined to generate a final list of terms describing the pragmatic measures construct. Duplicative and/or confusing terms/phrases were removed, and lengthy phrases were edited to approximately four

words or less. A final list of 47 potential pragmatic rating criteria (terms/phrases) were identified, with 19 criteria identified through both the literature review and stakeholder interviews. Importantly, 10 criteria were uniquely derived through stakeholder interviews.

Concept Mapping Task

A concept mapping approach (Kane & Trochim, 2007) was used to further operationalize and clarify the internal structure of the pragmatic measures construct. Stakeholders (N = 24) were asked to sort the 47 criteria defining the pragmatic measures construct into distinct piles that made sense to them using a web-based platform, Concept Systems Global MAX™. Four clusters emerged that meaningfully grouped the criteria into conceptually distinct categories: acceptable (n = 7 criteria), compatible (n = 6 criteria), easy (n = 19 criteria), and useful (n = 15 criteria).

During the concept mapping task, stakeholders were also asked to rate the clarity and importance of each of the 47 criteria on a 10-point scale (1 = *not at all clear/not at all important,* 10 = *incredibly clear/incredibly important*). Overall, results indicated that the mean ratings for each cluster were relatively high for both clarity (M = 7.06-7.86) and importance (M = 7.16-8.06). However, certain items were removed due to low importance ratings, or edited due to lack of clarity (i.e., ambiguous meaning of the term/phrase; see below).

Modified Delphi Task

A modified, multi-round Delphi task is a structured, iterative process used to transform expert opinion into group consensus (Michie et al., 2011). This approach was used to generate stakeholder consensus (i.e., 80% stakeholder agreement) on the priority of including certain terms/phrases in the rating criteria for the pragmatic measures construct. The research team pruned the criteria using information from the concept mapping task to generate a final list of 17 terms/phrases, which were entered into an online survey and distributed to stakeholder participants for the Delphi activities. Notably, terms/phrases within the final criteria list spread across each of the pragmatic rating criteria clusters: acceptable (n = 5 criteria), compatible (n = 2 criteria), easy (n = 8 criteria), and useful (n = 2 criteria).

During the first round of the modified Delphi task, stakeholders were asked (via online survey) to rate the relative importance of the pragmatic rating criteria (i.e., terms/phrases defining the pragmatic measures construct) by distributing 100 points across the terms/phrases within each cluster according to how important they believed those terms/phrases were to the associated cluster label (i.e., *acceptable, compatible, easy*, and *useful*). Stakeholders were then asked to distribute 100 points across all terms/phrases, regardless of cluster, to demonstrate how important they believed those terms/phrases were to the pragmatic construct of measurement. After the first round was complete, measures of central tendency and the interquartile ranges were calculated and included in the second round of the Delphi. That is, stakeholders were asked to distribute points again, but were provided the information on the first round of the task. Thus, if a stakeholder chose to assign points (out of 100) that fell outside of the interquartile range—effectively disagreeing with other stakeholders' ratings on the relative importance of that term to the category label or the pragmatic construct—they were asked to provide a reason for their choice. The qualitative responses provided by stakeholders during the second round were used to examine stakeholder attitudes about the pragmatic construct of measurement that differed from the majority opinion.

When participants were asked to rate the relative importance of criteria across all terms/phrases describing the pragmatic construct of measurement, ratings met consensus for all 17 criteria. That is, there was significant consensus within the stakeholder group on the degree of importance of each of the 17 terms provided. When

What are common misconceptions people have about D&I?

Dr. Chorpita: Well, I think there are many, but one of the more common ones I encounter is conflating dissemination with marketing. "Getting the word out" is not sufficient to produce system change. There is a much larger set of influences on whether an innovation takes hold and changes day-to-day practice. Even knowing that one treatment has a significant effect over another treatment, what Everett Rogers calls "relative advantage," is only one of at least a dozen factors that are relevant to whether that treatment gets adopted. So we need to broaden our strategies from simply messaging about relative advantage to attending to all the moving parts and discovering how behavior change works among the many members of service organizations—providers, supervisors, administrators. It's what ABCT has always been great at, but we need to expand our focus from changing symptoms to changing systems.

Dr. Dorsey: The most common misconception I run into is that people think D&I research is implementing a treatment in a usual-care setting (i.e., not a lab-based setting or in an efficacy trial). As my chair recently said (a brilliant social psychologist)—"I realized you're a methodologist!" Conducting a study in which a treatment is implemented in a usual-care setting (i.e., public mental health clinic; emergency room) is incredibly important for gaining experience that can inform D&I, but it isn't D&I research. Per the NIH definition, D&I research is the "study of methods to promote the integration of research findings and evidence into healthcare policy and practice." We're interested in the how, and the how often expands way beyond the individual provider and their training (probably the most second common misconception).

Dr. Garland: I think one common misconception is that successful dissemination and implementation is based solely on common sense, or tacit knowledge. Similarly, I think there is a perception that D&I is atheoretical. While the questions and challenges raised in D&I research are often very pragmatic, they can (and should) be informed by theory and research from across multiple fields and disciplines. We can learn a lot from descriptions of case studies, but I find it frustrating when such descriptions do not make an effort to frame the case study in terms of how it fits within theory and research on D&I.

D&I Spotlight Interviews: **http://www.abct.org/docs/PastIssue/40n7sup.pdf**

participants were asked to rate the relative importance of the pragmatic criteria within each cluster of the pragmatic measures construct, ratings showed similar consensus (16 of the 17 criteria met the 80% cut-off). For the one criterion that fell below the consensus cut-off ("easy to interpret"), the outlier scores were higher than the interquartile range. Thus, stakeholders believed that "easy to interpret" was an exceptionally important characteristic of pragmatic measures. Given the relative lack of clear variance on which of the 17 terms/phrases were most important to aspects of pragmatic measurement, knowledge from previous research phases, the research team, and an international advisory board were mobilized to determine which of the 17 criteria would progress into the next research phase.

Test-Retest Reliability and Known-Groups Validity Testing

Ulitimately, 11 terms/phrases were selected for inclusion in the final list of pragmatic measures rating criteria (e.g., *acceptable*, *uses accessible language,* etc.), which will be used to assess measures for their pragmatic strength. One unanticipated development in this work is that when finalizing the rating criteria, it became clear to us that certain criteria would be best applied by stakeholders themselves, when faced with a measure under considertation. Therefore, the pragmatic rating criteria have been divided into two categories: (a) those that can be applied to published measures and supporting literature by an objective observer (i.e., objective pragmatic rating criteria), and (b) those that should be applied by stakeholders when faced with the measure (i.e., stakeholder-facing pragmatic rating criteria).

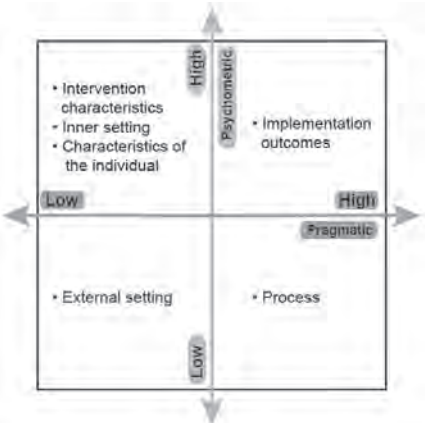


Figure 1. Psychometric-pragmatic grid
Note. Predictions of psychometric and pragmatic strength for measures assessing different implementation domains.
Figure originally published in Lewis, et al. (2015). Advancing implementation science through measure development and evaluation: A study protocol. *Implementation Science, 10*(1), 102.

The research team is currently in the process of establishing anchors for the objective pragmatic rating criteria (i.e., easy domain: uses accessible language; creates low assessor burden; brief; easy to interpret; acceptable domain: low cost). The rating scale anchor structure will mimic that used within the evidence-based assessment (EBA) psychometric criteria (Lewis, Stanick, et al., 2015), including definitions for rating the pragmatic quality of assessment measures on a specific domain (e.g., low cost) along a continuum: -1 (*poor*), 0 (*none/not applicable*), 1 (*minimal/emerging*), 2 (*adequate*), 3 (*good*), and 4 (*excellent*). These ratings will undergo psychometric testing (i.e., test-retesting, known groups validity) and revisions will be made by the investigative team, if necessary. The stakeholder-facing pragmatic rating criteria (acceptable domain: acceptable to staff and clients; offers relative advantage; easy domain: completed with ease; compatible domain: appropriate; useful domain: fits organizational activities; informs clinical or organizational decision-making) will also be defined using a similar scale; however, these criteria will be designed for stakeholder completion. The final step of this project is to combine the pragmatic rating criteria with updated EBA psychometric rating criteria and apply the full rating system to 450+ implementation science measures in a systematic review process to evaluate whether measures can be both psychometrically strong and pragmatic.

Discussion

The overall aim of this collection of studies was to establish a stakeholder-driven operationalization of the pragmatic measures construct. Through a systematic literature review and interviews with a panel of international stakeholders we generated the range of domains and dimensions that could comprise pragmatic measures. Utilizing stakeholder participants in each task, a concept mapping activity revealed the internal structure by putting forth conceptually distinct domains (acceptable, compatible, easy, and useful), while a modified Delphi activity provided consensus information regarding which terms/phrases were most important to be retained in the final version of the pragmatic measures criteria. Once the scales are set, we will explore the test-retest reliability and known groups validity by applying the operationalized rating criteria to published literature of implementation science measures.

By engaging in a rigorous process to define what it means for measures to be pragmatic, and including stakeholders at each step to drive the operationalization, we are confident that the pragmatic rating criteria are both empirically and stakeholder-informed. Indeed, of the final 11 terms/phrases that make up the pragmatic rating criteria, two of them were distinctively stakeholder-informed. Though there was overlap between what had been defined in the literature and what stakeholders identified (5 terms/phrases), without stakeholder involvement in defining what pragmatic measurement meant to them and which features are important, we would be missing key characteristics. This could potentially lead to further the gap between research and practice in science.

The long-term goal of this work is to yield a consensus battery of measures used to inform and evaluate an implementation effort, taking into account both psychometric properties and pragmatic strength. The first version of the EBA (psychometric) rating criteria (e.g., internal consistency, predictive validity, usability) was designed to produce head-to-head graphical comparisons that portray the relative and absolute psychometric strength of an implementation science measure within a construct to assist in selecting a measure for use. In addition to publishing this work, these results can be found in the Instrument Review Project repository on the Society for Implementation Research Collaboration (SIRC) website (societyforimplementationresearchcollaboration.org. The newly developed, and soon-to-be tested, pragmatic rating criteria will be incorporated into the EBA psychometric criteria and applied to the repository to reveal four "strength" quadrants (Figure 1) outlining both the psychometric (high/low) and pragmatic (high/low) strength of any specific measure. Importantly, we hope is that this research agenda will help researchers and stakeholders identify implementation science measures that are both psychometrically valid and pragmatic. Promoting quality implementation science measures through identification and use of standardized measure rating criteria could facilitate the development and use of prac-

tical, actionable, and psychometrically valid tools, which could significantly advance both the science and practice of EBP implementation.

References

Benton, D. (1991). Grounded theory. In D. Cormack (Ed.), *The research process in nursing* (2nd ed.). London: Blackwell.

Glasgow, R. E., & Riley, W. T. (2013). Pragmatic measures: what they are and why we need them. *American Journal of Preventive Medicine, 45*(2), 237-243. doi:10.1016/j.amepre.2013.03.010

Glisson, C., Landsverk, J., Schoenwald, S., Kelleher, K., Hoagwood, K. E., Mayberg, S., . . . Research Network on Youth Mental Health. (2008). Assessing the organizational social context (OSC) of mental health services: implications for research and practice. *Administration and Policy in Mental Health and Mental Health Services Reserach, 35*(1-2), 98-113. doi:10.1007/s10488-007-0148-5

Grimshaw, J., Eccles, M., Thomas, R., MacLennan, G., Ramsay, C., Fraser, C., & Vale, L. (2006). Toward evidence-based quality improvement. Evidence (and its limitations) of the effectiveness of guideline dissemination and implementation strategies 1966-1998. *Journal of General Internal Medicine, 21 Suppl 2*, S14-20. doi:10.1111/j.1525-1497.2006.00357.x

Kane, M., & Trochim, W. (2007). *Concept mapping for planning and evaluation* (Vol. 50). Thousand Oaks, CA: Sage.

Lewis, C. C., Stanick, C. F., Martinez, R. G., Weiner, B. J., Kim, M., Barwick, M., & Comtois, K. A. (2015). The Society for Implementation Research Collaboration Instrument Review Project: A methodology to promote rigorous evaluation. *Implementation Science, 10*(2). doi:10.1186/s13012-014-0193-x

Lewis, C. C., Weiner, B. J., Stanick, C., & Fischer, S. M. (2015). Advancing implementation science through measure development and evaluation: a study protocol. *Implementation Science, 10*, 102. doi:10.1186/s13012-015-0287-0

Michie, S., Abraham, C., Eccles, M. P., Francis, J. J., Hardeman, W., & Johnston, M. (2011). Strengthening evaluation and implementation by specifying components of behaviour change interventions: a study protocol. *Implementation Science, 6*, 10. doi:10.1186/1748-5908-6-10

Morgan, D. L. (1993). Qualitative content analysis: a guide to paths not taken. *Qualitative Health Research, 3*(1), 112-121. doi:10.1177/104973239300300107

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Reserach, 42*(5), 533-544. doi:10.1007/s10488-013-0528-y

Powell, B. J., Waltz, T. J., Chinman, M. J., Damschroder, L. J., Smith, J. L., Matthieu, M. M., . . . Kirchner, J. E. (2015). A refined compilation of implementation strategies: results from the Expert Recommendations for Implementing Change (ERIC) project. *Implementation Science, 10*, 21. doi:10.1186/s13012-015-0209-1

Proctor, E. K., & Chambers, D. A. (2016). Training in dissemination and implementation research: a field-wide perspective. *Translational Behavioral Medicine.* [Advance online] doi:10.1007/s13142-016-0406-8

Stanick, C., Halko, H., Dorsey, C., Powell, B., Weiner, B. J., & Lewis, C. C. (2017). Defining and developing a pragmatic construct for implementation measurement. *Implementation Science, 12*(Suppl 1), S57, 29-30.

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: techniques and procedures for developing grounded theory*. (2nd ed.). Thousand Oaks: Sage.

Tabak, R. G., Khoong, E. C., Chambers, D. A., & Brownson, R. C. (2012). Bridging research and practice: models for dissemination and implementation research. *American Journal of Preventive Medicine, 43*, 337-350. doi:10.1016/j.amepre.2012.05.024

. . .

This study was funded by the US National Institute of Mental Health (NIMH, 1R01MH106510).

Correspondence to Heather Halko, M.A., 32 Campus Drive, Skaggs 143, University of Montana, Missoula, MT 59812; heather.halko@umontana.edu

Strategies to Overcome Barriers to Implementing Dialectical Behavior Therapy in the Department of Veterans Affairs: Perspectives From a National Program Evaluation

Sara J. Landes, *National Center for PTSD, VA Palo Alto Health Care System, University of Arkansas for Medical Sciences; Central Arkansas VA Health Care System, VISN 16 MIRECC*

Monica M. Matthieu, *Central Arkansas VA Health Care System and Saint Louis University*

Brandy N. Smith, *National Center for PTSD, VA Palo Alto Health Care System*

Alison L. Rodriguez, *University of California, Berkeley, Schools of Public Health and Social Welfare*

Reducing veteran suicide has been and remains a high priority for the Department of Veterans Affairs (VA). For the past decade, the VA has implemented and disseminated a number of national initiatives that seek to identify, assess, and prevent suicide. However, while there are national VA implementation initiatives for evidence-based psychotherapies (EBPs) for disorders that overlap and/or impact suicide, such as PTSD, substance abuse, chronic pain, and depression (Karlin & Cross, 2014), there are none that directly target suicidality. In order to address this high-priority clinical need, VA providers have implemented other EBPs. One example is Dialectical Behavior Therapy (DBT; Linehan, 1993), an evidence-based psychotherapy for borderline personality disorder and chronic suicidality. DBT is a complex EBP with four treatment modes, including weekly individual therapy, weekly skills group, weekly therapist con-

sultation team meetings, and as-needed phone coaching. DBT is designed to last 1 year (approximately 182 hours of individual and group treatment per client; Landes, Garovoy, & Burkman, 2013; Linehan, 1993).

Despite not being nationally implemented and disseminated by the VA, DBT has been selectively implemented in VA medical centers (VAMCs) across the country. To identify and connect these sites with other programs in the VA that were implementing DBT, the first author (SJL) created a virtual community of practice (Wenger, 1998) via a VA intranet website. These intranet websites allow pages that include static content for providing information and other pages that allow user participation, like a Wiki site, where users can upload files and post in discussion forums. Given that most of the nationally implemented VA EBPs have these intranet sites to serve as a repository for resources, information, and a way to connect providers implementing the treatment, it seemed a natural place to start for the DBT community.

In creating this virtual community of practice, the first author worked to identify all VAMCs offering DBT programs or components. The result was creation of a list of DBT programs and DBT components offered across VA, organized by Veteran Integrated Service Network (VISN) or the regions of the country. Prior to creating this list, only three DBT programs were well known in VA. Following creation of the list, 59 sites were identified as having DBT programs ($n = 17$) or offering components of DBT (Landes & Weingardt, 2015). Of note, sites that reported offering all modes of treatment included those that offered limited phone coaching (as opposed to coaching available at any time, such as outside of business hours). This lack of phone coaching outside of normal business hours has been noted as a significant barrier to the full implementation of DBT (Landes et al., 2017), which may or may not be unique to the VA system.

As a result of the development of the community of practice, the list of VAMCs offering DBT programs or components of DBT essentially provided a list of early adopters of DBT. From another theoretical perspective, this group might also be considered to be "positive deviants." The positive deviance approach was first used in the 1970s to identify well-nourished people in a deprived and generally homogenous community to determine what they were doing well in order to create a food supplementation program or practices to help others (Wishik & Van der Vynkt, 1976). These practices were assumed to be feasible and culturally acceptable because they were derived from within the context. The authors described this approach as the opposite to the usual approach of figuring out what was missing and then filling that gap. As described by Marsh and colleagues (2004), the positive deviance approach has been used to improve the nutritional status of children, newborn care, contraception use, and educational outcomes. Recently, using a positive deviance approach has been highlighted as a strategy for identifying and disseminating best practices to improve the quality of health care (Bradley et al., 2009).

Based on this, the research team initiated a partnership with the VA's Office of Suicide Prevention and with funding from VA's QUERI program to conduct a national program evaluation DBT implementation in the VA. The goal was to determine how these positive deviants were able to implement this complex EBP in their setting. This paper will first summarize quantitative results that have already been reported elsewhere and then report qualitative data that expand upon how sites solved barriers to implementation. The focus will be on the lessons learned from the project while sharing clinically relevant insights for therapist and program managers who may be interested in implementing DBT.

DBT Modes Implemented

Based on this program evaluation (Landes et al., 2016; Landes et al., 2017), the team identified that of the four modes of DBT, skills group was the most commonly implemented mode in the 57 sites in VA that implemented a DBT program or any DBT component. In fact, 98% of sites offer DBT skills group. Individual DBT therapy (75%) was the next most commonly offered mode, followed by phone coaching (in any form or amount; 61%) and therapist consultation team (56%). Interestingly, more than 40% of the sites that completed the survey (42%) offered full DBT programs (e.g., all four modes of DBT).

As noted earlier, phone coaching outside of VA business hours is extremely challenging for the therapists who function in a highly bureaucratic health care system. Of the 35 sites that endorsed providing phone coaching in any form or amount, four endorsed offering it 24/7, 25 endorsed offering it during business hours, 10 endorsed that it depends on the provider's personal limits, and three endorsed "other."

Training and Desired Resources

When it came time to focus in on the "how" and "what they needed" to start DBT programs in the VA, the program evaluation quantitative survey assessed the types of training at least one person at their site had completed (sites were asked to either have one person represent their site in completing the survey or to complete it as a team) and to rank order a list of desired resources. While DBT intensive training (2 weeks of off-site training, separated by a 6-month period of program development and self-study) is considered the gold-standard for DBT (Landes & Linehan, 2012), only one-third of sites reported having any staff with a history of this high-intensity training. The most frequently endorsed workshop training was 1- or 2-day workshops, with about three-fourths of all VA sites reporting having any staff attend this more moderate level of training. The most frequently endorsed type of low-intensity training was reading of DBT books. See Landes et al. (2016) for all training activities endorsed.

Finally, sites were asked to rank order a list of 10 possible resources. Consistent with the low endorsement of completion of intensive training, the top rated desired resource was formal intensive DBT training, followed by funds for training. The remaining resources were rated in the following order (starting at rank 3, moving to the lowest ranked resource): videos on using DBT with veterans, DBT monthly consultation calls for VA clinicians, mentoring program for clinicians using DBT in VA, DBT list serv for VA clinicians, software to support measurement-based care and outcomes integration in the electronic health record, mobile apps for clients, note templates in the electronic health record, and mobile apps for therapists. Sites resoundingly wanted more training and support.

Barriers to Implementation

Knowing that sites want training and that they are implementing only certain modes of DBT, the program evaluation focused on things that are impediments to starting the full model of a DBT program with all of the modes of treatment. Barriers to implementation were assessed using a modified version of the DBT Barriers to Implementation questionnaire (BTI), a checklist of commonly reported barriers created to assist trainers in understanding

barriers faced by teams attending DBT trainings (α = .94). To get a better picture of what barriers might be more easily solved, the BTI was modified by changing the response options from "yes" and "no" to "not a barrier/problem," "a problem we overcame," "a problem we are currently working on," "a problem we could not overcome," or "not applicable."

The research team added four items to the BTI specifically related to the availability of phone coaching when providers were willing; the original version had one item related to phone coaching and providers being "not willing to take phone calls or extend limits when needed." New items addressed not being allowed to take calls during business hours, outside of business hours due to use of personal resources (e.g., phone), and outside of business hours due to use of personal time. A final item addressed lack of funding for calls. The final version of the modified BTI had 37 items.

To identify the most frequently endorsed difficult barrier items, the team selected all items that were endorsed as either a barrier they were "working on" or "could not overcome" by at least one-third of the sample. This resulted in identification of 13 barriers; see Figure 1. Of note, the three barriers rated as unable to overcome by the highest percentage of sites were all related to implementing phone coaching.

Methods

This national program evaluation used sequential mixed methods (quan → QUAL). This design started with a quantitative survey (N = 59) to characterize the degree of current implementation of DBT and to purposively select eight low and eight high adopting sites of DBT for the next qualitative phase. High adopters were defined as those sites implementing at least three of the four modes of DBT. Low adopters were defined as those sites implementing one or two of the four modes of DBT. The Promoting Action on Research Implementation in Health Services framework (PARIHS; Kitson, Harvey, & McCormack, 1998) was used as the overarching conceptual framework for this project. PARIHS describes successful implementation as a function of the nature and level of evidence for the practice, the context into which the implementation will occur, and the method or way the implementation process is facilitated. Qualitative interviews, guided by the PARIHS framework (Kitson et al., 1998), were conducted with a clinical provider and administrator involved in DBT implementation at each participating site to identify evidence, context, and facilitation factors associated with different degrees of DBT implementation. All interviews were audio recorded, transcribed, and coded using a codebook designed a priori based on PARIHS. The codebook was refined via consensus using the first few transcriptions. For a full description of the study methods, see Landes et al. (2016).

Results

Solutions to Barriers

Initial analysis of qualitative data identified that a number of sites had solved barriers creatively, with what they had. Given the focus on positive deviance, these results focus on the strategies that sites reported using to overcome barriers that they faced in implementing DBT programs in VA health care settings. The clinicians and administrators interviewed frequently identified that logistical, structural, and local policy changes enhanced or facilitated implementation.

An example of making a logistical change was to change a clinician's job expectations to provide flexibility for the person to do the work needed to get a program up and running. Within the VA system, that could mean changing someone's "grid" or block of scheduled clinic time to allow them to do work that is not direct patient care (e.g., training, planning DBT group schedules) and therefore not have lower clinic productivity on an audit report due to an underused clinic block. One administrator described it this way:

> "We remapped her to some admin time so that her grid changed, so he [mental health chief] just gave her the flexibility to really take the time to do a lot of this other work, and let her focus on what she could do well, knowing we may take a temporary hit for … individual therapy slots. But he was willing to see the big picture and knew this was an important thing for the veterans to have. He was very veteran focused, and he was just, like, 'We'll worry about the numbers later. We need to get this particular program up and running.'"

This quote highlights how leadership, the mental health chief in this case, considered the benefits of taking the time to set up a DBT program was worth it in the long

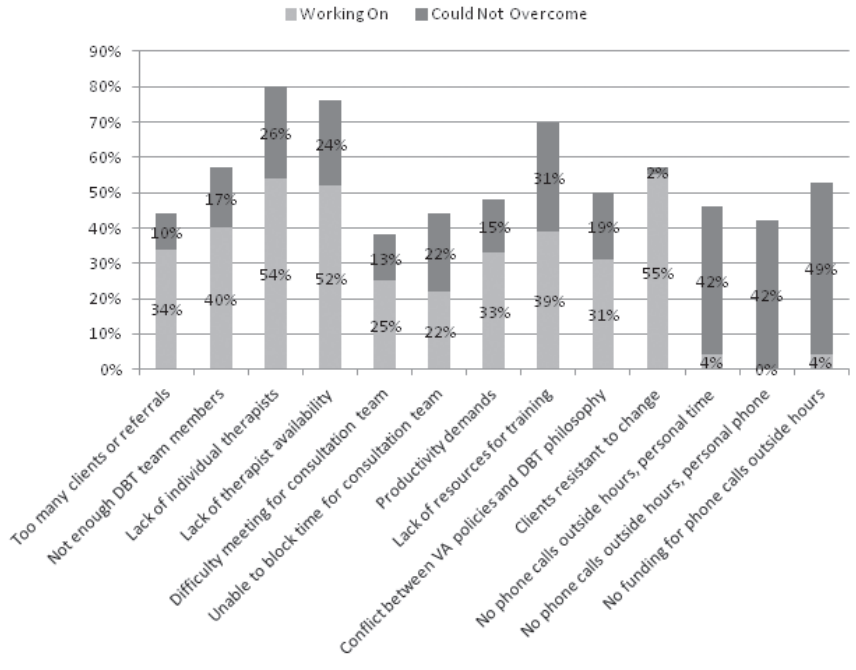


Figure 1. Most difficult to overcome DBT barriers endorsed by VHA clinical sites (N = 59) collected using a revised Barriers to Implementation (BTI). *Note*: Figure originally published in Landes et al. (2017). Barriers, facilitators, and benefits of implementation of dialectical behavior therapy in routine care: Results from a national program evaluation survey in the Veterans Health Administration. *Translational Behavioral Medicine*. doi: 10.1007/s13142-017-0465-5

run for patient care, even though in the short term it meant fewer patients were seen individually for a period of time.

An example of making a structural change was to create a DBT program that cut across clinics. In the VA health care system, a number of clinics address mental health issues. Examples of these include the general mental health clinic, PTSD clinical teams (PCT), substance abuse clinic, and community-based outpatient clinics (CBOC). Often these clinics may not have enough resources or demand for each to have their own DBT program. For example, a CBOC may have one mental health provider for the entire clinic. It may be more feasible and efficient to have a DBT program that cuts across these clinics. One administrator described it this way:

> "We … talked about the idea [that it] would be … an integrated team. So we have PCT, general mental health, substance abuse, homeless, CBOC, post deployment clinic … anywhere patients are treated in mental health, we could have a provider there with the idea that no matter where our patient comes, we would work with them… My supervisor and my director then went to the mental health care line supervisor meeting. They … said, 'We have this really great opportunity to treat some of our most like chronic, complex complicated patients. We just need your approval.' … [For] their staff to be on the team, it would be a commitment of four clinical hours … plus one hour admin for the consultation team, and then you could refer your patients all day to DBT if you thought they were appropriate and we would treat them. … So we had substance abuse, we had general mental health, CBOC, PTSD, MST, Vet Center, we've had post deployment clinics, HUD-VASH, so it's really kind of extended the whole care line."

This quote describes how a site created a DBT program that existed across clinics and also created buy-in from supervisors to allow staff to join the DBT program. For clinics to be able to refer patients to the DBT program, they also had to have a staff member participating in the DBT program.

An example of making a local policy change was to change the rules about clinicians calling patients outside of business hours or when they are "on the clock," which is generally against VA policy. As described above, one component of DBT is phone coaching, in which clients can call their therapist for coaching on how to use a skill or deal with a crisis in the moment. Phone coaching is meant to enhance skill generalization to the client's life and natural environment (e.g., not in the therapy room). One clinician described implementing after-hours phone coaching at their site:

> "The VA was not able or willing … to give us VA phones. So, we all use our personal cell phones. That's what we give our patients for our coaching calls. So, after hours coaching calls, we get one hour of overtime for every coaching call we take. … We have a process for that, so [we] have to, of course, write the note in [the medical record], and then we have to report that to our timekeeper … and then our boss has to approve it."

This statement describes the combination of the therapists' willingness to use his/her own cell phone and leadership willingness to provide compensation for working outside of business hours.

What are the advantages of working with large organizations and/or government agencies in the context of D&I efforts? What are some drawbacks or challenges?

Dr. Chorpita: Believe it or not, the drawbacks and challenges are the advantages. Every "unsolvable" problem, funding crisis, hiring freeze, policy limitation, bureaucratic barrier, or putative EBT saboteur is an opportunity for answering the real questions about improving service outcomes. Working in these systems is the difference between a fire drill and a fire. There is no better stimulus for learning than feeling that heat. Another advantage has been the endurance of these collaborations. I am lucky to have benefited from some inspiring friendships and partnerships that have lasted for decades. And my colleagues and I have been able to shepherd practice improvement initiatives from infancy, childhood, and adolescence, into a relatively stable and mature state, while hundreds of thousands of families have been helped over the years. It makes even the hardest days at work worthwhile.

Dr. Clark: The main advantage of working with a government agency is that you can plan large-scale dissemination that potentially covers a whole country. There aren't any major drawbacks; however, there are some additional challenges. Governments naturally want to see results during a normal electoral cycle. This can mean that the time scale for delivery may be particularly tight. Governments are also concerned that there is broad support for a major innovation. In order to achieve this, it is helpful to convene a reference group composed of acknowledged experts who are not linked to any particular vested interest and will be able to guide the dissemination project.

D&I Spotlight Interviews: **http://www.abct.org/docs/PastIssue/40n7sup.pdf**

Summary

For those considering implementing DBT in their clinic or system, these results can help inform an implementation plan and possible policy changes to support DBT implementation. When looking at modes of treatment implemented, we found that skills group was the most frequently implemented mode. This may be because it fits the VA setting where groups are commonly offered, allows offering of services to more clients when resources are limited, or it may be the "easiest" first mode to implement (this is based on the first author's clinical experience and has not been evaluated empirically). Furthermore, new data demonstrates that DBT skills group is an effective intervention (Chugani, Ghali, & Brunner, 2013; Neacsiu, Eberle, Kramer, Wiesmann, & Linehan, 2014; Valentine, Bankoff, Poulin, Reidler, & Pantalone, 2015). Skills group may be a good place to start a DBT implementation.

The recommended training in DBT is intensive training and, as the data demonstrated, it was not common at these VA sites for providers to have been intensively trained. If possible, funds should be allo-

cated for DBT training. However, this may be unrealistic due to cost; clinics might consider sending champions to be trained, sending more people to less intensive workshops, or finding alternate training plans.

Finally, this project identified the barriers to implementing DBT. This was done to help other sites identify barriers that would likely occur and could be overcome (e.g., not enough team members and lack of therapists were identified as barriers that sites either overcame or were working on). It was also done to identify those barriers that were more difficulty to overcome (see Figure 1). This allows sites fair warning that planning and problem solving will likely be needed to address these issues, should they arise. For example, sites interested in implementing phone coaching might either allot additional planning time to solve barriers related to phone coaching or work to include the appropriate leadership or departments (e.g., human resources) with the authority needed to make changes. Finally, we sought to identify solutions to barriers to share with others to avoid re-creating the wheel. These solutions can be used in other settings when planning their implementation or running into similar barriers. The goal of the research team is to create informational materials with these solutions for dissemination to teams receiving DBT training or implementing DBT.

References

Bradley, E. H., Curry, L. A., Ramanadhan, S., Rowe, L., Nembhard, I. M., & Krumholz, H. M. (2009). Research in action: Using positive deviance to improve quality of health care. *Implementation Science, 4*, 25. https://doi.org/10.1186/1748-5908-4-25

Chugani, C. D., Ghali, M. N., & Brunner, J. (2013). Effectiveness of short term dialectical behavior therapy skills training in college students with cluster B personality disorders. *Journal of College Student Psychotherapy, 27*, 323–336.

Karlin, B. E., & Cross, G. (2014). From the laboratory to the therapy room: National dissemination and implementation of evidence-based psychotherapies in the U.S. Department of Veterans Affairs Health Care System. *American Psychologist, 69*(1), 19-33.

Kitson, A., Harvey, G., & McCormack, B. (1998). Enabling the implementation of evidence based practice: A conceptual framework. *BMJ Quality & Safety, 7*, 149-158.

Landes, S. J., Garovoy, N. D., & Burkman, K. M. (2013). Treating complex trauma among veterans: Three stage-based treatment models: Complex trauma. *Journal of Clinical Psychology, 69*, 523–533.

Landes, S. J., & Linehan, M. M. (2012). Dissemination and implementation of dialectical behavior therapy: An intensive training model. In D. H. Barlow & R. K. McHugh (Eds.), *Dissemination and implementation of evidence-based psychological interventions* (pp. 187-208). New York, NY: Oxford University Press.

Landes, S. J., Matthieu, M. M., Smith, B. N., Trent, L. R., Rodriguez, A. L., Kemp, J., & Thompson, C. (2016). Dialectical behavior therapy training and desired resources for implementation: Results from a national program evaluation in the Veterans Health Administration. *Military Medicine, 181*, 747-752. doi: http://dx.doi.org/10.7205/MILMED-D-15-00267

Landes, S. J., Rodriguez, A. L., Smith, B. N., Matthieu, M. M., Trent, L. R., Kemp, J., & Thompson, C. (2017). Barriers, facilitators, and benefits of implementation of dialectical behavior therapy in routine care: Results from a national program evaluation survey in the Veterans Health Administration. *Translational Behavioral Medicine*. doi: 10.1007/s13142-017-0465-5

Landes, S. J., & Weingardt, K. R. (2015, May). *Supporting grass roots implementation through a virtual community of practice*. Flash presentation presented at the biennial Global Implementation Conference, Dublin, Ireland.

Linehan, M. M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. New York, NY: Guilford.

Marsh, D. R., Schroeder, D. G., Dearden, K. A., Sternin, J., & Sternin, M. (2004). The power of positive deviance. *British Medical Journal, 329*, 1177-1179.

Neacsiu, A. D., Eberle, J. W., Kramer, R., Wiesmann, T., & Linehan, M. M. (2014). Dialectical behavior therapy skills for transdiagnostic emotion dysregulation: A pilot randomized controlled trial. *Behaviour Research and Therapy, 59*, 40–51.

Valentine, S. E., Bankoff, S. M., Poulin, R. M., Reidler, E. B., & Pantalone, D. W. (2015). The use of dialectical behavior therapy skills training as stand-alone treatment: A systematic review of the treatment outcome literature. *Journal of Clinical Psychology, 71*, 1-20. doi: 10.1002/jclp.22114

Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. New York, NY: Cambridge University Press.

Wishik, S. M., & Van der Vynkt, S. (1976). The use of nutritional 'positive deviants' to identify approaches for modification of dietary practices. *American Journal of* Public Health, 66, 38-42.

. . .

The results described are based on data analyzed by the authors and do not represent the views of the Department of Veterans Affairs, Veterans Health Administration, or the United States Government. This study was funded by the Department of Veterans Affairs, Mental Health Quality Enhancement Research Initiative (MH QUERI) QLP 55-055 awarded to the first author.

Correspondence to Sara J. Landes, Ph.D., University of Arkansas for Medical Sciences, Psychiatric Research Institute, 4224 Shuffield Dr., Little Rock, AR 72205; Sara.Landes@va.gov

Can Less Be More? The Promise (and Perils) of Single-Session Youth Mental Health Interventions

Jessica L. Schleider and John R. Weisz, *Harvard University*

THE UNITED STATES SPENDS more money on health care than any other nation (Centers for Medicare and Medicaid Services, 2017), with psychiatric disorders ranking as the most costly conditions to treat ($201 billion annually, followed by $147 billion for heart disease; Roehrig, in press). Despite this investment, access to mental health services is strikingly low. An estimated 57% to 67% of adults experiencing mental illness in the United States do not receive needed services (SAMHSA, 2016). The need-to-access gap is even wider for children and adolescents: up to 80% of youths with mental health needs go without services each year (Cummings, Wen, & Druss, 2013).

With mental health care spending so high, how can service access be so low? Limited knowledge of effective treatments is not a likely cause: evidence-based psychosocial interventions have been identified for a broad array of mental health problems, with hundreds for children and adolescents alone (National Registry of Evidence-Based Programs and Practices, http://www.nrepp.samhsa.gov/). Rather, the problem might stem from the structure of these interventions. They are generally designed for delivery in brick-and-mortar clinics, in a one-to-one format, and by highly trained mental health professionals. They are also expensive in both time and money, spanning multiple sessions over many weeks (tested youth psychosocial therapies average 16 sessions; Weisz et al., 2017). These features make them difficult to disseminate on a broad scale. Time-intensive, clinic-based treatment may be particularly difficult to access for youths with mental health needs, as only 63% of U.S. counties have a mental health treatment facility for children and adolescents (Cummings et al., 2013). Even among youths who do access care, most drop out prematurely, completing just over 3 therapy sessions on average (Harpaz-Rotem, Leslie, & Rosenheck, 2004).

Given these concerns, some have called for a "rebooting" of mental health interventions and delivery systems, which, in their current forms, may not be able to markedly reduce the burden of mental illness (Kazdin & Blase, 2011; Rotheram-Borus, Swendeman, & Chorpita, 2012). Rotheram-Borus et al. (2012) suggest that a "disruptive innovation" model (Christensen, 2006) might guide the development of more affordable, scalable psychological interventions. Rather than focusing on services for the most complex, high-need clients, a disruptive innovation provides a simpler, less costly alternative that meets the needs of a majority of clients. Community colleges, for instance, offer less intensive and specialized services than 4-year universities, yet they meet many students' basic educational needs, and they are available to far more people at much lower costs (average U.S. community college tuition is $3,435, vs. $9,410 at public 4-year institutions and $23,893 for out-of-state students; Ma & Baum, 2016). Notably, community colleges have not replaced more comprehensive, specialized alternatives, for which there continues to be great demand. However, they have dramatically broadened access to the education that many people seek.

Applied to mental health care, disruptive innovation might be accomplished through brief interventions delivered through nontraditional means (e.g., via computers, smartphones, or individuals without psychotherapy training). These interventions may include core, theoretically driven elements of comprehensive, evidence-supported therapies. However, their brevity and flexible format could make them disseminable to those who might not otherwise access care—and for whom a targeted, "light touch" intervention might be just enough. Here we consider an especially light-touch approach: single-session interventions, or SSIs. Given the large need-to-access gap among youths, we focus on the promise of SSIs for prevention and treatment of youth mental health problems. In the sections below, we describe cross-disciplinary precedents for exploring SSIs for youth mental health problems; review results from a recent meta-analysis (Schleider & Weisz, 2017) of SSIs' effects on youth psychopathology; highlight limitations of SSI research to date; and discuss next-steps and questions regarding SSIs for youth psychological problems, specifically related to scaling-up service dissemination to youths with mental health needs.

SSIs Can Effect Lasting Change: Lessons From Social Psychology, Education, and Public Health

SSIs represent a relatively new research frontier for youth mental health researchers. However, there is a rich scientific history suggesting the promise of SSIs for positive youth academic, physical, and emotional outcomes (Yeager & Walton, 2011). SSIs have increased happiness and hope in adolescents (Feldman & Dreher, 2012); mitigated the adverse effects of stereotype threat on academic achievement among ethnic/racial minority youth, and girls studying math and science, from elementary school through college (Aronson et al., 2009; Martens, Johns, Greenberg, & Schimel, 2006); reduced HIV infection among high-risk adolescents (Eaton et al., 2012); strengthened perceived control, physiological stress recovery, and anxiety and depressive symptoms in adolescents high in internalizing distress (Schleider & Weisz, 2016; Schleider & Weisz, in press); and improved physical health, academic motivation, and adaptive coping with peer stressors in middle- and high-school-aged youth (Yeager et al., 2012; Yeager, Lee, & Jamieson, 2016).

These powerful, 5-to-90-minute SSIs share at least two common features, which likely contribute to their effectiveness. First, they are all mechanism-targeted interventions: carefully constructed, theoretically precise programs that address specific maladaptive beliefs or behaviors thought to underlie outcomes of interest. Academic motivation SSIs, for example, have focused on instilling the belief that intelligence is malleable (rather than fixed) by nature—i.e., a "growth mindset" of intelligence—to increase persistence in the face of achievement-related setbacks. Stereotype threat SSIs have included self-affirmation and social belongingness exercises, designed to challenge the feelings of otherness, performance concerns, and associated distress that stereotype threat can imbue. By focusing on these empirically identified change mechanisms, SSIs clearly communicate a cohesive, high-impact take-away message (e.g., "intelligence can change"; "failure is necessary for personal growth"). These features appear to boost

their capacity to enhance adaptive beliefs, behaviors, and longer-term functioning.

Second, many of these SSIs have targeted developmentally- or population-specific needs. Interventions designed to improve social belonging or strengthen "growth mindsets" for socially relevant traits are thought to be most relevant during adolescence, when peer stress grows particularly salient (Paunesku et al., 2015). Thus, both interventions have targeted adolescents during academic transitions (e.g., entering high school or college), characterized by unstable friendships and uncertainty about social standing. Additionally, social belongingness interventions have been designed for members of potentially marginalized groups, such as African-American students at majority-Caucasian schools, who often experience low belongingness in their academic communities (Walton & Carr, 2012; Yeager, Walton, et al., 2016). Stereotype threat interventions are similarly tailored for students at highest risk for experiencing stereotype threat on a day-to-day basis, including racial/ethnic minority students and girls pursuing STEM careers (Shapiro, Williams, & Hambarchyan, 2013).

SSIs and Youth Mental Health Problems

In addition to boosting academic, motivational, and physical health outcomes, some SSIs may reduce and prevent youth mental health difficulties. In a meta-analysis of 50 randomized-controlled trials (Schleider & Weisz, 2017), we found that SSIs for youth psychological problems demonstrated a significant beneficial effect (mean g = 0.32), across various levels of youth problem severity and diagnostic status (Figure 1). The most common SSI delivery settings were primary care and emergency room settings, middle and high schools, and community centers, although several studies described lab-based efficacy trials. A substantial portion of SSIs were self-administered by youths via computers or written activities; significant effects emerged even for these self-administered interventions, which may hold particular potential to reduce costs, broaden accessibility, and maximize scalability. SSIs' overall effects are slightly smaller than those observed for multisession youth psychotherapy (Weisz et al., 2017), but their relative efficiency could magnify their benefits for youth psychological health on a broad scale.

Although these findings are promising, further investigation is needed to determine SSIs' promise and limitations. For instance, SSIs have been most effective in reducing youth anxiety and conduct problems, whereas SSIs targeting youth depression have shown nonsignificant overall effects (Schleider & Weisz, 2017). That said, intervention effects on youth depression are also especially weak even for traditional multisession therapies (Weisz et al., 2017). Moreover, only 6 of 50 trials in our SSI meta-analysis targeted depression, ensuring a poorly powered significance test. It remains possible that novel, theoretically precise SSIs could ameliorate youth depression. The effects of SSIs on co-occurring psychological problems are also unclear, as only 1 of the 50 trials in our meta-analysis explicitly targeted multiple youth problem types (Perkins, 2006). Additionally, SSIs' overall effects have waned over time, with mean effects dropping markedly (to g = 0.07) at 3-month follow-up and beyond. SSI trials have also relied largely on youth self-report outcome measures, and some have used relatively weak metrics to assess the clinical significance of SSIs' effects (e.g., outcomes in an RCT of a disordered eating SSI included "body satisfaction" and "dietary restraint" but not BMI changes or whether participants met DSM-5 criteria for eating disorders; Diedrichs et al., 2015). Further, two-thirds of the SSI studies used inactive comparison conditions (no-treatment or waitlist controls; Schleider & Weisz, 2017). More rigorous, longer-term trials of SSIs targeting depression and associated problems are key next-steps.

It is notable that SSIs in our meta-analysis with highly specific intervention targets (i.e., mechanism-targeted programs addressing well-defined beliefs or behaviors) appeared to be more effective than those without specific targets, consistent with SSI research from other psychology subfields, education, and public health. For instance, one of the best-studied mental health SSIs is One-Session Treatment for Specific Phobia (OST; Davis, Ollendick, & Öst, 2012). OST is built on a single treatment component, widely viewed as an "active ingredient" in evidence-based anxiety treatments (Chorpita & Daleiden, 2009): graded exposure. Although OST sometimes incorporates other elements of behavioral therapy (e.g., cognitive restructuring, psychoeducation), these are included only to support OST's intensive, therapist-led exposures, designed to help clients habituate to feared stimuli by reducing avoidance. Research on OST strongly suggests the potency of targeting maladaptive avoidance—specifically via exposure—in treating specific phobias (for a review of OST RCTs, see Ollendick & Davis, 2013).

Other efficacious, mechanism-targeted SSIs for youth mental health problems are deliverable without clinician involvement, and in nontraditional settings. Thirty-minute computer-based interventions teaching growth mindsets of personality have prevented depressive symptoms (Miu & Yeager, 2015) and improved coping with academic setbacks (Yeager et al., 2016) in

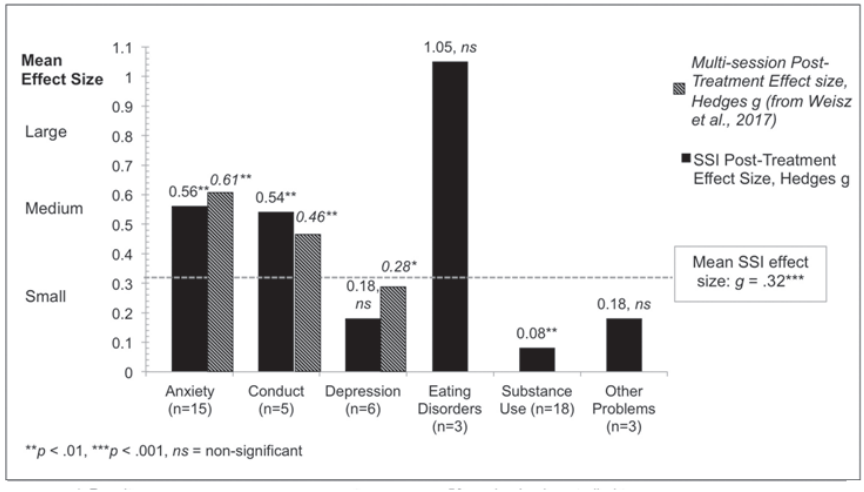


Figure 1. Results of Schleider & Weisz (2017) meta-analysis of 50 randomized controlled trails of single-session interventions (SSIs) for youth mental health problems, as compared with results from Weisz et al. (2017) meta-analysis of 447 randomized controlled trials of treatments youth pschological therapies.

high school freshmen; they have also strengthened perceived control, physiological stress recovery, and internalizing problems in high-symptom early adolescents (Schleider & Weisz, 2016; Schleider & Weisz, in press). As described in a previous section, growth mindset interventions target "keystone beliefs" thought to be highly potent, and relevant to adaptive stress-coping, for adolescents undergoing socially challenging transitions (i.e., starting middle or high school).

The promise of mechanism-targeted SSIs fits with emerging approaches to psychotherapy intervention design. The National Institute of Mental Health's current Strategic Plan for Research highlights the need for mechanism-targeted, developmentally sensitive approaches to building psychosocial interventions (NIMH, 2016). Within their "Experimental Therapeutics" approach, the first step to evaluating a novel treatment is testing its ability to shift theoretically promising targets (i.e., change mechanisms) thought to underlie psychopathology for a specific population. The second step is assessing whether changes in these targets produce reductions in psychopathology. Moving forward, research on targeted SSIs from social and educational psychology may help guide clinical scientists pursuing this two-step strategy, providing both content and a method that is especially well-suited to experimental therapeutics.

Scaling up SSIs? Future Directions for Dissemination Scientists

SSIs have shown initial promise in preventing and reducing youth mental health problems. However, many questions remain regarding strengths and limits of SSIs' efficacy, their readiness for implementation and dissemination, and their fit within existing care systems. Answers to these questions are necessary steps in gauging SSIs' capacity to increase service accessibility; improve the cost-effectiveness of the mental health-care delivery system; and help lessen the individual and societal burden of youth mental illness.

Are SSIs Acceptable?

First, the acceptability of SSIs for mental health problems is poorly understood. Intervention acceptability refers to judgments by laypersons, youths, families, and other stakeholders of whether the intervention is appropriate, satisfactory, and reasonable for the clinical problem at hand (Kazdin, 2013). Acceptability shapes clients' likelihood of seeking out a given intervention, viewing the intervention as potentially helpful, and adhering to the intervention's activities and recommendations once they pursue it (Kazdin, Whitley, & Marciano, 2006). Acceptability also influences clinicians' likelihood of recommending a given intervention, and (when applicable) implementing it with fidelity (Allinder & Oats, 1997). Thus, high acceptability of SSIs, both to providers and clients, is necessary for optimizing their benefits. It is plausible that youths and families would view SSIs as highly acceptable, due to their relative brevity and (potentially) lower cost. Alternatively, clients and clinicians may doubt SSIs' ability to effect lasting change, or may actively prefer and expect treatments that offer ongoing support, leading to low SSI uptake. SSI acceptability might also differ by intervention delivery context. Primary-care providers and school administrators may be more likely to embrace SSIs, which offer unique avenues for integrating mental health supports into overburdened, limited-resource systems (e.g., primary care clinics, schools). Mental health professionals, in contrast, may view SSIs as constraining or incompatible with services they are trained to provide. Examining whether, and by whom, SSIs are viewed as acceptable is a key next-step for implementation efforts.

Diminishing Returns on SSIs for Severe Psychopathology?

Many questions remain about the limits of SSIs' effectiveness. For instance, it is plausible that SSIs are effective up to a certain level of youth symptom severity, beyond which there could be diminishing returns. No evidence emerged for this sort of a "drop-off" effect in our meta-analysis: overall SSI effects did not differ by baseline youth symptom severity, or for prevention versus treatment programs. However, it remains possible that the severity level up to which SSIs are helpful may differ by problem domain. For instance, SSIs for anxiety may help reduce both mild and moderate levels of symptoms, whereas SSIs for substance use may be effective for prevention purposes alone. As the SSI literature grows, it will grow more possible to test interactions between problem domain and severity level in predicting program effectiveness, and to identify the circumstances under which SSIs can and cannot yield lasting change.

Can SSIs Cause Harm?

There is also the possibility that some SSIs might inadvertently cause harm. Indeed, iatrogenic effects of brief interventions have been documented in the past. One well-known example is "critical incident stress debriefing" (CISD): a group-based SSI designed to prevent symptoms of PTSD in adults exposed to extreme stressors (Lohr, Hooke, Gist, & Tolin, 2003). CISD is a group-based therapy administered within 72 hours of a trauma. CISD-trained therapists ask participants to "process" negative reactions to the trauma, discouraging discontinuation after the session begins; they also detail the PTSD symptoms that participants are likely to experience. RCTs have found CISD to increase PTSD symptoms in the long-term, perhaps by impeding natural recovery processes (McNally, Bryant, & Ehlers, 2003). Separately, "Scared Straight" programs, which involve organized visits to prisons by youths at risk for criminal behavior, aim to prevent delinquency by exposing youths the realities of life in prison. A meta-analysis of randomized and quasi-experimental studies of Scared Straight programs demonstrated that these interventions increased youth delinquency by up to 70% (Petrosino, Turpin-Petrosino, & Buehler, 2003). Most Scared Straight programs spanned more than one session; nonetheless, they illustrate the capacity of brief, well-intentioned programs to harm vulnerable participants. Moving forward, careful piloting, efficacy testing, and adherence to a developmentally tailored, mechanism-targeted design model might help prevent the dissemination of inadvertently harmful SSIs.

Broadening SSI Access Without Compromising Safety?

Another set of questions involves the safe, ethical delivery of SSIs to youths with mental health needs. Inherently, SSIs involve brief or no contact with a mental health professional. This feature bypasses or minimizes risk-monitoring procedures typical of weekly, clinic-based psychotherapy. Particularly in the context of SSIs for clinically significant psychopathology (as opposed to preventive SSIs for healthy or low-risk individuals), it is crucial to ascertain the degree of professional involvement needed to ensure client safety—particularly when risks include suicidal thoughts and actions, other life-threatening conditions such as anorexia, or harm to others. Because many SSIs are deliverable by professionals without formal mental health

care training (e.g., primary care physicians; teachers; nurses) or by means that involve no therapist at all (e.g., computer-based SSIs), formal evaluation of adverse outcomes following SSI administration—specifically as a function of professional involvement—is a necessary precursor to broad-scale SSI implementation and dissemination.

Where Do SSIs Fit Into Broader Systems of Care?

Given their brevity, it may be possible to integrate evidence-supported SSIs into a wide variety of service systems, either as stand-alone or adjunctive supports. Primary care clinics may be especially high-yield settings for youth SSI implementation. Pediatricians are often the first to identify mental health difficulties in their child and adolescent patients, yet they often feel ill-equipped to provide psychological services or referrals (Brown, Green, Desai, Weitzman, & Rosenthal, 2014). Offering SSIs to youths for whom pediatricians have identified mental health needs, especially SSIs deliverable on-site at the pediatric clinics, may be a feasible approach to connecting youths with care. Implementing SSIs in schools might be another promising strategy. While few children with mental health needs receive services, 80% of those who access treatment do so through their schools (Merikangas et al., 2010). However, there is a significant shortage of school-based mental health providers across the country, with counseling staff in short supply and the student-to-school psychologist ratio exceeding 1,383:1 (Castillo, Curtis, & Tan, 2014). With school clinician caseloads nearing the thousands, SSIs may help schools serve a greater proportion of students in need—particularly self-administered SSIs, which can be accessed by entire student bodies at once. SSIs may also fit nicely within the "Response to Intervention" (RTI) approach, increasingly adopted by United States public schools (Barnes & Harlacher, 2008). RTI is a multitiered service delivery system in which all students are provided an appropriate level of evidence-based services based on individual needs. SSIs might represent an early step in school-based triage: a lower-tier service for students experiencing or at risk of mental health problems. Those who do not respond to SSIs, or who are identified as needing ongoing, intensive supports, might be referred for alternative school or outpatient services.

An important pragmatic question is whether, and if so, how, SSIs delivered in traditional health care settings—or outside of them—may be covered by insurance. While this question warrants attention, it is important to note that health insurance coverage alone has not eliminated the need-to-access gap: among youths with mental health needs, 79% with private health insurance and 73% with public health insurance never receive treatment (Freedenthal, 2007). That said, reimbursability of SSI services would almost certainly increase access for many individuals. In the meantime, the efficiency and low cost of SSIs could make them available to many youths completely outside the bounds of existing insurance, managed care, and health care systems—for example, with access provided through schools, community programs, or religious centers.

Conclusion

The United States mental health care system will require significant "rebooting" to reduce the overall burden of mental illness (Kazdin & Blase, 2011). As a complement to multisession psychosocial treatments, SSIs may offer a promising path toward improving the accessibility and cost-effectiveness of mental health sup-

What disciplines have you drawn from to inform your work in D&I?

Dr. Clark: IAPT is a multidisciplinary initiative. The therapists that work in IAPT services have a range of professional backgrounds such as clinical psychology, social work, and mental health nursing. In my view, drawing on a wide range of professionals has enhanced the program. First, it provides a wider pool of potential trainees. Second, it helps the initiative to focus exclusively on the key goal of delivering effective treatments without being distracted by any issues that are specific to a particular professional group. Of course, each professional group brings different skills to the table. It is important to cherish this richness and to ensure that the training courses are appropriate to people with a wide range of backgrounds.

Dr. Chorpita: Well, first I need to clarify: I have tried to inform my work in the service of improving system outcomes, of which D&I is just one strategy. I think we now live in an age where the central aim of our work is evolving from pure discovery (i.e., knowledge creation) to coordination of many existing evidence bases (i.e., knowledge synthesis) from many different literatures, which is exciting. There is already so much known that could help inform how to reduce mental health burden, for example, in the research on memory and human learning, human technology interface, business and administration, economics, administration, design, cultural anthropology, artificial intelligence, knowledge management, data mining, education, and statistics, just to name a few. I am often surprised how often other disciplines have already found answers to the same problems in other contexts, which could be useful to addressing our field's biggest challenges. And I confess it helps to have friends who aggressively read outside of the mental health literature—they push me out of my comfort zone, which is important. It's easy to get myopic.

Dr. Garland: I feel very fortunate to have worked closely with mentors, colleagues, and trainees from multiple disciplines and I know this has enriched my work (and my life!) significantly. I've worked closely with anthropologists, biostatisticians, counselors, epidemiologists, marital and family therapists, pediatricians, psychiatrists, psychologists from multiple specializations, social workers, and sociologists (note the alphabetical order to avoid any suggestion of preference!). Although I am a psychologist by training, I've never worked in a psychology department. It's hard for me to imagine how my career trajectory would have differed if I had worked more exclusively within just one discipline.

Dr. Hanson: Business, social psychology, industrial psychology and medicine ...

D&I Spotlight Interviews: **http://www.abct.org/docs/PastIssue/40n7sup.pdf**

ports. Evidence from social psychology, education, and public health has suggested that SSIs—especially mechanism-targeted programs—can improve achievement, social functioning, and physical health. SSIs may also be effective in treating and preventing youth mental health problems (Schleider & Weisz, 2017). We have posed several questions—all ripe for investigation by implementation and dissemination scientists—to guide SSI research moving forward. We note the need to identify and test specific mechanisms to target via mental health-focused SSIs; to assess the acceptability of SSIs among youths, families, practitioners, and stakeholders; to gauge the problem types and severity levels with which SSIs can be helpful; to evaluate the risks that SSIs may pose to clients; and to assess the feasibility of incorporating effective SSIs into existing support systems for youths, including primary care clinics and schools. Work in each of these domains is needed to gauge the full potential of SSIs as a force for youth mental health.

References

Allinder, R. M., & Oats, R. G. (1997). Effects of acceptability on teachers' implementation of curriculum-based measurement and student achievement in mathematics computation. *Journal for Special Educators, 18*, 113-120.

Aronson, J., Cohen, G., McCloskey, W., Montrosse, B., Lewis, K., & Mooney, K., (2009). *Reducing stereotype threat in classrooms: A review of social-psychological intervention studies on improving the achievement of Black students*. Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance.

Barnes, A. C., & Harlacher, J. E. (2008). Clearing the confusion: Response-to-intervention as a set of principles. *Education and Treatment of Children, 31*, 417-431.

Brown, N. M., Green, J. C., Desai, M. M., Weitzman, C. C., & Rosenthal, M. S. (2014). Need and unmet need for care coordination among children with mental health conditions. *Pediatrics, 133*, e530-e537.

Castillo, J. M., Curtis, M. J., & Tan, S. Y. (2014). Personnel needs in school psychology: A 10-year follow-up study on predicted personnel shortages. *Psychology in the Schools, 51*(8), 832-849.

Centers for Medicare and Medicaid Services. (2017). National Health Expenditure Data.

Chorpita, B.F., & Daleiden, E.L. (2009). Mapping evidence-based treatments for children and adolescents: Application of the distillation and matching model to 615 treatments from 322 randomized trials. *Journal of Consulting and Clinical Psychology, 77*, 566-579.

Christensen, C. M. (2006). The ongoing process of building a theory of disruption. *Journal of Product Innovation Management, 23*, 39-55.

Cummings, J. R., Wen, H., & Druss, B. G. (2013). Improving access to mental health services for youth in the United States. *JAMA, 309*, 553-554.

Davis, T.E., Ollendick, T.H., & Öst, L.G. (2012). *Intensive one-session treatment of specific phobias.* New York: Springer.

Diedrichs, P. C., Atkinson, M. J., Steer, R. J., Garbett, K. M., Rumsey, N., & Halliwell, E. (2015). Effectiveness of a brief school-based body image intervention 'Dove Confident Me: Single Session' when delivered by teachers and researchers: Results from a cluster randomised controlled trial. *Behaviour Research and Therapy, 74*, 94-104.

Eaton, L.A., Huedo-Medina, T.B., Kalichman, S.C., Pellowski, J. A., Sagherian, M.J., Warren, M... & Johnson, B.T. (2012). Meta-analysis of single-session behavioral interventions to prevent sexually transmitted infections: implications for bundling prevention packages. *American Journal of Public Health, 102*, e34-e44.

Feldman, D., & Dreher, D. (2012). Can hope be changed in 90 minutes? Testing the efficacy of a single-session goal-pursuit intervention for college students. *Journal of Happiness Studies, 13*, 745-759.

Freedenthal, S. (2007). Racial disparities in mental health service use by adolescents who thought about or attempted suicide. *Suicide and Life-Threatening Behavior, 37*, 22-34.

Harpaz-Rotem, I., Leslie, D., & Rosenheck, R. A. (2004). Treatment retention among children entering a new episode of mental health care. *Psychiatric Services, 55*, 1022-1028.

Kazdin, A.E. (2013). Evidence-based treatment and usual care: Cautions and qualifications. *JAMA Psychiatry, 70*, 666-667.

Kazdin, A. E., & Blase, S. L. (2011). Rebooting psychotherapy research and practice to reduce the burden of mental illness. *Perspectives on Psychological Science, 6*, 21-37.

Kazdin, A. E., Whitley, M., & Marciano, P. L. (2006). Child–therapist and parent–therapist alliance and therapeutic change in the treatment of children referred for oppositional, aggressive, and antisocial behavior. *Journal of Child Psychology and Psychiatry, 47*, 436-445.

Lohr, J. M., Hooke, W., Gist, R., & Tolin, D. F. (2003). Novel and controversial treatments for trauma-related stress disorders. In Lilienfeld, S.O., Lynn, S.J, & Lohr, J.M. (Eds). *Science and Pseudoscience in Clinical Psychology* (pp. 243-272). New York, NY: Guilford Press.

Ma, J., & Baum, S. (2016). *Trends in community colleges: enrollment, prices, student debt, and completion*. College Board research brief. Retrieved from: https://trends.collegeboard.org/sites/default/files/trends-in-community-colleges-research-brief.pdf

Martens, A., Johns, M., Greenberg, J., & Schimel, J. (2006). Combating stereotype threat: The effect of self-affirmation on women's intellectual performance. *Journal of Experimental Social Psychology, 42*, 236-243.

McNally, R. J., Bryant, R. A., & Ehlers, A. (2003). Does early psychological intervention promote recovery from posttraumatic stress? *Psychological Science in the Public Interest, 4*, 45-79.

Merikangas, K. R., He, J. P., Burstein, M., Swanson, S. A., Avenevoli, S., Cui, L., ... Swendsen, J. (2010). Lifetime prevalence of mental disorders in US adolescents: Results from the National Comorbidity Survey Replication–Adolescent Supplement (NCS-A). *Journal of the American Academy of Child & Adolescent Psychiatry, 49*, 980-989.

Miu, A. S., & Yeager, D. S. (2015). Preventing symptoms of depression by teaching adolescents that people can change effects of a brief incremental theory of personality intervention at 9-month follow-up. *Clinical Psychological Science, 3*, 726-743.

National Institute of Mental Health (2016). *Strategic Research Priorities Overview*. Retrieved from: https://www.nimh.nih.gov/about/strategic-planning-reports/strategic-research-priorities/index.shtml

Ollendick, T. H., & Davis III, T. E. (2013). One-session treatment for specific phobias: a review of Öst's single-session exposure with children and adolescents. *Cognitive Behaviour Therapy, 42,* 275-283.

Paunesku, D., Walton, G. M., Romero, C., Smith, E. N., Yeager, D. S., & Dweck, C. S. (2015). Mind-set interventions are a scalable treatment for academic underachievement. *Psychological Science, 26*.

Petrosino, A., Turpin-Petrosino, C., & Buehler, J. (2003). Scared Straight and other juvenile awareness programs for preventing juvenile delinquency: A systematic review of the randomized experimental evidence. *Annals of the American Academy of Political and Social Science, 589*, 41-62.

Roehrig, C. (in press). Mental disorders top the list of the most costly conditions in the United States: $201 Billion. *Health Affairs.*

Rotheram-Borus, M. J., Swendeman, D., & Chorpita, B. F. (2012). Disruptive innovations for designing and diffusing evidence-based interventions. *American Psychologist, 67*, 463-476.

Substance Abuse and Mental Health Services Administration. (2016). *Results from the 2015 National Survey on Drug Use and Health*. Rockville, MD.

Schleider, J.L., & Weisz, J.R. (2016). Reducing risk for anxiety and depression in adolescents: Effects of a single-session intervention teaching that personality can change. *Behaviour Research and Therapy, 87*, 170-181.

Schleider, J.L., & Weisz, J.R. (2017). Little treatments, promising effects? Meta-analysis of single-session interventions for youth psychiatric problems. *Journal of the American Academy of Child & Adolescent Psychiatry, 56*, 107-115.

Schleider, J.L., & Weisz, J.R. (in press). A single-session growth mindset intervention for adolescent anxiety and depression: Nine-month outcomes of a randomized trial. *Journal of Child Psychology and Psychiatry*.

Shapiro, J. R., Williams, A. M., & Hambarchyan, M. (2013). Are all interventions created equal? A multi-threat approach to tailoring stereotype threat interventions. *Journal of Personality and Social Psychology, 104*, 277-288.

Walton, G. M., & Carr, P. B. (2012). Social belonging and the motivation and intellectual achievement of negatively stereotyped students. In M. Inzlicht & T. Schmader (Eds.), *Stereotype threat: Theory, Processes, and Application* (pp. 89-106) Oxford Scholarship Online. doi: 10.1093/acprof:oso/9780199732449.001.0001

Weisz, J.R., Kuppens, S., Ng, M.Y., Eckshtain, D., Ugueto, A.M., Vaughn-Coaxum, R. ... Weersing, V. R. (2017). What five decades of research tells us about the effects of youth psychological therapy: A multilevel meta-analysis and implications for science and practice. *American Psychologist, 72*, 79-117.

Yeager, D. S., & Dweck, C. S. (2012). Mindsets that promote resilience: When students believe that personal characteristics can be developed. *Educational Psychologist, 47*, 302-314.

Yeager, D. S., Lee, H. Y., & Jamieson, J. P. (2016). How to improve adolescent stress responses insights from integrating implicit theories of personality and biopsychosocial models. *Psychological Science, 27*, 1078-1091.

Yeager, D. S., & Walton, G. M. (2011). Social-psychological interventions in education: They're not magic. *Review of Educational Research, 81*, 267-301.

Yeager, D. S., Walton, G. M., Brady, S. T., Akcinar, E. N., Paunesku, D., Keane, L., ... Gomez, E. M. (2016). Teaching a lay theory before college narrows achievement gaps at scale. *Proceedings of the National Academy of Sciences, 113*, E3341-E3348.

. . .

The authors have no conflicts of interest or funding to disclose.

Correspondence to Jessica L. Schleider, Psychology Department, Harvard University, 33 Kirkland Street, Cambridge, MA 02138; jschleider@fas.harvard.edu

Implementation of Telepsychology Services in a University Training Clinic: Process and Lessons Learned

Alex R. Dopp, Noah R. Wolkowicz, Ayla R. Mapes, and Matthew T. Feldner, *University of Arkansas*

BEHAVIORAL HEALTH (i.e., mental health and substance use) disorders, which affect 1 in 4 individuals at any given time (Center for Behavioral Health Statistics and Quality, 2015), including 1 in 5 children (Centers for Disease Control and Prevention, 2013), are now the leading cause of disability in the United States (U.S. Burden of Disease Collaborators, 2013). A wide array of evidence-based treatments (EBTs) for behavioral health problems are now available, many of which are cognitive-behavioral in orientation (see Barlow, 2014; Chorpita et al., 2011; Society of Clinical Psychology, 2016), yet less than 20% of individuals with a diagnosable behavioral health condition receive care from a specialty provider (National Center for Health Statistics, 2012; Robinson & Reiter, 2016). Numerous barriers, such as inadequate numbers of providers (Bureau of Health Workforce, 2016; Substance Abuse and Mental Health Services Administration [SAMHSA], 2013) and obstacles to patient engagement including cost, transportation, and conflict with work schedules (Mojtabai et al., 2011; Owens et al., 2002; Robinson & Reiter, 2016), contribute to low rates of treatment by limiting the accessibility of behavioral health services; such barriers also have a disproportionate impact on traditionally underserved populations such as rural, racial and ethnic minority, and low-income individuals (Interian, Lewis-Fernández, & Dixon, 2013; McCord, Elliott, Brossart, & Castillo, 2012; Owens et al., 2002). Given all of these considerations, ongoing efforts to disseminate and implement cognitive-behavioral EBTs in traditional behavioral health settings must also attend to service accessibility if they are to maximize the public health impact of EBTs.

Strategies to improve accessibility of behavioral health services include delivery in novel settings, such as integrated behavioral health in primary care (see Robinson & Reiter, 2016; Talen & Valeras, 2013), but delivery of EBTs in specialty behavioral health services remains critical for many disorders (Comer & Barlow, 2014). Thankfully, rapid technological advances over the past decade—such as increases in computer and Internet use (U.S. Census Bureau, 2016), even in underserved populations (Anderson, 2015)—have provided new opportunities to improve the accessibility of traditional behavioral health services (Jones, 2014). Of particular promise for EBT delivery is telehealth, which involves remote delivery of health services via real-time audio- and video-conferencing (American Telemedicine Association, 2012) and includes telepsychology (i.e., delivery of psychological services in such a manner; American Psychological Association, 2013) and related behavioral health services (e.g., telepsychiatry, telemental health). We focus on telepsychology in the present article. Telepsychology has consistently been found to be an effective and patient-acceptable strategy to improve

accessibility of behavioral health services (Gros et al., 2013; Hilty et al., 2013; Slone, Reese, & McClellan, 2012), and thus represents an important avenue for increasing the availability of EBTs to diverse populations (Comer & Myers, 2016; Jones, 2014).

Despite the promise of telepsychology to improve accessibility of behavioral health EBTs, very few doctoral training programs in health services psychology provide instruction or supervised experience in that service modality (Colbow, 2013; Lustgarten & Colbow, 2017). Thus, many psychologists are limited to postdoctoral training in telepsychology via online and in-person continuing education programs or organization-specific trainings (e.g., at the U.S. Department of Veterans Affairs) and may have difficulty obtaining necessary supervision to become competent in telepsychology service delivery (Colbow, 2013). In recent years, however, at least three innovative APA-accredited doctoral programs have begun to offer onsite training in the theory and practice of telepsychology: the Texas A&M University counseling psychology program (i.e., Telehealth Counseling Clinic; www.telehealthcounseling.org/; see McCord et al., 2011; McCord, Saenz, Armstrong, & Elliott, 2015); the University of Nebraska-Lincoln clinical psychology program (i.e., Telehealth Clinic at the Psychological Consultation Center; www.psychology.unl.edu/pcc/ specialty-clinics); and the University of Louisville counseling psychology program (Dr. Eugene Foster, personal communication, November 3, 2016). Taken together, these programs demonstrate the feasibility of integrating telepsychology services into doctoral training in health services psychology.

Building on the success of those training programs, we recently implemented a home-based model of telepsychology service delivery in the training clinic for the University of Arkansas APA-accredited doctoral program in clinical psychology. In the remainder of this paper, we describe the process of our telepsychology initiative using the EPIS framework (Aarons, Hurlburt, & Horwitz, 2011) of EBT implementation in public service sectors. Specifically, across four phases of the implementation process (exploration, preparation, implementation, and sustainment), we describe our progress to date and identify internal ("inner context") and external ("outer context") factors that influenced implementation. Progress and lessons learned across the four phases are summarized in Figure 1.

Exploration

During the exploration phase, an organization identifies an issue that can be addressed through implementation of novel practices (Aarons et al., 2011). At the University of Arkansas, we first identified our goal of telepsychology service implementation based on the mission and values of our clinical training program. In particular, we noted the following three considerations: (a) our training clinic endorsed a dual mission of training student clinicians in evidence-based behavioral health treatments and improving behavioral health of the local community through provision of such treatments; (b) faculty, staff, and students were supportive of efforts to increase accessibility of services to vulnerable and underserved populations in the community; and (c) potential clients who were referred to the clinic from throughout the four-county Northwest Arkansas area were regularly unable to participate in offered services due to accessibility barriers. Thus, exploration was primarily driven by inner context variables rather than external pressures such as legislative mandates or funding requirements (i.e., outer context). Our approach to the exploration phase highlights the ability of training clinics to flexibly make decisions about health service provision that reflect their specific mission, values, and training goals.

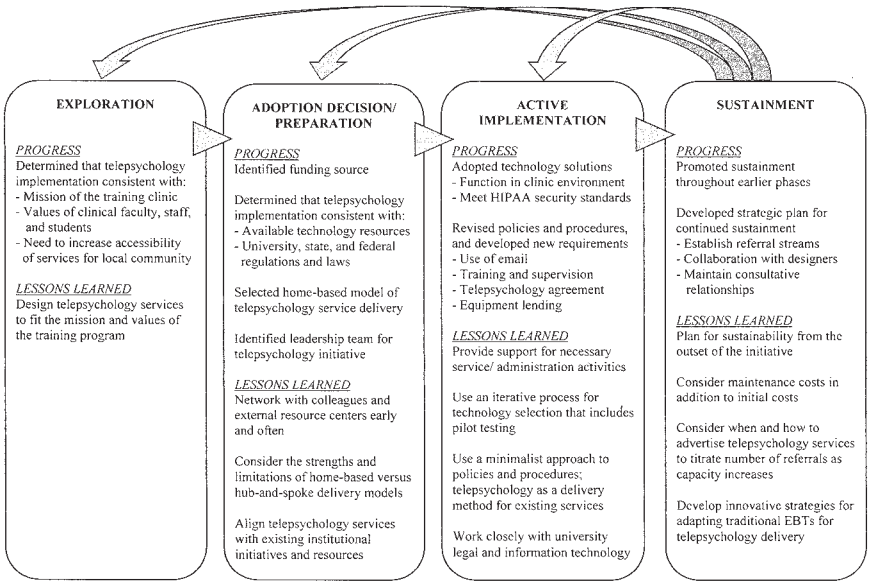


Figure 1. Based on the conceptual model presented by Aarons and colleagues (2011).

Adoption Decision/Preparation

The adoption decision/preparation phase includes all steps involved in determining whether the issue identified in the exploration phase is feasible to implement (Aarons et al., 2011). When making a decision about whether to proceed with implementation of telepsychology services, we had to balance the inner context factors identified during the exploration phase against a variety of critical outer context variables. For example, consultation with faculty from other doctoral training programs that provide training in telepsychology (e.g., Dr. Carly McCord at Texas A&M University) and local technical assistance (i.e., University of Arkansas for Medical Sciences Center for Distance Health; www.cdh.uams.edu/) provided critical information about the feasibility of implementing telepsychology services in a clinical psychology training program. Other useful resources included the American Telemedicine Association State Policy Resource Center (www.americantelemed.org/policy-page/state-policy-resource-center) and the Telehealth Resource Centers network (www.telehealthresourcecenter.org/who-your-trc).

It is important to note that all other training clinics that provide telepsychology services used a "hub-and-spoke" model, involving web-conferencing between the clinician at a central clinic (i.e., "hub") and the client at a remote health service setting (e.g., rural or school-based clinic; "spoke"); many training clinics may find it difficult to

implement such a service delivery model due to extensive administrative, technological, and financial requirements (see Shore & Manson, 2005). In contrast, other providers (e.g., Veterans Health Administration) have begun to offer telepsychology services using a home-based delivery model in which the client presents for services at their residence. In comparing hub-and-spoke versus home-based models, we noted that the infrastructure for the former would require considerable financial support, such as grant funding from federal agencies that focus on behavioral health (e.g., SAMHSA) or rural populations (e.g., U.S. Department of Agriculture Telemedicine Grants), whereas the necessary infrastructure for a home-based delivery model could be supported by a combination of clinic funds and resources from our department and university (e.g., research funds). Ultimately, we chose the home-based model of telepsychology services because it (a) minimized the burden of any changes on the training clinic; (b) maximized the feasibility of replication by other doctoral training programs; and (c) leveraged a history of research in our training clinic into a funding opportunity through existing resources.

The university environment that houses a training clinic serves as an important resource for bridging between the inner context of the clinic/training program and macro-level outer context considerations. For example, we consulted with legal counsel for our institution to determine whether the existing liability insurance policy for graduate student clinicians covered telepsychology services, and we coordinated with university Information Technology Services (ITS) to identify web-conferencing programs that would be supported by the existing campus infrastructure. Coordination with ITS proved especially beneficial, as we were able to align our telepsychology implementation process with an ongoing unified communications initiative that made GoToMeeting available to us through an institutional license. Finally, when considering the context outside of the university, we noted several legal factors that could have a critical influence on the decision to adopt telepsychology services in certain scenarios: At the state level, Arkansas law restricted insurance reimbursement for telehealth to services provided at a remote clinical site (i.e., hub-and-spoke model) until this year, and at the federal level, the Health Insurance Portability and Accountability Act (HIPAA) places restrictions on the electronic transmission of protected health information by covered entities and their business associates. These laws had little import for our adoption decision because our training clinic is not a HIPAA-defined covered entity (e.g., does not bill insurance), but other training clinics need to consider legislative requirements based on their location and legal status.

Upon completion of the adoption decision/preparation phase and receipt of necessary funding, the clinical training faculty in our department approved the implementation of telepsychology services in the training clinic. The first author (a faculty member with prior experience in telepsychology) and fourth author (the director of the training clinic) committed to serve as champions for the implementation process.

Table 1. Technology Used to Implement Telepsychology Services in a University Training Clinic

Technology[1]	Type	Purpose	Number of Units
Dell OptiPlex 9020 desktop computer and 22″ monitor	H	Run web-conferencing equipment	2 purchased
Dell Latitude E6540 15.6″ notebook with built-in webcam	H	Run web-conferencing equipment; loaner equipment for clients without a computer or tablet to conduct web-conferencing	6 already available
Citrix GoToMeeting site license	S	Conduct web-conferencing	1 already available through the University
Logitech H390 USB wired PC headset	H	Speakers and microphone for web-conferencing	4 purchased
Microsoft LifeCam 3000, 720p HD webcam	H	Video capture for web-conferencing with desktop computers; Loaner equipment for clients without webcam/ microphone to conduct web-conferencing	6 purchased
Apple 12.9″ iPad Pro tablet (Wi-Fi capable, 256GB) with built-in webcam	H	Loaner equipment for clients without a computer or tablet to conduct web-conferencing	4 purchased
Urban Armor Gear Rubberized Tablet Case for Apple 12.9" iPad Pro	H	Protect tablet from damage	4 purchased
TechSmith Camtasia license	S	Record audio and video from web-conferencing sessions for supervisor review	3 purchased (can install on two computers each)
SanDisk Cruzer Glide USB 2.0 flash drive	H	Store recordings of web-conferencing sessions	16 already available

Note. H = hardware; S = software. [1]The products listed are registered trademarks of the respective companies. We provide this list as an illustration of possible technology solutions for telepsychology services, rather than an endorsement of a particular product or brand; none of the specific products mentioned are essential.

What advice do you have for students or early career professionals pursuing a primary focus on D&I?

Dr. Clark: There is no single formula for successful dissemination and implementation. However, looking back on my experience with Improving Access to Psychological Therapies (IAPT), I would personally highlight the following points:
1. Stick closely to the evidence base and aim to implement the treatments that are well supported by research data, irrespective of one's personal orientation.
2. Be accountable. Ensure that outcomes are measured for everyone that is treated and that this data is placed in the public domain.
3. Pay considerable attention to ensuring that therapists are appropriately trained.
4. Also pay attention to therapist wellbeing.
5. Be accountable to service users. Encourage them to provide feedback on the services and be involved in plans to further improve provision.
6. Form strategic alliances with economists as commissioners of mental health services are particularly likely to be influenced by data on the economic benefits of implementing empirically supported treatments.
7. Don't get disheartened if your first 10 to 20 attempts to lobby for an expansion of psychological therapy fall on deaf ears. There will always be someone somewhere who has influence and is willing to act. It just takes time to find them.
8. Use your cognitive therapy skills to help you understand the beliefs and motivations of health commissioners. This will ensure that you are best able to present your arguments in the clearest light.

Dr. Chorpita: Well, the obvious answer is to read the relevant journals, go to the relevant conferences, and collaborate with other D&I researchers. And of course, by all means, join ABCT's Dissemination and Implementation SIG. If you don't, you're missing out. But I think history will best remember those people who didn't follow a standard recipe for success. If you like technology, go to technology conferences and read those journals. If you're an artist, study interface and design, and consider how they might impact diffusion of innovation. Dissemination in mental health services is a field still in its infancy, and those who take the oblique path are likely to experience some of the most significant discoveries and hence the greatest rewards. Most importantly, don't narrow your thinking that dissemination or implementation is the ultimate goal. Spend enough time in service organizations, in schools, in communities, and in consumer groups, so you don't forget why we do what we do: people want to have better, healthier, and more meaningful lives. Build your career around solving that problem.

Dr. Garland: I think it is essential for anyone interested in D&I to spend time in practice settings, getting to know the staff members, as well as administrators. Direct experience in practice settings should include exposure to all aspects of organizational structure and culture ranging from fiscal issues and contracting, to physical space and scheduling, human resources (e.g., hiring and promotion practice, supervision structures), marketing, and public outreach. Getting to know administrators and policymakers, as well as consumer representatives, is also extremely valuable. In addition, learning about theory and research from related disciplines is really valuable, including organizational research, research on behavior change, educational theories, especially regarding adult learning, social policy history and change. Finally, I encourage keeping an open mind regarding disruptive innovations. Too often we are just offering relatively minor "tweaks" on current practices. (I've sometimes espoused this myself, but am pushing myself to think about bolder innovations for the future). While gradual incremental system or practice change may seem most realistic and pragmatic, I would urge all of us to think about system and practice innovations that are actually more disruptive.

D&I Spotlight Interviews: **http://www.abct.org/docs/PastIssue/40n7sup.pdf**

Active Implementation

Active implementation encompasses the steps by which an organization adopts a novel health service practice (Aarons et al., 2011). Many of those steps are necessary predecessors to the new practice itself. For our implementation process, initial steps included selection of technology solutions, revision of existing policies and procedures in the training clinic, and development of new requirements for telepsychology services. We quickly discovered that implementation of telepsychology services involved significant administrative resources; therefore, we provided training to clinic staff so that they could support the implementation process and we created a faculty service position (with approval of the clinical training faculty), the Associated Director of Clinic Outreach and Communication, whose duties include administration of technology-related initiatives in the clinic. We have also continued to coordinate with university legal counsel and ITS, as well as consult with colleagues at other training clinics and technical assistance centers, throughout the Active Implementation phase (which is ongoing).

Table 1 provides a representative list of technology used in our telepsychology services; we provide this list as an illustration of possible solutions, rather than an endorsement of a particular product or brand. Selection of appropriate hardware and software for telepsychology services was a complex and iterative process. We found that it was vital to pilot-test products prior to making a full purchase, as using the technology in its identified environment made it much easier to satisfactorily evaluate the fit between product features and our needs. For example, we originally planned to use external video-recorders to record telepsychology appointments for supervisor review, but pilot-testing revealed that the video-recorder required a complex set-up to adequately connect with existing clinic computers. Therefore, we instead chose to purchase a video-capturing software program that accomplished the same task without complex hardware. In other instances, we had to make changes to clinic facilities, such as installing Ethernet ports so that we could connect desktop computers in therapy rooms to the Internet (i.e., because connection via Wi-Fi would have significantly decreased web-conferencing audio and video quality). In addition to price and usability, we also considered several important factors related to client confidentiality during the technology selection

process. For instance, we prioritized web-conferencing software that met HIPAA security standards, such as end-to-end encryption of transmissions. GoToMeeting met those standards (Citrix Systems, Inc., 2015); although Citrix will not enter into a business associates agreement, that is acceptable under HIPAA because GoToMeeting only acts as a conduit (i.e., the company cannot decrypt and access the information being transmitted; see Tuerk, Ronzio, & Shore, 2015). As another example, our university ITS installed software on our iPad tablets that allows us to fully wipe the device of any personal information after loaning it to a client.

In terms of adjusting policies and procedures to support telepsychology services, we sought to limit administrative burden on our training clinic by adopting a minimalist approach. Our guiding principle was "Telepsychology is a novel delivery method for psychological services, rather than a distinct service," and thus, whenever possible, we integrated information about telepsychology into existing policies and procedures rather than creating new ones. As such, many areas of clinical operations underwent only minor changes (e.g., when conducting phone screens, we inquire about barriers to treatment accessibility). There were substantive changes in four areas. First, we now collect client email addresses and use email to send appointment invitations, the link to our routine outcome measure portal, and other treatment information to clients who sign a release form; this change required creation of a clinic-specific email address through ITS. Second, we have established requirements for training and supervision in telepsychology services, including didactic training and required reading (e.g., APA, 2013, telepsychology guidelines); completion of a basic sequence of clinical practicum experiences; training in how to use the required technology; supervisor approval to provide telepsychology services; and ongoing supervision, including direct observation via session recordings and/or live observation. Third, before a client can be seen via video-conference, they must complete an on-site intake interview, be approved by a supervisor, conduct a test GoToMeeting session with a clinic staff member, and sign a telepsychology agreement that covers information about telepsychology services (e.g., technical requirements, threats to confidentiality, provisions in case of emergency or technical failure). Fourth, we have equipment (webcams, laptops, and tablets) available for telepsychology clients to check out in cases where it is needed and purchase would be cost-prohibitive to the client. The client must sign an equipment lending agreement, with language approved by university counsel, acknowledging that the clinic will bill them for lost, stolen, or damaged equipment.

Since the active implementation phase began approximately 4 months ago, we have screened 23 individuals for services in our training clinic and approximately 48% of those individuals (n = 11) identified significant barriers to treatment accessibility (M = 1.3 barriers; SD = 0.65). The most common barriers endorsed were distance and travel time to the clinic (n = 4); and conflict with external activities, such as jobs, classes, and caretaking responsibilities (n = 3). Moreover, in the past month, we have conducted three in-person intakes (of five scheduled); one of those individuals initiated telepsychology services whereas the other two are still in the evaluation process. Finally, three clinicians have met the training requirements for telepsychology and as many as seven additional clinicians could meet the requirements by the end of the calendar year.

Sustainment

During the sustainment phase, an organization takes steps to maintain, expand, or curtail its use of the now-implemented practice. Given that active implementation of telepsychology services is ongoing in our training clinic, our perspective on the sustainment phase is based on anticipation rather than experience. Nevertheless, we have emphasized "planning for sustainment" from the outset of the telepsychology implementation process and have taken several steps to promote continued use of our telepsychology services over the coming years. During the exploration phase, we sought to obtain buy-in from the clinical faculty, staff, and students into telepsychology services, through informational meetings and frequent solicitation of feedback, to promote a sense of shared ownership around the process. As one indicator of success, the seven faculty who supervise in our training clinic are all willing to supervise telepsychology cases under at least some conditions (e.g., depending on the clinical presentation and the availability of appropriate consultation or peer supervision). Next, during the adoption decision/preparation phase, we chose a service delivery model (i.e., home-based) that was not only less expensive to implement but would also be less expensive to maintain. Thus, replacement of equipment and other incidental expenses can generally be covered under the operating budget of the training clinic. Most recently, as part of the active implementation phase, we have iteratively revised our policies and procedures—through feedback from faculty, staff, and students—to maximize the fit between telepsychology services and existing practices.

As we look toward the future of telepsychology services in our training clinic, we have developed a strategic plan to support the sustainment phase. First, as we train additional student clinicians in the provision of telepsychology services, we recognize that it may become increasingly difficult to recruit an adequate number of training cases under our current (i.e., passive) recruitment practices. Thus, we plan to establish referral streams with community providers, such as community mental health centers and child advocacy centers, who are likely to work with vulnerable and underserved populations. Nevertheless, we emphasize that such clients were already contacting our training clinic for services at a rate of approximately 1 per week, and thus active solicitation would have likely resulted in a number of referrals that exceeded our initial capacity. Second, individual student clinicians may be more likely to sustain use of telepsychology services if they can deliver a wide variety of behavioral EBT models via web-conferencing. Unfortunately, the vast majority of EBTs were developed and evaluated using an in-person delivery format. Therefore, we plan to begin engaging in rapid adaptation of EBTs for telepsychology delivery through user-centered design processes (which are well-suited to the design of behavioral and cognitive interventions for novel contexts; see Lyon & Koerner, 2016) in collaboration with faculty and students from the University of Arkansas Department of Art and Design. Finally, we intend to maintain collaborative relationships with colleagues at other training clinics, technical assistance centers, and our university legal counsel and ITS so that we are well-positioned to respond when new challenges inevitably develop.

Conclusions

Innovative strategies are needed to promote the dissemination and implementation of cognitive-behavioral EBTs for behavioral health problems. Telepsychology service delivery offers a solution to

addressing many of the barriers to accessibility in traditional behavioral health services, and thus is poised to serve as a key component in increasing the public health impact of EBTs—but that will only be possible if doctoral programs in health service psychology begin to offer training in telepsychology to their students (Colbow, 2013). Herein, we have presented details regarding our implementation process as an example of such a training approach: home-based telepsychology services in a training clinic affiliated with the APA-accredited University of Arkansas doctoral program in clinical psychology. We hope that our experiences serve as a template that can guide other doctoral programs in health service psychology that wish to integrate telepsychology training into their curricula. In the future, we also plan to conduct research that evaluates the impact of our telepsychology services on (a) client symptoms and psychosocial functioning; and (b) student clinician preparation for internship, postdoctoral training, and employment that involves telepsychology; as well as (c) explores and refines the application of user-centered design to the adaptation of behavioral EBTs to telepsychology delivery. We encourage other training programs to join us in expanding the accessibility of their services through the use of telepsychology, as well as in advancing this area of scholarly inquiry, so that we can together build a robust and empirically supported set of best practices around the training of future psychologists in telepsychology service delivery.

References

Aarons, G. A., Hurlburt, M., & Horwitz, S. M. (2011). Advancing a conceptual model of evidence-based practice implementation in public service sectors. *Administration and Policy in Mental Health, 38*(1), 4–23. doi: 10.1007/s10488-010-0327-7

American Psychological Association. (2013). Guidelines for the practice of telepsychology. *American Psychologist, 68*, 791-800.

American Telemedicine Association. (2012). *Telemedicine practice guidelines*. Retrieved December 20, 2016 from http://thesource.americantelemed.org/resources/telemedicine-practice-guidelines#.VbliHsjn_Qw

Anderson, M. (2015). *Technology device ownership: 2015*. Washington, DC: Pew Research Center. Retrieved December 20, 2016 from http://www.pewinternet.org/files/2015/10/PI_2015-10-29_device-ownership_FINAL.pdf

Barlow, D. H. (2014). *Clinical handbook of psychological disorders: A step-by-step treatment manual* (5th ed.). New York, NY: The Guilford Press.

Bureau of Health Workforce. (2016). *Designated health professional shortage areas: Statistics as of November 16, 2016*. Washington, DC: U.S. Health Resources and Services Administration. Retrieved November 16, 2016, from https://datawarehouse.hrsa.gov/Tools/HDWReports/Reports.aspx

Center for Behavioral Health Statistics and Quality. (2015). *Behavioral health trends in the United States: Results from the 2014 National Survey on Drug Use and Health*. HHS Publication No. SMA 15-4927, NSDUH Series H-50. Retrieved April 3, 2017 from www.samhsa.gov/data/sites/default/files/NSDUH-FRR1-2014/NSDUH-FRR1-2014.htm

Centers for Disease Control and Prevention. (2013). Mental health surveillance among children - United States, 2005-2011. *Morbidity and Mortality Weekly Report.*

Chorpita, B. F., Daleiden, E. L., Ebesutani, C., Young, J., Becker, K. D., Nakamura, B. J., … Starace, N. (2011). Evidence-based treatments for children and adolescents: An updated review of indicators of efficacy and effectiveness. *Clinical Psychology: Science and Practice, 18*, 154-172. doi:10.1111/j.1468-2850.2011.01247.x

Citrix Systems, Inc. (2015). *GoToMeeting and HIPAA compliance: Privacy productivity and video conferencing*. Retrieved November 30, 2016 from https://assets.cdngetgo.com/45/64/0a5421dd434389cfb9e529a9e2c9/gotomeeting-hipaa-compliance-guide-brief.pdf

Colbow, A. J. (2013). Looking to the future: Integrating telemental health therapy into psychologist training. *Training and Education in Professional Psychology, 7*, 155-165. doi:10.1037/a0033454

Comer, J. S., & Barlow, D. H. (2014). The occasional case against broad dissemination and implementation: Retaining a role for specialty care in the delivery of psychological treatments. *American Psychologist, 69*(1), 1-18.

Comer, J. S., & Myers, K. (2016). Future directions in the use of telemental health to improve the accessibility and quality of children's mental health services. *Journal of Child and Adolescent Psychopathology, 26*(3), 296-300.

Gros, D. F., Morland, L. A., Greene, C. J., Acierno, R., Strachan, M., Egede, L. E., … Frueh, B. C. (2013). Delivery of evidence-based psychotherapy via video telehealth. *Journal of Psychopathology and Behavioral Assessment, 35*(4), 506-521.

Hilty, D. M., Ferrer, D. C., Parish, M. B., Johnston, B., Callahan, E. J., & Yellowlees, P.M. (2013). The effectiveness of telemental health: A 2013 review. *Telemedicine Journal and e-Health, 19*(6), 444-454.

Interian, A., Lewis-Fernández, R., & Dixon, L. B. (2013). Improving treatment engagement of underserved U.S. racial-ethnic groups: A review of recent interventions. *Psychiatric Services, 64*(3), 212-222.

Jones, D. J. (2014). Future directions in the design, development, and investigation of technology as a service delivery vehicle. *Journal of Clinical Child and Adolescent Psychology, 43*(1), 128-142.

Lyon, A. R., & Koerner, K. (2016). User-centered design for psychosocial intervention development and implementation. *Clinical Psychology: Science and Practice, 23*(2), 180-200.

Lustgarten, S. D., & Colbow, A. J. (2017). Ethical concerns for telemental health therapy amidst governmental surveillance. *American Psychologist, 72*(2), 159-170. doi:10.1037/a0040321

McCord, C. E., Elliott, T. R., Brossart, D. F., & Castillo, L. G. (2012). Mental health issues in rural areas. In R. A. Crosby, M. L. Wendel, R. C. Vanderpool, & B. R. Casey (Eds), *Rural populations and health: Determinants, disparities, and solutions* (pp. 323-339). San Francisco, CA: Jossey-Bass.

McCord, C. E., Elliott, T. R., Wendel, M. L., Brossart, D. F., Cano, M. A., Gonzalez, G. E., & Burdine, J. N. (2011). Community capacity and teleconference counseling in rural Texas. *Professional Psychology: Research and Practice, 42*(6), 521-528.

McCord, C. E., Saenz, J. J., Armstrong, T. W., & Elliott, T. R. (2015) Training the next generation of counseling psychologists in the practice of telepsychology. *Counselling Psychology Quarterly, 28*(3), 324-344, doi:10.1080/09515070.2015.1053433

Mojtabai, R., Olfson, M., Sampson, N. A., Jin, R., Druss, B., Wang, P. S., … Kessler, R. C. (2011). Barriers to mental health treatment: Results from the National Comorbidity Survey Replication (NCS-R). *Psychological Medicine, 41*(8), 1751-1761.

National Center for Health Statistics. (2012). Summary health statistics for the U.S. population: National Health Interview Survey, 2011. *Vital and Health Statistics, 2*(255), 1-110.

Owens, P. L., Hoagwood, K., Horwitz, S. M., Leaf, P. J., Poduska, J. M., & Kellam, S. G. (2002). Barriers to children's mental

health services. *Journal of the American Academy of Child and Adolescent Psychiatry, 41*(6), 731-738.

Robinson, P. J., & Reiter, J. T. (Eds.) (2016). *Behavioral consultation and primary care: A guide to integrating services* (2nd ed.). Switzerland: Springer International.

Shore, J. H., & Manson, S. M. (2005). A developmental model for rural telepsychology. *Psychiatric Services, 56*(8), 976-980.

Slone, N. C., Reese, R. J., & McClellan, M. J. (2012). Telepsychology outcome research with children and adolescents: A review of the literature. *Psychological Services, 9*(3), 272-292.

Society of Clinical Psychology. (2016). *Research-supported psychological treatments.* Retrieved April 3, 2017 from https://www.div12.org/psychological-treatments/

Substance Abuse and Mental Health Services Administration. (2013). *Report to Congress on the nation's substance abuse and mental health workforce issues*. Rockville, MD: Author. Retrieved December 20, 2016 from https://store.samhsa.gov/shin/content/PEP13-RTC-BHWORK/PEP13-RTC-BHWORK.pdf

Talen, M. R., & Valeras, A. B. (Eds.) (2013). *Integrated behavioral health in primary care: Evaluating the evidence, identifying the essentials.* New York, NY: Springer.

Tuerk, P. W., Ronzio, J. L., & Shore, P. (2015). Technologies and clinical videoconferencing infrastructures: A guide to selecting appropriate systems. In P. W. Tuerk & P. Shore (Eds.), *Clinical videoconferencing in telehealth: Program development and practice* (pp. 3-22). Cham, Switzerland: Springer International.

U.S. Burden of Disease Collaborators. (2013). The state of US health, 1990-2010: Burden of diseases, injuries, and risk factors. *Journal of the American Medical Association, 310*(6), 591-608.

U.S. Census Bureau. (2016). *Households with a computer and internet use: 1984 to 2012*. Retrieved December 20, 2016 from http://www.census.gov/data/tables/2012/demo/ computer-internet/computer-use-2012.html.

. . .

This work was supported by a grant from the Marie Wilson Howells Endowment, University of Arkansas Department of Psychological Science.

Correspondence to Alex R. Dopp, Ph.D., Department of Psychological Science, University of Arkansas, 216 Memorial Hall, Fayetteville AR, 72701; dopp@uark.edu

Understanding and Targeting Attrition in Implementation of Evidence-Based Practices: A CBT Case Example

Torrey A. Creed, Diane L. Rosenbaum, Danielle C. Centeno,
Perelman School of Medicine, University of Pennsylvania

IMPLEMENTATION SCIENCE has made significant advances in the past decade toward developing implementation frameworks and strategies to embed and sustain evidence-based practices (EBPs) in community behavioral health (CBH) settings. No frameworks and processes include the Consolidated Framework for Implementation Research (CFIR; Kirk et al., 2016), the PRECEDE-PROCEED model (Green & Kreuter, 2005), Promoting Action on Research Implementation in Health Services (PARiHS; Kitson, Harvey, & McCormack, 1998), and Exploration, Preparation, Implementation, Sustainment (EPIS; Aarons et al., 2011), among others. As noted in these frameworks, implementation processes occur across several phases, including preparation, active training, and sustainability. However, the majority of research has focused on the active training phase, in which the EBP training occurs, rather than the earlier phases of exploration and preparation, or subsequent sustainability (Aarons et al.; Olin et al., 2016). As an alternative, taking a wider-angle lens to the understanding of where barriers may lie in implementation efforts may, in turn, advance the development of strategies to increase the sustained uptake of EBPs.

A self-evident outcome of implementation efforts is to retain the staff members who have been trained so that they can deliver the EBP and support its penetration into the system (Timmer et al., 2016). However, the interaction of multiple factors may interfere with implementation outcomes such as retention. These include characteristics of the intervention, methodological weaknesses in the implementation effort, the context in which the EBP is to be delivered, and interactions among these and other factors (Glasgow & Emmons, 2007). Understanding these complex influences on an individual's ability and wish to remain involved in an implementation effort would give researchers the opportunity to address barriers and facilitators to retention, and would allow the development of strategies that may be specific to the implementation model, EBP, or environmental factors that might interact with clinician characteristics to impact attrition.

Although attrition data from implementation efforts are sometimes reported in the literature, there is currently no standard method for reporting that information, which makes comparison and conclusions very difficult. By promoting a more standardized approach to reporting data related to attrition, it may greatly increase confidence in the conclusions drawn about not only attrition in implementation of EBPs, but also larger questions about training and implementation outcomes (Marcellus, 2004). When this information is reported, the attrition data often simply reflect completers / noncompleters at the end of the active training phase (Olin et al., 2016). While the provision of active training completion rates may offer helpful information for identifying which implementation processes lead to greatest retention of clinicians in this phase, reporting attrition data from this phase alone is not sufficient to inform retention practices throughout the lifespan of an implementation effort. Attrition after the active training phase may be reported separately in studies of the sustainability of the EBP over time, but this reporting is infrequent and inconsistent. It is possible that the emphasis on reporting completion rates during the active training phase arose from a carryover of reporting models popular in clinical trials and other treatment outcome research where attrition and dropout reflect the degree to which a full dose of the intervention was received. Implementation efforts are distinct from traditional treatment outcome research in many ways,

including the expectation that measurement of sustainability is necessary to evaluate the effects of the program on clinicians, the system of care, and client outcomes after active training phase concludes. Understanding where in the timeline clinicians are systematically lost (including phases outside of active training, such as planning and sustainability) and for what reasons, can help identify opportunities for interventions to improve recruitment to participate in an EBP implementation, retention, sustainability, return on investment, and ultimately client outcomes.

Just as other standards of reporting have increased over the years (e.g., gender, race and ethnicity, the CONSORT diagram), routine reporting of attrition data may continue to advance the rigor and knowledge of implementation science. Currently, little is known about the factors that move clinicians to withdraw from programs of implementation (Olin et al., 2016; Powell et al., 2104). The progression of defining and refining this and other implementation outcomes follows from other important advances from the differentiation of implementation outcomes from services and client outcomes (Proctor et al., 2009) through ongoing work to identify instruments that measure these implementation outcomes (Lewis et al., 2015). Data on potential biasing variables for both the individuals who attrited and those who were retained, and data that examines the nature of, and reasons for, the attrition, may all contribute key pieces for understanding attrition (Barry, 2005; Marcellus, 2004). Little systematic study of attrition risk factors in implementation can be found in the extant literature; it is possible that identification of these factors and related research may be complicated since attrition risk may occur across several levels of organization (e.g., individuals, agency, system of care, community). Nonetheless, investigations of clinician characteristics as predictors of attrition in implementation are an important next step in advancing the field, and build from earlier work, such as studies that have found organizational climate predicts staff turnover in settings that are implementing EBPs (Sheidow et al., 2007).

Presented below are three aspects of attrition that may be important to consider in standardizing the ways in which attrition data are collected and reported.

Definitions

Definitions of attrition may vary across implementation programs, which influence how attrition is then reported. Attrition is related to both penetration and sustainability in Proctor's (2009) implementation outcomes, but it does not cleanly fit into either. Penetration relates to how fully an EBP is integrated into a service setting, including the ratio of people who receive the EBP out of the pool of people who were eligible for the EBP, or the ratio of providers who deliver the EBP out of the pool of providers who were expected to deliver the EBP. Alternatively, sustainability relates to the degree to which an EBP is maintained and integrated into standard practice over time. Both of these constructs are conceptually related to the degree to which trained clinicians continue to deliver the EBP, but the operational definitions remain vague. For example, how should clinicians who continued to attend consultation sessions but did not complete other implementation program components (e.g., did not meet skill competency benchmark, or did not provide sufficient evidence of practicing EBP with clients through session recordings) be classified? Similarly, for clinicians with multiple job roles, what portion of their time do they need to be actively engaged in providing the EBP in order to be counted among those who continue to deliver the EBP? And how should those who complete the active training phase, but attrit at some point after that (e.g., complete training, regularly deliver the EBP, and then leave the agency a year later), be classified?

Timing

The timing of attrition during an implementation protocol may offer important information to inform subsequent strategies to increase retention. For example, if attrition rates are found to be higher during one stage of an implementation process model than in the rest of the stages, strategies may be targeted toward reducing barriers and increasing facilitators during that stage. Similarly, phases in which attrition is relatively low may lead to hypotheses about strategies that build upon strengths in the model. More sophisticated questions such as how these patterns may differ across specific implementation models or processes, EBPs, types of settings, and clinician characteristics would further help to refine hypotheses. Given the current limited information about patterns of attrition, the development of these types of implementation interventions represent future directions rather than next steps, but more consistent reporting of when attrition occurs is a necessary first step to move the science toward a point where these strategies could be developed and tested. Since the current gold-standard for EBP implementation typically includes several components (e.g., workshop, clinician practice with supervision and/or consultation; Sholomskas et al., 2005) and the time frames for these components can vary across programs (Beidas & Kendall, 2010) at a minimum, attrition should be reported according to the phase of implementation in which it occurs.

Reasons

In addition to understanding the timing of attrition, reasons for attrition offer a different potential intervention point. Theoretical models of implementation suggest that reasons for poor implementation outcomes can be complex (Aarons et al., 2011; Sitzmann & Weinhardt, 2015; Wisdom et al., 2014), and their idiosyncratic nature may limit the generalizability of related findings. For example, studies have reported that clinicians have left implementation efforts due to maternity leave and family issues (Chorpita & Daleiden, 2014; Gleacher et al., 2011), the additional workload related to training or distance to the training site (Lyon et al., 2011; Timmer et al., 2016), job role changes (e.g., promoted to an administrative or supervisory role that does not involve patient care, and therefore no longer directly practicing the EBP; Creed et al., 2016; Stewart et al., 2012), trouble recruiting and/or retaining clients (Stewart et al., 2014), and turnover (i.e., leaving the work setting for reasons unrelated to the implementation effort; Creed et al., 2016; Dorsey et al., 2017; Timmer et al.). Development of more standardized categories for the reasons leading to attrition would better lend themselves to the development of generalizable strategies to address these reasons. On a basic level, loss of clinicians due to concerns about the EBP itself or the implementation process (e.g., poor acceptability of the EBP) would likely require a different intervention than loss of clinicians due to characteristics of the agency (e.g., organizational climate). Location of the reasons for loss of clinicians within CFIR (Kirk et al., 2016) or other frameworks may offer a more systematic method for categorizing these factors.

Case Example

To illustrate how the collection of attrition and dropout data may be used for program evaluation to understand leaky points in the implementation pipeline and

develop strategies to address those leaks, we present the Beck Community Initiative (BCI; Creed et al., 2014; Creed et al., 2016). To date, the BCI has partnered in training staff to use CBT in a variety of roles (e.g., clinicians, line staff in the therapeutic milieu, peer specialists) across almost 60 programs, including more than 500 clinicians.

Method

An examination of emerging patterns in the data helped to identify vulnerable periods for attrition, and informs strategies to address attrition and dropout risk. The three aspects of attrition posed above were addressed as follows:

Definition

The BCI implementation strategies are designed to support the sustained practice of an EBP (i.e., CBT), so all clinicians who began training with the BCI and then ended their participation at any point prior to April 2017 were examined. In other words, even clinicians who completed the full active training phase, and then concluded their participation during the subsequent sustained practice phase, were included in these descriptive statistics. Clinicians who ended their participation were grouped into two categories: those who dropped out, or withdrew from the BCI because they no longer chose to participate or deliver CBT, and those who attrited, or withdrew from participation for reasons reported to be unrelated to the BCI or CBT.

Timing

Because the BCI has several phases of involvement, each with different requirements and incentives for clinicians, natural markers were used to examine when clinicians leave the BCI. That is, attrition and dropout were examined at the point of transition from the initial skill-building workshop to the CBT consultation meetings, at the midpoint of the consultation period (i.e., 3 months postworkshop), at the conclusion of the consultation period (i.e., 6 months postworkshop), and at the recertification point (2 years after completing the consultation period). Although the BCI currently discontinues tracking clinician competency after they reach the 2–year recertification milestone, competency was tracked for earlier cohorts up to 8 years posttraining.

Reason

In order to focus efforts on managing the most preventable reasons for leaving and selecting participants who are most likely to be retained, clinicians were categorized and tracked based on their reasons for leaving the BCI according to whether they attrited for reasons related to (a) turnover, (b) a change of job role within the agency to a role without direct clinical contact (which prevented their ability to deliver CBT), (c) withdrawal of the provider agency's participation in the BCI, or (d) a decision to leave the BCI (e.g., still engaged in clinical practice at their agency, but withdrew specifically from the BCI).

The active training phase of the BCI lasts for 7 months, including 22 hours of intensive in-person workshops delivered to the inaugural cohort of clinicians over the course of 4 weeks, followed by 6 months of weekly group consultation with CBT experts to help clinicians develop and apply their skills with their regular caseloads (Creed et al., 2014). By the end of the active training phase, all clinicians who have completed the participation requirements (i.e., attendance at all workshops, attendance at 85% or more of the consultation groups, submission of at least 15 work samples) receive a certificate of completion. Those who also demonstrate competency in CBT (i.e., a total score of 40 or higher on the Cognitive Therapy Rating Scale; CTRS, Young & Beck, 1980) also earn a certificate of competency. After the active training phase, the expert-led consultation groups transition to a sustained practice phase, during which the consultation groups continue at the agency but are led by a group facilitator chosen from within the cohort of newly trained clinicians. To replenish clinicians lost to turnover and increase capacity, additional clinicians participate in a web-based training that is analogous to the in-person workshops. After completing the web-based training, these clinicians join the ongoing internal consultation group and over the course of 6 months, complete the same requirements that the initial cohort completed (85% attendance, submit at least 15 work samples including one earning a 40 or higher on the CTRS) to become eligible for a completion or competency certificates. Clinicians recertify at 2 years posttraining by submitting evidence that they have continued to attend at least 85% of their internal consultation groups, earned at least 3 Continuing Education credits related to CBT, and maintained competency (again, as evidenced as a total score of 40 or higher on the CTRS.)

When clinicians end their participation in the BCI, data are gathered to reflect when and why they have left. During the active training phase, the instructors record the date on which the clinician concluded their participation, and the reason the clinician gave for ending their participation (based on the 4 categories listed above). If the clinician cannot be reached to provide a reason, the clinician's supervisor identifies the correct code. During the sustained practice phase, attendance logs from the internally led consultation groups are used to identify the participation end date and a code is recorded by the group facilitator with the reason for the end of participation.

Results

Timing of Attrition and Dropout

Among those who eventually leave the BCI, the average length of involvement for clinicians prior to leaving is 1.67 years—almost a year past the end of the active training phase. Participation length ranges from 0 days (indicating the participant dropped out or attrited immediately after beginning the workshop) to approximately 8 years in this ongoing project. Frequencies of attrition and dropout over the active training and sustainability phases of the program are reported in Table 1. The greatest period for attrition and dropout appears to occur after full completion of the training program. That is, only 3.13% of all clinicians involved in the BCI leave prior to participating in the full workshop, and another 13.37% leave the program prior to the conclusion of the active training phase. The remaining 83.5% participate in the 7-month course of active training. The greatest point of attrition is in the first 2 years of sustained practice, during which 28.47% of the participating clinicians attrit. However, given mean annual turnover rates in CMH of 40%–60% (Mor Barak, Missley, & Levin, 2001), this 2-year rate of attrition, which includes all turnover plus attrition other reasons, is relatively low.

Reasons for Attrition and Dropout

Additional analyses were conducted to better understand the reasons for which clinicians leave the BCI. The most frequent reason for leaving the BCI was turnover. Please refer to Table 2 for frequencies of reasons for attrition and dropout.

Since the greatest opportunity to improve retention may be among those who decided to drop from the BCI as compared to those who attrited, we investigated the timing of dropout versus attrition for these two subgroups of clinicians. Dropouts were more likely to occur during the earliest portion of involvement with the

Table 1. Frequency of Clinicians Who Left the BCI by Implementation Phase

Training Period	Time Parameter	*n*	% of total clinicians who left BCI (*n* = 391)	% of total sample (*N* = 576)
Active Training Phase	During workshop	18	4.60	3.13
	After workshop, but before consultation midpoint	43	11.00	7.47
	Between midpoint and end of consultation	34	8.70	5.90
Sustainability Phase	After consultation but before recertification	164	41.94	28.47
	After recertification (when applicable)	80	20.46	13.89
Other	Unknown stop date	52	13.30	9.03
	Total	391	100	67.89

Note. BCI = Beck Community Initiative

BCI compared to attrition. Specifically, of those who discontinued participation, those who dropped out from BCI were more likely to end participation within the first 30 days after the workshop (21.1%) compared to those who attrited (3.6%) (χ^2 = 19.24, p = .000). This suggests that although attrition was low in the period of transition between the workshop and consultation, those who wished to leave the BCI self-identified early in the training process.

Discussion

Most clinicians who withdraw from the BCI do so via attrition rather than drop out, and do so after the major milestones of the program (i.e., key requirements and incentives) have been passed. This suggests that the intensity of the implementation program is not a primary factor that drives attrition. Rather, there may be agency and system-level factors that are realities of working in community mental health that lead to turnover. In fact, based on existing data on turnover in community mental health care (Mor Barak et al, 2001), it seems that clinicians in the BCI stayed in their positions longer than what is typical in the field. This raises questions about whether involvement with an implementation program may potentially increase job role satisfaction, and/or that the incentive of certification may be a strong enough pull to influence the timing of clinicians' decisions to seek other employment opportunities. Alternatively, a selection bias may have led to inclusion of clinicians who were more stable in their positions, whether through self-selection or nomination by agency administration.

Further, given that the majority of those who leave a BCI agency do so after completing the active training phase, several strategies were instituted to retain their skills within the local CMH system. For example, a list of all participating BCI agencies is available on several public websites, ensuring that all BCI clinicians are aware of alternative BCI agencies where they can transfer their completed requirements and continue their certification/recertification process at the new agency. Many of the BCI agencies also openly recruit BCI-trained clinicians for job openings, which means that clinicians who leave a BCI agency may move to a new agency and not actually attrit at all. Even among those who do not move to another BCI agency, and are therefore lost to tracking (and counted as an attrit), the large majority first completed the active training phase and therefore may transfer their skills to practice in another setting.

While the specific factors that may have led some clinicians to drop out soon after their involvement with the BCI began are unknown, it is possible that some aspects of the training experience may differ for dropouts versus those who attrited. For instance, the modality in which they participated in the initial workshop may play an important role in fostering connection and engagement in clinicians. Earlier analyses that compared the BCI web-based workshop program to the in-person workshop suggested that clinicians who participated in the web-based version had a higher rate of dropout than those who participate in the traditional live training (German et al., under review). The BCI coordinated with the group facilitators at partnering agencies to gather feedback about why this transition was harder for those who completed the web-based training than the in-person training, and discovered that several factors contributed to the higher dropout. First, some clinicians experienced the web-based training process to be isolating as they completed modules alone in their offices, in contrast to the camaraderie that is built among in-person participants. Second, some web-based clinicians reported that they were anxious about displaying their nascent CBT skills in front of peers who had been practicing CBT for months or longer. Third, clinicians trained in person had regular face-to-face contact with BCI staff who could remind them of upcoming due dates, whereas web-based clinicians received email reminders that could be more easily overlooked, resulting in non-completion of those requirements. Finally, a few web-based clinicians reported that they were hesitant to join the consultation group of their peers who had already been meeting regularly and built a cohesive group. Therefore, the BCI team developed a four-part approach to address these barriers. Clinicians were encouraged to enroll in the web-based training in groups of two or more and check in with each other weekly to encourage each other's progress and provide support during the multiweek workshop training period. Group facilitators began to meet individually with web-based clinicians prior to transitioning to

the group meetings to orient them to the purpose of joining the group to receive support for growing CBT skills, to normalize any anxiety the clinician may be experiencing, and to offer encouragement. The group facilitator then accompanied the clinician to the meeting, made introductions if needed, and helped ease the transition. Group facilitators also provided in-person reminders to clinicians about upcoming due dates for certification, and supported clinicians in achieving those goals. Although these changes are recent, clinicians report that the modifications have been very helpful in reducing the barriers and the resulting dropouts.

Across all clinicians, including those who received the traditional in-person workshops, the greatest time of attrition was in the 2-year period between completing the active training phase and attempting recertification. The BCI encouraged several retention strategies among the BCI agencies to address this higher-risk time. For example, several agencies instituted a wage increase of 3%–4% to recognize the achievement of the clinicians and encourage them to remain with the agency. Other agencies have used social reinforcement, including featuring certified BCI clinicians on their websites, or highlighting their achievements in intra-agency communications. BCI clinicians are also frequently enlisted within their agencies to act as local champions, recruiting others to begin the BCI web-based training and join the consultation groups, providing recognition of their own leadership among their peers. The ongoing consultation groups also offer an opportunity for peer mentoring (Creed et al., 2014; German et al., under review), which can provide clinicians a further sense of mastery of their CBT skills.

In addition to agency-level strategies, the BCI began holding quarterly Advanced Training Workshops at a central location to develop advanced skills among trained clinicians and foster a sense of belonging to the larger BCI network. At these meetings, BCI staff often partner with our trained BCI clinicians for the presentations, highlighting their successes and innovations with CBT. At an annual recognition celebration held with all local BCI agencies, each individual who has been certified or recertified in the past year is recognized, and opportunities are provided for networking among BCI clinicians from all BCI agencies.

Table 2. Frequency of Reasons for Leaving the BCT From 2007-2017

Classification	Reason Participation Ended	*n*	% of total clinicians who left BCI (*n* = 391)	% of total sample (*N* = 576)
Dropout	No longer wanted to participate in initiative	50	12.79	8.68
Attrition	Ended employment at BCI-affiliated agency	185	47.32	32.13
	Changed to a job role that does not provide direct clinical service	37	9.46	6.42
	Discontinuation of agency's participation in BCI	73	18.67	12.67
	Unknown reasons	46	11.76	7.99
	Total	391	100	67.89

Note. BCI = Beck Community Initiative

Limitations and Future Directions

There are several limitations to the methodology and findings of this study. First, no reliability check was performed on the coded reasons for attrition, which could lead to poor reliability among codes. However, the four categories were face valid (e.g., turnover, a change of job role within the agency to a role without direct clinical contact, withdrawal of the agency's participation in the BCI, or withdrawal from the BCI despite still being eligible for participation) and were typically reported directly by the attriting therapist. In addition, the data reported here are observational, so any inferences about causality should be made very carefully.

Within a single implementation project, consideration of the points in the pipeline at which participants are being lost can lead to the development of strategies targeted at the risk factors for attrition and dropout. However, as implementation experts and researchers begin to standardize the ways in which this information is gathered and reported, a more nuanced understanding of the patterns of risk for dropout and attrition may be developed, leading in turn to generalizable strategies for reducing dropout and attrition. Retention of participating clinicians will not only increase the return on investment of the implementation efforts, but, more important, increases the potential long-term impact on people participating in these services.

References

Aarons, G. A., Hurlburt, M., & Horwitz, S. M. (2011). Advancing a conceptual model of evidence-based practice implementation in public service sectors. *Administration and Policy in Mental Health and Mental Health Services Research, 38*(1), 4–23.

Barry, A.E. (2005). How attrition impacts the internal and external validity of longitudinal research. *The Journal of School Health, 75*(7), 267-270.

Beidas, R. S., & Kendall, P. C. (2010). Training therapists in Evidence-Based Practice: A Critical Review of Studies From a Systems-Contextual Perspective. *Clinical Psychology, 17*(1), 1–30. http://doi.org/10.1111/j.1468-2850.2009.01187.x

Chorpita, B. F., & Daleiden, E. L. (2014). Structuring the collaboration of science and service in pursuit of a shared vision.

Journal of Clinical Child & Adolescent Psychology, 43(2), 323–338.

Creed, T.A., Frankel, S.A., German, R., Green, K.L., Jager-Hyman, S., Pontoski, K., . . . Beck. A.T. (2016). Implementation of transdiagnostic cognitive therapy in diverse community settings: The Beck Community Initiative. *Journal of Consulting and Clinical Psychology*. http://dx.doi.org/10.1037/ccp0000105

Creed, T.A., Wiltsey-Stirman, S., Evans, A.C., & Beck, A.T. (2014). A model for implementation of cognitive therapy in community mental health: The Beck Initiative. *the Behavior Therapist, 37*, 56-64.

German, R. E., Adler. A., Frankel, S. A., Stirman, S. W., Evans, A. C., Beck, A. T., & Creed, T. A. (under review). *Testing a Web-based training and peer support model to build capacity for evidence-based practice in community mental health.*

Glasgow, R.E., Emmons, K.M. (2007). How can we increase translation of research into practice? Types of evidence needed. *Annual Review of Public Health, 28*, 413–33

Gleacher, A. A., Nadeem, E., Moy, A. J., Whited, A. L., Albano, A. M., Radigan, M., et al. (2011).Statewide CBT training for clinicians and supervisors treating youth: the New York State evidence based treatment dissemination center. *Journal of Emotional and Behavioral Disorders, 19*(3), 182–192.

Green, L. W., & Kreuter, M. W. (2005). *Health promotion planning: An educational and ecological approach* (4th ed.) New York: McGraw-Hill.

Kirk, M.A., Kelley, C., Yankey, N., Birken, S.A., Abadie, B., & Damschroder, L. (2016). A systematic review of the use of the Consolidated Framework for Implementation Research. *Implementation Science, 11*, 72.

Kitson, A., Harvey, G., & McCormack, B. (1998). Enabling the implementation of evidence based practice: A conceptual framework. *Quality in Health Care, 7*, 149-158. doi: 10.1136/qshc.7.3.149.

Lewis, C.C., Fischer, S., Weiner, B.J., Stanick, C., Kim, M., & Martinez, R.G. (2015). Outcomes for implementation science: An enhanced systematic review of instruments using evidence-based rating criteria. *Implementation Science, 10*, 155

Mor Barak, M. E., Nissley, J. A., & Levin, A. (2001). Antecedents to retention and turnover among child welfare, social work, and other human service employees: What can we learn from past research? A review and meta-analysis. *Administration and Policy in Mental Health and Mental Health Services Research, 39*(5), 341-352.

Olin, S.S., Nadeem, E., Gleacher, A., Weaver, J., Weiss, D., Hoagwood, K.E., & Horwitz, S.M. (2016). What predicts clinician dropout from state-sponsored managing and adapting practice training. *Administration and Policy in Mental Health and Mental Health Services Research, 43*, 945-956. doi:10.1007/s10488-015-0709-y

Powell, B. J., Proctor, E. K., & Glass, J. E. (2014). A systematic review of strategies for implementing empirically supported mental health interventions. *Research on Social Work Practice, 24*(2), 192–212.

Proctor, E., Silmere, H., Raghavan, R., Howmand, P., Aarons, G., Bunger, A., Griffey, R., & Hensley, M. (2009). Outcomes for implementation research: Conceptual distinctions, measurement challenges, and research agenda. *Administration and Policy in Mental Health and Mental Health Services Research, 38*, 65-76. doi:10.1007/s10488-010-0319-7

Sheidow, A.J., Schoenwald, S.K., Wagner, H.R., Allred, C.A., & Burns, B.J. (2007). Predictors of workforce turnover in a transported treatment program. *Administration and Policy in Mental Health and Mental Health Services Research, 34*, 45. doi:10.1007/s10488-006-0061-3

Sholomskas, D. E., Syracuse-Siewert, G., Rounsaville, B. J., Ball, S. A., Nuro, K. F., & Carroll, K. M. (2005). We don't train in vain: A dissemination trial of three strategies of training clinicians in cognitive–behavioral therapy. *Journal of Consulting and Clinical Psychology, 73*(1), 106–115. http://doi.org/10.1037/0022-006X.73.1.106

Sitzmann, T., & Weinhardt, J. M. (2015). Training engagement theory: A multilevel perspective on the effectiveness of work-related training. *Journal of Management* [Advance online publication]. doi:10.1177/0149206315574596

Stewart, R. E., Chambless, D. L., & Baron, J. (2012). Theoretical and practical barriers to practitioners' willingness to seek training in empirically supported treatments. *Journal of Clinical Psychology, 68*(1), 8–23.

Timmer S.G., Urquiza, A.J., Boys, D.K., Forte, L.A., Quick-Abdullah, D., Chan, S., & Gould, W. (2016). Filling potholes on the implementation highway: Evaluating the implementation of Parent-Child Interaction Therapy in Los Angeles County. *Child Abuse & Neglect, 53*, 40-50.

Wisdom, J. P., Chor, K. H. B., Hoagwood, K. E., & Horwitz, S. M. (2014). Innovation adoption: A review of theories and constructs. *Administration and Policy in Mental Health and Mental Health Services Research, 41*(4), 480–502.

Young, J. E., & Beck, A. T. (1980). Cognitive Therapy Scale: Rating manual. Unpublished manuscript, Center for Cognitive Therapy, University of Pennsylvania, Philadelphia, PA.

. . .

We would like to thank Nikki Carden, Psy.D., for her help in preparing this manuscript.

The authors have no funding or conflicts of interest to disclose.

Correspondence to Torrey A. Creed, Ph.D., University of Pennsylvania, 3535 Market Street, Floor 2, Philadelphia, PA 19104; tcreed@mail.med.upenn.edu

A Second Look at Dropout Rates From State-Sponsored MAP Trainings: Can Targeted Adaptations Improve Retention in Evidence-Based Practice Trainings?

Maria Michelle Vardanian and Sarah M. Horwitz, *New York University School of Medicine*

Amy Storfer-Isser, *Statistical Research Consultants, LLC, Schaumburg, IL*

Nicole Wang, Alissa Gleacher, Kimberly Hoagwood, and S. Serene Olin, *New York University School of Medicine*

STATES ARE RESTRUCTURING health care delivery with a focus on cost savings and care quality (NAMI, 2013; NASMHPD, 2014; Olin et al., 2016; Rieckmann, Kovas, Cassidy, & McCarty, 2011; Tanenbaum, 2005). In response to this shift, provider agencies are developing strategies to meet the objectives of value-based services, including the collection of quality metrics and the use of patient tracking registries. Frontline service providers are incentivized to use data to improve use of resources, identify areas of improvement, and support quality improvement efforts (America's Health Rankings Annual Report, 2016; Dzau et al., 2017; MACRA, 2016; New York State Department of Health, 2015). This shift from paying for volume to paying for value means that frontline providers must adapt to a working environment that focuses on providing short-term services, increased accountability for the services provided, developing competent skills in technology, and utilizing evidence-based treatments (Bolen & Hall, 2007; Cohen, 2003; Feldman, 2001; Keefe & Hall, 1998; Lu, Miller, & Chen, 2002). Evidence-based trainings (EBTs)—workshops that aim to disseminate and implement evidence-based practices (EBPs) among professionals—continue to be a focus of states in order to meet demands for accountability and quality (Bruns & Hoagwood, 2008; Gleacher et al., 2011; Hoagwood et al., 2007; North et al., 2008).

EBP and EBT Challenges

Although there are a growing number of EBPs that address child and adolescent mental health needs (Silverman & Hinshaw, 2008), there remain few studies about the actual dissemination and implementation of EBPs among frontline mental health service providers (McHugh & Barlow, 2010; Novins, Green, Legha, & Aarons, 2013; President's New Freedom Commission on Mental Health, 2003; Proctor et al., 2009). Furthermore, the use of evidence-based interventions among practitioners is challenging for many reasons, including time constraints and a preference for relying on other methods to make informed treatment decisions (Chorpita, Daleiden, & Collins, 2014; Grol & Wensig, 2004; Stewart & Chambless, 2007).

Moving EBPs from research settings to practice settings requires an infrastructure to support implementation (Aarons et al., 2012). Elements of a strong infrastructure include targeted provider training to improve retention in these trainings, and user-friendly information technology systems within these trainings (Stagman & Cooper, 2010). A strong fit between trainings and participants, less time-consuming trainings, ongoing consultations and supervisions, clearer instructions regarding training tools, and ongoing intensive competency training are components that hold promise for therapist behavior change and skillful EBT implementation (Fixsen, Naoon, Blase, Friedman, & Wallace, 2005; Forman, 2015; Kendall & Beidas, 2007; Lyon et al., 2013). Modifying current trainings to address implementation barriers and strengthening these key elements is critical (Aarons, Sommerfeld, Hecht, Silovsky, & Chaffin, 2009).

To our knowledge, there is little research on how trainings in evidence-based practices can be adapted to increase participant retention rates, improve attitudes towards EBPs, and facilitate its implementation in mental health services. EBTs often do not take into account important contextual conditions, including clinic characteristics, clinician characteristics, workflow, and reimbursement structures (Hoagwood, Atkins, & Ialongo, 2013; Kendall & Beidas, 2007; McHugh & Barlow, 2010). Targeted adaptations that address critical challenges while maintaining fidelity to the original model have the potential to impact both providers and improve the likelihood of EBP uptake.

One barrier to disseminating and implementing EBPs within a clinical setting is the high rate of participant dropout from EBTs (Gleacher et al., 2011; Olin et al., 2016; Southam-Gerow et al., 2014). In NYS, among clinicians who do not prematurely quit EBTs, completion rates in early statewide EBTs were just under 80% (Gleacher et al.). In another large-scale clinician training effort, data available from 504 out of more than 1,700 clinicians who started training showed that only 74% of these 504 clinicians were trained to proficiency (Southam-Gerow et al., 2014). Limited attention has been directed toward understanding the factors that motivate clinician participation in and/or dropout EBTs (Powell, McMillen, Hawley, & Proctor, 2013). Even less attention has been devoted to applying targeted adaptations to EBTs to decrease dropout rates and promote retention (Baumann et al., 2015). Given the continued investments by the federal and state government in workforce development, efforts made to understand what factors influence participant retention and engagement within EBTs are critical to improve and target workforce development investments (Hoagwood et al., 2014; Southam-Gerow et al.)

The NYS MAP Program

In 2006 the NYS Office of Mental Health (OMH) established the Evidence-Based Treatment and Dissemination Center (EBTDC) to train mental health professionals providing services to children and adolescents across the state (Carpinello, Rosenberg, Stone, Schwager, & Felton, 2002; Gleacher et al., 2011). The NYS Managing and Adapting Practice (MAP) Program is the most recent in a series of EBPs (e.g., CBT for PTSD and depression, parent management training) the state has attempted to disseminate. In 2013, MAP was selected for implementation in NYS because it equips service providers with the skills needed to apply EBP knowledge to a broader range of clients and promotes the use of effective and accountable practices with measurable data and outcomes. MAP suggests a potential for widespread adaptability, as it is cur-

rently being implemented in several MH organizations and counties (e.g., Southam-Gerow et al., 2014). The MAP system is seen as an opportunity to improve clinical outcomes, enhance accountability, and increase the knowledge and skills of the workforce with tools organized to provide clinical guidelines, models, and evidence-based processes to inform and assist mental health providers in formulating treatment plans, delivering services, and tracking outcomes (see www.PracticeWise.com; Chorpita et al., 2014; Olin et al., 2016).

In the first iteration of the NYS MAP Program in 2013 (MAP v1), Olin et al. (2016) assessed the multilevel factors associated with clinician participation, focusing on the predictors of clinician dropout. They found that over half of the participants (51.2%) dropped out of the training program, with age and region of the state being significant predictors of dropout. Specifically, older clinicians were 1.1 times more likely to drop out and those practicing in downstate urban areas were 9.1 times more likely to drop out (Olin et al., 2016). These findings suggested that there might be specific factors associated with these predictors that could be targeted for modification in order to retain a higher percentage of participants within EBTs. Olin et al. (2016) speculated that age likely served as a proxy for other clinician characteristics, such as comfort and familiarity with technology. The MAP system involves multiple technical components, including navigating an online website where participants can access EBP step-by-step guides as well as work with Microsoft Excel spreadsheets to track client progress and treatment outcomes. Olin et al. (2016) recommended several adaptations to the NYS MAP training, including the addition of continuous monitoring of participant engagement throughout the program to identify potential dropouts, integrating regular progress monitoring on training engagement, and incorporating targeted technical assistance for participants who may need additional support (i.e., screening individuals for ability to meet program requirements or need additional assistance working with the computer or Microsoft Excel). These adaptations were implemented in the second iteration of the NYS MAP Program (MAP v2), which we outline and describe below, along with the subsequent results of training participation, engagement, and dropout rates.

What do you see as the paramount challenge to bridging the research-practice gap for mental health? In the same vein, where should we focus our efforts to have the greatest impact?

Dr. Dorsey: We have a lot of challenges! I choose two. One is to find out how to innovate more efficiently and to be willing to shoot for reach vs. effect size. As psychologists, we often want the best treatments, delivered with the highest fidelity. We need to think more about efficiency and population reach. Glasgow's Minimal Intervention Needed for Change (https://www.ncbi.nlm.nih.gov/pubmed/24653774) should drive a lot of how we think about our work. We don't need more Cadillacs—we need more Honda Civics and Toyota Priuses (a little greater cost; more efficient). Second—we need more D&I efforts drawing from other disciplines and broadening our focus well beyond providers, to their leaders, organizations, and policies.

Dr. Garland: There are many challenges, but one that frustrates me is the fact that as researchers, we have generally not been as effective as I'd hope in communicating with policymakers and funding decision-makers. I appreciate the ongoing research on how to improve the use of research for data-based decision-making in practice (mental health, education, social service etc.), but many of us still have much to learn about how to effectively conduct and communicate our research so that it may contribute to policy and funding decisions. I'd like to see more attention to these challenges. In academia, I still perceive ambivalence about this goal, i.e., ambivalence about the extent to which a "true scientist" should attempt to enter the policy arena. Unfortunately, there are current counter-vailing societal forces that seem to be increasing the challenges of advocating for data-based decision making even when we want to.

Dr. Hanson: I see at least two areas that need to be addressed if we truly want to be successful in our D&I efforts. First, we have to continue to translate our jargon and very complex theories into content that is more meaningful and applicable for practitioners. While I understand the importance of theory-driven work, I think we have to move beyond this if we want this work to truly bridge the proverbial gap. Second, cost remains a huge issue. And third, despite significant strides, there still remains work to be done to get buy-in from multiple service sectors, such as child welfare or juvenile justice. And, this isn't original, but we do need to focus even more on sustainability.

D&I Spotlight Interviews: **http://www.abct.org/docs/PastIssue/40n7sup.pdf**

Study Goals

Building on lessons learned from the first statewide roll-out of MAP (Olin et al., 2016), we targeted adaptations to the MAP trainings, with the goal of addressing key factors related to clinician dropout. We describe these adaptations made to MAP v2, using Damschroder et al.'s (2009) theoretical model of the Consolidated Framework for Implementation Research (CFIR; Damschroder et al., 2009). Our adaptations were connected with each of the five domains: intervention characteristics (in our case, MAP training characteristics), outer setting (incentives and cost), inner setting (leadership/champions), characteristics of the individuals (participant knowledge, self-efficacy, and stage of change), and the process of training implementation (planning, engaging, executing, and reflecting and evaluating (Damschroder et al.). Next, we compared dropout rates between MAP v1 and MAP v2. Because the structural adaptations aimed to increase retention rate by targeting factors hypothesized to be associated with empirically derived predictors of dropout, we expected that the dropout rate would be significantly lower in MAP v2. We then examined associations of clinician sociodemographic characteristics, clinical characteristics, and attitudes with dropout. Although older participant age was significantly associated with dropout in MAP v1, we hypothesized that participant age will not be a significant predictor of dropout in MAP v2 because MAP v2 adaptations focused on age-related factors (e.g., added technical sup-

port). However, we expected clinic region, which is immutable, to remain a significant predictor of dropout.

Method

MAP Rollouts

The first rollout of the MAP training (MAP v1) in NYS occurred from September 2013 to June 2014 (Olin et al., 2016). The NYS MAP training protocol was modeled after the PracticeWise MAP developers' training model. MAP v1 training included a 5-day core MAP training with 2 in-person training days book-ending three webinar-based trainings on common youth disorders. These in-person trainings were conducted across five regions of the state. In MAP v1, the core training was followed by bi-weekly consultation calls with the NYU trainers in groups of 8 to 10 clinicians, for 9 months. NYS MAP certification was provided by EBTDC to participants who completed at least 27.5 hours of core NYS MAP training plus at least 12 hours (or approximately 70%) of consultation calls directed by an EBTDC trainer over the 9-month period. Certification also required submission of a MAP therapist portfolio, an achievement-based report for tracking and evaluating experience and proficiency of clinicians using the MAP system. These certification criteria were adapted from PracticeWise for NYS EBTDC. No incentives for participation were provided by the state in MAP v1.

The second NYS rollout of the MAP training (MAP v2) occurred between September 2014 and April 2016. In MAP v2, targeted adaptations were made to the structure of the training based on the observations made in Olin et al. (2016), which suggested specific modifications for the next MAP rollout that potentially could improve participant retention rates (e.g., increased administrative support, individualized technical support, increased monitoring of engagement). While the training content remained the same, structural adaptations were made. We focused specifically on structural adaptations related to the five major domains of Damschroder et al.'s (2009) CFIR model.

Targeted MAP Adaptations

Based on Olin et al.'s (2016) findings about predictors of participant dropout from MAP v1, we adapted the MAP v2 training rollout. We used Damschroder et al.'s (2009) CFIR as an organizing framework for the adaptations made (Table 1). CFIR is comprised of common constructs from published implementation theories about factors that have been found to be associated with implementation of EBPs. We describe the adaptations made to MAP v2 according to the five major CFIR domains: Intervention (MAP Training) Characteristics, Outer Setting, Inner Setting, Training Implementation Process, and Characteristics of Individual Training Participants (see Table 2).

Intervention (MAP Training) characteristics. We modified the original MAP training to address issues speculated to have influenced the engagement and clinician dropout. This included the design quality and packaging, complexity, and adaptability of MAP. With respect to design and quality of packaging, we implemented structural changes to the core and consultation period of the training. The original 2 in-person training days book-ending webinar-based training days in MAP v1 was modified to four consecutive in-person training days in MAP v2. This increased the in-person training from 12 hours to 28 hours, and eliminated webinar-based training as part of the core training. The consultation period was decreased from 9 months to 4 months, and total calls from 14 to 8, although the total percentage of required attendance was kept constant. Consultation group size decreased from 8 to 10 clinicians to 4 to 6 clinicians, which increased trainer/trainee interaction for individual MAP cases. Phone calls were upgraded to webinars to better engage participants via screen sharing; MAP participants were able to see corrections made to their dashboards in real time while remaining in their own clinical settings.

Changes were made to the complexity of MAP to reduce clinician perception of difficulty and facilitate learning. Templates were created based on the original clinical dashboards, which lacked detailed guidelines for data input. The templates included additional suggestions for entering and tracking information (i.e., markers for where to paste the PWEBS search on the Notes page, headers for descriptions of measurements collected) and were developed to ease clinician burden in treatment pathway development for the disorders covered in the training (anxiety, posttraumatic stress disorder, depression, and disruptive behavior disorder).

In regards to adaptability, in MAP v1, specific assessments were required to be collected to track progress (e.g., Columbia Impairment Scale required for every MAP case). These measures were still recommended in MAP v2, but alternate measures were allowed based on individual clinician's or program's existing preferences (i.e., Depression dashboard template recommended collecting the Revised Children's Anxiety and Depression Scales but if

Table 1. Key Structural Adaptations to NYS MAP Training*

	MAP v1	MAP v2
Rollout	09/13– 06/14	09/14 – 04/16
Core Training		
In-person Training	12 hrs (2 days)	28 hrs (4 days)
Webinar Training	18 hrs (3 days)	1 hr (pre-training)¥
Mid-Point Meeting	none	4 hrs (1 half-day)
Bi-Weekly Consultations (45-min)		
Method	calls	webinar
# Months	9 months	4 months
# Consultations	14	8
# Clinicians Per Group	8-10	4-5
Admin§ & IT Support	minimal	highly individualized
Certification Requirements		
Core Training	≥ 27.5 of 32 hrs	32 of 32 hrs
Consultations	11 of 14 (≥70%)	6 of 8 (≥ 75%)
Incentive		
Continuing Education Credits	N/A	32 CE's available

Note. *Training contents in MAP v1 and MAP v2 were unchanged.
¥More detailed criteria for screening of clinicians during application process; pre-training webinar provided more information regarding program requirements for training. §Admin support included close monitoring of clinician engagement and follow-up.

Table 2. MAP v2 Adaptations Based on the Consolidated Framework for Implementation Research (CFIR, Damschroder et al., 2009)

CFIR Domains and Subdomains	Adaptations Made to MAP v2
Intervention (MAP Training) Characteristics	
Design quality and packaging: *Structure of MAP training package*	• Core training restructured from 2 in-person training days bookending 3 webinar-based training days to 4 consecutive in-person training days. • Consultation period decreased from 9 months to 4 months, total calls from 14 to 8 (required call attendance percentage kept constant) • Consultation group size decreased from 8-10 clinicians to 4-6 clinicians to increase trainer/trainee interaction • Phone calls changed to webinars to better engage participants via screen sharing • Data-driven adaptations and improvements; training team focused on continuous quality improvement (CQI) based on participant feedback and suggestions
Complexity of MAP: *Perceived difficulty of creating treatment pathways*	• Templates based on original clinical dashboards, which lacked guidelines and additional directions for data input, were developed for the different disorders covered in MAP (e.g., anxiety, depression, disruptive behavior disorder) and included additional directions for entering and tracking information to ease clinician burden in treatment pathway development
Adaptability: *Tailoring to clinician needs*	• In MAP v1, specific assessments were required to be collected. In MAP v2, measures for tracking progress on dashboards are recommended but flexible to adapt to individual clinician or program's existing preferences
Outer Setting (Extra organizational barriers and facilitators to implementation)	
External policies and incentives: *Incentives for MAP training completion*	• MAP Training capitalized on new Social Work mandate for Continuing Education Credits; MAP v2 provided 32 CE's as an incentive for participation and successful completion of training. CE's were not required in the previous MAP rollout.
Inner Setting (i.e., context where clinicians practice)	
Clinic Implementation Climate - Compatibility: *Assessment of fit between MAP and clinic context*	• MAP team proactively conducted individual follow-up conference calls with supervisors/directors to discuss MAP requirements, compatibility of MAP with clinic context, and selection of appropriate staff
Process of Training Implementation	
Planning: *Increased access to MAP requirements and resources*	• MAP v2 training implementation was facilitated by a shift in administrative responsibilities from the state to the MAP training team. Training implementation followed a protocol including: (a) recruitment strategies that involved targeting potential clinics identified by OMH; (b) clear expectations for participation as described in in-depth training informational webinars; (c) outreach to interested sites about the role of MAP in a managed care context and program criteria • MAP Training website revamped to include logistics, detailed requirements and qualifications to participate online application and general interest form, online webinar registrations for informational webinars, and FAQs about the training program

(*Table 2, continued*)

Leadership engagement: *Commitment and involvement of supervisors*	• Recruitment efforts added emphasis for supervisor involvement in training to increase accountability and support for participating staff. Previous rollout did not specifically target supervisors during recruitment stage. • Trainers augmented training to target participating supervisors and discuss specific supervisory strategies to promote use of MAP in practice
Engagement: *Increased implementation supports*	• Administrative staff monitored individual comfort levels with technology during pre-training webinar to set up additional supports for participants who may self- rate technology skills as lower on a 1-10 scale; staff utilized information for support radar
Reflecting and Evaluating MAP Implementation	• MAP team monitored attendance logs to gauge clinician engagement and increase supports for clinicians who were at risk of dropping out • Individualized support throughout training tailored to specific needs of training participants
Characteristics of Training Participants	
Self-efficacy: *Training participant competency around use of technology*	• Mandatory pre-training webinar instituted in MAP v2 to ensure that participants have basic knowledge of Microsoft Excel
Fit: *Provide direct clinical services to children*	• Fit with training was determined pre-training, particularly around patient population (e.g., provide direct clinical services to children) and IT competency

a program already required collection of PHQ-9 assessments, then clinicians could track this instead). This maximized the adaptability of the technical dashboards to better align with program measurement efforts.

These improvements and adaptations were data-driven; the training team focused on continuous quality improvement based on participant evaluation of the training collected on the last day of the core training as well as an electronic EBPAS survey administered via an online survey software postsubmission of certification materials. Adaptations based on feedback included the addition of specific sections for supervisor throughout the core training to increase engagement and increased one-on-one dashboard tutorials for participants who struggled to improve likelihood of uptake, successful utilization, and sustained use of intervention tools.

Outer setting. The extra organizational components of the outer setting are difficult to target when implementing training intervention adaptations. However, MAP capitalized on the recent external policy change in NYS for Social Workers, which mandates all licensed social workers must complete at least 36 hours of approved continuing education courses for each triennial registration period (NYSED, 2015). Unlike MAP v1, 32 free continuing education credits were available to all licensed social workers upon successful completion of MAP v2, which was a major incentive for frontline providers to complete the training. Of the 66 licensed participants who had a degree in social work in MAP v2, 49 (74.2%) requested continuing education credits upon completion of the program.

Inner setting. In MAP v2, substantial effort was spent pretraining determining the compatibility of the MAP system with each registrant's implementation climate (e.g., whether the program's structure would be able to support MAP and meet MAP training requirements) as well as individual discussions with clinic directors and supervisors about their program's environment, available resources, and appropriate staff to send to the training (e.g., champions, key leaders, staff that are tech-savvy and willing to participant in EBTs). This thorough assessment of training fit to clinic context increased the likelihood of favorable attitudes and successful completion of the training intervention.

Process of training implementation. We implemented adaptations to the planning, leadership engagement, participant engagement, and the reflection and evaluation of the original MAP training to augment supports and target issues speculated to have influenced engagement and clinician dropout before and throughout the training intervention. The MAP v2 training implementation was facilitated by a shift in administrative responsibilities from the state to the MAP training team. Training registration followed a protocol that included: (a) recruitment strategies targeting potential clinics identified by OMH; (b) clear expectations for participation as described in detailed informational webinars; (c) outreach to interested sites about the role of MAP in a managed care context (e.g., utilizing evidence-based care; dashboards that tracked treatment progress and outcomes) and the specific program criteria for the core training/certification

requirements (e.g., clinicians need anxiety, depression, or disruptive behavior cases). The EBTDC website was revamped by the MAP team to include training logistics, detailed requirements and qualifications to participate (i.e., have Microsoft Excel and Wi-Fi enabled laptop, have a child caseload). The application processes were streamlined from paper to electronic submission to decrease registration time, burden, and introduce participant requirements for the training program immediately. A general interest form was developed for individuals who would like to attend trainings in the future at a specific location and date; this was later utilized for outreach and potential recruitment. Frequently asked questions about the training program (e.g., where to download the dashboard, how to conduct a PWEBS search) were also posted on the website to provide easily available information to both participating staff and those interested in the training. These changes increased the accessibility and clarity of the training requirements, reducing potential misunderstandings about the training.

With respect to leadership engagement, recruitment efforts by the MAP team emphasized the need for clinic director and supervisor involvement in the training intervention (i.e., emails were specifically sent to program directors/supervisors that expressed interest in evidence-based trainings and were invited to informational webinars). This aimed to increase the accountability and support for participating clinical staff and may have contributed to training engagement. The intervention included specific questions for supervisors to address throughout the entire training, which aimed to increase their engagement and support. MAP v1 did not specifically target supervisors during the recruitment stage or training stage.

In terms of engagement, the MAP administrative staff monitored individual comfort levels with technology during the mandatory pretraining webinar and set up a range of additional supports for participants with lower self-rated technology skills. Staff utilized this information to put participants on a support radar and provided additional assistance accordingly (i.e., on a 1–10 scale, those who self-rated comfort with technology between 1–5 would likely need one-on-one support throughout the entire training; those who self-rated between 5–8 would likely need periodic email correspondence, etc.).

With regards to reflecting and evaluating the MAP v2 training intervention, the MAP team continuously monitored attendance logs to gauge levels of clinician engagement (i.e., number of webinar calls attended, amount of consultation received) and to increase supports for clinicians who were at risk of dropping out (e.g., scheduling additional phone calls and webinars with these individuals to discuss potential barriers for completing the program). Individualized support throughout the core training and consultation period was tailored to the specific needs of training participants (e.g., one-on-one technical and clinical support webinars as needed, efforts to remind participants of requirements necessary to receive certification and training deadlines).

Table 3. MAP v1 & MAP v2 Clinician and Practice Characteristics

	Overall		Completers		Dropouts	
	*MAP v.1.0 (N=127)	MAP v.2.0 (n=122)	MAP v.1.0 (N=62)	MAP v.2.0 (n=107)	MAP v.1.0 (N=65)	MAP v.2.0 (n=15)
Clinician Demographics						
Age, Years*	37.4 ± 10.8	43.0 ± 12.0	32.7 ± 8.1	43.1 ± 12.2	41.6 ± 11.3	42.5 ± 10.0
Sex						
Female	104 (83.9)	101 (82.8)	51 (49.0)	90 (89.1)	53 (51.0)	11 (10.9)
Male	20 (16.1)	21 (17.2)	9 (45.0)	17 (81.0)	11 (55.0)	4 (19.0)
Ethnicity*						
White, Non-Hispanic	60 (62.5)	86 (70.5)	31 (51.7)	76 (88.4)	29 (48.3)	10 (11.6)
Black / African-American	4 (4.1)	10 (8.2)	0 (0)	5 (50.0)	4 (100)	5 (50.0)
Hispanic	16 (16.7)	21 (17.2)	10 (62.5)	21 (100)	6 (37.5)	0 (0)
Other	16 (16.7)	5 (4.1)	4 (25.0)	5 (100)	12 (75.0)	0 (0)
Education*						
Bachelor's Degree	4 (4.1)	10 (8.2)	1 (25.0)	10 (100)	3 (75.0)	0 (0)
Master's Degree	85 (87.6)	99 (81.1)	43 (50.6)	86 (86.9)	42 (49.4)	13 (13.1)
Doctorate/Physician	8 (8.3)	11 (9.0)	2 (25.0)	5 (81.8)	6 (75.0)	2 (18.2)
Clinician Characteristics						
Efficacy	39.9 ± 4.0	40.4 ± 5.2	40.1 ± 4.2	40.5 ± 5.2	39.7 ± 3.9	39.3 ± 5.4
Tech Q1 (Enter Data) ¥	-	2.4 ± 1.0	-	2.4 ± 1.0	-	2.5 ± 1.0
Tech Q2 (Read Graphs) ¥	-	2.4 ± 0.9	-	2.4 ± 0.9	-	2.6 ± 1.0
Tech Q3 (Ability to Master) ¥	-	3.2 ± 0.8	-	3.2 ± 0.8	-	3.3 ± 0.8
EBPAS¥						
Appeal	-	2.48 ± 0.73	-	2.55 ± 0.70	-	2.03 ± 0.78
Openness	-	2.74 ± 0.69	-	2.79 ± 0.63	-	2.39 ± 0.97
Divergence	-	1.19 ± 0.71	-	1.16 ± 0.69	-	1.42 ± 0.89
Practice Characteristics						
Employment*						
Part-time	5 (5.2)	6 (4.9)	1 (20.0)	5 (83.3)	4 (80.0)	1 (16.7)
Full-time	91 (94.8)	116 (95.1)	44 (48.3)	102 (87.9)	47 (51.7)	14 (12.1)
Licensed*						
No	6 (6.2)	32 (26.2)	2 (33.3)	30 (93.8)	4 (66.7)	2 (6.2)
Yes	91 (93.8)	90 (73.8)	44 (48.3)	77 (85.6)	47 (51.7)	13 (14.4)
Direct Client Contact Hours*	20.9 ± 9.0	18.5 ± 10.0	21.5 ± 8.3	17.9 ± 9.8	20.4 ± 9.7	22.3 ± 10.8
Program Category						
Outpatient	114 (89.8)	89 (73.0)	59 (95.2)	78 (87.6)	55 (84.6)	11 (12.4)
Inpatient	7 (5.5)	7 (5.7)	0 (0.0)	5 (71.4)	7 (10.8)	2 (28.6)
Residential	0 (0.0)	6 (4.9)	0 (0.0)	5 (83.3)	0 (0.0)	1 (16.7)
Support	6 (4.7)	20 (16.4)	3 (4.8)	19 (95.0)	3 (4.6)	1 (5.0)
Extra-organizational Characteristics						
Region/Urbanicity						
Downstate Urban	89 (70.1)	51 (41.8)	39 (43.8)	44 (86.3)	50 (56.2)	7 (13.7)
Upstate Rural	12 (9.4)	9 (7.4)	9 (75.0)	9 (100)	3 (25.0)	0 (0)
Upstate Urban	26 (20.5)	62 (50.8)	14 (53.9)	54 (87.1)	12 (46.2)	8 (12.9)

Note. *Map v.1.0 – about *n*=30 clinicians with missing data for these variables. ¥Data collected in first training round in MAP v.2.0 and all subsequent training rounds. §Data collected in second training round in MAP v.2.0 and all subsequent training rounds (missing *n*=30 scores).

Characteristics of individual training participants. To target participant self-efficacy around the use of technology in MAP v2, a mandatory pretraining webinar was instituted to establish a foundational knowledge of Microsoft Excel. Pretraining ratings of self-efficacy and comfort with technology were collected as monitoring agents for older clinicians who were found to have higher rates of self-efficacy but struggled more with the technical aspect of the training in MAP v1 (Olin et al., 2016). IT support was provided to this subset of participants, who may have otherwise dropped out of the training. Fit between training, clinician role and patient population (i.e., direct service provider with child caseload) and IT competency was also assessed pretraining so that inappropriate participants could be selected out prior to training.

Data Sources

Study data were extracted and merged from a pretraining survey and attendance logs. For both rollouts, participating clinicians completed the MAP survey measures on Day 1, prior to the start of training. MAP survey measures included items on demographics, clinician practice characteristics, perceptions of their clinic program's climate and work attitudes. For MAP v2,

we also included three questions assessing clinicians' comfort with technology. Attendance logs provided data on clinician attendance, number of MAP cases, and portfolio submission. The U.S. Department of Health and Human Services Area Health Resources Files (AHRF, 2014) provided county demographic data for both MAP v1 and MAP v2.

Participants

The sample included all clinicians who registered for the MAP v1 (n = 186) or MAP v2 training (n = 154). In MAP v1, participants were on average 37.4 ± 10.8 years old, predominantly White (62.5 %), female (83.9 %), and had master's degrees (87.6 %). The majority worked full time (94.8 %), were licensed (93.8 %), spent on average 20.9 ± 9.0 hours per week in direct client contact. The majority of clinicians were from outpatient programs (89.8%) and from the downstate urban region (70.1%). In MAP v2, participants were on average 43.0 ± 12.0 years old, predominantly white (70.5 %), female (82.8 %), and had master's degrees (81.1 %). The majority worked full time (95.1 %), were licensed (73.8 %), spent on average 18.5 ± 10.0 hours per week in direct client contact. The majority of clinicians were from outpatient programs (73.0%) but less than half were from the downstate urban region (41.8%).

Measures

Outcome: Dropouts. Dropouts are defined as clinicians who attended less than 70% of consultation calls and did not submit a MAP portfolio for certification.

Clinician demographics. Sociodemographic information included age, ethnicity (categorized as White, non-Hispanic; Black/African American; Hispanic; Other), gender (female, male), and education (bachelor's, master's, doctorate).

Clinician practice characteristics. For both MAP v1 and MAP v2, clinician practice characteristics included employment status (full-time or part-time), licensure status (yes/no), direct weekly client contact hours, number of clients on current caseload, and number of MAP cases. Additional measures were collected in MAP v2, including the Evidence-Based Practice Attitude Scale (EBPAS; Aarons, 2004) and clinician comfort with technology. The language for the EBPAS was edited to specifically gauge clinician attitude toward MAP (instead of EBPs in general) and were collected from participants once before the consultation period of the program and once after participants submitted their final portfolios. The three subscales of the EBPAS include (1) appeal, the extent to which an EBP would be adopted if it were intuitively appealing; (2) openness, the extent to which the provider is generally open to trying new interventions; and (3) divergence, the extent to which the provider perceives EBPs as not useful and less important than clinical experience (Aarons et al., 2010). Questions regarding clinician comfort with technology included frequency of Microsoft Excel data entry; frequency of reading Microsoft Excel graphs; and level of confidence in the ability to master a new computer program on a 1–4 scale.

Clinic-level variables. Clinic level variables included the four program categories that participated in both MAP v1 and MAP v2: (1) outpatient services, which provide treatment and rehabilitation in clinical settings; (2) inpatient services, which provide stabilization and intensive treatment and rehabilitation care in a controlled environment; (3) residential services, which are offered to children to provide short-term assessment, treatment, and aftercare planning; and (4) support services, which are community based and help children with serious emotional challenges to remain with their families (NYS OMH, 2016).

Extra-organizational variables. Clinics were categorized by OMH administrative regions (downstate representing New York City, Long Island and upstate representing Central, Hudson, Western regions) and as rural or urban based on AHRF county rural–urban continuum codes (Olin et al., 2016). However, downstate NYS is only urban, and a new variable denoting region-

How can organizations like ABCT help to disseminate/implement evidence-based treatments?

Dr. Chorpita: I think we need to encourage greater intellectual diversity within our own ranks—to make ourselves a bit uncomfortable even, by inviting others into our conversations and collaboration. Let me be clear, I think we will always be an organization that prioritizes science and its ever-growing yield as a way to guide strategic action. But we can preserve and even spread those core principles and values while we listen and learn from many other relevant disciplines and constituencies, both within and beyond mental health. The depth of expertise of our membership is unparalleled, but we will need breadth to take our work to the next level and to achieve our mission—to improve lives—on a grander scale.

Dr. Dorsey: In ABCT, we want to have an impact. The best way we can accomplish our desired impact is to be leaders in helping to figure out how all the research we've done and will continue to do can inform actual practice, in usual care settings, for the benefit of individuals served in those settings.

Dr. Garland: I'd love to see ABCT strengthen its relationship with other disciplines (i.e., disciplines beyond psychology), specifically, professional organizations and training programs representing disciplines that comprise the mental health workforce (e.g., master's-level counseling, marital & family therapy, social work, etc.). One of the great things about ABCT is that it is not discipline specific, but we need to find ways to better engage trainees and clinicians from diverse disciplines. As I responded to this question I received a timely announcement that the student representative for DIS SIG is in a social work program—that's terrific! This organization has the potential to be a leading transdisciplinary driver of effective mental health care.
Dr. Hanson: Probably stating the obvious here, but in order to get EBTs to the folks that need them, D&I remains critical to the field and to organizations, like ABCT. Also, ABCT has one of the largest, and strongest, representation of students, which gives the organization a tremendous opportunity to help "grow" new researchers and support those with an interest in this area of study.

D&I Spotlight Interviews: **http://www.abct.org/docs/PastIssue/40n7sup.pdf**

urbanicity was created to reflect three categories: downstate-urban, upstate-urban, and upstate-rural (Olin et al., 2016).

Statistical Analyses

Means and standard deviations were used to summarize continuous measures, and counts and percentages were used to summarize categorical measures. Data from MAP v1 and MAP v2 were compared using the two-sample *t*-test for normally distributed measures, the Wilcoxon rank-sum test for skewed measures, and the chi-square test for categorical measures. For MAP v2, bivariate associations of clinician sociodemographic and clinical characteristics, attitudes and self-efficacy with dropout were evaluated using the *t*-test, Wilcoxon rank-sum test, and the chi-square test. Statistical significance was set at $p<.05$, and analyses were performed using SAS version 9.4 (SAS Institute, Cary, NC).

Results

Analytic Sample

MAP participants who attended the first day of training, provided direct clinical services, and gave consent to participate in this study were included in the analytic sample. For MAP v1, 154 of the 186 individuals who registered for the training attended the first day of training; of these 154 individuals, 27 individuals were excluded because they did not provide direct clinical services or did not consent to participate in the study (Olin et al., 2016). For MAP v2, 128 of the 168 individuals who registered for the training attended the first day of training; 4 of these 128 individuals were excluded because they did not provide direct clinical services. The analytic sample includes 127 participants from MAP v1 and 122 participants from MAP v2.

Cohorts. For both MAP v1 and MAP v2, all clinicians who began consultation calls attended the requisite number of in-person training hours. Notably, the two cohorts in MAP v1 and MAP v2 varied significantly on the two variables that previously predicted dropout in Olin et al. (2016): age and region (see Table 3). MAP v2 clinicians were 5.6 years older on average than MAP v1 clinicians ($p<.001$) and a greater proportion were from upstate urban areas (50.8% vs. 20.5%, $p<.001$). In addition, MAP v2 participants included more unlicensed providers (26.2% vs. 6.2% $p<.001$) and more participants from nonoutpatient clinics (27.0% vs. 10.2%, $p<.001$).

Dropouts. The dropout rate for MAP v2 was significantly lower than MAP v2 (51.2% vs. 12.3%, $p<.001$). For both rollouts, clinicians who dropped out attended fewer required calls than completers (MAP v1: 33% vs. 83%, p<.001; MAP v2: 36% vs. 82%, $p<.001$). Characteristics of clinicians who dropped out in MAP v2 were generally similar to those in MAP v1 (see Table 3).

Due to the small number of dropouts in MAP v2 (n = 15), we examined bivariate associations. Unlike MAP v1 where older clinicians and downstate clinicians were more likely to drop out, age and region were not associated with dropout in MAP v2 ($p=0.87$ and $p=.50$, respectively). In MAP v2, the only significant predictor of dropout was the rating on the EBPAS appeal subscale; dropouts had significantly lower ratings on the EBPAS appeal scale on average compared to completers (2.03 vs. 2.55, $p=.01$). None of the clinician or clinician practice characteristics, self-efficacy, or comfort with technology questions was associated with dropout in MAP v2.

Discussion

Targeted structural adaptions, although not content changes, were made to the second rollout of NYS MAP (MAP v2) and significant decreases in participant dropout were observed when compared to data from the first MAP rollout (MAP v2 $n = 15$ vs. MAP v1 $n = 65$). It is important to note that there were unexpected but significant differences in the cohorts from MAP v1 to MAP v2, particularly for two variables that predicted dropout in the first rollout. The MAP v2 cohort was older, and consisted of a significantly higher proportion of participants from upstate urban regions and significantly fewer participants from downstate urban regions compared to MAP v1. While this cohort difference prevents us from making meaningful comparisons between the first and second MAP rollouts, it is notable that the dropout rate decreased from 51.2% to 12.6%, despite MAP v2 participants being substantially older and therefore at greater risk of dropping out of the training. We speculate that a number of service delivery changes influenced who participated in these MAP trainings. Posthoc analyses found that many more participants in the second cohort came from inpatient, residential, and support facilities, which were not fee-for-service providers. In essence, participants who attended these two trainings were quite different. We believe that the shift to managed health care may have influenced the types of clinics that continued to be interested in participating in the trainings.

The cost of EBTs (e.g., sending clinicians to the training, lost productivity during implementation and maintenance stages) has been found to be a barrier to successfully implementing EBPs within clinical settings (George et al., 2008; Kilbourne, Neumann, Pincus, Bauer, & Stall, 2007; Moser, Deluca, Bond, & Rollins, 2004). Importantly, continuing education for social workers became mandatory in NYS during the second rollout of MAP. MAP v2 offered 32 hours of free continuing education credits to licensed social workers who completed the program. Almost three-quarters of eligible participants utilized this opportunity, suggesting that targeted incentives may be a potent motivator for participation in and completion of EBTs. Another important and potentially modifiable characteristic associated with dropout was the EBPAS appeal subscale. EBPAS appeal scores at baseline were significantly lower among dropouts than completers in MAP v2; this was the only variable significantly associated with dropout in the second cohort. This suggests that targeted attention to individuals with low EBPAS prior to training may also improve retention. Clinician characteristics, practice characteristics, self-efficacy, and comfort with technology questions were not associated with dropout in MAP v2.

Limitations

Because there were significant differences between the two MAP training cohorts, we could not attribute improvements in MAP training retention to the adaptations made to MAP. While the substantial differences in dropout rates suggest that targeted strategies to improve training structure may have been effective in improving clinician engagement and retention, cohort differences make it impossible to confirm this. Nevertheless, because the literature suggests the importance of innovation-fit, relevance, and ease of use for training interventions (Chor, Wisdom, Olin, Hoagwood, & Horwitz, 2015), the findings are provocative and suggest areas for future research.

Conclusion

To our knowledge, this is the first paper to evaluate targeted adaptations to a spe-

cific state-wide EBT initiative. The adaptations were based on observations from an earlier MAP training rollout (Olin et al., 2016); these targeted adaptations may have had an influence on the significant improvement in retention rates in the second cohort. The findings from this study support the notion of continuously monitoring engagement and participation levels of trainees during EBT. Further investigation regarding targeted training intervention adaptations and their impact on trainee cohorts is needed to identify core strategies that will improve an outcome of significant relevance to states.

References

Aarons, G. A. (2004). Mental health provider attitudes toward adoption of evidence-based practice: the Evidence-Based Practice Attitude Scale (EBPAS). *Mental Health Services Research, 6*(2), 61-74.

Aarons, G. A., Glisson, C., Hoagwood, K., Kelleher, K., Landsverk, J., Cafri, G., & The Research Network on Youth Mental, H. (2010). Psychometric properties and United States national norms of the Evidence-Based Practice Attitude Scale (EBPAS). *Psychological Assessment, 22*(2), 1-16.

Aarons, G. A., Green, A. E., Palinkas, L. A., Self-Brown, S., Whitaker, D. J., Lutzker, J. R., . . . Chaffin, M. J. (2012). Dynamic adaptation process to implement an evidence-based child maltreatment intervention. *Implementation Science, 7*(1), 32-40.

Aarons, G. A., Sommerfeld, D. H., Hecht, D. B., Silovsky, J. F., & Chaffin, M. J. (2009). The impact of evidence-based practice implementation and fidelity monitoring on staff turnover: Evidence for a protective effect. *Journal of Consulting and Clinical Psychology, 77*(2), 270-280.

America's Health Rankings Annual Report. (2016). *A call to action for individuals and their communities*. United Health Foundation, Minnetonka, MN.

Baumann, A. A., Powell, B. J., Kohl, P. L., Tabak, R. G., Penalba, V., Proctor, E. E., . . . Cabassa, L. J. (2015). Cultural adaptation and implementation of evidence-based parent-training: A systematic review and critique of guiding evidence. *Children and Youth Services Review, 53*, 113-120.

Bolen, R. M., & Hall, J. C. (2007). Managed care and evidence-based practice: The untold story. *Journal of Social Work Education, 43*(3), 463-479.

Bruns, E. J., & Hoagwood, K. E. (2008). State implementation of evidence-based practice for youths, part I: Responses to the state of the evidence. *Journal of the American Academy of Child and Adolescent Psychiatry, 47*(4), 369-373.

Carpinello, S. E., Rosenberg, L., Stone, J., Schwager, M., & Felton, C. J. (2002). Best practices: New York State's campaign to implement evidence-based practices for people with serious mental disorders. *Psychiatric Services, 53*(2), 153-155.

Chor, K. H., Wisdom, J. P., Olin, S. C., Hoagwood, K. E., & Horwitz, S. M. (2015). Measures for predictors of innovation adoption. *Administration and Policy in Mental Health, 42*(5), 545-573.

Chorpita, B. F., Daleiden, E. L., & Collins, K. S. (2014). Managing and adapting practice: A system for applying evidence in clinical care with youth and families. *Clinical Social Work Journal, 42*(2), 134-142.

Cohen, J. A. (2003). Managed care and the evolving role of the clinical social worker in mental health. *Social Work, 48*(1), 34-43.

Damschroder, L., Aron, D., Keith, R., Kirsh, S., Alexander, J., & Lowery, J. (2009). Fostering implementation of health services research findings into practice: A consolidated framework for advancing implementation science. *Implementation Science, 4*, 50-65.

Dzau, V. J., McClellan, M., Burke, S., Coye, M. J., Daschle, T. A., Diaz, A., … Zerhouni, E. (2017). *Vital directions for health and health care: Priorities from a National Academy of Medicine Initiative*. Discussion paper, Vital Directions for Health and Health Care Series. National Academy of Medicine, Washington, DC.

Feldman, R. A. (2001). Health care and social work education in a changing world. *Social Work Health Care, 34*(1-2), 31-41.

Fixsen, D. L., Naoon, S. F., Blase, K. A., Friedman, R. M., & Wallace, F. (2005). *Implementation research: A synthesis of the literature*. Tampa: University of South Florida, Louis de la Parte Florida Mental Health Institute, the National Implementation Research Network.

Forman, S. G. (2015). *Implementation of mental health programs in schools: A change agent's guide*. Washington, DC: American Psychological Association.

George, P., Blasé, K. A., Kanary, P. J., Wotring, J., Bernstein, D., & Carter, W. J. (2008). Financing evidence-based programs and practices: Changing systems to support effective service. *Child and Family Evidence-Based Practices Consortium.*

Gleacher, A. A., Nadeem, E., Moy, A. J., Whited, A. L., Albano, A. M., Radigan, M., . . . Hoagwood, K. E. (2011). Statewide CBT training for clinicians and supervisors treating youth: The New York State evidence based treatment dissemination center. *Journal of Emotional and Behavioral Disorders, 19*(3), 182-192.

Grol, R., & Wensing, M. (2004). What drives change? Barriers to and incentives for achieving evidence-based practice. *Medical Journal of Australia,180,* S57–S60.

Hoagwood, K., Atkins, M., & Ialongo, N. (2013). Unpacking the black box of implementation: The next generation for policy, research and practice. *Administration and Policy in Mental Health, 40*(6), 451-455.

Hoagwood, K. E., Olin, S. S., Horwitz, S., McKay, M., Cleek, A., Gleacher, A., . . . Hogan, M. (2014). Scaling up evidence-based practices for children and families in New York State: Toward evidence-based policies on implementation for state mental health systems. *Journal of Clinical Child and Adolescent Psychology, 43*(2), 145-157.

Hoagwood, K. E., Vogel, J. M., Levitt, J. M., D'Amico, P. J., Paisner, W. I., Kaplan, S. J., & Hamilton, J. D. (2007). Implementing an evidence-based trauma treatment in a state system after September 11: The CATS project. *Journal of the American Academy of Child and Adolescent Psychiatry, 46*(6), 773-779.

Keefe, R., & Hall, M. (1998). Interfacing with managed behavioral health care organizations: An emerging scale of private practitioners self-perceived competence. *Professional Development, 1*(13), 41-52.

Kendall, P. C., & Beidas, R. S. (2007). Smoothing the trail for dissemination of evidence-based practices for youth: Flexibility within fidelity. *Professional Psychology: Research and Practice, 38*(1), 13-20.

Kilbourne, A. M., Neumann, M. S., Pincus, H. A., Bauer, M. S., & Stall, R. (2007). Implementing evidence-based interventions in health care: Application of the replicating effective programs framework. *Implementation Science, 2*(1), 42-52.

Lu, Y. E., Miller, M. H., & Chen, S. (2002). American revolution in mental health care delivery. *Journal of Teaching in Social Work, 22*(1-2), 167-182.

Lyon, A. R., Ludwig, K., Romano, E., Leonard, S., Stoep, A. V., & McCauley, E. (2013). "If it's worth my time, I will make the time": School-based providers' decision-making about participating in an evidence-based psychotherapy consultation program. *Administration and Policy in Mental Health, 40*(6), 467-481.

McHugh, R. K., & Barlow, D. H. (2010). The dissemination and implementation of evidence-based psychological treatments. A review of current efforts. *American Psychological Association, 65*(2), 73-84.

Medicare Access and CHIP Reauthorization Act of 2015 (MACRA), 100 U.S.C. §§ 101-525 (2015).

Moser, L. L., Deluca, N. L., Bond, G. R., & Rollins, A. L. (2004). Implementing evidence-based psychosocial practices:

Find a CBT Therapist

*ABCT's **Find a CBT Therapist** directory is a compilation of practitioners schooled in cognitive and behavioral techniques. In addition to standard search capabilities (name, location, and area of expertise), ABCT's Find a CBT Therapist offers a range of advanced search capabilities, enabling the user to take a Symptom Checklist, review specialties, link to self-help books, and search for therapists based on insurance accepted.*

*We urge you to sign up for the **Expanded Find a CBT Therapist** (an extra $50 per year). With this addition, potential clients will see what insurance you accept, your practice philosophy, your website, and other practice particulars.*

To sign up for the Expanded Find a CBT Therapist, click MEMBER LOGIN on the upper left-hand of the home page and proceed to the ABCT online store, where you will click on "Find CBT Therapist."

For further questions, call the ABCT central office at 212-647-1890.

Lessons learned from statewide implementation of two practices. *International Journal of Neuropsychiatric Medicine, 9*(12), 926-936, 942.

National Alliance on Mental Illness (NAMI). (2013). *State legislation report: Trends, themes and best practices in state legislation*. Washington, DC: NAMI.

National Association of State Mental *Health Program Directors (NASMHPD).* (2014). Assessment #10, expenditures. NASMHPD: Falls Church, VA.

New York State Department of Health. (2015). *Statewide executive summary of managed care in New York State: A report on quality performance by type of health insurance product*.

New York State Education Department (NYSED). (2015). *Continuing education*. Retrieved from http://www.op.nysed.gov/prof/sw/swceinfo.htm on February 20, 2017.

New York State Office of Mental Health (NYS OMH). (2016). *Mental health program directory*. Retrieved from https://my.omh.ny.gov/bi/pd/saw.dll?PortalPages#report on April 3, 2017.

North, M. S., Gleacher, A. A., Radigan, M., Greene, L., Levitt, J., Chassman, J., & Hoagwood, K. (2008). Evidence-Based Treatment Dissemination Center (EBTDC): Bridging the research–practice gap in New York State. *Report on Emotional & Behavioral Disorders in Youth, 8*(1), 9-16.

Novins, D. K., Green, A. E., Legha, R. K., & Aarons, G. A. (2013). Dissemination and implementation of evidence-based practices for child and adolescent mental health: A systematic review. *Journal of the American Academy of Child and Adolescent Psychiatry, 52*(10), 1009-1025.e1018.

Olin, S. S., Nadeem, E., Gleacher, A., Weaver, J., Weiss, D., Hoagwood, K. E., & Horwitz, S. M. (2016). What predicts clinician dropout from state-sponsored Managing and Adapting Practice training. *Administration and Policy in Mental Health, 43*(6), 945-956.

Powell, B. J., McMillen, J. C., Hawley, K. M., & Proctor, E. K. (2013). Mental health clinicians' motivation to invest in training: Results from a practice-based research network survey. *Psychiatric Services, 64*(8), 1-6.

Power, T. J., Eiraldi, R. B., Clarke, A. T., Mazzuca, L. B., & Krain, A. L. (2005). Improving mental health service utilization for children and adolescents. *School Psychology Quarterly, 20*(2), 187-205.

Proctor, E. K., Landsverk, J., Aarons, G., Chambers, D., Glisson, C., & Mittman, B. (2009). Implementation research in mental health services: An emerging science with conceptual, methodological, and training challenges. *Administration and Policy in Mental Health, 36*(1), 24-34.

Rieckmann, T. R., Kovas, A. E., Cassidy, E. F., & McCarty, D. (2011). Employing policy and purchasing levers to increase the use of evidence-based practices in community-based substance abuse treatment settings: Reports from single state authorities. *Evaluation and Program Planning, 34*(4), 366-374.

Silverman, W. K., & Hinshaw, S. P. (2008). The second special issue on evidence-based psychosocial treatments for children and adolescents: A 10-year update. *Journal of Clinical Child and Adolescent Psychology, 37*(1), 1–7.

Southam-Gerow, M. A., Daleiden, E. L., Chorpita, B. F., Bae, C., Mitchell, C., Faye, M., & Alba, M. (2014). MAPping Los Angeles County: Taking an evidence-informed model of mental health care to scale. *Journal of Clinical Child and Adolescent Psychology, 43*(2), 190-200.

Stagman, S., & Cooper, J. L. (2010). *Children's mental health: What every policymaker should know*. National Center for Children in Poverty.

Stewart, R. E., & Chambless, D. L. (2007). Does psychotherapy research inform treatment decisions in private practice? *Journal of Clinical Psychology, 63*(3), 267-281.

Tanenbaum, S. J. (2005). Evidence-based practice as mental health policy: Three controversies and a caveat. *Health Affairs, 24*(1), 163-173.

The President's New Freedom Commission on Mental Health. (2003). *Achieving the Promise: Transforming Mental Health Care in America. Final Report.* (DHHS Pub. No. SMA-03-3832). Rockville, MD.

US Department of Health and Human Services Area HealthResources Files (AHRF). (2014). http://ahrf.hrsa.gov. Retrieved on March 3, 2017.

. . .

This study was supported by grants P30 MH090322 and P20 MH085983 from the National Institute of Mental Health (NIMH), and by the New York State Office of Mental Health.

None of the authors have any disclosures or conflicts of interest to report.

Correspondence to Maria Michelle Vardanian, 1 Park Avenue, 7th Floor, New York, NY 10016; Michelle.Vardanian@nyu.edu

CLASSIFIEDS

■ **FELLOWSHIPS IN ADVANCED COGNITIVE THERAPY FOR SCHIZOPHRENIA WITH AARON T. BECK**
University of Pennsylvania

We offer an exciting opportunity for postdoctoral applicants in the Aaron T. Beck Psychopathology Research Center at the University of Pennsylvania. Specifically, our mission is to develop professionals who will become leaders in the field of psychosocial approaches that promote recovery for individuals with schizophrenia. Under the direction of Aaron T. Beck, M.D., our program includes clinical trials of innovative treatments for the disorder, dissemination and implementation of these treatment protocols into community mental health centers and psychiatric hospitals, as well as basic research. We have been recognized for our cutting edge work in this field. For more information, see http://aaronbeckcenter.org.

Applicants who have earned an Ph.D., Psy.D., or equivalent in psychology, social work, medicine or other related field and have had previous training in cognitive therapy, severe mental illness, or recovery-oriented services are encouraged to apply. Bilingual candidates are especially encouraged to apply.

Please send a curriculum vita with a cover letter and two letters of recommendation via email to Aaron T. Beck, M.D., at abeck@mail.med.upenn.edu.

The University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer. Seeking applicants for current and future positions. NOTES: 2 openings.

University of Pennsylvania, 3451 Walnut Street, Philadelphia, PA 19104. The University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer.

■ **FULL TIME THERAPIST POSITION AVAILABLE.** Due to our growth, Mountain Valley Treatment Center seeks an additional licensed clinician to join our exceptional clinical team as a primary therapist at its beautiful campus in Pike, NH. Mountain Valley, a short term residential treatment program, serves male and female adolescents and emerging adults, 13 – 20 years old, from across the globe with debilitating anxiety and OCD. Located on the edge of the White Mountains and Connecticut River Valley, 30 minutes north of the Hanover, NH and Dartmouth College area,

Mountain Valley adds clinically intensive CBT and ERP within an experiential education program and mindfulness-based milieu.

Primary Therapists manage a caseload of 3-5 private pay residents over their 90 day treatment stay providing individual, group, and family therapy. Designing and implementing exposures with their clients on its iconic New England, 1800 acre conservation land location and within local communities provides a unique professional experience unmatched at any other residential treatment setting.

The ideal candidate will have at a minimum a master's degree, be currently licensed or license-eligible in New Hampshire clinician with an understanding of CBT based modalities such as DBT, ACT and ERP. Prior experience serving clients with OCD and anxiety disorders preferred.

Above average salary, full benefits package, relocation and temporary housing assistance, and annual professional development opportunities such as attending ABCT, ADAA and IOCDF conferences. Casual work and team focused environment. Mountain Valley supports the professional growth of all its staff. Please contact Don Vardell, Executive Director at dvardell@mountainvalleytreatment.org for more information or to apply.

ADVERTISING in tBT

Classified ads are only $4.00 per line. For a free price estimate, attach the text of your ad in the form of a Word document and email Stephanie Schwartz at sschwartz@abct. For information on display ads, deadlines, and rates, contact S. Schwartz at the email above or visit our website at www.abct.org and click on ADVERTISE. Below are the 2013 deadlines:

ISSUE	DEADLINE
January	December 5
February	January 5
March	February 6
April	March 6
June	May 5
September	July 27
October	Sept. 6
December	November 7

And don't forget ABCT's on-line . . .

JOBBANK

JOB SEEKERS | EMPLOYERS

http://jobbank.abct.org

Resources for researchers

- Grants
- Links to government funding agencies
- Data collection tools
- Statistical software
- *tBT* articles related to professional development in research
- Links to international scientific organizations

PLUS: Questionnaire and interview resources, and much more.

http://www.abct.org

Resources for Professionals & Students

Associate
Renae Beaumont
Jeffrey Froh
Shari Pescatore
Amy Adolfo Signore

Full Members
Carolyn Allard
Daniel Almirall
Rachel Ammirati
Arthur Andrews III
Aaron Baker
Karen Bearss
Grace Bechle
Megan Bell
Helen Black
Whitney Black
Mark Blanca
Mary Bonsu
Richard Brouillette
Christy Capone
Ambrose Cheng
Candice Chow
Christopher Conley
Kitty Dahl
Janine Domingues
Carey Dowling
Michael Dunn
Colleen Ehrnstrom
Jeffrey Gambles
Rachel Gingold
Patrick Gosselin
Tom Hagesfeld
Amy Herschell
Aaron Hogue
Jason Horowitz
Suzannah Iadarola
Bonita Klein-Tasman
Candice La Lima
Christa Labouliere
Courtney LeClair
Rick Leichtweis
Wendi Lev
Betty Liao
Georgina Lopez
Jordan Lyon
Melissa Marcus
Claudia Mason
Robert Maurer
Haley Medlin
Joel Minden
Christine Moberg
Frank Morelli
Frances Moyer
Erica Musser
Robert Northcutt
Catherine O Hayer
Janine Olthuis
Kenneth Phelps
Vaishali Raval
Ashley Ross
Jacklyn Ruhl
Pamela Schippell
Holly Scott
Christine Sieberg
Colleen Sloan
Diane Smallwood
Melissa Soo Hoo
L Stuart Cody
Erica Tan
Christopher Udell
Sagit Vishra
Jennifer Wachen
Stephanie Waggel
Anne Walters
Carolyn Webster-Stratton
Eanah Whaley
Tetsuya Yamamoto
Judith Zackson

New Professional 1
Lena Andersen
Allison Brandt
Lara Brodzinsky
Kaylee Burnham
Nicole DeTore
Ricardo Eiraldi
Lisa Glassman
Jaclyn Goldman
Audrey Harkness
Lacey Herrington
Karolina Kowarz
Florencia Lebensohn-Chialvo
Andrea Niles
Carissa Philippi
Julina Rattel
Stephanie Smith
Adrian Thompson

New Professional 2
Gerald Adamson
Jason Duncan
Clarissa Gosney
Nora Kline
Jessica Maples-Keller
Stevie Schein
Nicole Stadnick
Michelle Wilson

New Professional 3
Chiaying Wei

Postbaccalaureate
Emily Ahles
Allegra Anderson
Aishvarya Arora
Gina Belli
Kendal Binion
Mackenzie Brown
Wendy Chu
Alexandra Convertino
Caroline Cusick
Jacob Dinerman
Layla Elmi
Cameron Evans
Lydia Federico
Nicole Fossos-Wong
Kristen Frosio
Amanda Gentz
Emi Gilbert
Alexandra Golik
Samantha Hellberg
Kimberly Henriquez
Rafaella Jakubovic
Jessica Janos
Stephanie Jeffirs
Alexandra Jensen
Julia Johnston
Paraskevi Kambanis
Kendra Knudsen
Maya Kratzer
Ilana Ladis
Clara Lee
Isaac Mirzadegan
Glory Oh
Asia Perkins
Julie Petersen
Meredith Powers
Dana Schindler
Aidan Schmitt
Mary Skapek
Bryan Stiles
Yael Stovezky
Sarah Wieman
Paul Young
Brianna Young

Students
Mayesha Alam
Lorraine Alire
Adrienne Anderson
Brenda Arellano
Inna Arnaudova
Melissa Aust
Natasha Bailen
Danielle Baker
Brittany Balassone
Meghan Bauer
Megan Baumgardner
Valerie Becker
Victoria Bennett
Madeline Benz
Kate Berghuis
Jasmine Berry
Joseph Bettcher
Lia Bishop
Alexis Blessing
Jennifer Blossom
John Brady
Courtney Breiner
Carolyn Brennan
Sarah Brenner
Rachel Capps
Abigail Caserta
Joseph Censor
Alexa Chandler
Kelly Chen
Grace Cho
Bridget Cho
Spencer Choy
Kimberly Cimino
Deja Clement
Adelyn Cohen
Elizabeth Combs
Allison Conforte
Cristian DaCosta
Chelsea Day
Jasmine Dayan
Kayla DeFazio
Meaghan Delcourt
Lillian Dobbs-Marsh
Cole Duncan
Ashley Fedynich
Alana Fenton
Michelle Fernando
Danielle Fishbein
Anna Franklin
Anna Gai
Ashley Galsky
Christina Gamache Martin
Diana Gamez
Caitlin Gasperetti
Christopher Georgiadis
Sarah Ghose
Rebecca Ginat-Frolich
Ali Giusto
Lara Glenn
Alison Goldblatt
Julia Goldmark
Rogelio Gonzalez
Rebecca Grekin
Arryn Guy
Ashley Hadwiger
Renee Hangartner
Holly Hauser
Catherine Hausman
Emily He
Hannah Herc
Ashley Hicks
Veronica High
Megan Higinbotham
Leela Holman
Amanda Howard
Chloe Hudson
Nadia Huq
Alex Irwin
Lance Johns
Emily Johnson
Payton Jones
Katherine Jongsma
Joanna Kim
Richard Kim
Casey Kohen
Merdijana Kovacevic
Katie Krajewski
Maria Kryza-Lacombe
Nichole Kuck
Mary Kuckertz
Madeline Lagacey
Jeanine Lane
Emily Lang
Nicole Lange
MarLa Lauber
Amina Lazzouni
Jesse Lee Wilde
Navjeet Lehal
Gabriela Lelakowska
Jordanna Lembo
Katherine Leppert
Emily Livermore
Mandi Logsdon
Laura Long
Erin Long
Daisy Lopez
Jaclyn Ludmer
Julie Lutz
Ellen Manegold
Hannah Martinez
Margaret Martinez
Marilyn McCune
Hayley McMahon
Alana McVey
Ilayna Mehrtens
Jocelyn Meza
Jennifer Miller
Rebekah Mitchell
Kimberly Morton
Alexandra Muratore
Andrea Murray
Swap Mushiana
Ashley Muskett
Taylor Nezich
Abigail Ngayan
Derek Novacek
Sean O`Hearn
Maggie O`Reilly Treter
Gili Ornan
Rachel Ouellette
Courtney Paisley
Andrew Paladino
Caitlin Paquet
Nikita Patel

Megan Pejsa-Reitz
David Perlman
thomas peterson
Amani Piers
Kelsey Pritchard
Chandler Puhy
Christina Quach
Paolo Raymundo
Hannah Reas
Sydney Risley
Adriana Rodriguez
Margarita Sala
Carly Salzberg
Shelby Savoree
Emily Scarpulla
Hillary Schiltz
Jessie Schulman
Judah Serrano
Danielle Shayani
Caitlin Simson
Shaneika Smith
matt smith
Ampornpan Solie
Pauline Song-Choi
Russell Sorenson
Anne Sorrell
Samuel Spencer
Sarah Staats
Taylor Stephens
Julie Stern
Kathleen Stewart
Katerina Stratigis
Karolyne Stucki
Ashley Synger
Bayley Taple
Naomi Tarlow
Johanna Terry
Hardian Thamrin
Fiona Thomas
Anna Tillery
Aubrey Toole
Mia Trentadue
Aleksandra Usyatynsky
Isabella Viducich
Sarah Vitale
Alison Vogelsang
Elysha Walker
Katherine Walukevich
Ewald Wefelmeyer
Jonathan Westman
Nicole Wilberding
Kelsey Winters
Kerri Woodward
Wing Yee Jackie Ma

2018

Call *for* Award Nominations

to be presented at the 52nd Annual Convention in Washington, DC

The ABCT Awards and Recognition Committee, chaired by Cassidy Gutner, Ph.D., of Boston University School of Medicine, is pleased to announce the 2018 awards program. Nominations are requested in all categories listed below. Given the number of submissions received for these awards, the committee is unable to consider additional letters of support or supplemental materials beyond those specified in the instructions below. Please note that award nominations may not be submitted by current members of the ABCT Board of Directors.

Career/Lifetime Achievement

Eligible candidates for this award should be members of ABCT in good standing who have made significant contributions over a number of years to cognitive and/or behavior therapy. Recent recipients of this award include Thomas H. Ollendick, Lauren B. Alloy, Lyn Abramson, David M. Clark, Marsha Linehan, and Dianne L. Chambless. Applications should include a nomination form (available at www.abct.org/awards), three letters of support, and the nominee's curriculum vitae. Please e-mail the nomination materials as one pdf document to awards.abct@gmail.com. Include "Career/Lifetime Achievement" in the subject line. Also, send a copy to the ABCT Central Office: 2018ABCTAwards@abct.org. **Nomination deadline:** March 1, 2018

Outstanding Mentor

This year we are seeking eligible candidates for the Outstanding Mentor award who are members of ABCT in good standing who have encouraged the clinical and/or academic and professional excellence of psychology graduate students, interns, postdocs, and/or residents. Outstanding mentors are considered those who have provided exceptional guidance to students through leadership, advisement, and activities aimed at providing opportunities for professional development, networking, and future growth. Appropriate nominators are current or past students of the mentor. Previous recipients of this award are Richard Heimberg, G. Terence Wilson, Richard J. McNally, Mitchell J. Prinstein, Bethany Teachman, and Evan Forman. Please complete the nomination form found online at www.abct.org. Then e-mail the completed form and associated materials as one pdf document to awards.abct@gmail.com. Include "Outstanding Mentor" in your subject heading. Also, send a copy to the ABCT Central Office: 2018ABCTAwards@abct.org.
Nomination deadline: March 1, 2018

Distinguished Friend to Behavior Therapy

Eligible candidates for this award should NOT be members of ABCT, but are individuals who have promoted the mission of cognitive and/or behavioral work outside of our organization. Applications should include a letter of nomination, three letters of support, and a curriculum vitae of the nominee. Recent recipients of this award include Mark S. Bauer, Vikram Patel, Benedict Carey, and Patrick J. Kennedy. Applications should include a nomination form (available at www.abct.org/awards), three letters of support, and the nominee's curriculum vitae. Please e-mail the nomination materials as one pdf document to awards.abct@gmail.com. Include "Distinguished Friend to BT" in the subject line. Also, send a copy to the ABCT Central Office: 2018ABCTAwards@abct.org. **Nomination deadline:** March 1, 2018

Anne Marie Albano Early Career Award for Excellence in the Integration of Science and Practice

Dr. Anne Marie Albano is recognized as an outstanding clinician, scientist, and teacher dedicated to ABCT's mission. She is known for her contagious enthusiasm for the advancement of cognitive and behavioral science and practice. The purpose of this award is to recognize early career professionals who share Dr. Albano's core commitments. This award includes a cash prize to support travel to the ABCT Annual Meeting and to sponsor participation in a clinical treatment workshop. Eligibility requirements are as follows: (1) Candidates must be active members of ABCT, (2) New/Early Career Professionals within the first 5 years of receiving his or her doctoral degree (PhD, PsyD, EdD). Preference will be given to

applicants with a demonstrated interest in and commitment to child and adolescent mental health care. Applicants should submit: nominating cover letter, CV, personal statement up to three pages (statements exceeding 3 pages will not be reviewed), and 2 to 3 supporting letters. Application materials should be emailed as one pdf document to Awards.ABCT@gmail.com. Include candidate's last name and "Albano Award" in the subject line. Also, send a copy to the ABCT Central Office: 2018ABCTAwards@abct.org.

This award is made possible by a generous donation to ABCT. A family who benefitted from CBT and knows of Dr. Albano's work expressed wanting to see others benefit from CBT and CBT-trained therapists.

Nomination deadline: March 1, 2018

Student Dissertation Awards

- **Virginia A. Roswell Student Dissertation Award ($1,000)**
- **Leonard Krasner Student Dissertation Award ($1,000)**
- **John R. Z. Abela Student Dissertation Award ($500)**

Each award will be given to one student based on his/her doctoral dissertation proposal. Accompanying this honor will be a monetary award (see above) to be used in support of research (e.g., to pay participants, to purchase testing equipment) and/or to facilitate travel to the ABCT convention. Eligibility requirements for these awards are as follows: 1) Candidates must be student members of ABCT, 2) Topic area of dissertation research must be of direct relevance to cognitive-behavioral therapy, broadly defined, 3) The dissertation must have been successfully proposed, and 4) The dissertation must not have been defended prior to November 2017. Proposals with preliminary results included are preferred. To be considered for the Abela Award, research should be relevant to the development, maintenance, and/or treatment of depression in children and/or adolescents (i.e., under age 18). Self-nominations are accepted or a student's dissertation mentor may complete the nomination. The nomination must include a letter of recommendation from the dissertation advisor. Please complete the nomination form found online at www.abct.org/awards/. Then e-mail the nomination materials (including letter of recommendation) as one pdf document to awards.abct@gmail.com. Include candidate's last name and "Student Dissertation Award" in the subject line. Also, send a copy to the ABCT Central Office: 2018ABCTAwards@abct.org.

Nomination deadline: March 1, 2018

President's New Researcher Award

ABCT's 2017-18 President, Sabine Wilhelm, Ph.D., invites submissions for the 40th Annual President's New Researcher Award. The winner will receive a certificate and a cash prize of $500. The award will be based upon an early program of research that reflects factors such as: consistency with the mission of ABCT; independent work published in high-impact journals; and promise of developing theoretical or practical applications that represent clear advances to the field. While nominations consistent with the conference theme are particularly encouraged, submissions will be accepted on any topic relevant to cognitive behavior therapy, including but not limited to topics such as the development and testing of models, innovative practices, technical solutions, novel venues for service delivery, and new applications of well-established psychological principles. Requirements: candidates must be the first author, and self-nominations are accepted; 3 letters of recommendation must be included; the author's CV, letters of support, and paper must be submitted in both electronic and paper form.

E-mail the nomination materials (including letter of recommendation) as one pdf document to PNRAward@abct.org. Include candidate's last name and "President's New Researcher" in the subject line. **Nomination deadline:** August 1, 2018

Nominations for the following award are solicited from members of the ABCT governance:

Outstanding Service to ABCT

Please complete the nomination form found online at www.abct.org/awards/. Then e-mail the completed form and associated materials as one pdf document to awards.abct@gmail.com. Include "Outstanding Service" in the subject line. Also, send a copy to the ABCT Central Office: 2018ABCTAwards@abct.org. **Nomination deadline:** March 1, 2018

Nominations for ABCT Officers: The Time Is Now!

David Pantalone, *Chair, Leadership and Elections Committee*

FOR ME, LIKE SO MANY OF YOU, ABCT is one of my most treasured professional homes. Indeed, I think of the Annual Convention as akin to my "CBT family reunion" and spend months looking forward to connecting with new colleagues, and seeing old friends, every year. For many years, I thought of the elected leaders of the organization as "others," some rarefied CBT deities with magical leadership powers. However, over time—as I interacted with them more, and as friends and colleagues ascended into those roles—I realized that those individuals are not some qualitatively different type of human but, indeed, are just "us"—but the "us" from among the membership who have chosen to step forward and make a public commitment to give their time, energy, and effort to this organization that we value so dearly (OK, arguably some may actually have magical leadership powers, but that is definitely not a prerequisite).

This column signals the time of year when our committee, the Leadership and Elections Committee, begins its task of recruiting members to fill the slate of nominees for elected offices. I have met so many smart, dedicated, and committed members of ABCT, and many of them already serve in leadership roles in their practices, their departments, or in other professional organizations (which shall not be named). I encourage you to think about whether you might be in a position to run for one of these elected offices or, if not this year, whether you can think of any of the "us" among the membership who might be well-suited for that task.

There are many reasons why extremely qualified members might count themselves out from pursuing elected office at ABCT. Some members might be concerned about the time commitment being too great, or they might be concerned that they know too little about the governance structure of the organization. Others may worry, as I once did, that leaders require some greater skill and knowledge than we possess. To that end, I would encourage anyone in that position to engage heartily in some reality testing, or to be in touch with any of the Leadership and Elections Committee members. We would be happy to talk through any member's potential candidacy with them (and the chances are that you are ready before you think you're ready).

For the 2018 election, we are recruiting for the President-Elect (2018-19), for a Representative-at-Large (2018-21), and for a Secretary/Treasurer (2019-2022). Each of the Representatives-at-Large serves as a liaison to one of the branches of the association. The representative position up for 2018 election will serve as the liaison to the Convention & Education Issues Coordinator and Committees. This individual's term of office will be from November 2018 to November 2021. The Secretary/Treasurer serves the Board of Directors as Chair of the Finance Committee, overseeing the financial health of ABCT, and consults with the Executive Director about the administration of the Central Office. The Secretary/Treasurer is elected a year in advance so there is a good amount of time to learn the basics of ABCT financial operations.

All full members in good standing are eligible to be nominated, and there is no limit to the number of members you can nominate for any of the positions. According to ABCT's bylaws, we require two candidates for President-Elect and Secretary/Treasurer, and three candidates for Representative-at-Large to successfully run the election. Electioneering starts at the Annual Convention. So, if you have a candidate in mind, or wish to nominate yourself, start the campaign now with the nominations and go to the Annual Convention and start making your case to the electorate. Remember, the candidates with the most nominations will ultimately be the only official names on the ballot: two for President-elect, two for Secretary/Treasurer, and three for Representative-at-Large.

The Board of Directors approved Leadership and Elections Committee includes a chair and two members, each serving concurrent 3-year terms (2016-19). The Chair is David Pantalone (david.pantalone@umb.edu), from the University of Massachusetts Boston. The members are Patricia DiBartolo (pdibarto@smith.edu), of Smith College, and Kristen Lindgren (kpl9716@u.washington.edu), of the University of Washington School of Medicine.

One of the goals of the committee is to increase participation in the election process and, to that end, we are considering ways to further streamline the nomination and election process. Please know that such efforts are underway and, if you have any feedback or ideas, please don't hesitate to share them with me (david.pantalone@umb.edu).

I nominate the following individuals:

PRESIDENT-ELECT (2018–2019)

_____

_____

REPRESENTATIVE-AT-LARGE (2018–2021)

_____

_____

SECRETARY-TREASURER (2019–2022)

_____

_____

NAME (printed) SIGNATURE (required)

Every nomination counts! Encourage colleagues to run for office or consider running yourself. Nominate as many full members as you like for each office. The results will be tallied and the names of those individuals who receive the most nominations will appear on the election ballot next April. **Only those nomination forms bearing a signature and postmark on or before February 1, 2018, will be counted.**

Nomination acknowledges an individual's leadership abilities and dedication to behavior therapy and/or cognitive therapy, empirically supported science, and to ABCT. When completing the nomination form, please take into consideration that these individuals will be entrusted to represent the interests of ABCT members in important policy decisions in the coming years.Only full and new member professionals can nominate candidates. Contact the Leadership and Elections Chair for more information about serving ABCT or to get more information on the positions. **Complete, sign, and send form to: David Pantalone, Ph.D., Leadership & Elections Chair, ABCT, 305 Seventh Ave., New York, NY 10001.**

call for Continuing Education Sessions

Submission deadline:
February 1, 2018

52nd Annual Convention
November 15–18, 2018
Washington, DC

Submissions will be accepted through the online submission portal, which will open on Tuesday, January 2, 2018.

Submit a 250-word abstract and a CV for each presenter. For submission requirements and information on the CE session selection process, please visit www.abct.org and click on "Convention and Continuing Education."

Workshops & Mini Workshops | **Workshops** cover concerns of the practitioner/ educator/researcher. Workshops are 3 hours long, are generally limited to 60 attendees, and are scheduled for Friday and Saturday. Please limit to no more than 4 presenters. **Mini Workshops** address direct clinical care or training at a broad introductory level. They are 90 minutes long and are scheduled throughout the convention. Please limit to no more than 4 presenters. *When submitting for Workshops or Mini Workshop, please indicate whether you would like to be considered for the other format as well*.

For more information or to answer any questions before you submit your abstract, contact **Lauren Weinstock, *Workshop Committee Chair***
workshops@abct.org

Institutes | Institutes, designed for clinical practitioners, are 5 hours or 7 hours long, are generally limited to 40 attendees, and are scheduled for Thursday. Please limit to no more than 4 presenters.

For more information or to answer any questions before you submit your abstract, contact **Christina Boisseau, *Institute Committee Chair***
institutes@abct.org

Master Clinician Seminars | Master Clinician Seminars are opportunities to hear the most skilled clinicians explain their methods and show taped demonstrations of client sessions. They are 2 hours long, are limited to 40 attendees, and are scheduled Friday through Sunday. Please limit to no more than 2 presenters.

For more information or to answer any questions before you submit your abstract, contact **Sarah Kertz, *Master Clinician Seminar Committee Chair***
masterclinicianseminars@abct.org

the Behavior Therapist
Association for Behavioral
and Cognitive Therapies
305 Seventh Avenue, 16th floor
New York, NY 10001-6008
212-647-1890 | www.abct.org
ADDRESS SERVICE REQUESTED

AWARDS & RECOGNITION

Congratulations to ABCT's 2017 Award Winners

Lifetime Achievement
Dianne L. Chambless, Ph.D.

Outstanding Contribution to Research
Jennifer P. Read, Ph.D.

Outstanding Training Program
Clinical Science Ph.D. Program,
Virginia Polytechnic Institute and State University,
Director, Lee D. Cooper, Ph.D.,

Outstanding Service to ABCT
David DiLillo, Ph.D.

Anne Marie Albano Early Career Award for Excellence in the Integration of Science and Practice
Carmen P. McLean, Ph.D.

Virginia Roswell Student Dissertation Award
Alexandra Kredlow, M.A.

Leonard Krasner Student Dissertation Award
Shannon Blakey, M.S.

John R. Z. Abela Student Dissertation Award
Carolyn Spiro, B.Sc.