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Commentary

Challenges in Sustaining Public Health Interventions

David G. Altman, PhD

Sustainability remains a key challenge in public health. The perspective article by Fagen and Flay adds to our understanding of technical factors associated with sustaining health interventions in schools. In this commentary, the Fagen and Flay article (2009) is considered within the broader literature on sustainability. By taking a broad view, public health theory and practice might be advanced further. Fagen and Flay illustrate that we have much to learn about sustainability. Questions for future research include: (a) what can we put into place at the systems level to ensure that the short-term efficacy of interventions have a fighting chance to be sustained? (b) considering the challenges inherent in sustainability, what are realistic goals against which to evaluate the cost-effectiveness of interventions found effective in the short-term? and (c) what theories, methods, and strategies in fields outside of public health can be drawn upon to improve work in public health?

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Some writers on innovation argue that innovation is best fostered by connecting ideas and people across diverse domains. For example, Hargadon (2003) found that “innovation isn’t a process of thinking outside of the box so much as one of thinking in boxes that others haven’t seen before” (p. 13). To achieve breakthroughs, Hargadon encouraged recombinant invention, or the building of new communities around the recombination of existing ideas. This is good advice for public health researchers and practitioners working in the area of sustainability. There is important work on sustainability in areas outside of public health. If this work were brought to bear in public health, it would advance our understanding of sustaining health interventions.

Sustainability remains a key challenge in public health. Although much progress has been made in the development of efficacious interventions to promote health, too few interventions achieve long-term sustainability. If interventions last only as long as the period of initial funding, what makes us think they will have lasting effects, or is it even reasonable to expect interventions to have lasting effects? A central issue, of course, is the connection between the established efficacy of interventions and the broader social change and infrastructure development that is needed to sustain efficacious interventions.

Before delving into the particular case of the sustainability of school-based prevention research, the topic of the article by Fagen and Flay (2009), which appears as a perspective
article in this issue of HE&B, it is important to broaden our lens on the generic topic of sustainability. Indeed, sustainability is of interest to many fields beyond public health. It also connects to core public health principles such as increasing community capacity (cf. Norton, McLeroy, Burdine, Felix, & Dorsey, 2002). By embracing a broader view of sustainability, public health professionals might well advance both theory and practice.

In the past year alone, sustainability writ large has been a topic that has appeared on the front pages of the popular press. Al Gore’s 2006 book and movie An Inconvenient Truth focused on global warming and addressed environmental sustainability and the sustainability of human life on earth. Thomas Friedman’s 2005 best-selling book The World is Flat focused on the deep, global interdependencies related to sustainable economic, educational, and environmental development. Conflicts in Iraq, Afghanistan, Israel, Lebanon, and Darfur raised concern about sustainable solutions to human conflict. Corporations and business scholars are paying increasing attention to corporate social responsibility (CSR) and the “triple bottom line” to assess their commitment to concomitantly making money and improving the human condition through business practices. CSR is defined as “a commitment to improve community well-being through discretionary business practices and contributions of corporate resources” (Kotler & Lee, 2005, p. 3). The triple bottom line refers to using economic, environmental, and social values and criteria to evaluate organizational performance, rather than just economic performance. Taken together, CSR and the triple bottom line, relatively new concepts in the business world, convey a growing recognition that sustainability is key to promoting business prosperity and the high quality of life, if not survival, of the human race.

So what can we learn from these discussions outside of public health that might advance our understanding of sustaining public health interventions? First, it is important to understand how sustainability is defined in these other sectors.

**BASIC DEFINITIONS**

A comprehensive resource on sustainability can be found at http://www.wikipedia.org/, the open source, Internet-based encyclopedia. Wikipedia notes that the word sustainability came on the scene in Germany in the early 1700s and reflected a substantive focus on forestry (Sustainability, 2006). To this day, sustainability is more often than not a term used in the context of environmental issues. There are many definitions of sustainability and a general lack of agreement on a common definition. Sustainable development, a related term, has been defined as activities that meet present-day needs without compromising the ability to meet future needs (Goffman, 2005). As of early September 2006, the definitional landscape of sustainability in Wikipedia contained the following observations:

- “Sustainability is a systemic concept, relating to the continuity of economic social, institutional and environmental aspects of human society, as well as the non-human environment. It is intended to be a means of configuring civilization and human activity so that society, its members and its economies are able to meet their needs and express their greatest potential in the present, while preserving biodiversity and natural ecosystems, and planning and acting for the ability to maintain these ideals in a very long term.”
- “At the heart of the concept of sustainability there is a fundamental, immutable value set that is best stated as ‘parallel care and respect for the ecosystem and for the people within.’ From this value set emerges the goal of sustainability: to achieve human and ecosystem well-being together. It follows that the ‘result’ against which the success of any project or design should be judged is the achievement of, or the contribution to, human and ecosystem well-being.
together. Seen in this way, the concept of sustainability is much more than environmental protection in another guise. It is a positive concept that has as much to do with achieving well-being for people and ecosystems as it has to do with reducing stress or impacts.”

- “A definition of development sustainability is the continuation of benefits after major assistance from the donor has been completed. Ensuring that development projects are sustainable can reduce the likelihood of them collapsing after they have just finished; it also reduces the financial cost of development projects and the subsequent social problems, such as dependence of the stakeholders on external donors and their resources. All development assistance, apart from temporary emergency and humanitarian relief efforts, should be designed and implemented with the aim of achieving sustainable benefits.”

- “However only a handful analyze why there is such a strong resistance to adopting sustainable practices . . . if enough members of the environmental movement adopted a problem solving process that fit the problem, the movement would make the astonishing discovery that the crux of the problem is not what it thought it was. It is not the proper practices or technical side of the problem after all. Any number of these practices would be adequate. Instead the real issue is why is it so difficult to persuade social agents (such as people, corporations, and nations) to adopt the proper practices needed to live sustainably? Thus the heart of the matter is the change resistance or social side of the problem.”

A few key themes are embedded in these perspectives on sustainability: (a) continuity of impact, or meeting both current and future needs; (b) respect for the well-being of systems and the people living in them; (c) importance of maintaining long-term benefits from short-term investments; and (d) focus on human resistance to sustainability as well as to technical challenges associated with achieving it.

In these definitions, some of the challenges inherent to the sustainability of public health interventions are identified. The first dimension of sustainability identifies a tension between meeting current needs and putting into place processes, structures, and activities that meet long-term needs. In the Fagen and Flay study, the authors found little evidence that the intervention was sustained. The logic underlying the approach of using lay health advisors has conceptual merit and, as the authors noted, some empirical support. Yet, the finding that the intervention was not sustained overall and that there was wide variability across schools, classroom, and parent educators is not all that surprising. On the one hand, hats off to the investigators for trying to sustain AASP and for using theory and practice to guide their work! On the other hand, I wonder whether the authors were fully tackling the challenges that really mattered in the long term. Numerous authors have written about the nature of problems and problem solution. For example, in an acclaimed book published in 1974 (Change: Principles of Problem Formation and Problem Resolution), Watzlawick, Weakland, and Fisch make the distinction between first-order change (i.e., incremental change within a system) and second-order change (i.e., fundamental change in the system itself). Similarly, the 1994 book Leadership Without Easy Answers by Harvard professor Ronald Heifetz (1994), made a distinction between adaptive problems and technical problems. Technical problems, although they are challenging, are wonderful to solve because there are expert solutions available! Examples include paying a car mechanic to tune up a car, a physician to prescribe antibiotics to cure a bacterial infection, or a professor to explain a mathematical proof. In contrast, adaptive problems cannot be solved by an expert with a straightforward, sure-fire solution. Instead, adaptive problems require examining the underlying root causes (e.g., philosophy, values, beliefs, behaviors) and considering fundamentally new ways to tackle the problem through systems intervention. Fagen and Flay offer both first-order, or technical, solutions (e.g., more parent training, more team teaching, better procedures for selecting parent educators, on-time payments to parent
educators) and a few second-order, or adaptive, solutions (e.g., better assessing community readiness). The emphasis of the interventions, however, was predominantly on first-order solutions. Therein lays a key challenge. We know from complexity, systems, and ecological theories that systems are in a constant state of flux. One of the challenges of sustaining school-based interventions is that school systems are dynamic environments. Factors in the school environment that could affect long-term sustainability of health interventions include high administrator and teacher turnover, uneven parent participation in classroom activities, insufficient resources to support auxiliary school staff and lay volunteers, wide variability across schools and classrooms in teacher quality and parent involvement, and insufficient funding for curricular and extracurricular programs. Because of this contextual dynamism and the resultant human and financial resource challenges inherent in school interventions, achieving sustainability of a parent-centered health intervention in the classroom via technical or first-order solutions is frankly asking a lot of the solution. Moreover, this challenge relates to larger challenges in sustainability work—balancing the desire to meet both short-term and long-term needs. In the absence of a systems-level intervention in which fundamental values, processes and structures are targeted, it will be quite challenging to achieve sustainability of health interventions in the dynamic context of school settings. Does that mean that researchers and practitioners shouldn’t try? No! Instead, it should encourage people to think beyond quick-fix, first-order, technical solutions whenever possible. We also know from systems theory that small changes in a system can have powerful reverberating effects. Thus, a few changes at the systems level, combined with an array of technical solutions, could in fact result in increased sustainability.

The second definition of the larger field of sustainability refers to the well-being of the system and the people within it. The approach taken by Fagen and Flay has at its root the goal of keeping whole the school itself and the key actors involved in the health education intervention (students, parent volunteers, teachers, administrators). Indeed, the second research question posted by the investigators is squarely focused on this component of sustainability: “Relations—how do the relations both within and between the research and school teams affect the sustainability project?” A key finding of the study centered on the importance of the health educator/parent educator relationship. When the relationship was not strong and collaborative (i.e., when the efficacy and “well-being” of key parties was not sufficiently robust), sustainability was compromised. The quote in the manuscript from one parent educator makes this point eloquently: “It matters how we treat one another. Partnership is just that. We have to recognize that we are all of value.” The parent-educator then goes on to lament the way in which she was treated with respect to payment for services rendered. In essence, she was saying that she and the system were not made whole. Referring back to the broad definition of sustainability from Wikipedia, respect for, and the well-being of, people in the system was compromised. As a result, it was not a sustainable system.

The third definitional component of sustainability refers to the importance of maintaining long-term benefits from short-term investments. As Fagen and Flay noted, this goal is a central theme in public health writings on sustainability and it was a primary goal of their study. In the introduction section of their article, Fagen and Flay wrote, “If efficacious strategies for preventing youth problem behaviors cannot be translated into sustainable school-based prevention programs, the health promotion field will not be successful at using school-based strategies for reducing subsequent morbidity and mortality.” The authors stake out an ambitious (and appropriate) goal by linking school-based prevention programs to subsequent reductions in morbidity and mortality.
Achieving such reductions strikes at the heart of sustainability—bringing long-term well-being to individuals and the systems in which they live.

The fourth component of sustainability noted in Wikipedia concerns factors that impede sustainable solutions. The evidence suggests that human resistance, more than lack of technological know-how, is what causes failed sustainability. Fagen and Flay experienced this firsthand. In their concluding section, they suggested that the promise of a sustainable intervention “was mitigated by implementation realities that included (mostly) non-professionalized parent educators and (often) fragile relationships between professional health educators and non-professional parent educators.” The fragility of human relationships is indeed a key barrier to sustainability. Research on the efficacy of public health interventions provides strong empirical support for an array of interventions. However, to achieve long-term sustainability in real-world settings, it takes more than simple dissemination of efficacious interventions found effective in controlled research settings.

In summary, the study by Fagen and Flay adds to our understanding of the technical factors associated with sustaining health interventions in schools and to factors that may impede sustainability. By connecting the particular findings of this study to the broader field of sustainability, the study also sheds light on macrolevel contributors and impediments to sustainability. It is quite evident from this and other related studies that we have much to learn about sustaining public health interventions. Key questions for future research include: (a) what can we put into place at the systems level to ensure that the short-term efficacy of interventions have a fighting chance to be sustained? (b) considering the challenges inherent in sustainability, what are realistic goals against which to evaluate the cost-effectiveness of interventions found effective in the short-term? and (c) what theories, methods, and strategies in fields outside of public health can be drawn upon to improve work in public health?

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