Active Living by Design and Its Evaluation
Contributions to Science

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The heart disease prevention trials in California, Minnesota, and Rhode Island could be viewed as the first generation of community-based, chronic disease–related health behavior change interventions in the U.S. They were funded by NIH, designed as controlled research studies, were resource-intensive, and emphasized community organization and educating large numbers of people as the primary approaches to behavior change.[1] Those studies generated many innovative intervention and evaluation approaches that were widely adopted,[2] but they were seen as having disappointing results, and enthusiasm for ambitious community-wide interventions waned.[3] A second generation consisting of more focused tobacco control initiatives provided an expanded view of community studies with more-compelling results, wherein the interventions more explicitly coordinated policy advocacy (e.g., pricing and limited vending machine access); environmental change (e.g., smokefree workplaces, restaurants); and "denormalizing" educational campaigns (e.g., mass media revealing tobacco industry deceptions).[4] Tobacco control became the standard, for better or worse, by which subsequent public health efforts to change behavior in populations would be judged.

The "better" part of the tobacco control standard that should be applicable wholly to obesity control is its insistence on comprehensive approaches with multiple interventions, policy changes, and environmental modifications, and with attention to processes of changing social norms of behavior.[5] The "worse" part of imposing the tobacco control standard on obesity control is that physical activity and dietary behavior are more complex and varied in their determinants. They do not have a single industry driving them, and the multiple commercial forces influencing nutritional and activity patterns cannot be vilified so readily as having no redeeming social value in their products or their promotion of them.

Active Living by Design can be considered an early example of an ongoing third generation of community-based health behavior change interventions directed at chronic disease control, along with recently published evaluations of obesity prevention initiatives funded by the CDC,[6] The California Endowment,[7] and Kaiser Permanente.[8] This generation of projects, like most of the community- and state-wide tobacco initiatives, has consisted of community demonstrations rather than formal research studies. The projects have been informed by ecologic models of behavior that emphasize intersectoral collaboration on environmental and policy interventions expected to have widespread and long-lasting effects on behavior. The interventions have been developed by local coalitions with extensive community-based participation instead of being researcher-driven.

Evaluating unstandardized, constantly changing, community-directed, slow-moving changes that represented all the levels in ecologic models from programs to policies has been challenging in this as in other comprehensive efforts such as (CDC's) REACH and STEPS, as well as the earlier initiatives in tobacco control. It is impossible to determine the relative contribution of the many moving parts or the "active ingredients" in the complex interventions.[9] Like the earlier academically controlled intervention studies, these community- or practice-based evaluations cannot ensure that an effective intervention in one setting will generalize to another community, but the latter offer a greater degree of credibility about their generalizability insofar as they are carried out in real time by practitioners and community partners who are deeply rooted in the communities.[10,11] The evaluation of Active Living by Design was not conducted in an ideal way, because comparison communities were not included in the evaluation design, and circumstances prevented the planned collection of baseline data. Thus, unambiguous answers to the simple question *What were the outcomes?* are impossible because of the post-test-only, uncontrolled design. So what scientific value, if any, can be derived from the evaluation described in the

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Lessons for Science from the Active Living by Design Evaluation

Several lessons from the multiple methods employed can advance the science of health behavior change and health promotion. First, the systematic and well-described methods used to portray and quantify the functioning of the community coalitions, the intervention goals achieved, and the environmental and policy changes made are improvements over previous measures. The combination of notes of project leaders, interviews with stakeholders, observations, comparison of before-and-after photographs, and coding of documents makes for a rich mix of raw data that in this case has been summarized in a clear and useful manner. These enhanced process measures are too often missing in the published reports of highly controlled trials and can be used in subsequent studies and applications of the interventions to understand how and how well the components of complex community interventions are implemented and how those process variables relate to outcomes. For example, the National Heart, Lung, and Blood Institute (NHLBI)-funded evaluation of childhood obesity initiatives nationwide could adapt some of the methods described in this supplement (www.nccor.org/projects_evaluating_community_programs.html).

Second, the description of specific changes in each of the 5Ps intervention areas (preparation, promotions, programs, policy influences, and physical projects), as well as the barriers and facilitators identified, are valuable sources of hypotheses to be tested in future studies. The qualitative observations of stakeholders provide hypotheses for future studies and interventions, and they are made more valuable by the systematic reporting. The wealth of intervention approaches documented is a blessing and a curse. The blessing is the large number of intervention ideas that can be implemented and evaluated in other communities. The curse is there are too many options to evaluate adequately, and there is too little guidance about which ones to give priority. It is left to future studies to determine whether (1) a specific mix of strategies is more important than the overall number or intensity or reach of interventions and (2) to what extent an effective mix of strategies is generalizable or depends on local conditions and population characteristics.

Third, the enhanced evaluations of Somerville MA[22] and Columbia MO[25,26] provide models for the evaluation of natural experiments. In contrast to educational interventions targeting individuals or groups, policy and environmental changes and the mass media advocacy efforts to support them are almost never controlled by the investigator, neither in their design nor in the people they reach. Thus, evaluating such interventions requires creativity in evaluation design and luck in having archival data available that can be used in the evaluation of interventions subsequently decided by the community. Sometimes it will be possible to evaluate only part of a multicomponent intervention, but the results can still be valuable.

When the subject of new intervention development is one with such epidemiologic urgency as obesity and with such a paucity of evidence-based practices, practitioners and communities cannot sit idly while science develops refined interventions. Action is a political, economic, and public health necessity, and such actions must be taken in the absence of absolute confidence in their efficacy, much less their effectiveness in the particular communities, settings, and populations.[28] As such action rolls out, the opportunities to evaluate its development, application and effects become the stuff of practice-based evidence that will contribute to and make more robust the long-awaited evidence-based practice.

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