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Program sustainability: Is this a valuable concept?

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IN THIS ISSUE

There is a growing discussion in the field of implementation science that basically states we don't need to study program "sustainability" as a distinct subfield, rather we should integrate this focus with the existing emphasis on program implementation. In other words, the focus should not be whether a program can stand on its own two feet after it has been delivered, the funding scuttles out of town, and there is little, if any, technical support. This approach is most unproductive and will yield little information beyond the obvious. A much better approach empowers an organization (i.e., school, clinic, agency, and workplace) with the requisite skills to be fully capable of implementing a behavior change program on its own; a skill or capability that is garnered during the adoption and implementation phase. According to this perspective, sustainability studies are not needed, rather capacity building studies are needed. Stated somewhat differently, understanding sustainability begins with the adoption of the program not after it has been implemented.[1-3]

In this issue of the LARS **eNEWS** we examine the different threads of this discussion blending in several different literatures to understand more fully the different views of sustainability and what factors contribute to the "institutionalization" of programs. The onus of making sure a program has "staying power" should rest with the developer, however, scant few have really addressed this issue during the initial phase of program development where the priority rests with determining the program's efficacy. The distinctive features of efficacy testing is driven by the logic model, unveiling the causal mechanisms (i.e., testing active ingredients or the conceptual theory), and in some cases further confirming program effects that may be specious (addressing for whom and under what conditions) through tests of moderation or subgroup analyses.

As we further explore this discussion, we need to keep in mind that that the recently introduced prevention science guidelines for efficacy, effectiveness and scale-up herald sustainability as one of the top criteria of what makes a program "evidence-based.[4] In other words, the "staying power" of a program stands on equal footing with efforts to determine program efficacy. Highlighting the importance of sustainability brings to mind several considerations including whether the program developer offers implementation training (to achieve maximal program adherence or fidelity),[5-6] trains practitioners in process evaluation,[7-8] provides ongoing technical support,[9] assesses contextual factors (organizational readiness and climate) that can influence program outcomes,[10] engages capacity building,[11] strengthens the service provider's recruitment, retention, and evaluation skills,[12] collects cost-benefit information (monetizing the program)[13] and allows a modicum of program flexibility to handle cultural or other types of adaptations[14] (without weakening program effects). These are some, but not all, of the factors that influence a program's ability to "scale up" and become institutionalized when it moves from the efficacy to effectiveness phase.[15]

Overall, the issues raised above fall under the broad rubric of "translational science" or Type 2 translation research.[16-17] It is unfortunate, however, that the scientific

base for this discipline is not as advanced as the focus on determining whether a program works (examining features of the intervention that produce desired outcomes).

> *Despite long-term interest in issues of program sustainability, sustainability research has not coalesced into a widely used set of research questions, operational definitions and procedures, or a research paradigm.*
>
> Scheierer & Dearing (2011). *American Journal of Public Health, 101*(11), p. 2059.

Definitions. Before more thoroughly engaging this discussion, it is crucial to develop a common ground, based on popular and oft-cited terms that we encounter in the health promotion and disease prevention literature.[18]

Adaptation = a form of customization (incremental adjustment, reinvention) of program materials to maximize fit with the target population. Can involve changes to surface or deep structure.[19] Generally looked upon favorably if it involves "additions" rather than "subtractions" to the program content and if the adaptations do not detract from the efficacy of core components.

Capacity-building = ensuring the appropriate infrastructure (durable resources) and systems level support is present to support implementation of EBIs or to test the effectiveness of a single program.

Diffusion = factors that prompt successful adoption of EBIs by stakeholders and the targeted population. Can be "passive, untargeted, and unplanned."[20]

Dissemination = Distribution of information and intervention materials to the target population, requires active, planned efforts.[21] Involves moving from the developmental stages for an innovation to its widespread use. Can begin with the researcher (source-based) or the consumer (user-based) but is always focused on uptake and utilization.

Efficacy trial = examining the benefits of a program under optimal (ideal) conditions, usually involving a rigorous design focusing on internal validity, controlled conditions, and extensive monitoring to ensure the program is implemented as designed with minimal *program drift*.

Effectiveness trial = conducted in real-world settings, where a program is likely to be implemented in a less controlled environment and the goal is to determine whether variations in the intervention (i.e., weaker implementation quality), population, time, settings and outcomes depart from what was obtained in efficacy trials.

Evidence-based intervention = programs, policies, or practices tested using rigorous and methodologically sound designs with demonstrated benefits that are both statistically and practically significant.

Implementation = incorporating an innovation (public health intervention) into an organization through concerted, active (strategic) efforts; should be distinct from efficacy and effectiveness studies.[22] Does require moving clinical knowledge to routine use in real-world "usual care settings."

Intervention = programs, policies, guidelines, and practices aimed at improving health and well-being or at reducing disease and related problems. Involves a certain set of directed activities (i.e. tasks) aimed at achieving certain behavioral goals (outcomes).

Sustainability = continued implementation of program components and activities with the goal of maintaining program benefits in the same setting and with similar populations. Also referred to as "continuation, maintenance, durability, stabilization, and institutionalization."

Translation = the process and steps needed and taken to ensure effective and widespread use of EBIs, practices, and policies.

Type 2 translational research = examines the processes and mechanisms through which EBIs are integrated into practice and policy at the population level with the goal of sustainability, in multiple settings and with diverse populations.

What Got Us Here? The traditional prevention research framework primarily consists of intervention development, pilot testing, efficacy trials, effectiveness trials and ultimately broad dissemination. This 'linear' approach to research is captured in the earlier SPR Standards of Evidence[23], however, several authors have suggested abandoning this approach[∂]. What is suggested instead is consideration of factors that will influence scale-up efforts (making the program available on a larger scale) and their incorporation into the different "development" phases of a program as the program trialing matures from efficacy to effectiveness. This means making it easy for the organizational members (i.e., school, community, workplace, healthcare practice) to readily draw upon the pre-implementation training and technical support provided and have ready access to the instructional materials required for implementation. For instance, in a school-based drug prevention program both the administration and teachers should have sufficient training to carry on with the intervention curriculum in the absence of the researchers that introduced the program, and also even in the absence of technical support teachers should be fully capable of implementing the program on their own. This will increase buy-in when a program requires little in the way of institutional resources and is not considered too demanding.

> *Relatively little rigorous research has been conducted related to the processes and systems through which EBIs are adopted, implemented, and sustained on a large scale.*
>
> Gottfredson et al. (2015). *Prevention Science, 16*, p. 914.

Core Challenges. It goes without saying that both prevention and implementation science face certain challenges.[22] For one thing, funds are much easier to come for basic and applied research developing and testing an intervention with much less support to determine what specific factors influence sustainability of proven interventions. This has not prevented a few scholars from advancing promising "prevention delivery systems" for implementation and sustainability. These efforts are, by and large, outgrowths of theoretically driven interventions to reduce youth drug use, violence, delinquency, mental health

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[∂]Even the NCI (2004)[37] "*stage pipeline*" model contains a linear progression with five phases that map closely to the linear approach suggested by prevention science models. The NIH Roadmap for translational research (https://commonfund.nih.gov/sites/default/files/rtrc_interimreport.pdf) reduces the five down to two stages including basic science leading to intervention testing followed by implementation in real-world practice settings.

problems or as part of health promotion and disease prevention studies more generally.

Sustainability Frameworks. As part of their efforts to address the "research-to-practice" gap, several investigators have proposed sustainability "frameworks." In the interest of conserving space, only a few can be discussed, albeit there has been a proliferation of these conceptual frameworks in the past decade alone. Several worth mentioning include the Interactive Systems Framework for Dissemination and Implementation or ISF,[24] Knowledge to Action (K2A),[25] the RE-AIM framework,[26] the Prevention Service Development Model, specific to mental health[27] the Consolidated Framework for Implementation Research,[28] and Rogers "Diffusion of Innovations" model.[29]

The Translation Science to Population Impact (TSci Impact) Framework[30] is based primarily on Roger's Diffusion of Innovations.[29] The framework articulates four phases of translation functions including pre-adoption, adoption, implementation, and sustainability, the latter phase giving credence to the importance of scaling-up health promotion programs to the population. *Pre-adoption* emphasizes features of the intervention, consumer, provider, and organization that can influence ultimate program adoption. This includes the appeal or acceptability of the intervention to consumers and feasibility of the intervention (including its cost). *Adoption* addresses the "decision-making" of the institution including their readiness for change (i.e., receptivity to new innovations), the wherewithal to finance new programs, incentives to accelerate adoption, loyalty to existing programs, and proposed economic benefits. Programs that are very costly and difficult to implement and that don't net a tremendous benefit are less likely to be adopted.

Implementation deals with integration of EBIs into the existing agency, school, community or healthcare unit (clinic) service structure. Considerations include the ability to reach and engage the target population, fidelity of program delivery, staff training and technical assistance, various forms of incentives to increase attendance (recruitment and retention), training to improve program adherence, conducting process evaluations, and fostering a favorable organizational climate from the leadership to the practitioners in the trenches. *Sustainability* deals with the maintenance and institutionalization of EBIs and how they can be expanded both within and across different settings if needed. Specific factors might include identifying sustained funding initiatives, personnel turnover (stability of the trained workforce), nurturing program champions, identifying diffusion and support networks (TA systems), and policy initiatives that fuel the infrastructure and maintain a focus on the importance of the prevention program.

In addition, a valuable marker of sustainability concerns whether the benefits that accrue to the consumer continue as well as the volume of services delivered by the agency (school, clinic, community).[3] This can easily be measured in terms of the program activities, whether there is continued TA and training, and whether there are continued efforts to build networks in the form of interagency collaboration or community coalitions.

Core Active Ingredients. Regardless of their original orientation (i.e., drug prevention research or health promotion), all of these prevention delivery framework share some common ground particularly with regard to sustainability. First, they all emphasize support structures, or the need for continued technical assistance and training of service providers. Training can take shape as "coaching" for teachers or on-site training to improve implementation for family agencies conducting parent skills training programs. The importance of training and TA cannot be overstated and research confirms it benefits for program outcomes.[31-32]

> *The first core challenge is to build infrastructures and the capacity for broad translation of evidence-based preventive interventions into community practices through prevention delivery systems.*
>
> Spoth et al. (2013) *Prevention Science, 14*, p. 322.

Sustainable programs should have a clear public health impact and fit with the funding and policy mandates at the government or funder level. If external funding is not an issue (or funding was time-limited), the program must still find a way to address the public health mandate in order for it to garner community support. The program should not only align with the mission of the organization but also with the wishes of the community and its members. It can be the death knell if a program goes against the grain of community wishes despite its overall importance to the target population's health and well-being.

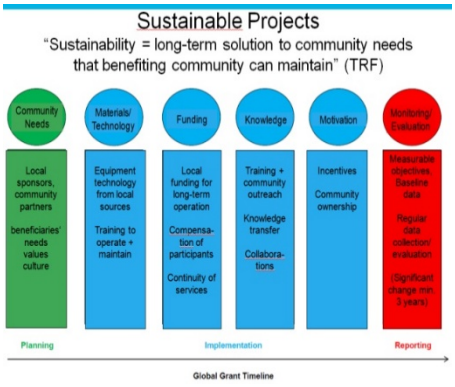
Challenges to the "worth" of a program can mire it in endless committee meetings and, furthermore lacking a champion, undermine the best intentions of providers who value it. This is particularly true for disadvantaged and vulnerable populations who may feel neglected, socially marginalized or distrustful of large-scale efforts to reinvigorate a distressed neighborhood and invest in social capital. Ideally, one could equate social capital with "capacity."[33] The absence of social capital, marked by a poor infrastructure, weak social networks bonds within the community, and the absence of tangible community resources, all detract from the desire to initially mount let alone sustain public health campaigns.

Likewise, sustainable programs must demonstrate fit between the program content and the service delivery systems where implementation will take place. This latter point is heralded in the TSci Impact Framework as a *Core Challenge* to ensure that the program developer, working in concert with the consumer, is aware of the needs, resources, values, and preferences of the target audience. This applies also to the "myths, symbols, metaphors and rituals" that capture the underlying organizational belief system and work to promote congruence between the service delivery agents and eventual program consumers (i.e., clients).

Programs that are adopted are seen as more "advantageous" to the ones already in place, fit with the organizational structure of service delivery, and are easy to deliver.[21] The foundation of dissemination is to convey this knowledge to stakeholders at all levels of the informed decision-making process that will ultimately decide in favor or against program adoption. Examples from the Communities that Care prevention model reinforce how important communicating this information can be in the adoption and sustainability of community-based prevention programs.[34] As a side note, it is interesting that in many cases, stakeholders (consumers) do not rely on the research evidence in determining whether to adopt EBIs, rather they resort to testimonials, economics, familiarity and other intractable

information that convinces them of the program's overall worth.

Partnerships and coalitions also contribute to the sustainability of programs. The PROSPER model highlights the importance of building collaborations to build capacity as early as the adoption phase.[35-36] In this case, the setting involved the public education system joining forces with a university to engage (and sustain) drug prevention on a large scale.



Concluding Remarks. There are any number of reasons to account for the slow development of sustainability as a sub discipline of implementation science. These include the fuzzy nature of the construct, poor measurement, and broad conceptual models that frame sustainability in different ways. The lack of a clear lexicon and the inability to point decisively to when sustainability should start in the development of an intervention hampers the field. Too often, a program developer attends to the "efficacy" side of the coin, leaving consideration of going to scale and sustainability to a much later point in time. This disjoint or separation of intervention development from implementation concerns hinders the ability of service providers to incorporate the program into existing services or extend services into new and unchartered territory. Simple things like training and technical assistance, attention to provider needs, cultural sensitivity, and emphasizing the values of the organization where the innovation will take place can undercut the program's ability to remain a fixture. Many of the frameworks and models showcased in this **eNEWS** underscore the need for researcher-agency-provider partnerships, or university-community collaborations to advance implementation science and find ways to increase the sustainability of EBIs. Only with the sustaining of these collaborations can we hope to close the research-to-practice gap. It is essential to recognize that institutionalization cannot be an afterthought, rather it must be conceptualized as part of the research and translation phases that occur prior to and during efficacy and effectiveness trials. The innovation is not the program standing alone by itself, rather it incorporates the way the innovation becomes part of the fabric of the service delivery environment and an indelible feature of the consumer's mindset.

References.

[1]Scheierer, M. A. (2005). Is sustainability possible? A review and commentary on empirical studies of program sustainability. *American Journal of Evaluation, 26*(3), 320-347.

[2]Pluye, P., Potvin, L., Denis, J-L., Pelletier, J., & Mannoni, C. (2005). Program sustainability begins with the first events. *Evaluation and Program Planning, 28*(2), 123-137.

[3]Scheierer, M. A., & Dearing, J. W. (2011). An agenda for research on the sustainability of public health programs. *American Journal of Public Health, 101*(11), 2059-2067.

[4]Gottfredson, D. C., Cook, T. D., Gardner, F. E. M., Gorman-Smith, D., Howe, G. W., Sandler, I. N., & Zafft, K. M. (2015). Standards of evidence for efficacy, effectiveness, and scale-up research in prevention science: Next generation. *Prevention Science, 16*, 893-926.

[5]Durlak, J. (1998). Why program implementation is important. *Journal of Prevention & Intervention in the Community, 17*, 5–18.

[6]Durlak, J. A., & Dupree, E. P. (2008). Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *American Journal of Community Psychology, 41*, 327-350.

[7]Steckler, A., & Linnan, L. (Eds.). (2002). *Process evaluation for public health interventions and research*. San Francisco, CA: Jossey-Bass.

[8]Saunders, R. P., Evans, M. H., & Joshi, P. (2005). Developing a process-evaluation plan for assessing health promotion program implementation: A how-to guide. *Health Promotion Practice, 6*(2), 134-147.

[9]Katz, J., & Wandersman, A. (2016). Technical assistance to enhance prevention capacity: A research synthesis of the evidence base. *Prevention Science, 17*, 417-428.

[10]Dariotis, J. K., Bumbarger, B. K., Duncan, L. G., & Greenberg, M. T. (2008). How do implementation factors relate to program adherence? Examining the role of organizational, implementer, and program factors. *Journal of Community Psychology, 36*(6), 744-760.

[11]Shapiro, V. B., Oesterle, S., & Hawkins, J. D. (2015). Relating coalition capacity to the adoption of science-based prevention in communities: Evidence from a randomized trial of Communities that Care. *American Journal of Community Psychology, 55*, 1-12.

[12]Heinrichs, N., Bertram, H., Kuschel, A., & Hahlweg, K. (2005). Parent recruitment and retention in a universal prevention program for child behavior and emotional problems: Barriers to research and program participation. *Prevention Science, 6*(4), 275-286.

[13]Griffith, K. N., & Scheier, L. M. (2013). Did we get our money's worth? Bridging economic and behavioral measures of program success in adolescent drug prevention. *International Journal of Environmental Research and Public Health, 10,* 5908-5935.

[14]Castro, F. G., Barrera, M., & Martinez, C. R. (2004). The cultural adaptation of prevention interventions: Resolving tensions between fidelity and fit. *Prevention Science, 5*, 41–45.

[15]Glasgow, R. E., Lichtenstein, E., & Marcus, A. G. (2003). Why don't we see more translation of health promotion research to practice? Rethinking the efficacy-to-effectiveness transition. *American Journal of Public Health, 93*(8), 1261-1266.

[16]Rohrbach, L. A., Grana, R., Sussman, S., & Valente, T. W. (2006). Type II translation: Transporting prevention interventions from research to real-world settings. *Evaluation & The Health Professions, 29*(3), 302-333.

[17]Woolf, S. H. (2008). The meaning of translational research and why it matters. *Journal of the American Medical Association, 222*(2), 211-213.

[18]Rabin, B. A., & Brownson, R. C. (2012). Developing the terminology for dissemination and implementation research. In R. C. Brownson, G. A. Colditz, & E. K. Proctor (Eds.), *Dissemination and implementation research in health: Translating science to practice* (pp. 23-51). New York, NY: Oxford University Press.

[19]Resnicow, K., Soler, R. E., Braithwaite, R. L., Ahluwalia, J. S., & Butler, J. (2000). Cultural sensitivity in substance use prevention. *Journal of Community Psychology, 28*, 271–290.

[20]Rabin, B. A., Brownson, R. C., Haire-Joshu, D., Kreuter, M. W., & Weaver, N. L. (2008). A glossary for dissemination and implementation research in health. *Journal of Public Health Management and Practice, 14*, 117-123.

[21]Greenhalgh, T., Robert, G., Macfarlane, F., Bate, P., & Kyriakidou, O. (2004). Diffusion of innovations in service organizations: Systematic review and recommendations. *The Milbank Quarterly, 82*, 581-629.

[22]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*, 24-34.

[23]Flay, B. R., Biglan, A., Boruch, R. F., Castro, F. G., Gottfredson, D., Kellam, S., ... Li , P. (2005). Standards of evidence: Criteria for efficacy, effectiveness and dissemination. *Prevention Science, 6*, 151-175.

[24]Wandersman, A., Duffy, J., Flaspohler, P., Noonan, R., Lubell, K., Stillman, L., ... Saul, J.(2008). Bridging the gap between prevention research and practice: The Interactive Systems Framework for Dissemination and Implementation. *American Journal of Community Psychology, 41*, 171-181.

[25]Wilson, K. M., Brady, T. J., Lesesne, C., and the NCCDPHP Work Group on Translation (2011).An organizing framework for translation in public health: The Knowledge to Action Framework. *Preventing Chronic Disease, 8*(2). http://www.cdc.gov/pcd/issues/2011/mar/10_0012.htm. Accessed September 3, 2019.

[26]Glasgow, R. E., Vogt, T. M., & Boles, S. M. (1999). Evaluating the public health impact of health promotion interventions: the RE-AIM framework. *American Journal of Public Health, 89*(9), 1322-1329.

[27]Sandler, I., Ostrom, A., Bitner, M. J., Ayers, T. S., Wolchik, S. A., & Daniels, V. S. (2005). Developing effective prevention services for the real world: A prevention service development model. *American Journal of Community Psychology, 35*(3-4), 127-142.

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

[29]Rogers, E. M. (1995). *Diffusion of innovations* (4th ed.). New York, NY: Free Press.

[30]Spoth, R., Rohrbach, L. A., Greenberg, M., Leaf, P., Brown, C. H., Fagan, A., ... Hawkins, J. D. (2013). Addressing core challenges for the next generation of Type 2 translation research and systems: The translation science to population impact (TSci Impact) framework. *Prevention Science, 14*, 319-351.

[31]Mitchell, R. E., Florin, P., & Stevenson, J. F. (2002). Supporting community-based prevention and health promotion initiatives: Developing effective technical assistance systems. *Health Education & Behavior, 29*(5), 620-639.

[32]Hunter, S. B., Chinman, M., Ebener, P., Imm, P., Wandersman, A., & Ryan, G. W. (2009). Technical assistance as a prevention capacity-building tool: A demonstration using the Getting To Outcomes framework. *Health Education & Behavior, 36*(5), 810-828.

[33]Johnson, K., Hays, C., Center, H., & Daley, C. (2004). Building capacity and sustainable prevention innovations: A sustainability planning model. *Evaluation and Program Planning, 27*, 135-149.

[34]Fagan, A. A., Hanson, K., Briney, J. S., & Hawkins, J. D. (2012). Sustaining the utilization and high quality implementation of tested and effective prevention programs using the Communities that Care prevention system. *American Journal of Community Psychology, 49*, 365-377.

[35]Spoth, R. L., Greenberg, M. T., Bierman, K., & Redmond, C. (2004). PROSPER community-university partnership model for public education systems: Capacity-building for evidence-based, competence-building prevention. *Prevention Science, 5*(1), 31-39.

[36]Spoth, R. L., & Greenberg, M. T. (2015). Impact challenges in community science-with-practice: Lessons from PROSPER on transformative practitioner-scientist partnerships and prevention infrastructure development. *American Journal of Community Psychology, 48*, 106-119.

[37]National Cancer Institute (2004). Dialogue on dissemination: Facilitating dissemination research and implementation of evidence-based cancer prevention, early detection, and treatment practices. Retrieved September 3, 2019, from https://cancercontrol.cancer.gov/IS/pdfs/dod_summ_nov-dec.pdf.

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