

Building Capacity of State Adolescent Pregnancy Prevention Coalitions to Implement Science-Based Approaches

Lori A. Rolleri · Mary Martha Wilson ·
Patricia A. Paluzzi · Valerie J. Sedivy

Published online: 22 February 2008
© Springer Science+Business Media, LLC 2008

Abstract A central question in adolescent reproductive health circles is how to effectively disseminate research to practitioners in a way that supports them in using the most scientifically sound and effective programming. In 2002, the Division of Reproductive Health at the Centers for Disease Control and Prevention (CDC) tackled this question by funding three national-level and five state-level organizations focused on adolescent pregnancy prevention to promote the use of science-based programs and approaches. Healthy Teen Network (HTN) and Education, Training and Research Associates (ETR), two national organizations, have partnered under this CDC funding to implement an effective model for capacity building. This paper provides an overview of the approaches used by HTN and ETR in capacity building using a seven-step process. We describe how we modified the Interactive Systems Framework for Dissemination and Implementation (ISF) for science-based innovations to apply to capacity-building for adolescent reproductive health (ARH) programs, and how we developed relevant, sustainable training and technical support. We conclude by reviewing some of the results of this training, and discuss the future work that will likely continue to advance the science behind effective dissemination of ARH research to practice.

Keywords Adolescent pregnancy prevention · Capacity building · Training · Stages of change

L. A. Rolleri (✉)
ETR Associates, 4 Carbonero Way, Scotts Valley, Santa Cruz,
CA 95066, USA
e-mail: lorir@etr.org

M. M. Wilson · P. A. Paluzzi · V. J. Sedivy
Healthy Teen Network, Washington, DC, USA

Introduction

The field of adolescent reproductive health (ARH) in the United States is comprised of some of the most highly trained research scientists in the world, who have published widely on adolescent reproductive health demographics, determinants of sexual risk-taking behavior, and the effectiveness of both prevention and treatment programs and practices. The question of how to effectively disseminate this research to ARH practitioners who work directly with youth has become a central focus for the Division of Reproductive Health (DRH) at the Centers for Disease Control and Prevention (CDC).

With funding from CDC-DRH, Healthy Teen Network (HTN) and Education, Training and Research Associates (ETR) have been working together since October 2002 to find innovative ways to effectively disseminate adolescent reproductive health research to practitioners connected with state adolescent pregnancy prevention (APP) coalitions. This article provides an overview of the approaches used by HTN and ETR in achieving this goal, including: (1) the Interactive Systems Framework for Dissemination and Implementation (ISF); (2) how this framework is reflected in the capacity-building approach developed by HTN and ETR to support APP coalitions to implement science-based programs and practices; and (3) future work that will likely continue to advance the science behind effective dissemination of ARH research to practice.

The Interactive Systems Framework for Dissemination and Implementation

Colleagues from the Division of Violence Prevention at CDC, the University of South Carolina, and Miami

University of Ohio have created a framework for understanding the interplay of three important systems involved with the dissemination of science-based innovations (Wandersman et al. this issue). These three systems include: (1) the prevention delivery system, (2) the prevention synthesis and translation system, and (3) the prevention support system. “Innovations,” as discussed in this article, refer to ARH prevention programs and curricula, program planning and evaluation tools, research syntheses, and other practices related to selecting, adapting, developing, and implementing effective programs—i.e., programs that lead to reducing adolescent sexual risk-taking behaviors.

In the field of adolescent reproductive health, the *prevention delivery system* includes organizations such as local adolescent pregnancy prevention coalitions, schools, community-based organizations, and clinics. These organizations implement programs and practices that aim to reduce unintended pregnancy, STD, and HIV among youth. The professionals who work at these organizations often do not have the time or resources to stay current with ARH research and innovations.

The *prevention synthesis and translation system* includes organizations such as universities, local and federal government entities, and national research organizations. These organizations research different aspects of ARH, including changes in demographics; reasons teens engage in sexual risk-taking behaviors; the consequences of unintended pregnancy, STD and HIV; and the effectiveness of programs, policies, and practices designed to prevent or treat these outcomes. Moreover, the prevention synthesis and translation system plays an important role in synthesizing (i.e., compiling and summarizing) important findings in ARH research and translating the implications of this research in a way in which practitioners find easy to interpret and apply.

The *prevention support system* includes organizations that can speak the “languages” of both researchers and practitioners. Their goal is to build the capacity of the prevention delivery system to apply the work produced by the prevention synthesis and translation system, as well as to communicate the needs of practitioners to researchers. Depending on practitioners’ stage of readiness (discussed later in this paper), capacity-building efforts can be accomplished through written products, training, technical assistance, and coaching. Healthy Teen Network and ETR Associates are two examples of national organizations that make up the prevention support system funded by the National Promoting Science-Based Approaches Project at CDC’s Division of Reproductive Health.

The National Promoting Science-Based Approaches Project

The ARH Prevention Support System Funded by CDC

In 2002, the Division of Reproductive Health at CDC released a Request for Proposal (RFP) to state adolescent pregnancy prevention coalitions (prevention delivery system) to strengthen their use of science-based programs and practices. At the same time, CDC released an RFP for national organizations with a track record in developing and delivering capacity-building assistance specifically around science-based programs and practices in adolescent reproductive health (prevention support system).

Healthy Teen Network and ETR decided to blend their strengths and partner in responding to the national organization RFP. Healthy Teen Network, a national membership organization with a strong practitioner base, has been building the capacity of state APP coalitions through a variety of activities, including written products, technical assistance, and strategic planning training, as well as facilitating an annual national conference since 1979. HTN works predominately in the prevention support system. ETR Associates operates in both the prevention synthesis and translation system and the prevention support system. For over two decades, ETR has been conducting original ARH research, developing and testing ARH programs, translating and synthesizing research, and disseminating the practice implications of ARH research through training and technical assistance. With systems, strategies, and constituents already in place to support state APP coalitions, HTN and ETR were ideal partners to respond to this CDC RFP.

The Prevention Delivery System Funded by CDC–APP Coalitions

Before describing the multiple ways that state APP coalitions can assist in bridging ARH research to practice, it is important to recognize that coalitions come in various stages of organizational structure and sophistication. Some are comprised of voluntary boards that offer conferences and conduct legislative visits. Some include representatives from community and state groups, organized and staffed by a host or lead agency. Still others are well-established, independent non-profit organizations with a functioning board of directors and paid staff. Some of these groups refer to themselves as coalitions, while others may refer to themselves as campaigns, alliances, networks, councils, caucuses, or organizations. Regardless of their structure, level of sophistication, or name, all of these groups have a common mission—to reduce teen pregnancy and, in some

cases, to support parenting teens and their children. It should also be noted that all of the CDC-funded APP coalitions have a minimum infrastructure in place to support science-based innovations (e.g., leadership, strategic plan, communication system, etc.).

State APP coalitions play a strong role in influencing adolescent reproductive health for several reasons. First, they offer a variety of services at little or no cost to their constituents. Second, they maintain databases of practitioners from varied settings throughout the state, including schools, community-based organizations, faith communities, health care facilities, and government offices, as well as other individuals (e.g., parents, youth, and donors) concerned about adolescent reproductive health. With the use of these databases, coalitions can provide practitioners with opportunities to exchange information, learn about new resources, and seek assistance or support.

Third, through this networking and communication, staff of statewide coalitions quickly become knowledgeable about the programs, successes, and challenges across the state and can often create synergy between coalition constituents, facilitate collaborations, and develop and deliver training or technical assistance that meets the needs of multiple organizations.

Coalitions' statewide reputations poise them to influence practitioners with emerging ARH research, effective evidence-based programs, and science-based practices. Adolescent pregnancy coalitions are in an ideal position to disseminate ARH science-based innovations because of their access to the community and their efforts to assess and strengthen community readiness.

What Are Science-Based Approaches?

With guidance from the Division of Reproductive Health, APP coalitions and national organizations worked together on developing a definition for “*science-based programs*,” “*promising programs*,” and “*science-based approaches*.” These definitions have proven to be critical components in our work for three reasons. First, these definitions provide a common language for grantees, which in turn helps build consistency across their efforts. Having a common language helps collaborative efforts between coalitions and national organizations run more efficiently through a common understanding of goals and objectives. Second, these definitions provide clear criteria (described below) to judge whether a program is truly science-based. As a result, these criteria create parameters around what coalitions can endorse as effective and encourage them to think more critically about a program's claim of effectiveness. Third, it has become easier for practitioners to develop measures of program effectiveness by referring to agreed-upon

definitions of science-based practices or approaches that are clearly operationalized.

A “*science-based program*” is one that has been shown to reduce rates of unintended pregnancy, births, or sexually transmitted disease among adolescents ages 10–19, or that shows at least one of the following four sexual behavior changes: (1) delay in sexual initiation, (2) reduction in the frequency of sexual activity, (3) reduction in the number of sexual partners, or (4) increase in the use of condoms and other contraceptives (CDC DRH Project Partners 2006). The program must have been evaluated using the most rigorous research design as evidenced by the use of experimental or quasi-experimental evaluation design.

A “*promising program*” differs from a science-based program in that it has not been rigorously evaluated and, therefore, its effectiveness has not been demonstrated by research. A promising program has all or most of the 17 Characteristics of Effective Sex Education and HIV Prevention Programs (Kirby et al. 2006a), which are the result of a systematic review of 83 studies on sex education and HIV prevention programs from both the developed and developing world. Kirby and his team studied a sample of these effective programs in depth and coded them for common characteristics. Based on the work of Kirby et al., HTN and ETR have developed an assessment tool designed to support practitioners in assessing, selecting, adapting, improving, and developing programs based on these characteristics (Kirby et al. 2006b).

“*Science-based approaches*” have become known as a set of ARH practitioner behaviors or capacities necessary to select, adapt, improve, and develop science-based programs and promising programs. These behaviors also assist practitioners in bridging relevant research to everyday practice. HTN and ETR assisted in developing this list of practitioner capacities by conducting coalition assessment activities throughout the course of their work on this project. These capacities became a key component of the logic model that guides our project and are listed in Figs. 1 and 2 below. They are more fully described in the next section of this paper.

Innovation Specific and General Capacity Building: A Seven-Step Process

Healthy Teen Network and ETR jointly developed a seven-step process to strengthen the capacity of APP coalitions to use science-based approaches. Some of our efforts have been geared toward general capacity building (e.g., training on how to develop logic models and program evaluation plans) and some of our efforts were innovation specific (e.g., training on how to select and implement science-based sex and HIV prevention programs). This seven-step

capacity building process includes: (1) developing informal partnership relationships with APP coalitions, (2) assessing needs and assets of APP coalitions, (3) developing a logic model to guide capacity-building activities, (4) developing skills-based trainings and technical assistance activities, (5) delivering training and technical assistance, (6) evaluating training and technical assistance activities for process and outcome, and (7) conducting appropriate follow-up activities. Each of these steps is described below.

Step 1: Build Relationships with APP Coalition Staff

In order to be an effective player in the prevention support system, positive relationships must be formed with those working in the prevention delivery system. Adolescent pregnancy prevention coalitions need to see the support being offered by the prevention support system as useful and relevant, and must trust the integrity and quality of those offering and delivering support services. They must also feel like partners in determining the need for support and in planning how that support will be delivered. Without these conditions in place, organizations in the prevention support system will have a difficult time getting through the door of any organization that is part of the prevention delivery system. HTN and ETR have built trusting and productive relationships with APP coalitions using several techniques.

Together, HTN and ETR spend several hours each week proactively communicating with coalition representatives by phone, exchanging e-mail, and fulfilling minor requests for resources or support. The main goals of these communication efforts are to keep our team apprised of coalition achievements, stay aware of the changing challenges and capacity-building needs the coalitions face, assess appropriate opportunities to support coalitions with science-based programs and practices, and offer support. Developing these relationships has been key in opening the door to influence and promote science and research—especially among those who are resistant to change, suspicious of science, cautious about investing in new programs due to resource constraints, and/or stretched thin on time.

The relationships developed with APP coalitions have also made our efforts more efficient. For example, these relationships have allowed us to rely on coalition staff to coordinate most logistics (e.g., participant recruitment, etc.) required for delivering a successful training. In addition, coalition staff assists in conceptualizing training objectives and activities, and providing feedback on final training design drafts. These informal partnerships encourage coalition staff to feel a greater sense of investment in the training event because of their efforts. Their involvement also prepares them to provide follow-up technical assistance to training participants.

Step 2: Assess Needs and Assets of APP Coalitions

HTN and ETR assessed the needs and assets of state coalitions with respect to implementing science-based programs and practices using two primary methods: baseline and follow-up pen-and-pencil surveys at each annual HTN conference, and in-depth telephone interviews with staff who coordinate and/or direct programs at an APP coalition. After careful review of the assessment data gathered from these two activities, several themes emerged with respect to coalition needs around implementing science-based approaches. These needs are described below.

Understanding “Science-Based”

During telephone assessment interviews at the beginning of the first cycle of funding (in December 2002), we asked coalition staff what “science-based” meant to them. For some interviewees, “science-based” did not resonate. Interviewees preferred to use other terms that appeared to be better understood in their local circles (e.g., “evidenced-based,” or “proven programs”). When asked about the criteria they would use to judge a science-based program, coalition responses were quite varied. At the conclusion of these interviews, it was clear to the project team that “science-based” would be an important concept to operationalize and define during the course of its project work.

Identifying Challenges to Promoting Science-Based Approaches

As part of the annual HTN conference survey as well as during telephone interviews, coalitions were asked about some of the obstacles they face in promoting science-based programs and practices. The obstacles most often cited included: (1) inadequate information, (2) concerns about cultural appropriateness/suitability, (3) lack of community support, (4) lack of financial resources to purchase science-based materials, (5) staff’s unwillingness to change, and (6) not enough programs from which to choose.

Developing Key Skills and Capacities

Telephone interviews gave a clear message to the project team about the types of skills and capacities needed by coalition staff and constituents. Topping the list was a need to increase general capacity for evaluating programs for both process and outcome measures. Other priority capacities were more innovation specific, including developing logic models for program planning and proposal writing, adapting science-based programs/curricula to meet the needs of their particular community, and implementing specific science-based ARH programs/curricula.

Evaluating Assets

Several assets emerged from our telephone interviews. Most coalitions felt adequately prepared to assess community needs and assets, and design and implement advocacy efforts—two important core functions of most APP coalitions. In addition, coalitions' readiness for science-based work was high. They were enthusiastic and eager to push their own staff and constituent organizations toward science-based practice. All coalitions had a system in place to coordinate and deliver training to their staff and to their constituent organizations—this asset greatly facilitated the capacity-building work that HTN and ETR ultimately designed to support them. And, as noted above, all coalitions funded on this project had good relationships with HTN and ETR staff members, and had familiarity with resources from both organizations.

The assessment data gathered from conference surveys, telephone interviews, and literature reviews guided the project team in developing a logic model that identifies eight coalition behaviors (or capacities) we believe are necessary for achieving our project goal. This logic model is described in detail under “Step 3” below.

Step 3: Develop a Logic Model to Guide Capacity-Building Activities

HTN and ETR opted to use the Behavior-Determinant-Intervention (BDI) Logic Model for planning capacity-building activities. The BDI Logic Model guides program planners in developing interventions that link to a health goal by completing these four steps: (1) establish a health goal for a specified population; (2) identify behaviors or capacities that directly relate to that health goal; (3) identify determinants of those behaviors (e.g., knowledge, attitudes, skills, and conditions); and (4) select or develop intervention activities that can change those determinants (Kirby 2004).

Establish a Health Goal

In the case of our capacity-building project, the health goal was relatively obvious given the directive received from CDC: “Increase the use of science-based programs and practices by CDC-funded adolescent pregnancy prevention coalitions.”

Identify Behaviors or Capacities

Our next task was to identify coalition behaviors that directly influence this goal. Our assessment data led us to identify eight such behaviors, listed in Fig. 1.

Identify Determinants of Those Behaviors

Our assessment led us to understand the factors that influence whether or not coalitions engage in these behaviors. For example, why do some coalitions evaluate their programs for process and outcome measures while others do not? Why are some constituents suspicious of anything labeled “science-based,” while others embrace the label? The list of determining factors associated with these eight behaviors is too long to include in this paper; however, they can be summarized into five general categories as listed in Fig. 2.

Develop Capacity-Building Activities

With the first three steps of our BDI Logic Model complete, we were ready to propose capacity-building activities that would address the unique needs of CDC-funded APP coalitions. HTN and ETR designed capacity-building activities including trainings and presentations, customized technical assistance, and information dissemination using multiple formats. Our multi-pronged intervention strategy was largely born from an analysis of assessment data collected from the HTN annual conference surveys.

Attitudes Toward Science-Based Programs

In regard to embracing science-based programs and practices, our team observed from the assessment data that there are three distinct groups of ARH practitioners.

- *Group 1: Not Interested* The first group has little interest in using or learning about science-based approaches. Practitioners in this group are somewhat suspicious of science-based programs and are more comfortable trusting the anecdotal information about programs from their colleagues than published program evaluation information. They are also concerned about the cultural appropriateness of science-based programs, and believe their communities have specific and unique needs that would not fit a prescribed program.
- *Group 2: Interested* The second group of practitioners is beginning to become convinced of the benefits associated with science-based programs and practices, and wants to learn more. This group believes that outcome evaluation results are very important in selecting programs. They seem to accept the term “science-based” and feel it's important that the programs they adopt be science based.
- *Group 3: Interested and Practicing* The last group of practitioners fully accepts science-based approaches and has experienced the benefits that come from using them. Practitioners in this group are familiar with

Fig. 1 Identifying the project goal and the coalition behaviors (capacities) directly related to that goal

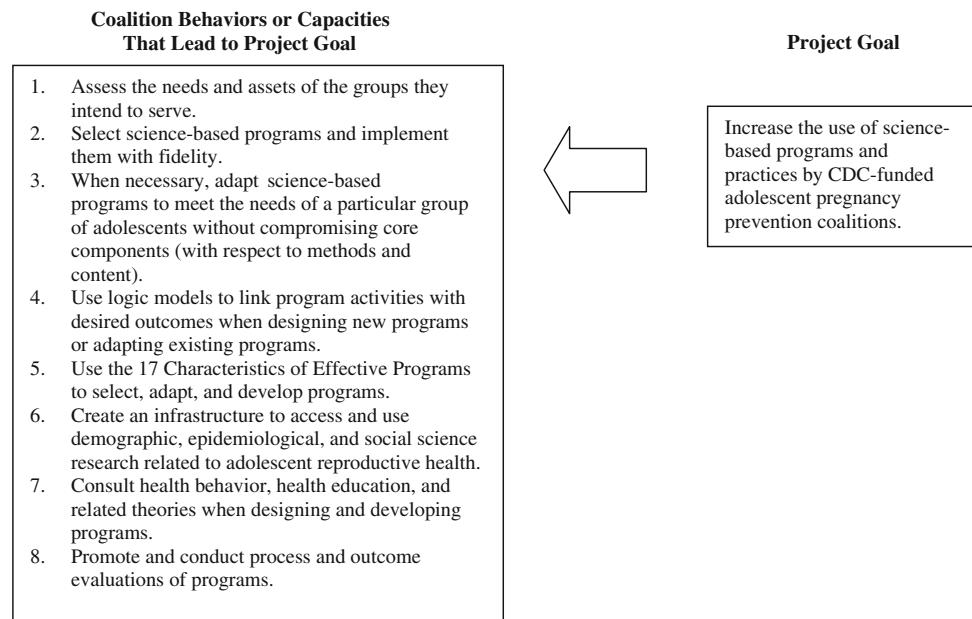
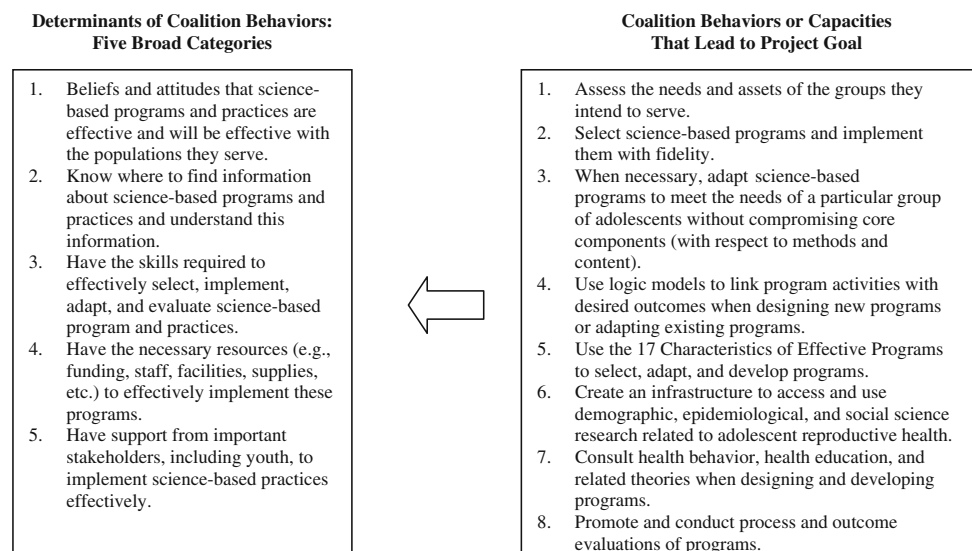


Fig. 2 Identifying the determinants of coalition behaviors or capacities



science-based programs, believe it's important to replicate a science-based program with fidelity, know where to access research about science-based programs and practices, and actively promote these programs and practices in their communities.

Using the Stages of Change to Design Activities

Based on the Stages of Change model (Prochaska et al. 1997), our team's strategy is to engage each type of practitioner at his/her particular stage of understanding and embracing of science-based practices so he/she can move along a spectrum to eventual adoption of these practices.

The Stages of Change model defines five stages of an individual's thinking about a particular behavior: pre-contemplation, contemplation, preparation, action, and maintenance. Utilizing a "stage-based" approach to intervention means recognizing the current stage of an individual or organization and designing capacity-building resources that meet them in that stage, while offering opportunities to move to the next stage.

Those practitioners who are pre-contemplators (Group 1) need a certain set of intervention activities (e.g., consciousness raising, organizational assessment) while those who are contemplating the benefits of science-based approaches, preparing to use them, or actually acting on using them (Groups 2 and 3), need another set of intervention activities that uniquely support their needs. Thus,

our intervention activities range from written materials (e.g., Frequently Asked Questions about Science-Based Approaches), conference and meeting presentations and weekly e-gram updates, to customized technical assistance, coaching, online training, and face-to-face training.

As part of the ISF's prevention support system described earlier in this paper, our team worked to develop and customize capacity building strategies to address needs of each of three practitioner groups described above so that each group would move along the stages of change continuum and ultimately incorporate science-based programs and practices in their communities. This paper focuses on the work our team completed to develop face-to-face training and follow-up technical assistance for those practitioners we describe as being in the contemplation, preparation, and action stages of change in regard to implementing science-based programs and practices.

Step 4: Develop Skills-Based Trainings

ETR and HTN developed a series of trainings designed to support the eight science-based behaviors or capacities identified in our logic model (listed in Figs. 1 and 2). Our team's philosophy is that training should be designed to improve participants' performance on the job—i.e., improving each participant's capacities to implement science-based innovations. Critical to improving performance is achieving competence and confidence in the skills needed to perform the capacities we identified in our logic model.

Consistent with social cognitive theory (Baranowski et al. 1997), our skills-based trainings were designed to: (1) identify and teach participants the specific steps required to master a particular skill (behavioral capability); (2) effectively model that skill for participants to observe (observational learning); (3) provide an opportunity for participants to practice the skill themselves with appropriate guidance and support (self-efficacy); and (4) receive feedback on their performance (reinforcement).

Step 5: Deliver the Training

Our project team has thus far developed eight trainings that directly relate to the coalition behaviors listed in Figs. 1 and 2. The overall goal of these trainings is to increase participants' capacities in the skills needed to achieve these science-based practices. Some have been reformatted for presentation purposes at statewide coalition conferences and other meetings.

In addition to these trainings, our team also developed a four-day Training of Trainers (TOT) titled *Designing and Evaluating Programs with Intent*. During this TOT, trainers from various coalitions come together to learn how to facilitate the one-day *Developing BDI Logic Models*

training and the one-day *Program Evaluation Basics* training. Rather than HTN and ETR continuing to visit state coalitions to deliver the training, coalition staff are now capable of delivering the training themselves. Coalition staff also have greater capacity to provide follow up technical assistance and coaching to their constituents.

Step 6: Evaluate for Process and Outcome

HTN and ETR conduct both process and outcome evaluation on every training event.

Process Evaluation Activities

With regard to process, trainers conduct three evaluation activities. First, as part of a written posttest administered at the conclusion of each training, training participants are asked several open-ended questions to elicit their opinions about the relevancy of the content. Second, immediately following each training, the trainers conduct a debrief critique of the training design, module by module, discussing ease of facilitation, flow, timing, participant engagement, and their perception of effectiveness. Third, trainers informally interview coalition sponsors (who also attend the training) to provide the training team with feedback.

Outcome Evaluation Activities

With regard to outcome evaluation, our team administers a pretest to participants immediately prior to the start of the training, posttests immediately after the training, and posttests again 12 months later. Posttests administered at 12 months after the training event are collected via e-mail or fax. Pre- and posttests include a mix of 12–18 open- and closed-ended questions. These questions examine changes in participant knowledge, attitudes, skills, and intentions to use the skills. Pre- and posttest questions are derived directly from the training's learning objectives.

Evaluation has been a continuous process within this project, and is used to alter individual training content or adapt targeted activities to improve outcomes. All assessment and evaluation tools are designed by the project's lead evaluator and are administered with her guidance. Pre- and posttest data are collected and entered into SPSS for analysis. The lead evaluator analyzes the data and prepares evaluation summaries for each training event. These evaluation summary reports are provided to the project team and discussed at length, including the apparent effectiveness of specific events and how activities could be improved. At the end of each project year, the lead evaluator completes an evaluation summary that identifies progress in project objectives and performance targets.

Selected Results of 12-Month Post-Training Surveys

To measure participants' subsequent use of logic models following a one-day *Developing a BDI Logic Model* training held in Boston and again in Holyoke, Massachusetts in October 2003, we assessed intentions reported in the immediate posttest and actual development of a BDI logic model at 12 months. At the immediate posttest, 77.3% of respondents reported that they planned to participate in efforts to develop a logic model within the following six months ($N = 43$). At the 12-month follow-up, an even higher number of participants (81.3%) reported actually doing so. Most participants (62.5%) provided specific information about ways they had used the information learned in the BDI training session.

In 12-month follow up surveys for a one-day training on *Using Research to Improve Practice* in Chapel Hill, North Carolina, 30 participants were asked to report the ways in which they had used the information learned at the session. Approximately six out of ten (60%) had taken the significant step of developing an action plan to use research more effectively at their organizations.

Step 7: Conduct Appropriate Follow-Up

Follow-up activities are essential to any training. Many participants need encouragement, support, and technical assistance as they begin to implement what they have learned in the training (Evaluation Consultation Center 1996). HTN and ETR stress the importance of follow-up activities from the first engagement with practitioners, including coalition representatives who have arranged for the training as well as training participants. HTN and ETR employ multiple means to determine the need for follow-up work after each training event. We work proactively to obtain this feedback through a post-training face-to-face debrief meeting, post-training phone calls, and post-training e-mails. Our team then works with coalition staff to build their capacities to provide follow-up technical assistance to training participants (their constituents). This follow-up might include an additional review of training content, application of training content to a particular grant proposal or project, review and feedback of a draft logic model or evaluation plan, or the creation of written materials (e.g., assessment guides, resource lists, and tip sheets) that will support the coalition team in supporting their constituents.

Training participants themselves also provide us with guidance for follow-up work based on their feedback during training and in their posttests. For example, training participants from one coalition asked for more extensive information about how to construct a BDI logic model for their project in their posttests. The HTN and ETR team

worked with them following the training via phone calls and e-mails. Over the last two years, we have continued to offer technical assistance to this group. In addition, coalition leaders have asked for specific assistance in the development of their organizational logic models, and we continue to work closely with two states on this effort.

The last four years have taught our team about the essential skills and capacities APP coalitions need to increase and strengthen their use of science-based programs and practices. Our process for building their capacities has demonstrated effectiveness as evidenced by the process and outcome evaluation data. We have also learned about work that stills needs to be done to further the dissemination of ARH research to practice.

Work To Be Done

All three systems involved with the dissemination of ARH research to ARH practice described earlier in this paper (i.e., the prevention synthesis and translation system, the prevention delivery system, and the prevention support system) still have work to do. It should be noted that these three systems have contributed to great achievements in the last decade. For example, from 1990 to 2000, teen pregnancy decreased by 28% among girls ages 15–19 (Henshaw 2004). This is indeed good news; however, disparities among different ethnic and racial groups still remain, and the birth rate for Hispanic girls has recently experienced a slight upturn (Vexler and Sullentrop 2006). Although adolescent pregnancy rates overall are dropping, STD among adolescents continues to be on the rise (CDC 2004a, b). Moreover, ARH practitioners and researchers are working in a political climate that at times places greater weight on personal or religious values (e.g., that teens should simply wait until marriage to have sex) than on public health data. Thus, the need to emphasize the utility and benefits of ARH research and science-based approaches remains high.

For the ARH prevention synthesis and translation system, there is the ongoing work of surveillance that informs the field about where adolescent pregnancy, STD, and HIV are occurring and which population groups are most affected. These data, when translated and presented in practitioner-friendly form help prioritize work efforts and public health resources. In addition, the ARH prevention synthesis and translation system should continue to synthesize the research on the risk and protective factors that affect adolescent sexual decision-making, with a special focus on how these risk and protective factors may affect different populations in different ways. For example, in 2003, African-American girls ages 15–19 were approximately 6.4 times more likely to be infected with chlamydia

than White teens (CDC 2004a, b). What risk factors are putting African-American teens at greater risk? The field would also benefit from a risk-and-protective-factor analysis that would inform us about which of the documented risk and protected factors are most proximally related to adolescent sexual decision-making. These data would help prioritize efforts. The more this research is synthesized and translated for the prevention delivery system, the better. Finally, more evaluation research is needed on the effectiveness of programs that address ARH outcomes.

Community-based practitioners in the ARH prevention delivery system are at times confused by the different groups (some driven by political or personal rather than scientific motives) who promote their programs as “effective.” Building the capacity of these community practitioners to understand the criteria for science-based programs and promising programs is an important step in helping bridge research to practice. These critical-thinking and assessment skills support practitioners in selecting programs that will be effective for their communities.

Community-based practitioners continue to need support in learning about science-based approaches and programs, the benefits they offer, and the skills required to implement them. In addition, practitioners need support in adapting science-based curricula to better meet the needs of their communities, without compromising the core components (with respect to content, pedagogy, and implementation) of the program. Providing practitioners with these kinds of tools will afford them some flexibility and likely increase their willingness to consider, and ultimately implement, science-based programs.

The prevention support system should continue to liaison between ARH researchers and practitioners by creating opportunities for dialogue and exchange. In addition, the prevention support system should continue to play a role in assisting with translation and synthesis of research into practitioner-friendly products (such as fact sheets, issue briefs, and guidelines), as well as in disseminating these products through skills-based training, technical assistance, and appropriate coaching.

HTN and ETR will continue to assess the needs and challenges of APP coalitions and provide training, follow-up technical assistance, and coaching over the next five years. Our plan is to move toward increasing the capacity of coalitions to conduct their own statewide trainings by providing them with more Trainings of Trainers and appropriate follow-up. We will continue to develop training on the latest science-based ARH innovations, such as the *17 Characteristics of Effective Sex Education and HIV Prevention Programs* and new curricula designed to prevent adolescent pregnancy and STD. We will also keep abreast of the emerging literature and develop appropriate

tools, such as guidelines to adapt science-based ARH programs.

Conclusion

Expecting front line ARH practitioners to regularly comb through the most relevant ARH research and data, and then interpret and apply what they learn to their daily work is unrealistic. Demanding schedules and tight budgets make this type of activity a luxury for many. Furthermore, some community-based practitioners are simply not interested or trained to engage in this activity. The prevention support system plays an important role in bridging the work of the ARH prevention synthesis and translation system and the ARH prevention delivery system. With funding from the Division of Reproductive Health at CDC, Healthy Teen Network and ETR Associates have developed a set of strategies to build the capacity of state adolescent pregnancy prevention coalitions to better access and understand ARH research and to more effectively implement science-based approaches in their work. Continued process and outcome evaluation of the capacity-building strategies used by HTN and ETR are needed to determine their effectiveness; however, evaluation data from the first three years of the project demonstrate preliminary success.

References

- Baranowski, T., Perry, C. L., & Parcel, G. S. (1997). How individuals, environments, and health behavior interact: Social cognitive theory. In K. Glanz, F. Marcus Lewis, & B. K. Rimer (Eds.) *Health behavior and health education: Theory, research, and practice* (2nd ed., pp. 153–174). San Francisco: Jossey-Bass Publishers.
- Centers for Disease Control, Prevention. (2004a). *Sexually Transmitted Disease Surveillance, 2003* (Table 11B, p. 97). Atlanta, GA: U.S. Department of Health and Human Services.
- Centers for Disease Control, Prevention. (2004b). *STD Surveillance 2004: Special focus profiles – adolescents and young adults*. Atlanta, GA: U.S. Department of Health and Human Services.
- Centers for Disease Control, Prevention, Division of Reproductive Health Project Partners. (2006). *Promoting science-based approaches definitions: Science-based approach, science-based program, and promising program*. Atlanta, GA: CDC DRH Project Partners.
- Evaluation Consultation Center. (1996). *Developing the marketing plan: Insights from the diffusion of innovation literature guidelines diffusion project*. Washington, DC: Academy for Educational Development.
- Henshaw, S. K. (2004). *U.S. teenage pregnancy statistics with comparative statistics for women aged 20–24*. New York: The Alan Guttmacher Institute.
- Kirby, D. (2004). *BDI Logic Models: A useful tool for designing, strengthening, and evaluating programs to reduce adolescent sexual risk-taking, pregnancy, HIV, and other STDs*. Santa Cruz, CA: ETR Associates.

- Kirby, D., Laris, B. A., & Rolleri, L. (2006a). *The impact of sex and HIV education programs in schools and communities on sexual behaviors among young adults*. Washington, DC: Healthy Teen Network.
- Kirby, D., Rolleri, L., & Wilson, M. M. (2006b). *A tool to assess the characteristics of effective sex education and HIV prevention programs: A guide for program developers and educators*. Washington, DC: Healthy Teen Network.
- Prochaska, J. O., Redding, C. A., & Evers, K. E. (1997). The transtheoretical model and stages of change. In K. Glanz, F. Marcus Lewis, & B. K. Rimer (Eds.), *Health behavior and health education: Theory, research, and practice* (2nd ed., pp. 60–80). San Francisco: Jossey-Bass Publishers.
- Vexler, E. J., & Sullentrop, K. (2006). *Bridging two worlds: How teen pregnancy prevention programs can better serve Latino youth*. Washington, DC: National Campaign to Prevent Teen Pregnancy.
- Wandersman, A., Duffy, J., Flaspohler, P., Noonan, R., Lubell, K., Stillman, L., Blachman, M., Dunville, R., & Saul, J. (2008). Bridging the gap between prevention science and practice: The Interactive Systems Framework for Dissemination and Implementation. *American Journal of Community Psychology*, 41(3–4).