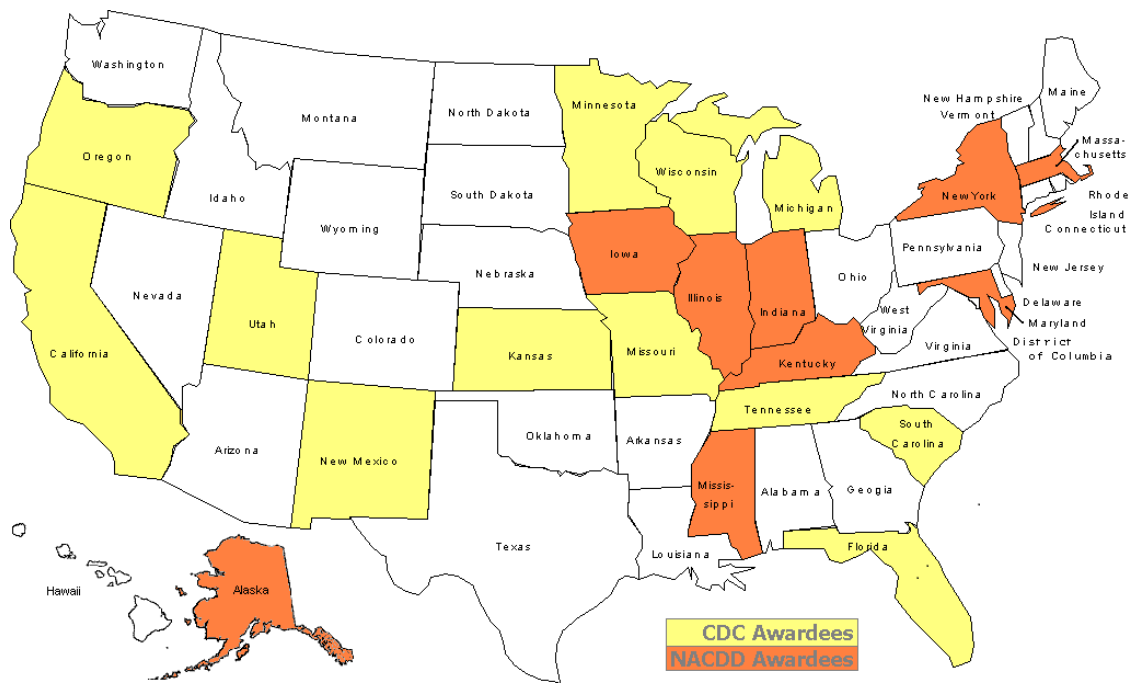


Strategic Approaches to Expanding the Reach of Evidence-Based Interventions:

Results of a Multistate Evaluation

Executive Summary

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Background

An estimated 50 million adults—one in five American adults—have self-reported, doctor-diagnosed arthritis, making it one of the most common diseases in the United States (Cheng, Hootman, Murphy, Langmaid, and Helmick, 2010). Arthritis is also the most common cause of disability in the United States (Hootman, Brault, Helmick, Theis, and Armour, 2009). Research has shown that the pain and disability accompanying arthritis can be minimized through early diagnosis and appropriate management (Hootman, Brady, Helmick, 2012). Participation in community-based self-management education and physical activity interventions has been demonstrated to improve quality of life for those who have arthritis (Hootman, Brady, Helmick, 2012).

Since 1999, the Centers for Disease Control and Prevention (CDC) have led public health efforts to reduce the burden of arthritis among Americans. As part of this effort, CDC has worked with State health departments to disseminate evidence-based physical activity (PA) and self-management education (SME) interventions.

This report evaluates the strategies used by 21 state health departments in using funding from CDC and the National Association of Chronic Disease Directors (NACCD) to expand the reach of arthritis-appropriate evidence-based interventions in their states. It compares and contrasts processes that grantees have used to achieve this expanded reach. It explores the ability of states to achieve their grant objectives, assesses strategies that states used to disseminate their selected interventions; and evaluates the effectiveness of these strategies at expanding reach. The study focuses on the systems level—the interaction between state health departments and their partners.

State Arthritis Programs and Arthritis Integrated Dissemination Grantees

The CDC funded 12 state health department based arthritis programs (SHD-AP) to expand the reach of arthritis interventions in their states (Figure ES-1), with each receiving approximately \$500,000 a year from 2008-2012. Using these funds, SHD-APs were to significantly expand access to and use of evidence-based interventions such as the Chronic Disease Self Management Program, the Arthritis Self Management Program, the Arthritis Foundation Exercise Program, and EnhanceFitness. In order to expand their *reach*—the number of participants—states were encouraged to embed these evidence-based interventions in *delivery systems*—partner organizations implementing an intervention at multiple sites. CDC also set state *reach targets* for the interventions they disseminated. During this funding cycle, state arthritis program grant objectives included:

- To engage multi-site organizations as delivery system partners
- To facilitate delivery system partners to embed the evidence-based interventions into their routine operations
- To collaborate with other chronic disease programs at the state departments of health
- To achieve cumulative program reach—participation in the interventions-- of 4% of the total number of people in the state with arthritis (capped at 40,000 per state)

Recognizing that many people who live with arthritis also have other chronic conditions (Hootman, Brady, Helmick, 2012), the NACDD, in collaboration with CDC, made \$50,000 annual grants to nine additional State health departments during 2008–2011 to integrate arthritis-appropriate interventions into other chronic disease efforts (Figure ES-1). These Arthritis Integrated Dissemination (AID) grants had the following objectives:

- To engage multi-site organizations as delivery systems partners

- To facilitate delivery system partners to embed the evidence-based interventions into their routine operations
- To integrate arthritis appropriate interventions into the work of another state health department program

Arthritis Integrated Dissemination projects were given some autonomy in how they used the grant funds, provided that they were meeting the grant objectives. The AID project activities included developing master training capacity, supporting a limited number of delivery system partners in program implementation, and developing regional collaboration to facilitate intervention delivery.

Figure ES-1: State Arthritis Programs and AID Projects

State Arthritis Programs	Arthritis Integrated Dissemination (AID) Grantees
<ul style="list-style-type: none"> •California •Florida •Kansas •Michigan •Minnesota •Missouri •New Mexico •Oregon •South Carolina •Tennessee •Utah •Wisconsin 	<ul style="list-style-type: none"> •Alaska •Illinois •Indiana •Iowa •Kentucky •Maryland •Massachusetts •Mississippi •New York

Methodology

The evaluation employed qualitative and quantitative methods to explore the experiences and activities of the 21 states funded to disseminate arthritis-appropriate interventions. The project team

- Closely reviewed six rounds of **semiannual progress reports** submitted by the grantees . Progress reports included state activities conducted from July 2008 through June 2011. Information was extracted from these data sources and coded into an online database.
- Closely reviewed four rounds of **annual reach numbers** submitted by the grantees. Reach reporting included the total number of participants reached from January 2008 through December 2011. Reach data was also coded into the online database.
- Conducted **in-depth telephone interviews or site visits** with each state arthritis program or AID project coordinator (APC). In addition, during site visits, the project team interviewed chronic disease program leaders, arthritis program staff members, and other stakeholders. Interviews and site visits were conducted from December 2010 through May 2011.
- Interviewed selected **delivery system partners** who were working to implement interventions.
- Conducted **Follow-up interviews** with a selected group of APCs at the end of the data collection period, March and April 2012.

Interviews and site visit notes were abstracted, coded, and summarized using an analytic rubric developed for this evaluation and the coding tool. These data were merged with the progress report data for statistical analysis.

Analysis

In order to achieve comparability of information across the 21 states, primary and secondary data were compiled into a database. The database collated information from secondary data sources, documentation submitted by the states, and key characteristics of grantee approaches gathered from interviews and site visits as summarized in the analytic rubric. These data were extracted into a SAS data file for analysis (SAS Version 9.2; SAS Institute Inc., Cary, NC).

Cross-tabulations and correlations were run on the merged rubric and progress report data. Sample sizes at the state level were small; there was a maximum of 21 states and for some analyses only the 12 SHD-APs were included. In some cases, qualitative research suggested a finding, but the correlations were not statistically significant at the 95% level of confidence. We use the term “weakly correlated” to refer to relationships with a chi-square probability of $P < 0.20$ but at least three states believed the activity had contributed to their program efforts. In this way, we integrated qualitative findings with the quantitative findings, and used the results to support and, in some cases, take the place of statistically-detected relationships when experiences were judged to be potentially informative for future programs.

Findings

Expansion of Reach

A total of 139,086 people were reached with these evidence-based interventions from 2008 through 2011. In 2008, a total of 31,301 people were reached through SHD-AP and AID grantees; in 2011 a total of 42,505 people were reached by these same grantees. Six AID grantees reported only six months of data because their funding concluded in June 2011. However, overall reach statistics mask considerable variation in states’ success in increasing the reach of interventions.

Expansion of Reach among State Arthritis Programs. Each SHD-AP was assigned a reach target equal to 4% of the people in their State who have arthritis (capped at 40,000). Using a linear projection model based on annual reach numbers from 2008-2011, we projected an estimate of the likely progress toward SHD-AP reach targets would be through 2012. Our prediction indicated that none of the 12 SHD-AP were likely to meet their reach targets. Three states were on track to achieve more than half of their reach target, while five states were unlikely to achieve a third of their target.

Expansion of Reach among AID States. AID states struggled to expand their reach, and growth in these states slowed between 2010 and 2011. AID states achieved far lower reach than did their CDC-supported counterparts. Over their 3 years of funding, the nine AID states reached a total of 6,643, while the 12 SAPs, who were funded at substantially larger amounts, reached a total 132,443. In fact, the reach from all AID states *put together* is less than that of two-thirds of the individual SHS-AP. Though this is not unexpected given the significantly smaller grant size, the average cost per person reached under the AID grants was \$268.38, while the average cost per person reached among SAPs was \$206.50.

Expansion of Reach by Intervention. We also examined reach numbers by specific interventions.

During 2008 through 2011, the distribution of reach across interventions changed in the following ways:

- The number of participants in the Chronic Disease Self-Management Program (CDSMP) and Spanish CDSMP *tripled* (from a combined total of 6,728 in 2008 to a combined total of 22,431 in 2011). One factor in this increase were grants made to state government programs by the Administration on Aging under the American Recovery and Reinvestment Act of 2009 (Recovery Act). These 2-year grants contributed to significant expansion of CDSMP within states and many states were able to coordinate their program efforts with the Recovery Act-funded activities such as partnering to offer leader trainings or leader support networks.
- At the same time, reach of the Arthritis Self Management Program (ASMP), also known as the Arthritis Foundation Self Help Program, declined from 5,021 in 2008 to 239 in 2011. State targeting self-management education to participants with chronic disease broadly, rather than just arthritis, may have contributed to this decline. Moreover, during the course of the grants, the ASMP training procedures changed, requiring all workshop leaders to be retrained. Rather than retrain, many states simply opted to focus their efforts on CDSMP.

- In 2009 CDC added Walk with Ease (WWE) to its list of approved evidence-based interventions. This low impact physical activity program appealed to states and their delivery partners, and between 2010 and 2011 there was significant growth (213 in 2010; 2,185 in 2011) in WWE as partners began offering the new intervention.

Dissemination Strategies

SHD-APs and AID grantees were asked as part of their grant to expand their reach by **partnering with multi-site delivery systems**. The intent was that delivery systems would adopt the intervention, and, in turn, would use their own organizational resources (e.g., staff, funds, access to population) to implement the classes or workshops.

In addition to partnering with multi-site delivery systems, we found that most SHD-APs and AID states used multiple strategies to expand the reach of their self management education and physical activity interventions. Several states created **regional collaboratives**, facilitating different organizations to work together to function as new delivery systems that could implement the interventions. Some states partnered **with organizations to stage the interventions at single sites**. These organizations used their internal capacity to host the classes, yet they only had one location and could not be linked to a larger system of delivery. Finally, some states used their resources to **conduct leader or master trainer trainings** with the assumption that more leaders and trainers would lead to expanded reach. Table ES-1 shows the correlations between reach and recommended strategies as outlined in the funding opportunity announcement (FOA) as well as the correlations between reach and the additional dissemination strategies we observed. SHD-APs' efforts to work with multisite delivery systems and reach was statistically significant ($P=.020$). Other grant objectives—embedding interventions into the operations of delivery systems and collaborating with other chronic disease programs—were weakly correlated with reach. We also observed that states that explicitly made expanding reach a priority were

indeed more likely to expand reach (P=.001). The rest of the report explores these strategies in more detail. Alternate strategies observed in states were not correlated with reach.

Table ES-1: Strategies and their Correlation with Reach, State Arthritis Programs

Strategy	r	p value	N
Recommended Strategies			
Work with existing delivery systems with multiple delivery sites	0.66	0.020	12
Embed evidence-based interventions into partner operations	0.46	0.128	12
Collaborate with other chronic disease programs	0.50	0.102	12
Prioritize expansion of reach	0.83	0.001	12
Alternate Strategies Observed			
Build a new delivery system with multiple sites	-0.16	0.622	12
Support one delivery partner with one site	-0.07	0.821	12
Train leaders and master trainers who then disseminate interventions	-0.08	0.801	12

Partnering with Delivery Systems

One of the directives under the 2008 FOA was that states should attempt to engage delivery systems to deliver interventions to multiple sites. It was expected that a delivery system partner would adopt an intervention and assume responsibility for the day-to-day operations, such as recruiting and training leaders, scheduling classes, recruiting participants and holding the classes. States, in turn, could focus their intervention-related efforts on partnership development, technical assistance, and quality control.

Nearly all states included efforts to work with delivery system partners as an integral part of their strategy for expanding reach. Only one AID state had made relatively little effort to work with delivery system partners as part of their strategy to expanding reach. However, states varied in how much strategic focus they gave delivery systems and varied in their success in working with delivery system

partners. Interviews revealed that many states had encountered roadblocks that limited their ability to successfully engage delivery systems as partners. States found that outreach efforts to delivery systems required persistence, patience, and creativity. The states most effective at expanding reach identified partner needs, customized their outreach efforts to address those needs and provided marketing materials to prospective and current partners.

Types of Delivery System Partners. States worked with a total of 329 *delivery system* partners from 2008 through 2011. SHD-APs had an average of 18 delivery system partners per state; AID States had an average of 12 delivery system partners per state. The most common types of delivery system partners were Area Agencies on Aging (26%), health care delivery organizations(16%), community organizations (e.g., faith-based organizations, YMCAs, senior residential communities, gyms) (14%), and local and county health departments (8%).

To identify which types of delivery system partners were likely to be effective, we asked states to identify two delivery system partners with which they had successfully worked to expand the reach of their interventions. Several states found valued partners in university extensions and hospitals. Area Agencies on Aging (AAAs) were the most frequently reported type of “successful” delivery system partner; however, states reported mixed experiences working with them. In interviews, states noted that they were decentralized and had varying levels of enthusiasm and commitment to the interventions. Similarly, several states identified local health departments as “successful partners”, but other states had limited success working with these partners. Some reasons for the differences may include the degree to which a state invested in its local health departments and the degree to which the local health departments were regularly engaged in program delivery.

Regional Arthritis Foundations. When offering their interventions, states had to consider whether they would collaborate with their regional Arthritis Foundation (AF) office. We observed few patterns in

AF partnership efforts across the states. Moreover, we observed few patterns in what comprised a successful working relationship between state health department and AF. In nearly all of the states that had forged a close working relationship with their regional AF, the relationship was built upon years of successful collaboration. Several states reported that establishing contracts with clear deliverables and maintaining regular communication were key factors in effective partnerships with their local AF office.

Even though CDSMP was the fastest-growing intervention, the AF Exercise Program (AFEP) remained the intervention with the most participants reached during the reporting period (AFEP total reach : 52,017; CDSMP total reach: 48,666). Though AF partnership efforts contributed to increased reach in several states, but we did not find any correlation between a state's ability to collaborate with the AF and state reach performance.

Barriers to Working with Delivery System Partners. Though 20 of 21 states attempted to work with delivery systems, 14 AID states and SHD-APs reported challenges recruiting delivery system partners. Challenges working with delivery systems included:

- Different uses of the term “delivery system partner.”
- Difficulty locating delivery systems.
- Locating the right person in a delivery system.
- Time, patience, and persistence for partner buy-in.

Solutions/Promising Practices in Working with Delivery System Partners. In progress reports states reported several tactics that they felt had helped them effectively identify new delivery system partners and persuade these partners to adopt the interventions. These tactics included:

- Networking, either through referrals from colleagues, advisors, or existing partners or by using professional networks to identify new partners, including participating on listservs or attending presentations.
- Creating a SHD-AP staff position with dedicated partnership development responsibilities
- Providing marketing materials to partners

Embedding Interventions into Partner Operations

In interviews, sustainability emerged as one of the states' primary concerns. The recommended strategy to promote long-term sustainability, as structured into the CDC and AID grants, was to embed interventions into delivery systems by having the delivery system make the intervention part of its routine operations. SHD-APs that prioritized embedding efforts were associated with higher reach. States did not indicate in their progress reports whether delivery system partners had embedded interventions, making it difficult to assess which delivery systems might have done so.

As part of the qualitative evaluation, we assessed the extent to which states had focused their efforts on helping delivery system partners embed interventions in their operations. Seven of 21 states made embedding interventions within partners' organizations an integral part of their strategy to expand reach. An additional 10 states had made some attempt to embed interventions with their partners; however, four states had made relatively little efforts to include embedding in their larger strategy. SHD-APs did not place a stronger strategic focus on embedding than did AID states.

In interviews, states believed that in order to embed interventions in routine operations, partners had to value the interventions and prioritize them as core activities, not simply adopt them. That kind of buy-in required time—first, for organizations to decide that they should adopt an intervention and, second, for organizations to see positive results from participants. Contextual factors, such as the

economy, were also perceived as affecting an organization's ability to develop a deep-rooted commitment to an intervention. Barriers also varied by which intervention the organization chose to implement.

Interviews indicated states did not have a shared understanding of what constituted embedding. At a fundamental level, some states believed partners had embedded an intervention when the intervention was being conducted regularly or being expanded. Some states believed that self-sufficiency, such as when partners sought other funding sources or obtained their own license, equaled embedding. These states observed that partners with embedded interventions relied less on states for technical assistance than they had previously. However, states with higher levels of reach often described embedding in terms of organizational or policy change, such as changed job descriptions, revised mission statements or web pages, or an established process by which someone could enroll in a program.

Partner Motivations. We conducted interviews with selected delivery system partners, chosen in consultation with the states, during site visits and hour-long semi-structured telephone conversations. Factors motivating these partners to make an organizational commitment to the interventions included:

- **Passion for the intervention.** They had witnessed the intervention's impact and several partners shared anecdotes of how the intervention had helped people they serve. They believed they would continue the intervention at some level, even without financial support from state government.
- An **organizational mission highly aligned** with delivering the intervention.
- **Other program efforts compatible with the intervention.** Rather than starting from scratch, the intervention could be employed in conjunction with existing efforts, leveraging staff interest, experience, and expertise.

- **Health promotion savvy.** Several partners we spoke with were adept at securing grant money from the states and major foundations. In some cases the partners had a previously established relationship with the state department of health.
- **Commitment to evidence-based programming.** These partners were aware that there were non-evidence-based alternatives, particularly when it came to physical activity interventions and yet believed that careful research and evaluation had contributed to interventions that worked.

Barriers to Embedding. Often a partner was interested in adopting an intervention, but balked at the commitment that was required. Barriers that limited some states’ abilities to embed interventions with partner organizations included:

- Difficulties weaning partners from grant funding.
- Champion or point person left the organization.
- Insufficient staff resources for class or workshop coordination.
- Identifying people who could serve as instructors or leaders. EnhanceFitness, for example, requires instructors to have a specialized background in physical activity. For CDSMP, many partners—especially those in early stages of embedding—opted to train employees in order to provide them with increased familiarity with the program, though a long-term strategy might be to recruit volunteer CDSMP leaders.
- Difficulty releasing staff for training
- Not enough staff time to conduct the classes

Solutions/Promising Practices for Embedding. Embedding practices that influenced the ability of states to increase reach included:

- **State grant-making strategies.** We saw a weak correlation between states giving grants that supported partners' day-to-day operations, like funding staff positions or financially supporting partner-led trainings, and *decreased* reach.
- **Trust between the partner and the state department of health.** Among partners with embedded interventions, we observed high levels of trust between the partner and the state department of health. This trust had emerged gradually, through positive working relationships and recognition that the partner could turn to the Department of Health as a source of support and expertise.
- **Helping partners feel part of a larger effort.** A few states described the importance of making partners feel they were not alone. These states assured their partners that they would get technical assistance and that they were connected with a network of other organizations implementing the intervention, when one existed in their area.
- **Encouraging change processes** such as embedding interventions in an organization's mission statement, or encouraging them to incorporate intervention-related responsibilities into employee job descriptions in order to secure ongoing resource commitment.

Collaboration with Other Chronic Disease Programs

As part of receiving the grant, states were asked to collaborate with other chronic disease programs.

CDC grantees were asked to collaborate with other chronic disease programs to promote wider use of an intervention, whereas AID grantees were asked to integrate an intervention in the operations of another chronic disease program (presumably the program receiving the grant, as AID States did not have an arthritis program).

All arthritis coordinators attempted to reach out to other chronic disease programs, and 15 of the 21 states were able to build strong ties with other programs. Among AID States, four states had made concerted efforts to embed their interventions into the ongoing activities of another chronic disease program, and one state had made minor efforts. Four AID states were assessed as having not integrated the intervention into the core activities of another program. Among SHD-APs, two states had been able to collaborate with several chronic disease programs, eight states had been able to collaborate with at least one program, and two states had not been able to establish a significant collaborative relationship with another chronic disease program. Ability to establish multiple collaborative ties was weakly associated with increased reach among SHD-APs.

Types of Collaboration Partners. The evaluation recorded what types of chronic disease programs that states listed as partners in their progress reports. Nineteen of 21 states collaborated with their state **diabetes** programs. In several cases, the state diabetes program chose to implement CDSMP in order to meet its own grant requirements. Fourteen states also found success working with **non-disease specific programs**. These programs were often state specific or served multiple conditions (e.g., farm worker's program, pain and palliative care, worksite health) and could not be categorized as focusing on a single condition.

From other types of chronic disease programs, state coordinators encountered varying levels of commitment. Eleven states forged working relationships with their state **heart disease** unit, but many of these relationships were simply cross-promoting the intervention or collaborating on a short-term basis because they had available resources. Some states also attempted to partner with programs such as **tobacco, cancer, disability, and asthma**. These programs had often become referral partners for arthritis-appropriate interventions.

Barriers to Collaboration. In interviews, states reported cultural, organizational, and individual challenges when trying to collaborate with other chronic disease programs, including

- Other program coordinators' prioritizations of their program's grant requirements over collaboration.
- "Siloed" organizational culture which kept each coordinator focused on their own categorical program
- Reluctance among some AID grantees to embed the intervention into a different program area because they hoped that their previous state arthritis program would regain funding.

Solutions/Promising Practices for Collaboration. We observed that most states wanted to find collaboration partners within their chronic disease bureau. However, states' abilities to form these collaborations varied considerably. Promising collaboration practices included:

- Making concrete attempts to collaborate with other programs in their chronic disease bureau. In eight states the bureau had developed work-plans that included collaboration.
 - "Top down" leadership. Chronic disease bureau chiefs and other leaders often set agendas to seek out collaboration opportunities.
 - Workspaces that provided opportunity for informal, "water cooler" conversations
 - Arthritis program coordinators who were able to identify and present "win-win" opportunities to other program areas.
 - Arthritis program coordinators who were widely respected at the state department of health.
- There was some evidence that these coordinators were more likely to meet their grant objectives. It is unclear whether a coordinator's good reputation was earned because they led

their programs effectively or whether their good reputations increased people’s willingness to collaborate.

Collaboration with Aging. Departments of aging emerged as important support partners for arthritis programs during the study timeframe. Because so many of them received Recovery Act grants, the department of aging and the Area Agencies on Aging (AAAs) in their networks, also were developing infrastructure for CDSMP, adding master trainers, instructors, locations, promotional materials, and support systems. Though departments of health and aging frequently recognized opportunities to work in partnership, collaboration was often a challenge because of contractual barriers, differences in organizational culture, and philosophical differences about the best way to implement the intervention. States’ abilities to navigate these barriers proved important to their efforts to expand reach.

Conclusions and Recommendations

Our data projections indicate that, in this grant cycle, it is unlikely that SHD-APs will meet the target of reaching 4% of the total number of people with arthritis in their state. However, SHD-APs were able to demonstrate yearly increases in program reach.

Partnership building was integral to these increases, and states enlisted dozens of partners in their efforts. We found that states agreed in principle that it made sense to target delivery systems as partners to deliver the interventions. The biggest barrier appeared to be that states required more time than was available to nurture and establish effective partnerships.

Gauging by reach numbers alone, AID states appeared to fall far short of their CDC-funded counterparts.¹ The average cost per person reached under the AID grants was \$268.38, while the

¹ Though increased program reach was an expected outcome of AID grantee efforts, AID States were not provided reach targets and increased reach was not a grant deliverable.

average cost per person reached among SHD-APs was \$206.50. However, AID states had significantly less access to resources that could be used to expand reach, such as dedicated staff for partnership development. Moreover, fewer resources resulted in less ability to expand delivery system partnerships.

However, the AID grants conferred important benefits that cannot be fully understood through reach statistics alone. Specifically, AID funds helped position the grantees as resident experts on self-management education. A year later when the Recovery Act grants were awarded, AID grantees had gained experience, had established important relationships, and could offer useful insights into how to implement CDSMP. This expertise resulted in greater collaboration with aging programs than would have been possible without the AID grants.

Based on the evaluation findings, we offer the following recommendations:

Strategies and Tactics for Expanding Reach

This evaluation identified the following high-return strategy for expanding reach:

- **Working with delivery systems.** States' efforts to work with multisite delivery systems were positively associated with program reach. Above all, the *intent* and the amount of *effort* expended were correlated with reach. That is, the programs that expressly identified reach expansion as a priority and laid out strategies with the specific goal of increasing reach were more likely to achieve greater reach. This was likely because of the length of time needed to nurture relationships with these partners; some partnerships had not materialized yet.

Additionally, the following tactics appeared to have been effective in expanding reach in some states:

- **Partnering with organizations in health and education.** States that worked with organizations such as hospitals, health clinics, and university extensions were likely to identify these organizations as valued partners.
- **Partner recruitment.** States needed to be able to market the intervention to partners in a way that would evoke partner interest, educate them about the benefits of the interventions, and convince them to implement the interventions in their organizations. Successful communicators had done background research to understand the needs of their target audiences and created strong messages conveying the value of the interventions that resonated with their potential partners. These practices often varied by audience; while one organization would be highly drawn to a data-intensive message and focusing on the evidence base, another might be convinced more by testimonials. Care had to be taken in the background research phase to determine how to customize the message in a way that would address the organization's needs.
- **Partnership building.** Many states relied on networks or third party referrals to find out about new partners. States could adopt more strategic approaches to finding possible leads, such as doing more to identify local areas with the highest need. Also, states could target specific organization types, such as hospitals, health clinics or university extensions.
- **Embedding support.** Rather than providing the majority of technical support for intervention leaders and delivery system partner organizations, effective states attempted to connect partners with each other by developing regional networks. These regional networks offered sources of technical support and advice for specific challenges, reduced an organizations' need to market and schedule interventions individually, and contributed to the development of an intervention leader pool that could be deployed across local organizations.
- **Training.** Rather than a strategy unto itself, training was an effective tactic to support delivery systems. Training was an incentive states could offer partners as to facilitate start-up and to

help build intervention delivery capacity. States observed that training enabled partners to increase their improved their understanding of and support for the interventions.

Areas for Additional Technical Assistance from CDC

Many arthritis programs, especially those struggling to meet their reach targets, welcomed feedback and ideas they could use to better implement and sustain their programs. In particular, our study found that many states could benefit from technical support on:

- **Marketing.** From employers to health organizations to local government agencies, states were asked to engage a variety of organizations that could implement the interventions. States needed guidance on how to create a persuasive message, what to say while delivering the message, and how to “close the deal.”
- **Communication.** Arthritis programs are likely to have increased collaboration with other programs in their chronic disease bureau. Our study found that reach was increased when the program coordinator had effective leadership and management skills. These skills included agenda- and goal- setting, effective communication of program vision to team members, ability to listen to the needs of others and identify “win-win” situations, and resourcefulness, such as working with new types of partner organizations or connecting partners who shared common goals.
- **Sustainability.** Embedding interventions is one way states can ensure that interventions can be sustained; however, states needed additional guidance in best practices regarding sustainability. Some promising sustainability practices included establishing a clear set of expectations with partners, working with partners to develop a roadmap leading to sustainable practices, and ensuring that partners were making satisfactory progress toward sustainability.

Future Activities

This evaluation also offers CDC guidance for future activities:

- **Clear definitions of terms regarding program goals.** State response and CDC technical oversight could be improved with common definitions of key terms like “delivery system,” “system partner,” “advisory partner,” and “embedding.” We observed that the CDC and National Association of Chronic Disease Directors worked hard during this grant cycle to offer clarification and technical assistance on these issues; work remains to be done on clarifying “embedding”.
- **Continued focus on delivery systems.** CDC’s strategy of encouraging partners to work with delivery systems appears to have resulted in increased program reach; however, CDC should encourage further evaluation to expand its own and states understanding of what constitutes a delivery system. Though a delivery system can be an existing partner with multiple sites, we also observed states successfully using the delivery system strategy by working to establish program-specific collaboratives or alliances. Demonstration projects could explore how much interdependence among partners is required and how much effort from states would be required from states to maintain various types of collaboratives.
- **Reach goals.** Reach numbers that focus on the total number of intervention participants regardless of intervention type tend to undervalue the effort needed to provide physical activity courses. In calculating reach, a class participant was considered the same whether they had participated in a 6-week self-management education workshop or in a year-long ongoing physical activity intervention. Factoring in other information such as the total number of classes or impact measures would help address this bias.

- **Reach reporting.** In this grant cycle reach reporting may have proved to be an unreliable measure of program activity because of data quality issues. Offering additional support to states and partner to help collect participation numbers (e.g., mobile apps for instructor/leaders, data collection forms, web-enabled databases, etc.) might improve reliability.
- **Increased focus on collaboration.** In this grant cycle we observed a system wide shift towards increased collaboration efforts at the state departments of health. Though states believed it made sense to collaborate, they acknowledged that the catalyst for this shift was expected changes in federal program requirements.

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