

Bridging the Gaps: Progress and Challenges in Public Health Radiation Emergency Preparedness



Summary Findings

One year after the “Bridging the Gaps: Public Health and Radiation Emergency Preparedness” conference, which occurred in March 2011, the National Association of County and City Health Officials (NACCHO) surveyed attendees to identify what activities took place since the conference and where local health departments (LHDs) and state health departments (SHDs) still see gaps in their radiation emergency readiness.

Survey responses indicate the following:

- Bridging the Gaps had a positive impact on attendees’ radiation emergency planning efforts. Attendees not only shared information from the conference with their staff and partners but also incorporated tools acquired during the conference into their planning. Three out of four survey respondents reported beginning or enhancing radiation emergency preparedness efforts since attending Bridging the Gaps.
- Respondents experienced difficulties in prioritizing radiation emergency preparedness due to lack of time and funding, the existence of higher priority threats, and the perception that other agencies or organizations have the responsibility of leading or initiating planning efforts. These challenges led to a lack of skilled staff designated to focus on radiation emergency preparedness.
- Respondents clearly indicated what tools would be most helpful to them and identified their preferred formats for receiving additional information. However, respondents lacked awareness of existing tools and resources that they could implement immediately to improve their radiation readiness.

These findings are considered in the context of broader national initiatives to improve both the nation’s and the public health community’s ability to respond to all hazards. Radiation emergencies are one of a multitude of threats that health departments are building the capabilities to address effectively. However, continued progress may be hampered by significant funding cuts that lead to reductions in staffing and program capacity.

Introduction

The Centers for Disease Control and Prevention (CDC) Radiation Studies Branch sponsored the “Bridging the Gaps: Public Health and Radiation Emergency Preparedness” conference in March 2011. Bridging the Gaps was intended to provide a forum for conference participants to discuss the current state of radiation emergency preparedness; enable participants to share promising practices, lessons learned, and practical applications to enhance their preparedness; and create a network of public health professionals and other stakeholders invested in advancing the field of radiation emergency preparedness.

Health departments find it difficult to dedicate staff to radiation emergency preparedness efforts given limited time and funding, competing priorities, and a perceived lack of authority or expertise to drive these efforts.

The National Association of County and City Health Officials (NACCHO) surveyed Bridging the Gaps attendees in February 2012 to determine what radiation emergency preparedness progress has been made since the conference and what challenges and needs still exist. Key findings from the survey suggest the following:

- Conferences like Bridging the Gaps spur attendees to take actions to improve radiation emergency readiness.
- Health departments find it difficult to dedicate staff to radiation emergency preparedness efforts given limited time and funding, competing priorities, and a perceived lack of authority or expertise to drive these efforts.
- Progress has been made, and health department staff know what tools would help them move forward, but they are not necessarily aware of current resources.

This report details the findings from the NACCHO survey and discusses them in the context of larger national initiatives related to preparedness. It also considers the impact of reductions in federal preparedness funding and cuts to LHD programs and workforce on the ability to advance radiation emergency preparedness efforts. The report

concludes with recommendations on how NACCHO, CDC, and other partners can support continued public health radiation emergency preparedness.

Methodology

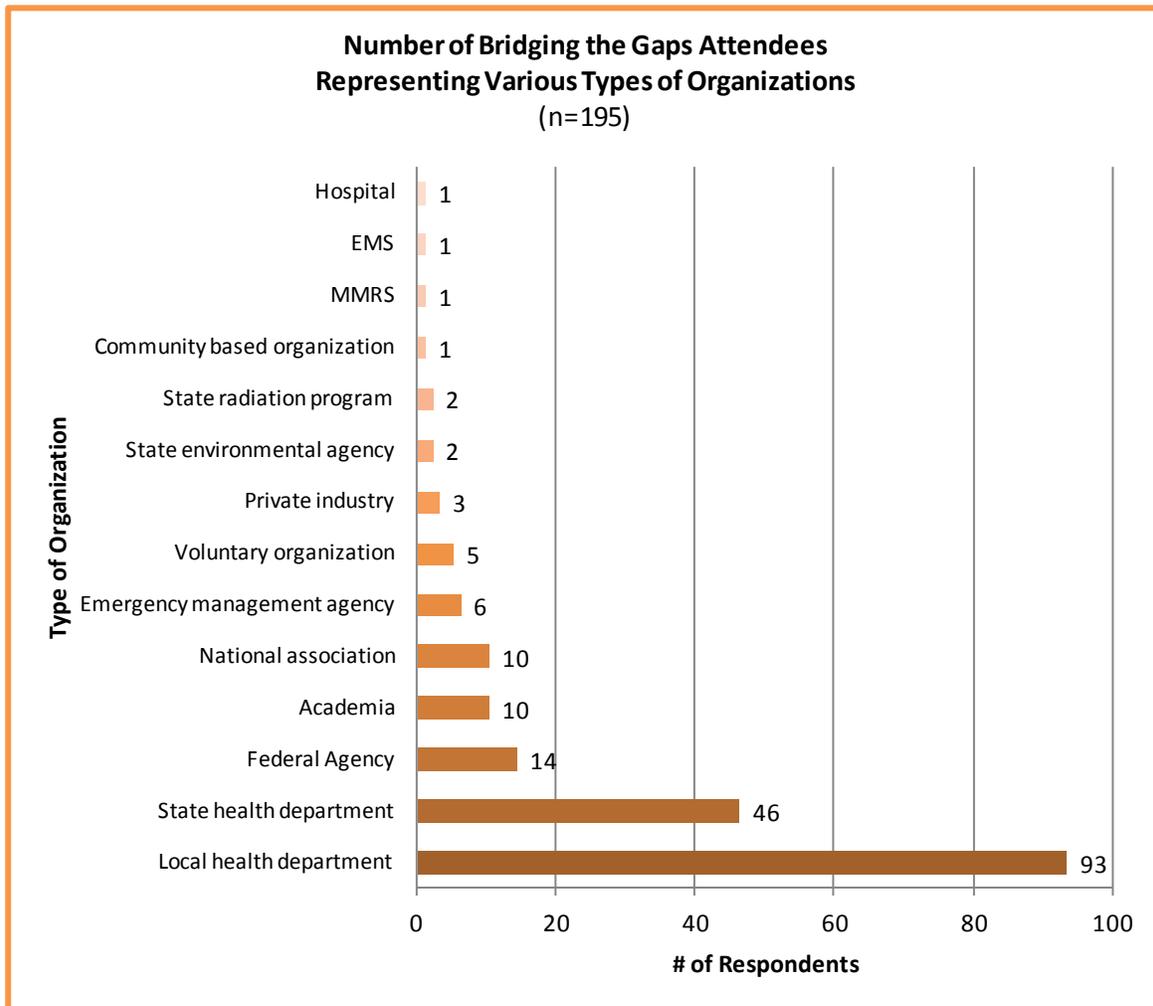
NACCHO deployed a Web-based survey to all 435 Bridging the Gaps attendees on Feb. 6, 2012. A reminder e-mail followed on Feb. 15, 2012. One-hundred ninety-five attendees responded, for a response rate of 48.1 percent after excluding inactive e-mail addresses from the sample. The survey did not include mandatory questions; however, respondents were prompted to answer skipped questions. Nevertheless, not all respondents answered all questions. One of the survey's limitations is that it is unknown whether Bridging the Gaps attendees possessing a significant level of interest or involvement in radiation emergency planning efforts were more motivated to complete the survey than those attendees less engaged in such efforts. As a result, the survey findings may not be representative of the Bridging the Gaps attendees overall. Additionally, NACCHO cross-tabulated the results of many questions to draw out the responses from LHD and SHD staff who comprised the majority of attendees and were the primary group of interest for the purposes of this report. However, those who attended Bridging the Gaps and completed the survey may not be representative of LHDs and SHDs overall.

Radiation Emergency Preparedness Since Bridging the Gaps

Attendees of the Bridging the Gaps conference represented local, state, and federal public health agencies; other governmental agencies; academia; nonprofit organizations; and the private sector

(Figure 1). Representatives of LHDs and SHDs comprised the majority of survey respondents, making up 48 percent and 24 percent of respondents, respectively.

Figure 1



NACCHO survey results suggest that attendance at Bridging the Gaps spurred progress in radiation emergency preparedness. One-hundred fifty-one of the 195 respondents (79%) began or enhanced their radiation emergency planning efforts since participating in Bridging the Gaps. That figure includes 76 percent of those representing LHDs and 83 percent of those representing SHDs.

NACCHO asked respondents to categorize all areas in which they have made progress since the conference. Respondents most frequently noted plan development or improvement, including planning and conducting exercises. More than half of respondents (56%) did work in this area, while additional areas of progress were categorized under training and education opportunities (49%), building and sustaining partnerships (44%), and identifying and addressing resource needs (37%).

When only responses from LHD and SHD staff are considered, progress since Bridging the Gaps is even more dramatic. Seventy-two percent of respondents representing LHDs and 79 percent of those representing SHDs worked on plan development and improvement. In each of the other categories, more than half of LHD and SHD attendees reported making progress (Figure 2).

NACCHO asked respondents to name additional areas of progress falling outside these four pre-designated categories. Other activities included raising awareness of public health responsibilities with regard to radiation emergencies, developing guidance, conducting surveillance, working on research and development, and participating in national-level discussions and activities.

Plan Development and Improvement

NACCHO asked those who developed or enhanced their radiation emergency plan since the conference to assess the extent to which they have done so. Responses reflected a broad range of plan development and improvement activities, with 45 percent indicating they took the basic step of establishing a workgroup. More than one-fifth of respondents (21%) had progressed to the point that they had exercised their plan.

Like the respondents overall, those representing LHDs and SHDs most frequently reported that they had established a planning workgroup (Figure 3). Forty-nine percent of those representing LHDs and 55 percent of those representing SHDs indicated that they had established a planning workgroup in their jurisdictions.

Figure 2

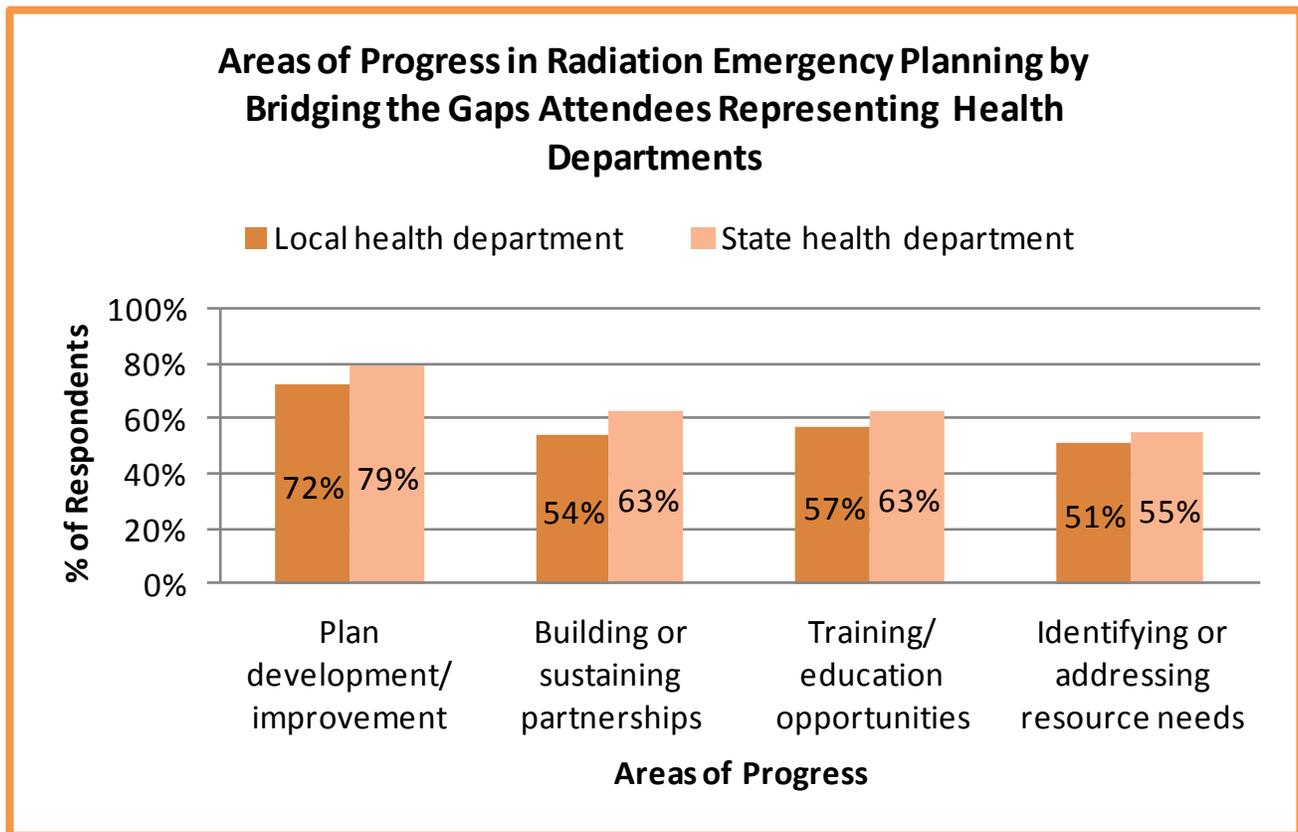
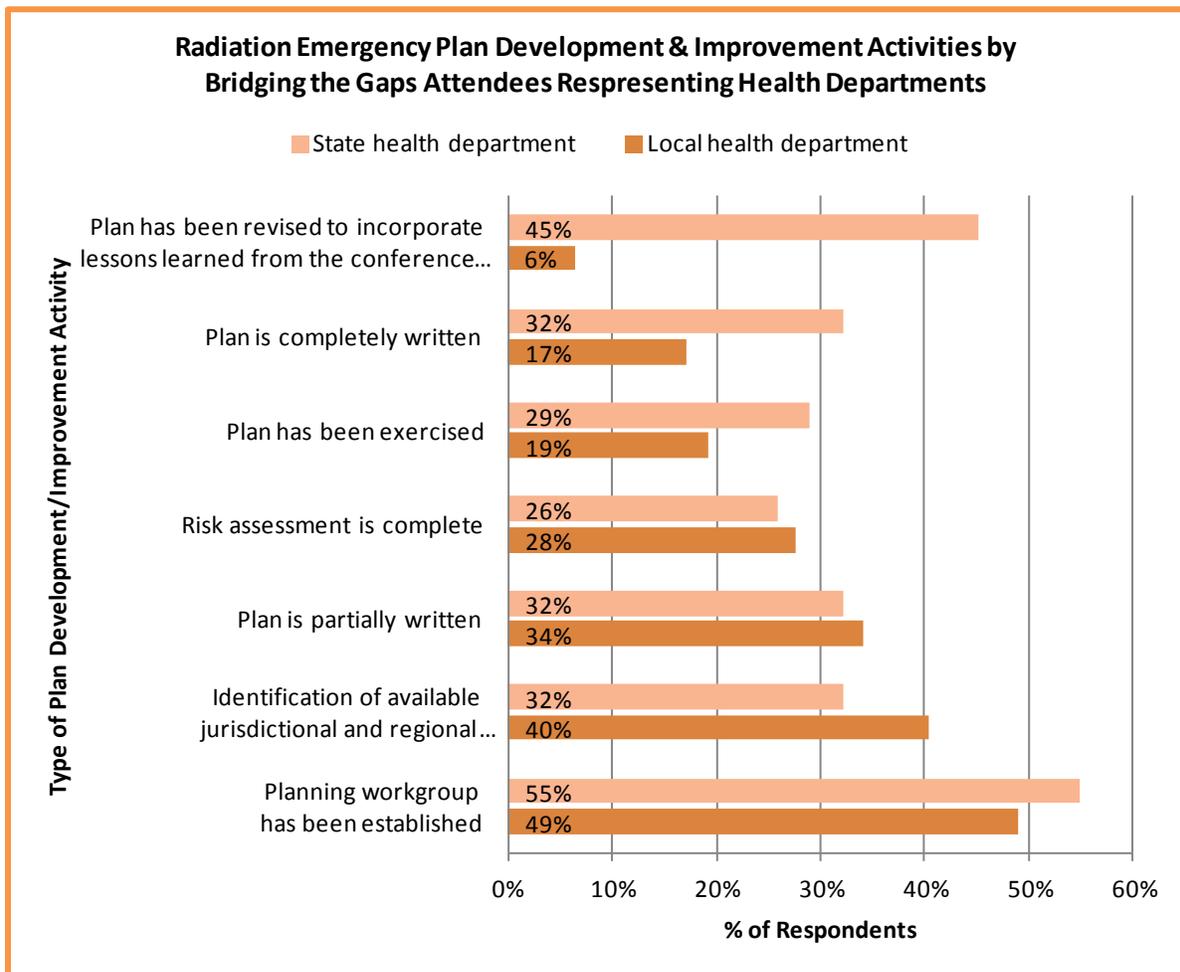


Figure 3



Responses from health department representatives suggest that SHDs have progressed further than LHDs in their radiation emergency plan development and improvement efforts. This difference is most dramatic in the area of plan improvements; only six percent of LHDs reported that they had revised plans to incorporate lessons learned from an exercise or attending Bridging the Gaps, while 45 percent of SHDs had done so. This finding is consistent with responses suggesting that SHDs are more likely than LHDs to have a plan and to have exercised it. SHDs were nearly twice as likely as LHDs to have completed a written plan (32% vs. 17%). Only 19 percent of LHDs had exercised their plan compared to 29 percent of SHDs. These differences may be attributed to emergency planning requirements that exist for entities that serve populations within 50 miles of a nuclear power reactor. These requirements impact a greater percentage of SHDs than LHDs.

Many LHDs were engaged in risk assessment and asset identification activities that would inform the completion of their plans. Forty percent of LHD representatives reported that they had completed the identification of available jurisdictional and regional assets. Additionally, more than a quarter of LHDs (28%) had completed a risk assessment. These activities will be valuable as LHDs coordinate with their local, state, and federal partners to determine roles and responsibilities during radiation emergencies that will likely have an impact beyond the jurisdiction in which the incident occurs.

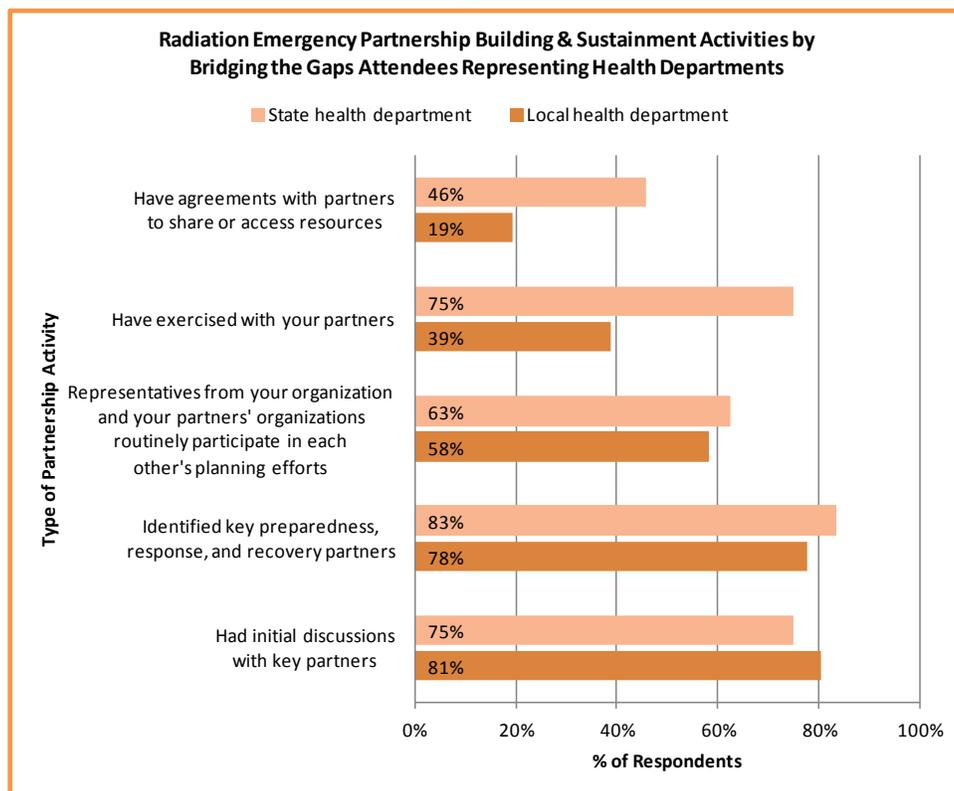
The experience gained from attending Bridging the Gaps also enabled attendees to enhance activities they were engaged in before the conference. One attendee described, “Much of the work we have accomplished was started prior to the conference using [Metropolitan Medical Response System (MMRS)] funds. The MMRS project was completed following the conference with an exercise and [after action report]. The conference was a bonus that enhanced our project.” Other attendees stated that information they gained by attending the conference allowed them to build on planning undertaken to address the potential risks of having a nuclear plant in their jurisdictions or to enable their participation in large-scale exercises such as TOPOFF.

Building and Sustaining Partnerships

Among the 84 respondents who reported progress in building and sustaining partnerships, more than three quarters identified (79%) or had initial discussions (75%) with key preparedness, response, and recovery partners. More than half of respondents (54%) indicated that representatives from their own and their partners’ organizations

routinely participated in each other’s planning efforts. Forty-three percent had exercised with their partners, and more than a quarter had agreements with their partners to share or access resources. Considering responses from LHD and SHD representatives exclusively, the greatest variances in progress were in exercises and resource-sharing agreements (Figure 4). SHDs were nearly twice as likely as their LHD counterparts to report having exercised with their partners. The gap is even wider in developing agreements with partners to share or access resources, with 46 percent of SHDs reporting having done so compared to just 19 percent of LHDs. These findings suggest that, while LHDs have undertaken initial partner outreach activities at a level similar to their SHD counterparts, they are less likely to have begun operationalizing these relationships. This variance may be attributed to the decades of planning that the majority of SHDs have been engaged in with their partners in preparation for a possible nuclear power reactor disaster. Many LHDs have become engaged more recently as the threat has expanded from reactor emergencies to potential terrorist acts involving improvised nuclear devices.

Figure 4



NACCHO asked those respondents building and sustaining partnerships to identify their partners. Eighty percent of all respondents named emergency management agencies as partners.

Despite the progress made in building and sustaining partnerships, challenges remain. One respondent noted the difficulty of “ensuring that radiological preparedness is a priority for all of the key partners.” Another pointed out a knowledge gap, stating that the biggest obstacle is a “misunderstanding of type and scale of risk from radiation among our partner agencies (police, fire, hospitals). [This] outsized sense of peril often leads to inappropriate restrictions on treatment or management of injured individuals and [inaccurate] estimation of personal risk to individuals at these partner agencies.”

NACCHO asked those respondents building and sustaining partnerships to identify their partners. Eighty percent of all respondents named emergency management agencies as partners. Other frequent partners included first responder agencies (70%), state radiation control programs (69%), and hospitals (63%).

Among the 93 attendees who represented LHDs, more than one-third (36) responded that they were building or sustaining partnerships (Figure 5). Of

those 36 respondents, 86 percent partnered with emergency management or first responder agencies, 75 percent partnered with hospitals, and 72 percent partnered with their state radiation control program. Tribal partnerships were the least frequently mentioned; however, it is unknown how many of the LHDs represented at the conference have tribal nations within or near their jurisdictions.

LHDs were more likely than SHDs to partner with organizations in their communities, including first responder agencies (86% vs. 75%), Medical Reserve Corps (MRC) units (53% vs. 42%), and hospitals (75% vs. 71%). In contrast, SHDs were more likely to partner with their state radiation control program (88% vs. 72%) and, even more dramatically, with federal agencies (71% vs. 31%).

In addition to a predefined list of partners, NACCHO gave respondents the opportunity to identify other categories of partners. Eight respondents named additional partners, with the military and academic institutions being cited multiple times.

Figure 5

% of Represented Organizations Engaged with Various Partners			
	Type of Organization Represented		
	Local health department	State health department	All other organizations
State radiation control program	72	88	52
Emergency management agency	86	92	67
First responder agencies	86	75	43
Federal agencies	31	71	57
Behavioral health agency	31	38	14
MRC	53	42	38
Hospitals	75	71	43
Private industry	22	33	19
Tribes	8	17	10
# of Respondents Who Built or Sustained Partnerships	36	24	21
# of Overall Survey Respondents	93	46	56

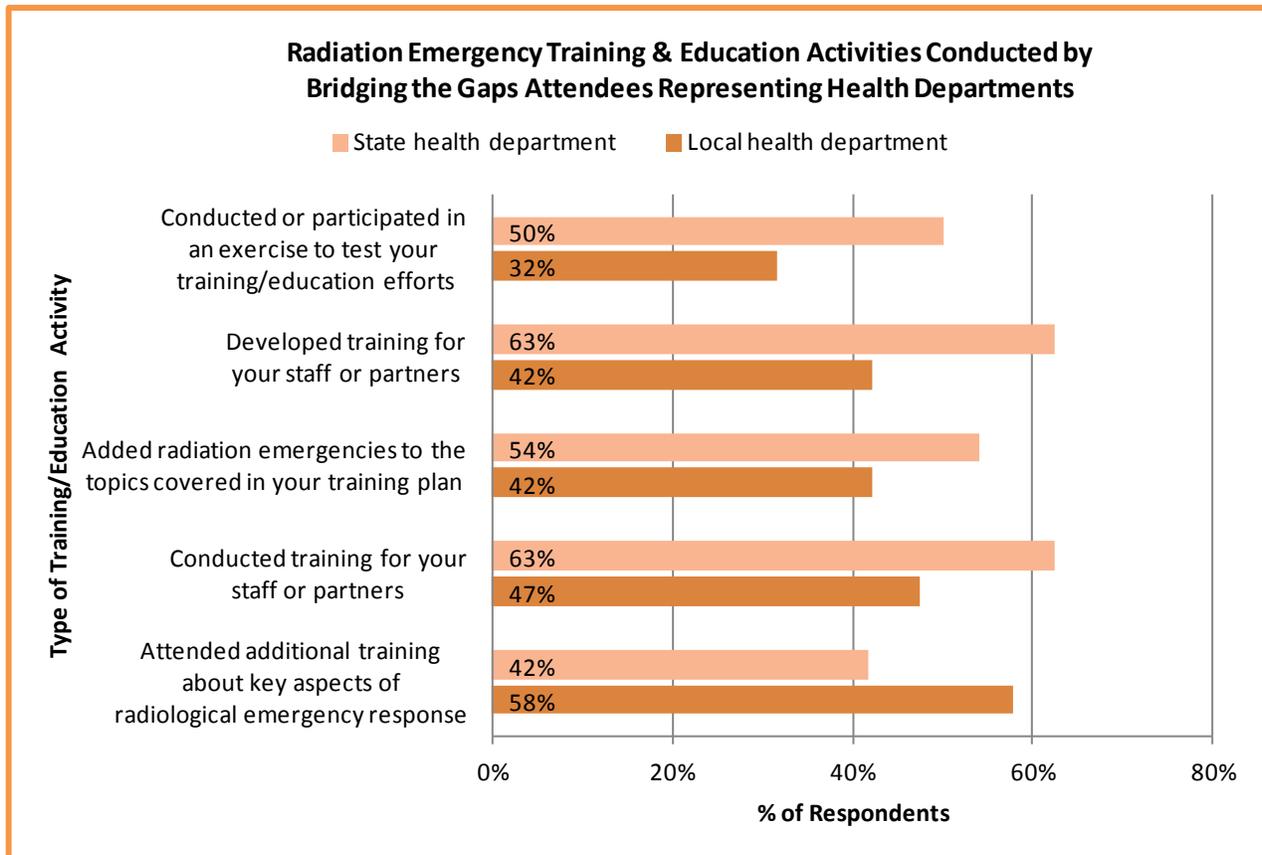
Training and Education Opportunities

Bridging the Gaps had an immediate training and education impact on both attendees and their planning colleagues. Of the 93 attendees who reported progress in their training and education efforts, 74 percent used information from the conference to educate their staff or partners, and 59 percent incorporated tools or resources they acquired at the conference into their planning efforts.

Also, among those who had worked on training and education, 47 percent had conducted training for their staff or partners, 44 percent attended additional training about key aspects of radiological emergency response, and 42 percent developed training for their staff or partners. One respondent applied for doctoral level studies in this field after attending the conference.

When one looks at responses from LHD and SHD attendees, differences emerge. Findings suggest that LHDs are less advanced than SHDs in their radiation emergency training and exercise activities (Figure 6). Representatives from LHDs were more likely than those from SHDs to have attended additional training about key aspects of radiological emergency response (58% vs. 42%), suggesting that they frequently take the opportunity to participate in training and education activities offered by others. In contrast, SHDs appear more likely to lead training and education activities. At least half of SHD representatives reported conducting or developing training for staff or partners, adding radiation emergencies to the topics covered in their training plans, or conducting or participating in an exercise to test their training and education efforts.

Figure 6



Many respondents recognized the need to address a variety of training and education needs. As one respondent explained, “Our local hospitals outside the planning area surrounding our nuclear power plant will need focused efforts for training/education of the emergency room staff...physicians, nurses, EMTs, etc. Getting this done will be a process.... It would be helpful to identify ways to create more awareness and education about the need for this kind of planning for all the stakeholders in a health department. This is a possible gap to be addressed by NACCHO.”

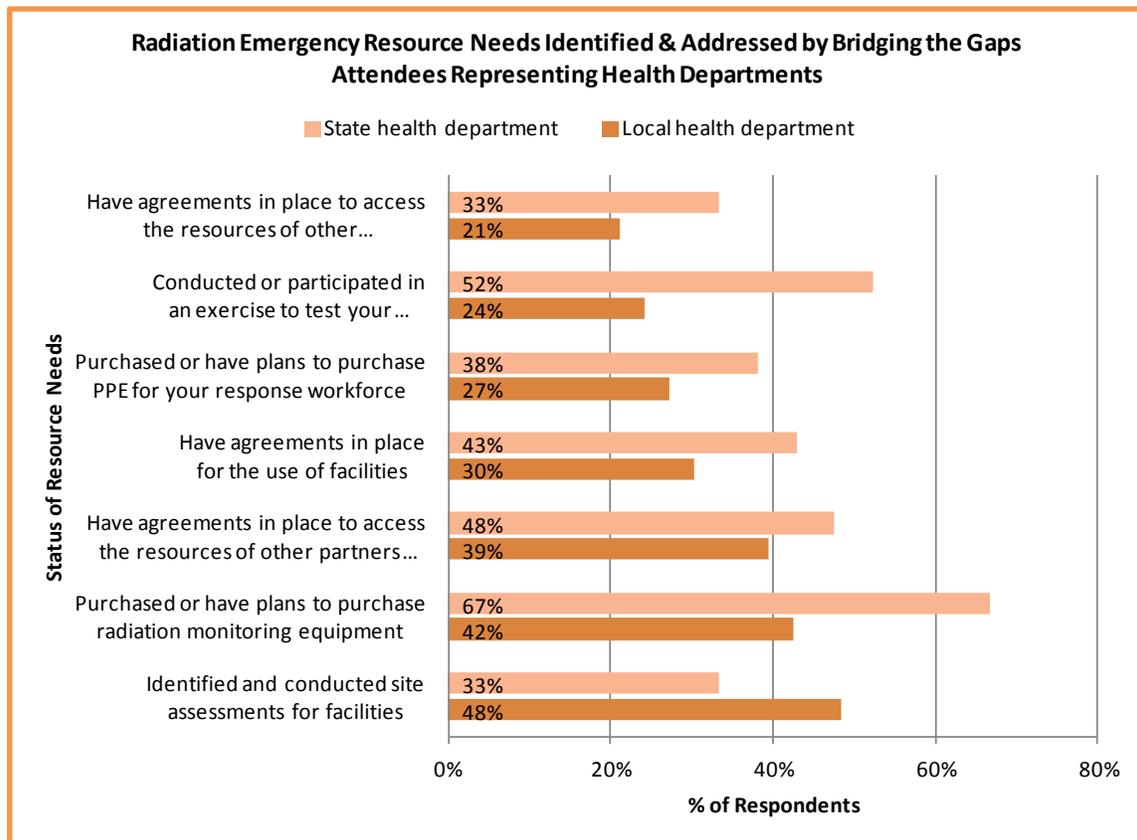
Identifying and Addressing Resource Needs

Among the 71 respondents working toward identifying and addressing resource needs, 46 percent had purchased or planned to purchase radiation monitoring equipment. More than one-third (35%) identified and conducted site assessments for facilities such as community reception centers. Thirty-two percent had agreements in place to access the resources of other partners within their jurisdiction or had conducted

or participated in an exercise to test their mobilization of resources.

As seen in the other areas of progress, LHDs are at an earlier stage than SHDs in identifying and addressing resource needs (Figure 7). The area where LHDs have made the greatest progress is in identifying and conducting site assessments for facilities, with nearly half (48%) having done so. In all other areas, LHDs are outpaced by SHDs. The greatest difference was seen in the use of exercises to test mobilization of resources—SHDs were more than twice as likely as LHDs (52% vs. 24%) to have conducted or participated in such an exercise. This disparity may be related to findings that suggest SHDs have more available resources to mobilize. Sixty-seven percent of SHDs reported purchasing or having plans to purchase radiation monitoring equipment compared to just 42 percent of LHDs. Similarly, 38 percent of SHDs reported purchasing or having plans to purchase radiation monitoring equipment compared to just 27 percent of LHDs. Similarly, 38 percent of SHDs compared to 27 percent of LHDs purchased or have plans to purchase personal protective equipment for their response workforce.

Figure 7



NACCHO provided respondents the option to indicate other activities they were engaged in to identify and address resource needs. Twenty-five percent of respondents offered additional examples of their efforts, including developing resource databases, creating pre-incident public information messages, and calibrating equipment.

Obstacles to Progress

In addition to gathering information about the progress made in radiation emergency preparedness since Bridging the Gaps, the NACCHO survey was intended to reveal challenges, obstacles, and remaining gaps. Among the 40 Bridging the Gaps attendees who responded that they had not begun or enhanced their radiation emergency planning efforts since the conference, the greatest obstacle was lack of time, cited by 48 percent (Figure 8). One respondent described, “My primary obstacle is the amount of time that I have to devote to radiation emergency planning. With my responsibilities for all hazards planning, I have to divide my time.”

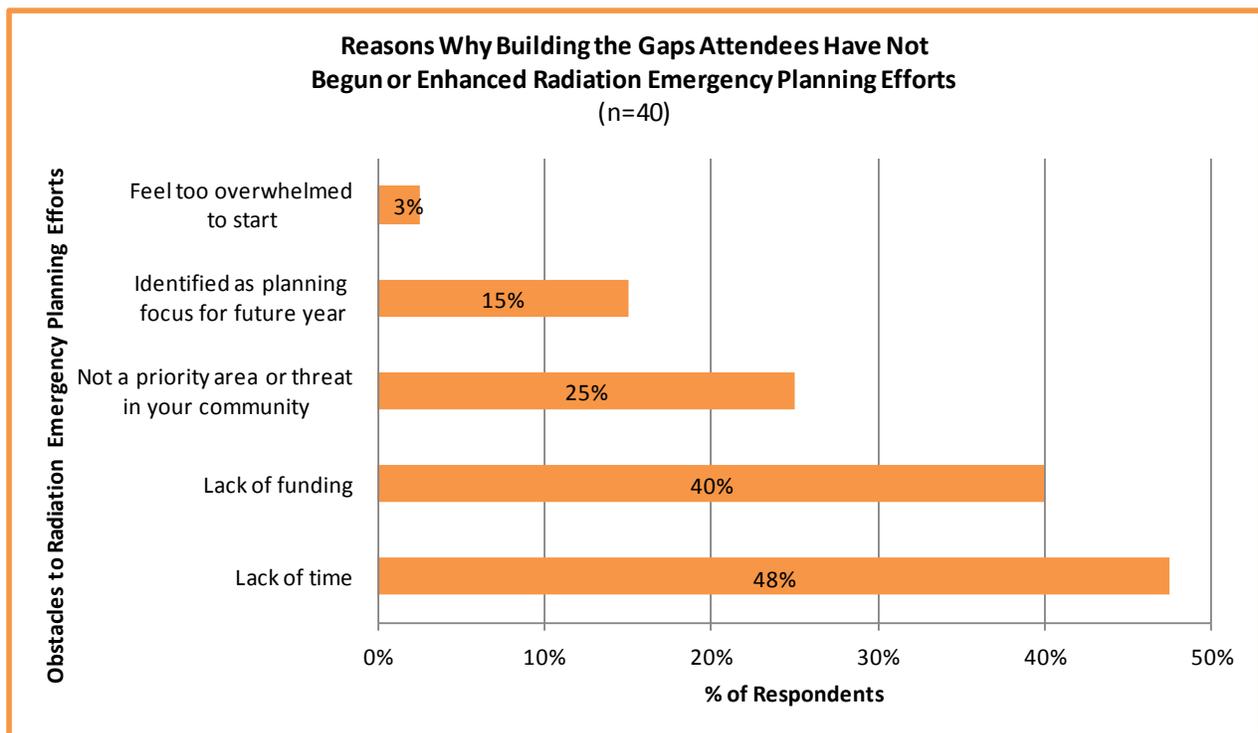
Noting time constraints, another respondent explained, “Many folks are being asked to do more

with less. Most state radiation protection programs do not have a dedicated asset to do just this one critical job.”

Lack of funding was identified by 40 percent of respondents as an obstacle to beginning or enhancing radiation emergency planning efforts. “There currently are no dedicated funds to do the amount of work necessary to implement all lessons learned and to develop the planning tools necessary. Also, there are no funds to buy necessary equipment,” one respondent explained.

Additional respondents indicated that, while they recognized the importance of planning for radiation emergencies, they were unable to devote resources to this issue due to competing priorities. As one respondent stated, “Preparedness for a nuclear detonation is a hard sell in the face of competing responsibilities.” Another noted that the “risk is low, so other more likely events take planning priority.” A third described a “lack of significant urgency in light of other preparedness initiatives and normal public health programs that have a steadily declining funding and resource base.”

Figure 8



“We respect the threat potential to any community, but there are other hazards and planning efforts that pose a higher threat probability to our community. We are trying to practice due diligence based on personnel, funding, and time.”

More than one-third of respondents offered additional reasons for why they had not begun or enhanced their radiation emergency planning efforts. Most commonly, respondents indicated that they lacked the authority or it was another individual’s or agency’s responsibility to initiate or lead these efforts. One described the challenge of “convincing folks that something could actually happen.” Another was concerned about a perceived “unwillingness to plan for radiological incidents without it being specifically required by the federal government or a grant deliverable.” Many respondents noted multiple obstacles. As one described, “We respect the threat potential to any community, but there are other hazards and planning efforts that pose a higher threat probability to our community. We are trying to practice due diligence based on personnel, funding, and time.”

An encouraging finding is that only one respondent reported feeling too overwhelmed to start planning efforts, and 15 percent of respondents identified radiation emergencies as a future planning focus.

NACCHO asked all attendees to identify the primary gap or obstacle to their radiation emergency planning efforts. Many of the responses fell under the broad categories defined in Figure 8, while others revealed very specific challenges. Several pointed toward gaps in information, commenting on the “lack of pertinent, digestible information,” “difficulties in establishing who the experts in this field are,” and “lack of details in how federal and state agencies will support response.” One wondered “how to handle questions from the public about whether they have been exposed and what they should do.” Another found using material provided by the Department of Energy difficult, stating that the material was “biased towards the nuclear industry.” A third noted a lack of “understanding of where the best credible information will come from—and how quickly it will be available. We are concerned not only with information pertaining to personal safety [but also with] how the incident might affect the regulation of our industry. For example, would a store have to get rid of all of its stock (food, medicines)? Where are the lines of demarcation for those kinds of actions?”

Other respondents questioned whether the challenges associated with radiation emergencies were fully recognized and adequately addressed. One respondent offered, “I think there is an understanding that there is a threat; however, it is also a very specialized area of study.” Another doubted that there is “a full realization on the part of responders at all levels as to the scope of consequences of a radiological incident.” A third criticized “decision makers’ failure to recognize a need to prepare for radiation emergencies and the incomprehensible focus on [technical assistance review] scores rather than ensuring preparedness.”



Several others struggled with the gap between the progress they have made and the recognition of the work that remains to be done. One respondent noted that there is “not enough time or funding to address gaps identified in assessments and exercises.”

Frustrated by staffing needs, another respondent explained that “planning efforts are useless without the staff to monitor progress and staff to train” and described “difficulty engaging key responders because staff is doing so many tasks.” A third explained that while “planning appears to be fine, carrying out the plan, especially in a Community Reception Center scenario when assessing the long-term health effects of radiation to individuals, could be a problem due to staffing constraints. We have to find more health physicists who would be available to operate outside their healthcare institutions in an emergency.” Another lamented, “We have radiation detectors in the hospital, but they are either being ignored or not noticed by the EMS or hospital staff if they alarm. Or when [the alarms are] noticed, the staff doesn’t always know what to do.”

A few respondents questioned the application of broader approaches or guidance to their organizations’ planning efforts. One respondent expressed frustration with “trying to apply a state-sponsored ‘one size fits all counties’ plan to a large metropolitan area where there are individuals/agencies with more expertise in responding to this type of emergency.”

Another respondent cautioned, “CDC recommendations are too extensive for even state resources to support. CDC needs to understand that if these recommendations (Bioassay/Dose Assessment) are to be done at a CRC, they need to get their partner agencies to provide that as a resource. No locals and very few states will have the supplies/personnel/expertise to conduct that.”

Addressing Obstacles

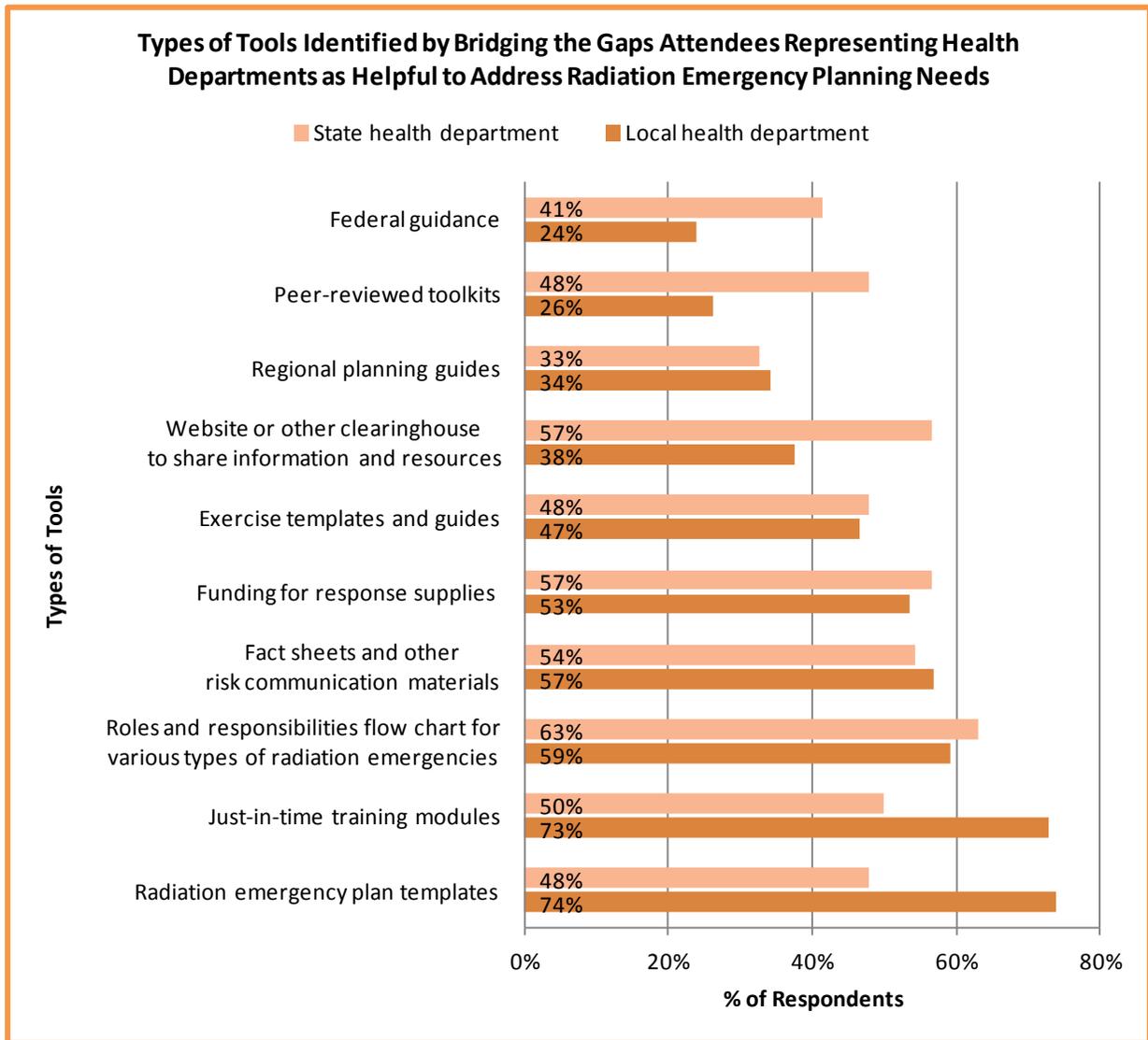
Helpful Tools

NACCHO asked Bridging the Gaps attendees what types of tools would be helpful to address their planning gaps. Among the 182 responses, 63 percent indicated that a radiation emergency plan template would be useful. Other popular options included just-in-time training modules (60%) and a roles and responsibilities flow chart for various types of radiation emergencies (58%).

These three options were also most frequently chosen by representatives of LHDs, with nearly three-quarters interested in radiation emergency plan templates (74%) and just-in-time training modules (73%) (Figure 9). A roles and responsibilities flow chart for various types of radiation emergencies was the third most popular choice for LHD representatives (59%) and the top choice for those representing SHDs (63%). Funding for response supplies and a website or other clearinghouse to share information and resources were tied for second choice among SHD representatives, with 57 percent indicating such options would be helpful.

Conferences like Bridging the Gaps appear to be popular forums for learning about available tools and resources, networking with preparedness colleagues, and obtaining advanced training on specific radiation emergency concepts.

Figure 9



NACCHO offered attendees the option to suggest other tools in addition to the pre-designated categories. Several suggested public information efforts, including a national awareness campaign and a video showing the risks associated with radiation emergencies. Others suggested requiring or encouraging radiation emergency planning in

Public Health Emergency Preparedness (PHEP) grants, with one person stating, “Please require this planning. It’s extremely important and will not be attended to otherwise.” One noted the need for “databases such as [Environmental Protection Agency’s] Scribe to be able to store all the data...need exposure databases, databases to store

environmental sampling, databases to store sampling of homes and businesses.” Another asked for “clear distinction as to what will be local public health supplied versus state/federally supplied in equipment and trained personnel.” Other suggestions included an assessment tool for each geographic area to identify resources and federal agreement on applicable standards.

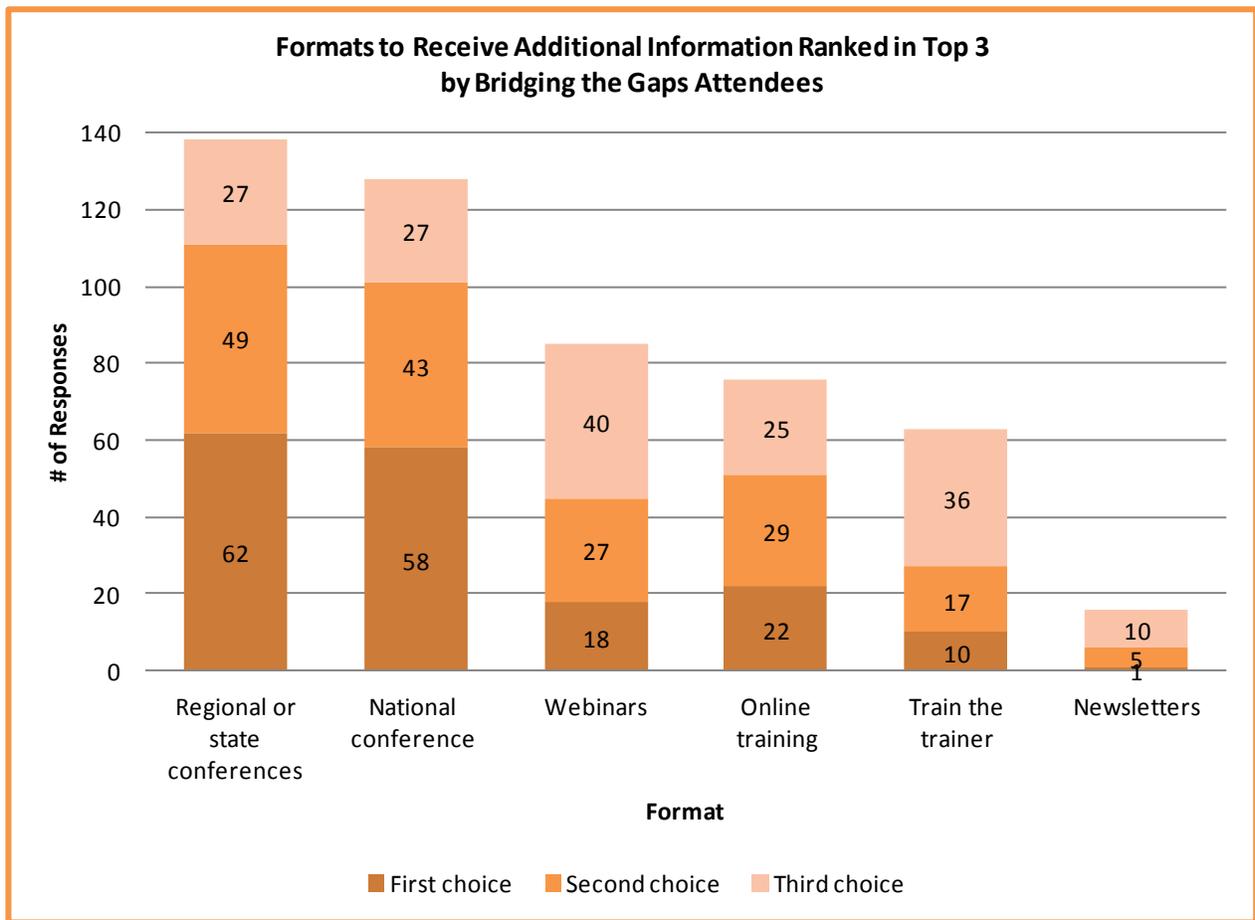
Survey findings revealed an underused resource for sharing and accessing tools. The National Alliance for Radiation Readiness (NARR), a coalition of public health, healthcare, and emergency management organizations representing practitioners in the field of radiation readiness, hosts a clearinghouse for sharing and evaluating practices, resources, and tools. When respondents were asked about their awareness of NARR, 38 percent reported no knowledge of the coalition. Among the 85 respondents who indicated that a website or other clearinghouse would be a useful tool to share information and resources, 31 percent were not aware of NARR.

Conferences like Bridging the Gaps appear to be popular forums for learning about available tools and resources, networking with preparedness colleagues, and obtaining advanced training on specific radiation emergency concepts. Referring to Bridging the Gaps, one respondent explained, “The conference was extremely valuable to locals who didn’t understand the federal side. Networking and sharing ideas from across the nation proved to be helpful while exploring new ideas. I would love to see another conference to continue the much needed support for radiological programs.” Another attendee reported, “I hope you plan to have another conference so more MRC volunteers can attend. The conference last year was eye-opening and I made great contacts.”

Other respondents expressed the desire to learn about best practices, be able to ask questions, and access practical tools and guidance. As one respondent explained, it is critical to “obtain national standards and peer reviewed best practices suitable for implementing locally.” Respondents also saw opportunities to identify key points of contact, increase engagement between state and local partners, and work on consensus procedures. One hoped to gain “agreement between agencies about [the] need for integrated planning between health and emergency management agencies.” Another sought opportunities to “provide feedback to the state on resource needs...collaborative planning rather than this top-down stuff we have been getting.” Other ideas included elevating awareness of the importance of planning and understanding avenues to train regions that do not have power plants.

NACCHO asked attendees to indicate which of six formats would be useful for them to receive additional information in and to rank them according to preference (Figure 10). “Regional or state conferences” was the most frequently chosen format, with 162 total responses. The second most frequently chosen format was “national conferences” with 154 responses. “Newsletters” was the format least frequently chosen as helpful with 114. When providing additional comments, one individual suggested regional focused “incremental” trainings. Another cautioned that “national conferences would be best, but without federal funding states often cannot attend.” Additional suggestions included a list service like the one used by the Strategic National Stockpile or online template documents representing national best practices.

Figure 10



Funding

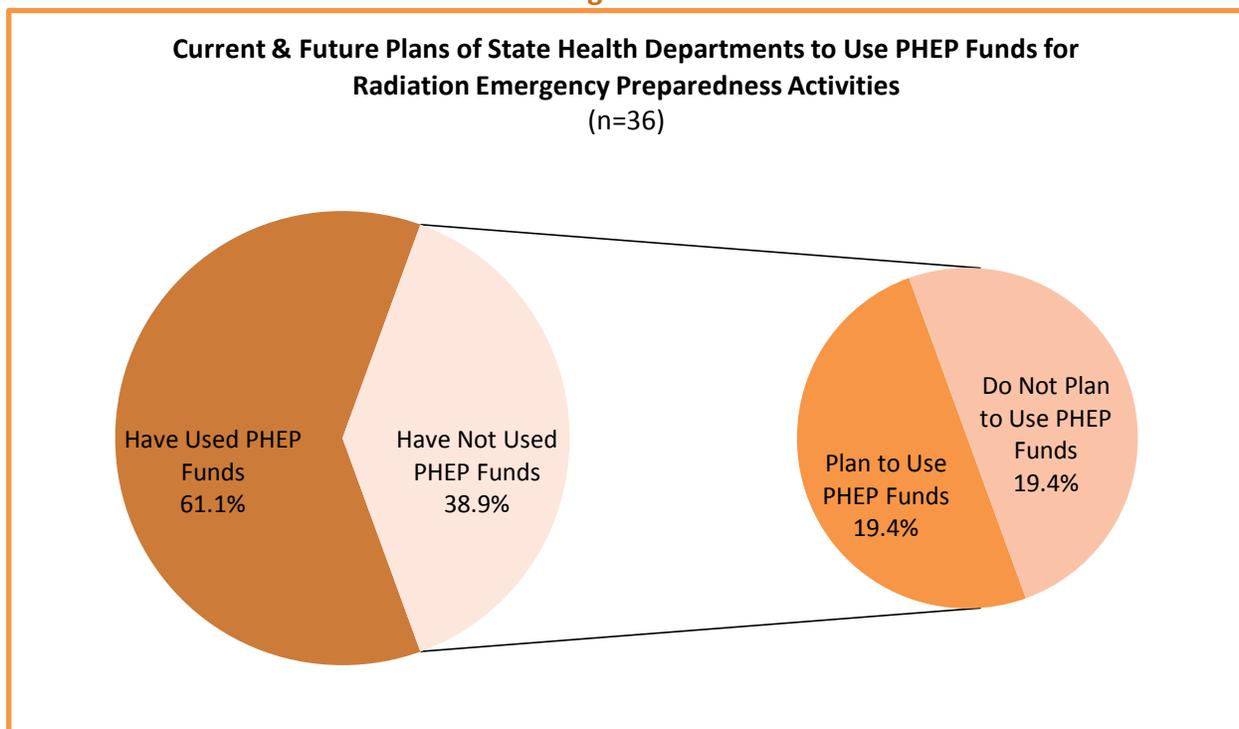
The CDC Public Health Emergency Preparedness (PHEP) cooperative agreement is the primary funding source for overall public health preparedness activities undertaken by health departments nationwide. The direct recipients of PHEP funds are health departments in all 50 states, four directly funded cities, and eight territories and freely associated states. Local and tribal health departments are frequently indirect recipients of PHEP funds through their SHDs.

Thirty-one percent of respondents reported using PHEP funds to carry out radiation preparedness activities. The majority of respondents had not used PHEP funds, likely reflecting the fact that they were not recipients of such funds rather than a lack of

interest in using them for radiation emergency preparedness. As one person explained, “If CDC PHEP funds are available, I would most certainly ensure that the people who need to use them do so.” Many respondents indicated they had no access to PHEP funds.

As the direct recipients of PHEP funds, representatives of SHDs were most likely to report using them for radiation emergency preparedness. Sixty-one percent of the 36 SHD representatives who responded to this question indicated that they used PHEP funds for this purpose (Figure 11). Among those who had not used PHEP funds to carry out radiation emergency preparedness activities, half planned to do so in the future.

Figure 11



Overall, 74 percent of attendees representing LHDs or SHDs had used or planned to use PHEP funds to carry out radiation emergency preparedness activities.

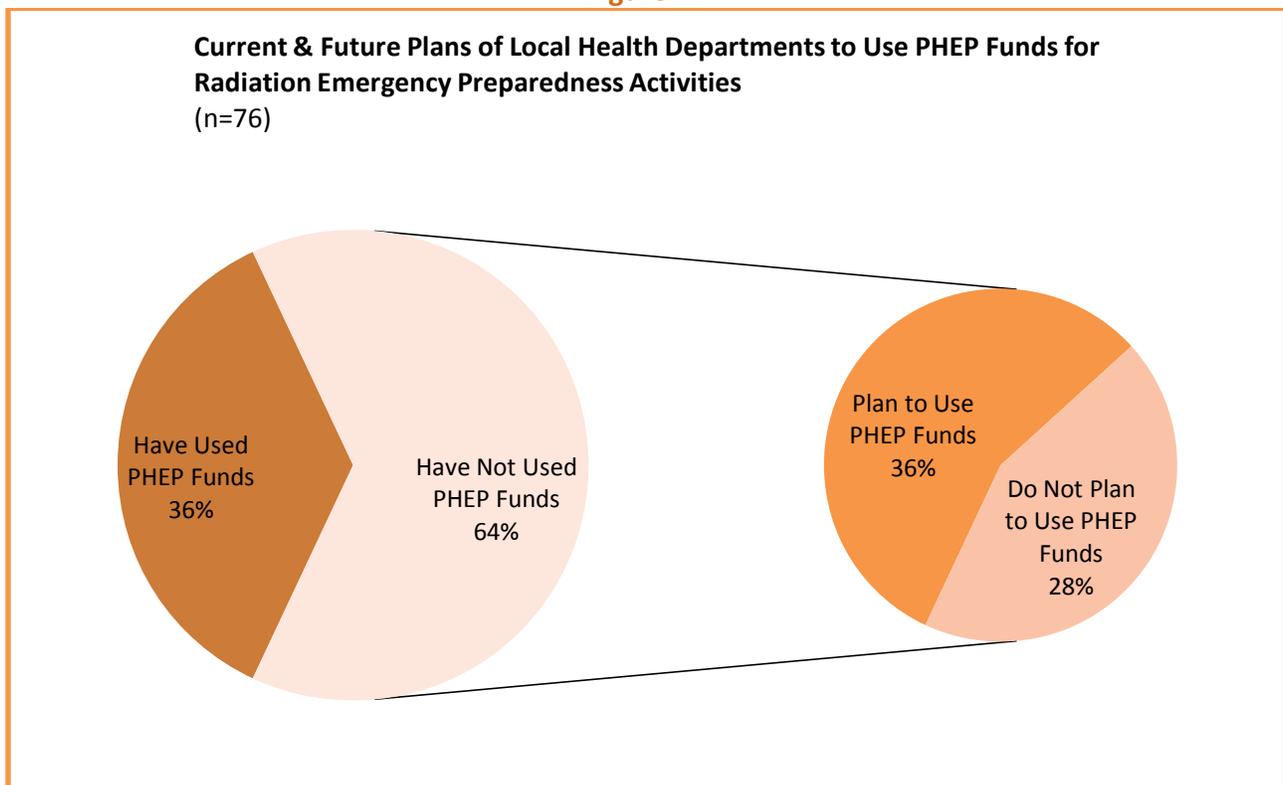
Representatives of LHDs, the organizations most likely to receive PHEP funds through their SHDs, were slightly more likely than overall respondents to report using these funds for radiation emergency preparedness. Among the 76 LHD representatives, 36 percent reported using PHEP funds for this purpose (Figure 12). An equal number, who had not used PHEP funds for radiation emergency preparedness, planned to do so in the future.

Overall, 74 percent of attendees representing LHDs or SHDs had used or planned to use PHEP funds to carry out radiation emergency preparedness activities. However, these plans depend on health departments receiving sufficient PHEP funding to

support radiation emergency preparedness activities.

As one respondent explained, “The yes to us using funds is contingent on adequate funds being available, which is highly unlikely in the current decremental [sic] funding environment.” Additionally, CDC does not require PHEP awardees to use their funds to address radiation emergency preparedness. This lack of requirements filters down through states to the local level. One respondent stated, “Being [an] LHD, our funding guidance and grant deliverables come from the state. The LHDs will address radiation preparedness when the states prioritize and allocate funding to address it.”

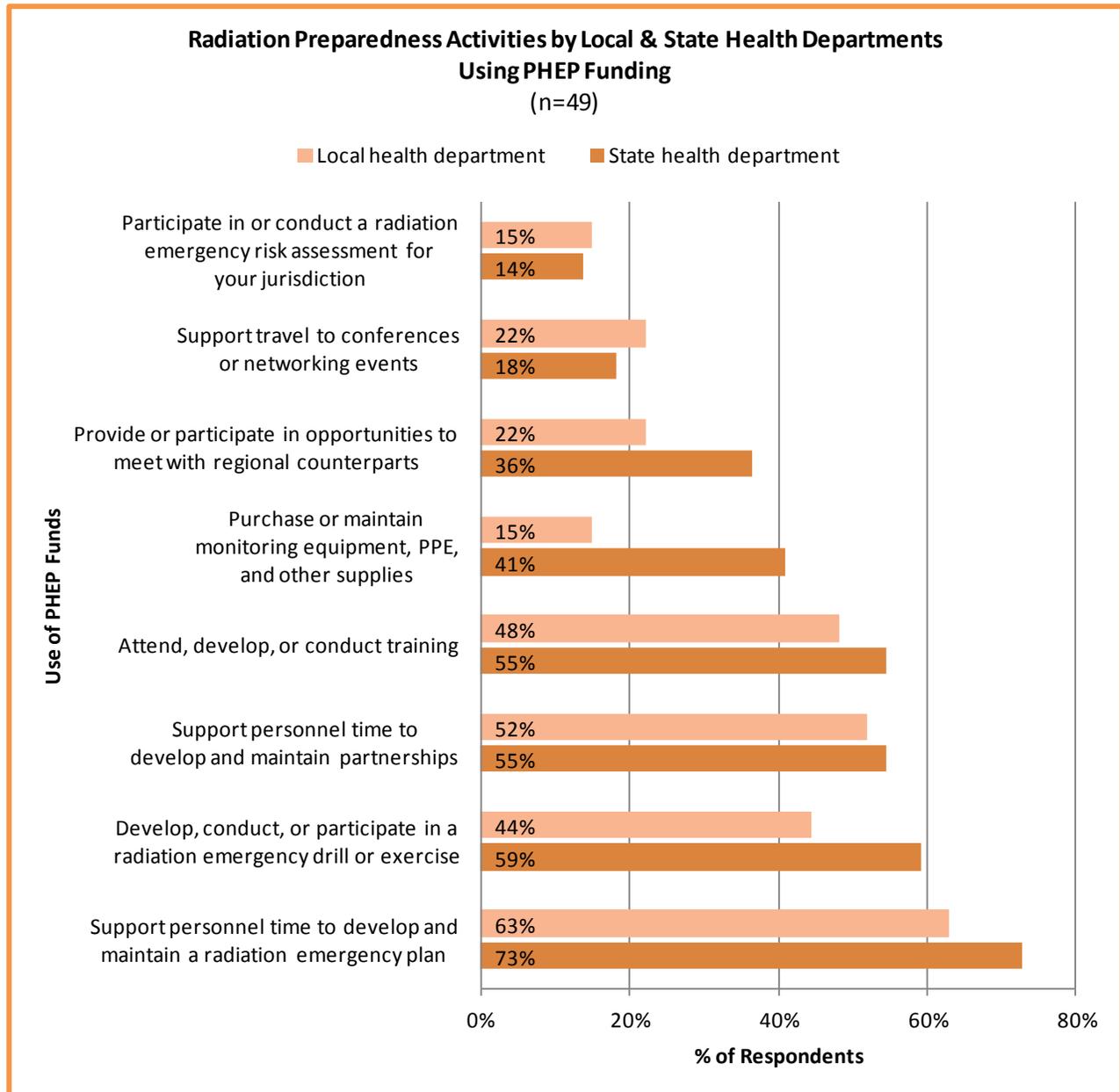
Figure 12



The most common radiation preparedness activity identified by LHDs and SHDs using PHEP funding was supporting personnel time to develop and maintain a radiation emergency plan (Figure 13). This was done by 73 percent of SHDs and 63 percent of LHDs. SHDs (59%) were more likely than LHDs (44%) to develop, conduct, or participate in a radiation emergency drill or

exercise. SHDs were also much more likely than LHDs to report purchasing and maintaining monitoring equipment, personal protective equipment, and other supplies (41% versus 15%) and providing or participating in opportunities to meet with regional counterparts (36% versus 22%).

Figure 13





Discussion

Radiation emergency preparedness is an unfamiliar topic in many health departments, particularly at the local level. Seventy-one percent of SHDs conduct radiation control activities, typically as part of their environmental health program.¹ In contrast, only 13 percent of LHDs include radiation control within the scope of their activities.² This difference between LHDs and SHDs is likely a function of both staffing and perceived threats. Overall, the median number of full-time equivalent staff positions in SHDs is 1,224³ as compared to 17⁴ in LHDs. With a larger number of positions available, SHDs are more likely to be able to devote a staff member at least part-time to radiation emergency preparedness or hire individuals with expertise in this area. In contrast, given the limited number of personnel available to address all of the public health issues present in a community, many LHDs cannot assign staff to radiation preparedness

activities unless radiation preparedness has been identified as a high-risk hazard. Historically, this has been more likely to be the case for jurisdictions that fall within the 50-mile radius emergency planning zone surrounding a nuclear power plant. According to the U.S. Nuclear Regulatory Commission, there are currently 104 nuclear power reactors located in 31 states.⁵ While many LHDs do not serve populations within these emergency planning zones, most SHDs either have a reactor within their jurisdiction or serve a portion of the population that falls within the emergency planning zone of a reactor in a neighboring state. As a result, SHDs have had a head-start in planning for radiation emergencies. However, concerns about a terrorist attack using an improvised nuclear device or radiological dispersal device have expanded the need to plan for radiation emergencies to all areas of the country. Many health departments that have not been focused on these threats in the past need assistance to build their expertise in radiation readiness.

Days after the Bridging the Gaps conference ended, the White House issued Presidential Policy Directive/PPD-8: National Preparedness. PPD-8 focuses preparedness efforts in the whole community, from the federal government to individual citizens, around developing core capabilities to effectively prevent, protect, mitigate, respond to, and recover from threats determined to pose the greatest risk to the nation.

One of the components of PPD-8 was an unclassified Strategic National Risk Assessment in December 2011. Among the national-level events of concern are an accidental radiological substance release from a reactor or a human-caused nuclear or radiological terrorism attack. As part of the integrated, whole-community approach to preparedness of PPD-8, local and state governments are expected to conduct their own risk assessments to identify likely threats to their jurisdictions.

Attendees of Bridging the Gaps are actively engaged in assessing the risk of a radiation emergency impacting their jurisdictions. Among the LHD and SHD representatives who reported making progress in their plan development and

LHDs and SHDs will have a significant role in the response to a radiation emergency, but Bridging the Gaps attendees have concerns about whether that role is being recognized by others.

improvement activities since the conference, more than a quarter had completed risk assessments, an activity commonly supported by PHEP funding. Among LHDs and SHDs that used PHEP funds for radiation preparedness activities, approximately 15 percent had used funds to participate in or conduct a radiation emergency risk assessment for their jurisdictions. Less formal risk assessments also guide determinations of which capabilities not to pursue. Among the respondents to the NACCHO survey who had not begun or enhanced their radiation emergency planning efforts since the conference, 25 percent reported they had not done so because radiation emergency was not a priority area or threat in their community.

Achievement of the vision of PPD-8 requires the implementation of the capabilities needed to address identified risks. The public health community had already begun work in this area when PPD-8 was issued. In March 2011, the CDC released *Public Health Preparedness Capabilities: National Standards for State and Local Planning*. This document identifies 15 capabilities that form the basis of local and state public health preparedness. Grantees of CDC PHEP funds are expected to make continued progress toward achieving these capabilities over a five-year period. Additionally, in September 2011, a National Preparedness Goal was released as another component of PPD-8. The National Preparedness Goal identifies core capabilities, including Public Health and Medical Services, based on the Strategic National Risk Assessment that must exist to enable preparedness.

Due to the timing of the documents' release, LHDs and SHDs have not yet felt the full impact of these two capabilities-related documents. However, findings from the NACCHO survey suggest that Bridging the Gaps attendees have begun to consider how to identify and develop capabilities unique to the practice of public health. The primary concern of LHDs and SHDs is protecting the public from

illness and injury. In the event of a radiation emergency, protecting the public will involve triaging individuals based on assessment of their radiation exposure, assisting with decontamination efforts, leading the provision of appropriate medical countermeasures, coordinating the movement and medical treatment of large numbers of people, making determinations about scarce public health and medical resources, and providing risk communication to the general public and responders to improve their safety.

While Bridging the Gaps attendees recognize that these issues need to be considered, they may not have all of the tools necessary to do so. LHDs and SHDs will have a significant role in the response to a radiation emergency, but Bridging the Gaps attendees have concerns about whether that role is being recognized by others. As one respondent explained, "There is a lack of [support] from key high-level officials, who fail to understand the mission we are tasked with. There is a misbelief that local HazMat will handle all things radiological.... [Officials may not recognize] that this is not feasible for a months-long operation." The extensive partnership activities in which Bridging the Gaps attendees are engaged may increase awareness of the roles and responsibilities of partners across the whole community and lead to a greater coordination of resources. Continued development of such partnership activities will be encouraged as PHEP grantees work to meet the CDC's Community Preparedness capability.

Even when the role of LHDs and SHDs is recognized, concerns exist about the ability to meet this role. One attendee stated, "We do not have the resources or subject matter experts to help us support a CRC." Other attendees expressed the same concerns, noting the inability to purchase radiation monitoring and other equipment. The number of staff available and the lack of knowledge

related to radiation were viewed as major obstacles to operating a CRC.

While LHDs and SHDs have engaged in extensive planning related to the distribution and dispensing of medical countermeasures, the developed strategies may not be appropriate for addressing acute radiation syndrome. An attendee described the need “to expand beyond [points of dispensing (PODs)] for mass prophylaxis,” stating, “To continue to spend funds to test ‘thru-put’ in a POD to dispense medications is no longer needed; we know how to do this. We need federal directives and [a] shift in funding to become proficient in other areas like radiation response.”

The ability to coordinate medical care for thousands of patients was an underlying concern for many Bridging the Gaps attendees. One respondent urged, “There *must* be a clear [federal] mandate with associated guidance and funding, which will enable *all* hospitals throughout the [United States] to have a uniform, practical, and effective plan, education program, and physical capabilities to be able to quickly manage multiple patients resulting from a large-scale radiological event.”

Because the dissemination of accurate educational messages may reduce the number and extent of injuries and deaths resulting from a radiation emergency, LHDs and SHDs have a major stake in providing effective risk communication. More than half of the health department representatives at Bridging the Gaps who responded to the NACCHO survey indicated that fact sheets and other risk communication materials would be helpful tools to address their radiation emergency planning needs. Qualitative responses also suggested that uniform, science-based materials such as pre-developed messages or an awareness campaign would be helpful resources.

Bridging the Gaps attendees clearly expressed a desire for additional guidance, with LHD representatives seeking practical tools like just-in-time training modules and SHD representatives looking for broader federal guidance. The CDC’s Public Health Preparedness Capabilities include suggested resources that may assist in fostering radiation readiness.

Coordination of activities with partners and clear and supportive guidance are especially important to future advancements in radiation emergency preparedness given the current state in which health departments are operating. In the most recently completed fiscal year, 84 percent of LHDs received federal funds to support their public health preparedness activities; 59 percent relied exclusively on federal funds for their preparedness efforts.⁶ The proposed fiscal year 2013 funding level for PHEP, the primary source of federal public health preparedness funding, represents a 27.8-percent cut in total funding since fiscal year 2004.⁷ These cuts occur as health departments are expected to build and maintain readiness for a growing number of infectious disease threats, disasters, and potential acts of terrorism. According to NACCHO data, 23 percent of LHDs reported reductions in their emergency preparedness programs in 2011.⁸ Nearly 40,000 LHD jobs have been lost since 2008.⁹ These reductions in staffing and programmatic support will likely compound the inability of LHDs to devote resources to radiation emergency preparedness. The combined efforts of multiple partners will be necessary for jurisdictions to achieve an appropriate level of radiation readiness.

Bridging the Gaps was a valuable method of motivating LHDs, SHDs, and other agencies to address the need for improved radiation emergency preparedness.

Conclusions

Bridging the Gaps was a valuable method of motivating LHDs, SHDs, and other agencies to address the need for improved radiation emergency preparedness. Attendance raised awareness and provided education on key radiation emergency preparedness concepts. “Bridging the Gaps was an important national conversation on radiation readiness. The nation would benefit with more such conversations,” said one attendee. Attendees made an immediate impact in their home communities by sharing materials from Bridging the Gaps with their coworkers and partners and by implementing tools or resources they learned about at the conference in their planning efforts. Additionally, nearly 80 percent of attendees have begun radiation emergency planning efforts or have enhanced existing ones since the conference. Similar future conferences at the national, regional, or state level would likely build on this progress.

Staffing is an obstacle to advancing radiation emergency readiness. Attendees reported a lack of time to focus on radiation emergency planning that was partially due to the lack of personnel available to devote all or part of their time to these efforts. A lack of funding prevents the hiring of additional staff. Existing personnel frequently juggle multiple responsibilities and are forced to concentrate their efforts on threats that are considered a higher priority or more immediate. The staffing issue is particularly acute for LHDs, which have seen dramatic cuts in personnel and programs in recent years. Further advances in the nation’s radiation emergency preparedness will be difficult without a stable, skilled, and trained workforce that has access to tested tools and resources.

Despite the challenges, Bridging the Gaps attendees are interested in improving their radiation emergency preparedness. Respondents expressed the desire to learn about best practices, be able to ask questions, and access practical tools and

guidance. They shared opinions on the types of tools that would be helpful and their preferred formats for receiving additional information. Many of the tools that attendees suggested would be most useful in advancing their radiation emergency planning efforts are currently being collected through NARR. Increasing awareness of NARR and encouraging the exchange of resources on its website would create a link between the identified needs and the available tools, thereby potentially leading to improvements in overall radiation emergency preparedness.

The quantity of guidance available to support radiation emergency preparedness continues to grow. The CDC’s Public Health Preparedness Capabilities include radiation emergencies as a planning consideration across the capabilities and suggest resources to assist grantees in achieving the capabilities. As additional components of PPD-8 are rolled out, Bridging the Gaps attendees will be able to see how their unique roles fit into the larger picture of the whole-community approach to radiation emergency preparedness.

References

1. Association of State and Territorial Health Officials. (2011). *ASTHO Profile of State Public Health: Volume 2*. Retrieved from <http://www.astho.org/display/assetdisplay.aspx?id=6588>.
2. National Association of County and City Health Officials. (2011). *2010 National Profile of Local Health Departments*. Retrieved from http://www.naccho.org/topics/infrastructure/profile/resources/2010report/upload/2010_profile_main_report-web.pdf.
3. Association of State and Territorial Health Officials. (2011).
4. National Association of County and City Health Officials. (2011).
5. Nuclear Regulatory Commission. (2009). *Backgrounder on Emergency Preparedness at Nuclear Power Plants*. Retrieved from <http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/emerg-plan-prep-nuc-power-bg.html>.
6. National Association of County and City Health Officials. (2011).
7. National Association of County and City Health Officials. *Local Health Departments Prepare for and Respond to Emergencies*. Retrieved from <http://www.naccho.org/advocacy/upload/preparedness-with-chart.pdf>.
8. National Association of County and City Health Officials. (2012). *Local Health Department Job Losses and Program Cuts: Findings from January 2012 Survey*. Retrieved from <http://www.naccho.org/topics/infrastructure/lhdbudget/upload/overview-report-final-revised.pdf>.
9. Ibid.

Acknowledgments

This report was supported by Award Number 5U38HM000449-04 from the Centers for Disease Control and Prevention. NACCHO is grateful for this support. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the CDC.

NACCHO thanks the following staff who contributed to this report: Jack Herrmann, MSED, NCC, LMHC; Carolyn Leep, MS, MPH; Jennifer Nieratko, MPH, NACCHO Consultant; and Tim Siemsen.

For more information, please contact:

Tim Siemsen

Director, Pandemic and Catastrophic Preparedness
202-756-0163
tsiemsen@naccho.org