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TECHNICAL
REPORT

Process Evaluation of Project Public Health Ready

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Sponsored by the National Association of County and City Health Officials

Center for Domestic and
International Health Security
A RAND HEALTH PROGRAM

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PREFACE

Even before the events of fall 2001, public health officials understood the need to prepare the nation for bioterrorism and other public health emergencies. Those events presented a new sense of urgency around the development of preparedness plans and procedures for emergency response at the national, state, and local level, as well as preparing the emergency response and public health communities to perform effectively at the front lines of such an event.

Project Public Health Ready aims "to prepare staff of local governmental public health agencies to respond and protect the public's health through a competency-based training and certification program." The program is voluntary and participants receive recognition for their efforts. Project Public Health Ready is a collaborative activity of the National Association of County and City Health Officials (NACCHO); the Center for Health Policy at the Columbia University School of Nursing; and the Centers for Disease Control and Prevention (CDC), Public Health Practice Program Office, Office of Workforce Policy and Planning. Launched in June 2003, the project has three key components: (1) Preparedness planning; (2) competency-based training; and (3) drills/exercises.

In March 2004, NACCHO contracted with the RAND Center for Domestic and International Health Security, a RAND Health program, to evaluate the pilot year of its Project Public Health Ready program. This report describes the results of this evaluation. The report begins with a brief description of the public health preparedness context, NACCHO, and Project Public Health Ready. We then describe our evaluation methodology and summarize our findings. Finally, we describe the resulting conclusions and recommendations.

This report was prepared specifically for NACCHO, but it should be of interest to individuals working in public health preparedness at the federal, state, and local levels, and especially to local public health agencies in Project Public Health Ready or considering participating. Comments or inquiries should be sent to the RAND Principal Investigator Michael Stoto (mstoto@rand.org).

This work was sponsored by NACCHO with funding from CDC. For more information about the RAND Center for Domestic and International Health Security, please visit http://www.rand.org/health/healthsecurity/. The mailing address is RAND Corporation, 1200 South Hayes Street, Arlington, VA 22202. More information about RAND is available at http://www.rand.org.

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BACKGROUND

The National Association of County and City Health Officials (NACCHO) in March 2004 contracted with the RAND Center for Domestic and International Health Security to evaluate the pilot year of its Project Public Health Ready program. This report describes the results of this evaluation. The report begins with a brief description of the public health preparedness context, NACCHO, and Project Public Health Ready (PPHR). We then describe our evaluation methodology and summarize our findings. Finally, we describe the resulting conclusions and recommendations.

Specific evaluation objectives, which were developed in consultation with NACCHO project leaders, were to:

- Identify issues related to project management and implementation that can be used both immediately and in the future to improve program quality.
- Identify appropriate ongoing evaluation strategies for subsequent years of PPHR.
- Describe whether, how, and the extent to which local public health agencies used the PPHR program and took advantage of the resources built into the process.
- Describe a sample of participants' preparedness to respond to a bioterrorism event following participation in the project (and, if feasible, compare current with prior preparedness).
- Describe participants' perceptions of the value of the program, especially regarding enhancement of knowledge and skills related to emergency preparedness.
- Provide NACCHO and its partners with data that can be used to inform future program direction.

METHODS

In the initial year of the PPHR program, 13 sites were recruited and 2 did not complete the requirements. We interviewed individuals from all 11 sites that completed the PPHR requirements.

Interviews for three of the sites were conducted during in-person visits. During our site visits, we also conducted a tabletop exercise on preparedness and interviewed at least one individual from the state health department and the academic public health preparedness center associated with each location. These sites

were selected based on recommendations from NACCHO Project Public Health Ready staff and their location in diverse geographic areas and within states with a variety of public health organizational structures, and they may not be representative of other PPHR sites. Interviews for the remaining eight sites were conducted via telephone.

The semi-structured interviews lasted approximately 45 minutes and allowed for participants' additional comments throughout. In all interviews, participants were assured of the anonymity and confidentiality of their individual responses. They were also informed that participation was voluntary and would have no impact on future PPHR recognition or participation. RAND's Institutional Review Board approved this project and our methodology.

CONCLUSIONS AND RECOMMENDATIONS

Overall, Project Public Health Ready was a positive force in the efforts of participating local public health agencies (LPHAs) to prepare for bioterrorism and public health emergencies. Participation in the project provided these LPHAs with (1) a framework to use in organizing their preparedness activities; (2) ideas, materials, and support from their colleagues in the national program, academic public health preparedness centers, and elsewhere; and (3) recognition for their department's efforts. Additional positive results included improved relationships with critical local partners and an improved sense of purpose and understanding of public health functions among department staff. It was not possible to clearly differentiate PPHR activities from other preparedness efforts mandated by CDC, state health departments, and others, but participating departments generally felt that their participation in PPHR helped them to better meet all of their expectations. In particular, PPHR deadlines and requirements led LPHAs to become prepared earlier than if they had not participated in the program. Although a systematic outcome assessment was beyond the scope of our work, we were impressed with the bioterrorism-related activities and planning discussed by the LPHAs that we site visited, and especially with their performance in the tabletop exercise.

Most of the limitations of the project were associated with its status as a pilot program and the early state of development of standards, materials, and knowledge about public health preparedness. LPHAs began the project without a clear idea of the requirements, which were developed during the pilot year. PPHR requirements were, to some extent, inconsistent with state and CDC expectations, themselves very much in flux. Guidance and materials that participants thought would be provided were either not available at all, or the partner academic centers and state health departments were not able to locate and supply them. Support from academic centers and state departments generally was variable, depending in part on these partners' own state of development. Interviewees praised NACCHO staff for their efforts, especially given the challenging start-up situation.

Although there were often substantial non-reimbursed costs associated with participating in PPHR, each of the participating departments said that they were glad to have chosen to be part of the program and would participate again.

Based on the interview and exercise findings that are detailed in the report, the evaluation team offers the following findings and conclusions, followed by associated recommendations, to NACCHO and its partners as they shape future rounds of PPHR.

Table S.1
Summary of Key Themes and Corresponding Recommendations

Findings	Recommendations
Overall PPHR Assessment	
• PPHR provides a useful, relevant, efficient, and needed model for organizing public health preparedness planning and training activities as well as assessing and improving workforce competencies. With the incorporation of the recommendations included in this report, it has the potential to become an important tool for LPHAs—and indeed regions and states—nationwide. • PPHR and its components are seen by many as models or paradigms for dealing with a variety of day-to-day public health issues—from HIV-contact-tracing investigations to setting up clinics for flu vaccination campaigns. • The recognition attached to successful PPHR completion is very important to LPHAs. It is a reward for their hard work as well as a leverage point for greater recognition in their communities and states. • In some cases, LPHAs' PPHR efforts were conducted in close collaboration with surrounding communities that were not formal participants in the project.	1. Continue the PPHR project, seeking to implement it on a larger scale and potentially organizing it at the state or regional level.

Findings	Recommendations
Implementation	
• Sites had little guidance regarding the best way to actually implement the PPHR activities. Most found creative ways to get started that suited their agency characteristics and culture. They described what worked (and what did not work) about the approaches they developed. • PPHR is not a "one size fits all" project. LPHAs worked hard to implement it in ways that were appropriate for their characteristics and culture. No two sites had the same approach, mix of individuals involved, or financial or staffing circumstances at the outset. • Leadership from the LPHA director or other key leaders is essential to successful completion of the requirements.	2. Provide new sites with case studies of the approaches that the pilot sites undertook to implement PPHR activities, with an emphasis on the appropriateness and adaptability of each approach to LPHAs with different characteristics and cultures. Include the key role of LPHA leaders.
Site Characteristics	
• The pilot sites – particularly those that received site visits from the evaluation team –were in many ways among the "cream of the crop." Despite the differences in the PPHR approaches and products, 11 out of the 13 sites that began the program received PPHR recognition.	3. NACCHO and its partners must be cautious in adapting the model to future participating sites, which may not enter the project with the same capacities, public health and political savvy, and level of preparedness as the pilot sites. Encouraging a mentoring relationship with past PPHR participants is one potential way to address this.
Time and Effort	
• Although most believed that PPHR participation was well worth the time and resources required, they were all concerned with the lack of adequate staff to complete the PPHR requirements at the same time that they had to continue fulfilling their day-to-day public health roles and activities. • Some LPHAs encountered conflicts between PPHR requirements and state or CDC requirements for bioterrorism preparedness.	4. Work with partner agencies, including CDC, to enhance state's understanding of and engagement with LPHAs' PPHR activities. 5. Provide templates or guidance for meshing PPHR plans with existing local, state, or regional preparedness plans. Most LPHAs entering PPHR this year will have already developed plans as part of these broader efforts and should not have to reinvent the wheel.
Plan Development and Writing	
• While training usually addressed a wide array of LPHAs' staff, the development and writing of preparedness plans tended to center around the LPHA director and/or other core leadership staff. In some cases, just one person wrote the plan.	6. Require a participatory plan development and writing approach. Extending timelines and providing tools for plan development—including sample work plans—may be needed to facilitate this.

Findings	Recommendations
Changes in Priorities, Deliverables, and Timing	
• LPHAs voiced substantial frustration over shifting priorities, deliverables, and timelines, although most understood that this was a by-product of being a pilot site. Nonetheless, it created some residual ill will.	7. Make requirements and timelines clear up front and provide sites with a realistic assessment of the potential that priorities may change during the project. Provide estimates of the time and resources needed to complete the requirements based on the experience of pilot sites. 8. Implement an evaluation strategy from the outset of the project. If present from the beginning, evaluators could help the project team craft objectives that are measurable and lend themselves to more rigorous qualitative and quantitative analyses. Additionally, evaluators could attend project meetings, conference calls, etc. and be able to assess these activities with objectivity, rather than relying on second-hand reports months after the fact. They could also provide important data for quality assessment.
Tools and Models	
• LPHAs voiced frustration over a lack of concrete tools and models provided by PPHR leaders and state and academic partners. Many believed that this was because there were few tools out there—or no means by which to evaluate the usefulness of the tools.	9. Provide more concrete tools, templates, and model documents to participating sites. Rely as much as possible on products developed by the pilot LPHAs. 10. Provide a clearinghouse for information and evaluation of training opportunities that address PPHR competency requirements so that sites do not have to "weed through" the available offerings. 11. Develop and/or disseminate standardized exercises, which are scaleable to varied health departments. Include standardized after-action reports to more objectively gauge preparedness.
Site Visits and Other Interactions	
• There seemed to be very limited interaction among participating LPHAs (aside from formal PPHR-wide meetings and conference calls). No participants mentioned site visits; only a few mentioned informal interactions.	12. Consider enhancing PPHR activities to include funded site visits by participating LPHAs or others that have completed the program, including observing others' exercises.
Training Assessment Tools	
• The use of training needs assessment tools created some confusion for PPHR sites. Many found the tools they used to be unsatisfactory or inefficient. The University of Illinois at Chicago Learning Management System was used by several sites and garnered the most positive feedback.	13. Consider using one training assessment tool for all sites or providing criteria for choosing an appropriate tool based on LPHA characteristics.

ACKNOWLEDGMENTS

We would like to acknowledge the assistance and candid, thoughtful feedback provided by the individuals with whom we conducted interviews. We are particularly grateful to staff at the LPHAs that we visited for organizing our visits, for participating in the tabletop exercise, and for being gracious and generous hosts. The site visits would not have been possible without the permission (in all three cases, the enthusiastic permission) of the LPHA directors who allowed us to visit. Michelle Bruno provided expert administrative and travel assistance and Barbara Meade provided valuable editorial support to the development of this report. Finally, we would like to thank our RAND and other colleagues whose work we built upon in developing this evaluation.

I. INTRODUCTION AND BACKGROUND

The National Association of County and City Health Officials (NACCHO) in March 2004 contracted with the RAND Center for Domestic and International Health Security to evaluate the pilot year (2003) of its Project Public Health Ready (PPHR) program. This report describes the results of this evaluation. It begins with a brief description of the public health preparedness context, NACCHO, and Project Public Health Ready. We then describe our evaluation methodology and summarize our findings. Finally, we describe the resulting conclusions and recommendations. The primary intended audience for this report is NACCHO and its PPHR cosponsors, including the Centers for Disease Control and Prevention's (CDC) former Public Health Practice Program Office and the Office of Workforce Policy and Planning. Other interested stakeholders include participating pilot sites, individuals and organizations interested in PPHR as a model for organizing their preparedness efforts, and policymakers interested in better understanding the challenges and opportunities associated with public health emergency preparedness efforts.

THE PUBLIC HEALTH PREPAREDNESS CONTEXT

Even before the terrorist events of fall 2001, federal, state, and local public health officials understood the need to prepare the nation for bioterrorism and other emergencies. The 2001 events created a new sense of urgency around developing preparedness plans and procedures for emergency response at the national, state, and local levels, as well as preparing the emergency response and public health communities to perform effectively at the front lines in a public health emergency.

The nation's public health infrastructure has been underfunded and understaffed for many years—especially at the local level.[1] Local health departments[2] have struggled to deliver even basic public health services to their communities, and those that have succeeded have made creative use of limited resources. The mandate to enhance preparedness for bioterrorism and other public health emergencies added another layer of burden to this stressed system. The primary driver of this mandate is CDC's Cooperative Agreement on Public Health Preparedness and Response for Bioterrorism. The public health community requires extensive technical assistance and programmatic support from federal agencies, trade associations, academic centers, and others as it builds capacity and infrastructure in this area.

NACCHO represents local public health agencies (including city, county, metro, and tribal agencies) and works to support efforts that protect and improve the health of all people and all communities. It

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[1] Board on Health Promotion and Disease Prevention, Institute of Medicine, *The Future of the Public's Health in the 21st Century,* Washington, D.C.: National Academies Press, 2002. Online at http://www.nap.edu/catalog/10548.html.

[2] For the purpose of this document, we adopt the NACCHO use of the term "local" to include city, county, metro, district, and tribal public health agencies.

provides a variety of programmatic and educational resources, as well as advocacy support for its 1,000-plus member local public health agencies (LPHAs). As such, it plays a key role in ensuring a timely and effective public health response at the local level—which is often the "front line" for emerging public health issues.

PROJECT PUBLIC HEALTH READY

NACCHO in 2003 developed Project Public Health Ready, which aims to prepare local governmental public health agencies to respond and protect the public's health through a program of planning, competency-based training, and exercises. The program is voluntary and participants receive recognition for their efforts. Project Public Health Ready is a collaborative activity between NACCHO and the Centers for Disease Control and Prevention (CDC), through its former Public Health Practice Program Office and the Office of Workforce Policy and Planning.[3] Initially conceived as a certification program, Project Public Health Ready evolved into a recognition program. Political concerns prompted this switch: There was a concern that certification would imply a guarantee that an LPHA was prepared to respond effectively to a public health emergency.

Launched in 2003, the project has three key components: (1) preparedness planning, (2) competency-based training, and (3) drills/exercises. Pilot sites were recruited by NACCHO, generally through NACCHO's contacts with LPHA directors who had been closely involved in various NACCHO bioterrorism and workforce committees. Participating sites work through a checklist of preparedness planning and workforce competency goals that NACCHO considers key to public health preparedness. These goals are based on guidelines from CDC, the Columbia University Mailman Center for Public Health Preparedness, and others. NACCHO requires sites to maintain documentation that they have reached these goals and have completed required activities aimed at accomplishing them and provides examples of appropriate documentation. Sites are then required to test—and identify gaps in—their preparedness through participation in drills/exercises that test some aspect of public health emergency preparedness. The results of each of these activities are documented in a comprehensive application submitted to NACCHO at the end of the project. Throughout the project, a core group of NACCHO PPHR project staff provide project coordination, management, and technical assistance to sites, including in-person meetings and conference calls. Sites that demonstrate preparedness are recognized as "public health ready" based on assessments by an advisory group of public health experts.

Thirteen local agencies served as Project Public Health Ready pilot sites in Year 1 (2003)—with 12 applying for and 11 achieving recognition. Key among the intended benefits for participating sites is the synergy with "local and state resources, including emergency management agency expertise, state bioterrorism funding, and consultation with Academic Centers for Public Health Preparedness." NACCHO

[3] The Center for Health Policy at the Columbia University School of Nursing was another initial PPHR partner.

is not aware—other than anecdotally—of how and the extent to which the participating sites are taking advantage of these linkages, nor of the efforts made by these other agencies to reach out to the sites. Other support provided to participating sites by the NACCHO project team includes periodic conference calls and newsletters, site visits, and in-person meetings. Sites do not receive funding for participation, but NACCHO intends that their efforts be supported through existing funding arrangements with their states and the academic centers with which they are linked.

NACCHO project staff conducted initial evaluations during Project Public Health Ready using online survey methodology. These surveys were completed in September, October, and November 2003, prior to the end of the project. Using these surveys, NACCHO project staff tracked sites' progress toward completing the Project Public Health Ready requirements.

A September 2003 survey collected some qualitative information regarding site personnel's evaluation of the usefulness and role of PPHR in the sites' preparedness efforts. Respondents were asked multiple-choice questions. Half of the eleven responding sites said that PPHR provides a framework for preparedness planning and training, and half said it brings additional resources/expertise from outside the LPHA. Just two of five respondents believed that PPHR assists with collaboration with other community partners in preparedness. Respondents noted that the most substantial challenges to PPHR implementation were a lack of staff time and a lack of funding. Only three of ten sites listed "issues with tools" as a challenge. This survey found that seven of the eleven responding sites had received no assistance from their state health departments; most had received at least training assistance from the academic center for public health preparedness with which they were partnered.

As of November 2003, two months before sites' recognition applications were due, seven of the eleven sites responding to a second survey had completed their emergency response plan, three had completed the development of job action sheets, and four had implemented a process to update their emergency response plans on an ongoing basis. With respect to training, all but one had completed their training needs assessment, but only two had completed training. Almost half had completed the required exercise; four had not begun.

RAND aimed to update—and explore in more detail—these qualitative findings, especially with an eye toward devising a long-term evaluation strategy in addition to evaluating the pilot year. An evaluation of the pilot sites' preparedness *per se* was beyond the scope of this project (however, that evaluation was performed by the PPHR application review team).

II. METHODS

EVALUATION FRAMEWORK

Specific evaluation objectives, which were developed in consultation with NACCHO project leaders, were to:

- Identify issues related to project management and implementation that can be used both immediately and in the future to improve program quality.
- Identify appropriate ongoing evaluation strategies for subsequent years of Project Public Health Ready.
- Describe whether, how, and the extent to which local public health agencies used Project Public Health Ready and took advantage of the resources built into the process.
- Describe a sample of participants' preparedness to respond to a bioterrorism event following participation in the project (and if feasible, compare with preparedness prior to participation).
- Describe participants' perception of the value of the program, especially in relation to enhancement of knowledge and skills related to emergency preparedness.
- Provide NACCHO and its partners with data that can be used to inform future program direction.

DATA COLLECTION

We developed an open-ended interview protocol with specific questions that addressed each of these objectives. NACCHO project staff provided feedback on an initial draft, which was revised with their comments in mind. The protocol is included as an appendix. In all interviews, participants were assured of the anonymity and confidentiality of their individual responses. They were also informed that participation was voluntary and would have no impact on future PPHR recognition or participation. RAND's Institutional Review Board approved this project and our methodology. The RAND evaluation team consisted of two researchers with substantial experience in public health program evaluation. We interviewed 27 individuals from 12 health departments, including the health director at all but two locations. One of the interviewed sites did not receive PPHR recognition. We did not interview one initial PPHR site that did not complete the PPHR application requirements.

One or both members of the evaluation team conducted 12 of the interviews in person and 15 via telephone from April to June 2004. These semi-structured interviews lasted approximately 45 minutes on average and allowed for participants' additional comments throughout. We conducted the in-person interviews during site visits to three of the Project Public Health Ready pilot sites. Interviewees were gleaned from a list provided by NACCHO project leaders. In many cases, two individuals were noted on that list—both the health department director and NACCHO's key PPHR contact. We tried to interview both in each

case, but this was not always possible due to non-response or job turnover. In a few cases, only one person in the health department was closely involved in PPHR. We also asked interviewees if anyone else in the department had been closely involved in PPHR implementation and we attempted—and were often successful—in completing additional interviews with those individuals.

The three sites we visited were selected based on recommendations from NACCHO Project Public Health Ready staff and geographic and demographic characteristics, including their location in diverse geographic areas and within states with a variety of public health organizational structures. They may not be representative of other PPHR sites.

We also interviewed at least one individual from each of the state health departments and two of the academic centers in the states in which we conducted site visits. These interviews were informal and were guided by what we had learned from the LPHAs that we visited. Because this was not part of our initial evaluation plan, we started late in the process and were unable to contact one of the academic centers despite several follow-up attempts.

During the three site visits, in addition to conducting in-person interviews, we also facilitated a tabletop exercise focusing on the initial epidemiologic response following a bioterrorism attack. RAND has tested the exercise methodology and scenarios in a number LPHAs in the course of other projects. A key reason for conducting the exercise at three sites was to see if exercise performance might be a useful and appropriate way to validate what sites reported in their PPHR applications and our interviews. If so, we believed it would be a useful methodology for future PPHR evaluations. This exercise was carried out in addition to those conducted by the sites as a requirement of their PPHR recognition. It was conducted in May 2004, several months after PPHR activities were completed.

III. INTERVIEW FINDINGS

The findings from the interviews are detailed here and are organized around the key evaluation questions. As the interviews were semi-structured and were in part aimed at identifying key themes and domains to be used in crafting a long-term evaluation strategy for PPHR, our analysis was solely qualitative. We intersperse findings from our limited interviews with academic partners and state health department staff with those from our interviews with LPHA staff. A summary of key themes and corresponding recommendations is included in Table 1.

How and to what extent was Project Public Health Ready implemented at different sites, and what was the impact of different approaches?

Interviewees across LPHAs gave similar reasons for participating as PPHR pilot sites. The majority reported that their health director was active in NACCHO's bioterrorism and workforce advisory committee or NACCHO's board, and either sought out or was offered the opportunity to participate. Most emphasized their belief that it was an opportunity to enhance or organize their bioterrorism (BT) preparedness efforts, and they also viewed it as an opportunity to be leaders in this area. One LPHA director to whom we spoke noted that the department "tried to stay on the cutting edge of the issue. It was an opportunity to beta test and look at areas I wasn't seeing progress in within the [state health] department nor benchmarks out there." Another noted that it was "The right opportunity at the right time. [Our state] had been slow to release plans." This interviewee, a health director, wanted other experts to be able to review the planning work she had already done and help identify areas for improvement.

Specific participation objectives at the outset reported by LPHAs included developing and/or enhancing current preparedness plans and training strategies, having a structure for developing plans and training strategies, gaining access to tools and resources developed by others, and being recognized as "public health ready." One LPHA director noted an objective to "gain access to academic center and other tools and resources." Another aimed to have "a better prepared workforce for bioterrorism and other public health emergencies." Still others pointed out that their community was already seen as—or was in fact—a regional leader in preparedness, and that made them feel responsible for finding and using useful preparedness models. One county LPHA is the lead agency for its state BT preparedness region and hoped that PPHR would help it complete contract deliverables for the region. Another specific objective cited was to gain access to preparedness tools: "We hoped we would not have to reinvent the wheel on everything … we thought we would get more tools for local public health from training, curricula, job action sheets, etc."

Table 1
A Summary of Key Themes and Corresponding Recommendations

Findings	Recommendations
Overall PPHR Assessment	
• PPHR provides a useful, relevant, efficient, and needed model for organizing public health preparedness planning and training activities as well as assessing and improving workforce competencies. With the incorporation of the recommendations included in this report, it has the potential to become an important tool for LPHAs—and indeed regions and states—nationwide. • PPHR and its components are seen by many as models or paradigms for dealing with a variety of day-to-day public health issues—from HIV-contact-tracing investigations to setting up clinics for flu vaccination campaigns. • The recognition attached to successful PPHR completion is very important to LPHAs. It is a reward for their hard work as well as a leverage point for greater recognition in their communities and states. • In some cases, LPHAs' PPHR efforts were conducted in close collaboration with surrounding communities that were not formal participants in the project.	1. Continue the PPHR project, seeking to implement it on a larger scale and potentially organizing it at the state or regional level.
Implementation	
• Sites had little guidance regarding the best way to actually implement the PPHR activities. Most found creative ways to get started that suited their agency characteristics and culture. They described what worked (and what did not work) about the approaches they developed. • PPHR is not a "one size fits all" project. LPHAs worked hard to implement it in ways that were appropriate for their characteristics and culture. No two sites had the same approach, mix of individuals involved, or financial or staffing circumstances at the outset. • Leadership from the LPHA director or other key leaders is essential to successful completion of the requirements.	2. Provide new sites with case studies of the approaches that the pilot sites undertook to implement PPHR activities, with an emphasis on the appropriateness and adaptability of each approach to LPHAs with different characteristics and cultures. Include the key role of LPHA leaders.

Findings	Recommendations
Site Characteristics	
• The pilot sites – particularly those that received site visits from the evaluation team –were in many ways among the "cream of the crop." Despite the differences in the PPHR approaches and products, 11 out of the 13 sites that began the program received PPHR recognition.	3. NACCHO and its partners must be cautious in adapting the model to future participating sites, which may not enter the project with the same capacities, public health and political savvy, and level of preparedness as the pilot sites. Encouraging a mentoring relationship with past PPHR participants is one potential way to address this.
Time and Effort	
• Although most believed that PPHR participation was well worth the time and resources required, they were all concerned with the lack of adequate staff to complete the PPHR requirements at the same time that they had to continue fulfilling their day-to-day public health roles and activities. • Some LPHAs encountered conflicts between PPHR requirements and state or CDC requirements for bioterrorism preparedness.	4. Work with partner agencies, including CDC, to enhance state's understanding of and engagement with LPHAs' PPHR activities. 5. Provide templates or guidance for meshing PPHR plans with existing local, state, or regional preparedness plans. Most LPHAs entering PPHR this year will have already developed plans as part of these broader efforts and should not have to reinvent the wheel.
Plan Development and Writing	
• While training usually addressed a wide array of LPHAs' staff, the development and writing of preparedness plans tended to center around the LPHA director and/or other core leadership staff. In some cases, just one person wrote the plan.	6. Require a participatory plan development and writing approach. Extending timelines and providing tools for plan development—including sample work plans—may be needed to facilitate this.
Changes in Priorities, Deliverables, and Timing	
• LPHAs voiced substantial frustration over shifting priorities, deliverables, and timelines, although most understood that this was a by-product of being a pilot site. Nonetheless, it created some residual ill will.	7. Make requirements and timelines clear up front and provide sites with a realistic assessment of the potential that priorities may change during the project. Provide estimates of the time and resources needed to complete the requirements based on the experience of pilot sites. 8. Implement an evaluation strategy from the outset of the project. If present from the beginning, evaluators could help the project team craft objectives that are measurable and lend themselves to more rigorous qualitative and quantitative analyses. Additionally, evaluators could attend project meetings, conference calls, etc. and be able to assess these activities with objectivity, rather than relying on second-hand reports months after the fact. They could also provide important data for quality assessment.

Findings	Recommendations
Tools and Models	
• LPHAs voiced frustration over a lack of concrete tools and models provided by PPHR leaders and state and academic partners. Many believed that this was because there were few tools out there—or no means by which to evaluate the usefulness of the tools.	9. Provide more concrete tools, templates, and model documents to participating sites. Rely as much as possible on products developed by the pilot LPHAs. 10. Provide a clearinghouse for information and evaluation of training opportunities that address PPHR competency requirements so that sites do not have to "weed through" the available offerings. 11. Develop and/or disseminate standardized exercises, which are scaleable to varied health departments. Include standardized after-action reports to more objectively gauge preparedness.
Site Visits and Other Interactions	
• There seemed to be very limited interaction among participating LPHAs (aside from formal PPHR-wide meetings and conference calls). No participants mentioned site visits; only a few mentioned informal interactions.	12. Consider enhancing PPHR activities to include funded site visits by participating LPHAs or others that have completed the program, including observing others' exercises.
Training Assessment Tools	
• The use of training needs assessment tools created some confusion for PPHR sites. Many found the tools they used to be unsatisfactory or inefficient. The University of Illinois at Chicago Learning Management System was used by several sites and garnered the most positive feedback.	13. Consider using one training assessment tool for all sites or providing criteria for choosing an appropriate tool based on LPHA characteristics.

All of the sites that we interviewed and that were recognized as Project Public Health Ready implemented the project and worked through the list of requirements. There were many commonalities in their approach, including a focus on incident command systems, development of job action sheets, and broad-based training for all department members rather than specialized training (e.g., for epidemiologists). However, LPHAs adopted widely diverse approaches to meeting the PPHR requirements. Approaches varied depending on health department staff and other resources, previous funding for or work in BT preparedness, and general leadership and management style. For some, "Project Public Health Ready was just another aspect of what we do," so the implementation was more difficult to describe than it might be for a more discrete project. Others made PPHR management the purview of existing groups or organizational structures, such as emergency management or bioterrorism committees.

We highlight several pilot sites' descriptions of their PPHR implementation approaches below:

- One urban city health department director noted that the department had one staff member with multiple hats and key responsibility for workforce development. PPHR got started "under her

watch." She had a relationship with the LPHA's academic partner and helped strengthen the LPHA's relationship with it. Project activities were communicated at weekly leadership team meetings, larger supervisory meetings, and via email.

- A rural LPHA that regularly trains for and responds to weather-related public health emergencies (hurricanes, floods, etc.) used the project to help supplement existing competencies with new ones. PPHR was not considered a stand-alone project, but rather was integrated into people's jobs to enhance their ongoing activities.

- A county LPHA first developed a work plan, including team roles. Agency personnel presented an introduction to PPHR to all employees and explained why they were participating. Once they had a work plan and timetable, they spent three weeks conducting a needs assessment and used the results to develop a training plan, which they implemented over the next several months and then evaluated through their exercise.

- A city LPHA director noted that when agency staff were getting started, it was like the "blind leading the blind," so they decided to just jump in and seek out any educational opportunities they could find.

- A county LPHA described a process based on the philosophy that it was important to identify up front the health department's role within a broader community preparedness effort and to recognize that it does not need to "control" the preparedness process.

What was the time and staff burden and actual cost, if any, involved in participation?

When asked about the costs—both financial and otherwise, and direct or indirect—interviewees noted that PPHR participation was generally very time intensive, although it made their broader BT preparation efforts more efficient. While some maintained detailed records of hours or dollars devoted to the project, others found it hard to separate project costs from broader BT efforts. One urban LPHA saw implementation as a resource challenge up front and hoped that special NACCHO and state staff, supported by bioterrorism funding, along with "bits of others" could move this forward. The interviewee noted that this hope was perhaps a "little naïve." PPHR essentially "became an unfunded mandate for staff and the department" and required a full public health workforce effort. Once they "sold" the effort to the state department of health and were really up and running, PPHR and responsibilities for leading the effort were transferred to another person who did not have adequate knowledge of the project to continue to support it.

Those who were able to keep track of at least some of the resources associated specifically with PPHR offered the following information:

- One LPHA noted that although PPHR-related costs were primarily "soft costs," the agency kept track of actual hours spent on training. The total number of hours spent on training by all participating department employees was six hours each. Above and beyond that, the seven planning committee participants each spent 48 hours on training; emergency management staff spent 70 hours each; the county volunteer program coordinator spent 12 hours; 50 community

volunteers at the exercise spent six hours each; and three exercise coordinators spent five hours each. Additionally, the state office of performance improvement spent 90 hours on training activities and also covered travel expenses, materials, and supplies. All of the above excludes the time spent on this project by the project manager.

- Another LPHA reported that the total PPHR cost was $72,986. This figure was based on the calculation of the staff time that was devoted specifically to the project (including plan development, training, and the exercise) minus the amount of CDC BT funding that had been allocated to the LPHA by the state department of health.

Participants uniformly noted that the value received was worth the cost of participation. Key themes with respect to value included PPHR's role as a framework or structure for navigating an otherwise ambiguous preparedness process; access to tools, resources, and templates; and strengthened partnerships. Specific comments are summarized below:

- One LPHA director noted that the "CDC [and] state benchmarks are not useful anyway. They are still struggling with understanding what preparedness is. The focus is on funding, not what is needed to be prepared." Without PPHR, the LPHA "would not have focused much on job action sheets, [which are] pretty useful." Now, "If we have to mobilize and surge up we have got [plans] partly activated [and are] ready for just-in-time training." The interviewee noted that the LPHA can now give staff written explanations guiding their response and that this is "not required by CDC or the state."

- Another LPHA director noted that "CDC's guidelines are overwhelming. PPHR helped us break [them] down into plan, train, exercise; … it helped break [them] down into functional units that made sense."

- A BT coordinator who drove the PPHR process within her LPHA noted that preparedness "is part of [her] job anyway," and that while it added to her BT activities through the need to produce documentation and the actual PPHR application, it enhanced her efficiency. This individual also noted that "getting [information] down to the clerk level" added value to the project.

- Several interviewees described the exercise component of PPHR as having substantial value. One LPHA director described the point-of-distribution exercise as "incredibly helpful … staff took it very seriously."

Additionally, several individuals noted the usefulness of the training aspects of PPHR. One noted that her LPHA "had been floundering" with respect to training and that PPHR provided some training standards that helped the agency meet CDC and state benchmarks. Similarly, another individual noted that the process "forced some assessment rather than hitting the ground running." And finally, though many of the interviewees believed that their LPHA would have completed much of this work even without the PPHR framework, nearly all stated that the timeline and requirements pushed them further and faster. As one interviewee pointed out, PPHR "gave us a real deadline."

Did the project enhance participating agencies' ability to meet the requirements of their CDC cooperative agreements or otherwise improve their preparedness for public health emergencies?

We asked interviewees whether and how the PPHR requirements either complemented or conflicted with state or CDC requirements related to BT preparedness and funding. One LPHA director noted that a number of differences between PPHR and state requirements led to some frustration for staff, including different emphases on readiness, report formatting issues, and aspects of the PPHR requirements that were "still ahead of where the state is going." Another director noted that his state's regional BT coordinator did not know about PPHR and talked about wanting the LPHA to redo its plan to fit into the state Strategic National Stockpile plan. This LPHA had already completed its plan for PPHR—the only county in the state that had done so—and was able to argue successfully that there was no need to revisit it. Indeed, many other counties in the state are now calling this department for assistance, and it is seen as a model.

To proactively address this issue, one LPHA looked at required PPHR competencies and federal guidelines to identify differences and similarities at the outset. Another, from a state that has a number of statutes that dictate the contents of plans, meshed the PPHR criteria with the LPHA's existing plans.

What impact did the project have on preparedness? What were the other outcomes of the project (positive and negative)?

A number of interviewees described recent public health events that tested their ability to respond. These included both public health emergencies and responding to more day-to-day public health issues. One county health department director described a recent case in which an HIV-infected individual violated a cease-and-desist order regarding contact with uninfected individuals. The investigation of contacts was so extensive that it involved at least half of the department staff at some points, so the department applied the Incident Command Structure (ICS) to the situation. The director noted that the approach worked well, with some mistakes and that we "learned a lot about how to use ICS in a public health situation," and that "at this magnitude, ICS was extremely helpful." However, as with other respondents, it was difficult for this interviewee to credit PPHR versus the site's overall BT efforts for its ability to effectively address this situation.

Many cited their 2003-2004 flu campaigns as having benefited from PPHR activities and products. One LPHA used a "PPHR mentality" to organize its vaccination effort—using concepts such as points of distribution and holding offsite clinics at schools and shopping malls. The two neighboring counties that are part of this LPHA's ICS system have also adopted these models for addressing the flu and plan to continue to refine the system next winter. Additionally, this LPHA's director has asked his staff to bring him a plan for carrying out back-to-school physicals this fall and is encouraging the use of the PPHR paradigm for that. This director noted that he "wants to have ICS in working order for day-to-day business" and that PPHR provides a model. A minority of interviewees reported that there have not been follow-on events requiring the use of PPHR but believed that their exercises served as good tests of preparedness.

We asked about positive outcomes of PPHR above and beyond completion of the explicit requirements. Responses generally centered around engaging staff, enhancing staff knowledge and collaboration levels, enhancing partnerships with other community agencies, and an enhanced sense of the LPHA's role within a broad-scale response. One LPHA director noted that staff have a greater sense of their role outside of their 8 to 5 jobs: in a crisis, "they may be on 24/7." Further, in this LPHA, PPHR "engaged certain employees that were not touched before. … They had to interact more formally around this." A frontline public health nurse that we interviewed—who was a recipient of PPHR–related training—noted that although she "felt inadequate and overwhelmed, she wouldn't have [had] the knowledge base to succeed" on the training needs assessment because of a lack of relevant experience. It validated for her that her day-to-day activities related to surveillance really are relevant to emergency preparedness. Although she was unaware of the recognition aspects of PPHR prior to her participation, she now feels like she is "ahead of the curve."

Others described the benefits of outside recognition from a national entity like NACCHO and its partner agencies. One director said this LPHA was "proud to say we are one of 11 sites," and that his superiors in the state department of health recognized this achievement, which was a cause for pride. Another interviewee noted that the health department staff now has the basic knowledge and vocabulary to deal with the emergency response community in the city and region. One LPHA has seen a number of frontline staff enroll in masters in public health or nursing degree programs after going through PPHR training. An interviewee from that site noted that PPHR gave her an opportunity to see other roles and understand that "we are part of this bigger purpose" that extends beyond her day-to-day activities. A state health department interviewee noted that PPHR "pushed people to look more at evaluation and documentation … change critical policies … [and] visit other LPHAs." This same interviewee noted the value of the participating LPHA taking the learning needs assessment tool used in PPHR and tying it to its overall human resources management processes—which is a "big leap" for an LPHA. Finally, this state health department hosted a press conference when the LPHA was certified as Project Public Health Ready, which enhanced its reputation as a leader.

Negative outcomes described by participants focused on the substantial time and resource commitments needed to complete the PPHR program requirements. Echoing many of the interviewees, one LPHA director noted that "emergency preparedness takes away from other public health activities," and that PPHR compromised the agency's ability to respond to "normal" public health issues. It was not clear whether this was a result of PPHR or broader BT planning efforts. One noted that the exercise created some apprehension for staff as they did not understand that "it's the place to make mistakes," and that the purpose was to practice, not to test.

Because public health departments are only as prepared as individual staff, we ended interviews by asking interviewees to step back from the broader LPHA's participation and think about what impact, if any, participation in PPHR had on them personally and/or professionally. Responses included enhancement

of their leadership abilities, enhanced understanding of ICS and other preparedness issues, feeling more prepared, and personal and professional recognition, including job offers. One noted that the "best thing" about PPHR was that it had the whole process of preparedness broken down into specific functions that helped one move forward. A director who joined his LPHA midway through the PPHR project admitted to being "scared to death on [his] first day" and wanting to appear competent to staff members who had been participating in PPHR for some time. However, he quickly "realized that a lot of what was expected was like other decisionmaking roles in [his] job" and that he did not need to have additional detailed knowledge to do so. This was very much a result of the PPHR framework.

Did NACCHO project leadership and technical assistance help enhance participating agencies' involvement? How could these areas be improved?

Interviewees voiced substantial frustration with the evolving nature of the project, deliverables, and timelines. They understood, however, that such changes were a part of a pilot project. Given the evolving nature of the program, participants were grateful for the help that they received from the NACCHO staff.

One noted that "Project Public Health Ready was sold as a[n existing] resource, but [really only] became a resource" as the project went along. Others lamented the relative lack of interaction among the PPHR sites other than during the two in-person meetings and conference calls, with one noting that she "did not feel connected to the national project."

With respect to the specific tools that NACCHO provided as technical assistance and to promote collaboration, the in-person meetings in Reno and Chicago received mixed reviews. One LPHA director noted that the meeting in Reno happened too early in the project and that staff from one of NACCHO's partner agencies "had no clue that this was one of 40 projects we were responsible for," and voiced unrealistic expectations about LPHA's capacity. The PPHR conference calls also got mixed reviews, with many agencies believing that they were too large to allow for adequate exchange of ideas and to address the concerns of different types of LPHAs.

On the other hand, interviewees generally provided very positive feedback about NACCHO project staff. One LPHA director noted that "he never heard negative [comments] from staff about non-response" by NACCHO staff and that they did a good job of interacting with sites at the national meetings. Several found NACCHO's BT PREP exercise development tool helpful. More than one of the interviewees noted that they did not ask for much from NACCHO because they were not sure what they should be asking for.

Some interviewees commented on the usefulness of specific tools provided by other PPHR sites through NACCHO. For example, one interviewee who found herself responsible for developing job description sheets for the department used materials from another site that had been shared at the Reno PPHR meeting.

The majority of interviewees offered an unqualified "yes" to our question about their willingness to participate again. However, there were definite concerns about the time and resource burden involved.

One LPHA director said that it would be one more thing to pay attention to. And there were some stronger caveats. An interviewee noted that CDC and states need to recognize the accomplishments associated with PPHR and "count" it as part of the LPHA's deliverables. The lack of recognition by these entities made it even more of a "challenge for staff doing this on a voluntary basis."

What was the level of interaction with and technical assistance from the academic centers for public health preparedness, state departments of health, and other resources leveraged by NACCHO project staff? What are participants' perceptions of the usefulness of these contacts?

Participants had varying views on the usefulness of their partnership with their academic partner and described varying roles that the partners played during PPHR. Academic partner participation ranged from playing a key role in bringing the various partners together at the outset of PPHR to ensure that they built a strong foundation, which "wouldn't have happened without the academic partner," to serving as a sounding board: "[We] bounced ideas off of them at different times." Several participants believed that they would not have had the same level of access to an academic center without PPHR. Several stated that their PPHR partnership enhanced the relationship between the LPHA and academic partner. One LPHA director noted that the relationship is continuing and that the academic partner just completed public health law training for the LPHA. She said that "as we identify needs, they will train us."

Several noted the traditional conflict between public health practice and academia as a key challenge to their partnerships. Some believed that PPHR helped bridge this gap by encouraging partnerships. One LPHA director noted that the challenge is that academic centers are more like "ivory towers, not rooted in reality," although their PPHR "interface helped them understand LPHAs." Additionally, "as we design systems that respond and build on dual use and capacity, [the academic center] has improved its ability to walk in our shoes, [which is] useful if they are trying to train or assist others." This LPHA may be joining their academic partner in another project and writing a paper.

Most of the sites interacted with their academic partner to find assessment tools for staff baseline skills and knowledge to use for training needs assessment. NACCHO did not mandate the use of a particular assessment tool, and a number of interviewees expressed frustration with either their efforts to identify the most appropriate tool for their site or with the tool itself.

With respect to PPHR sites' interactions and relationships with their state departments of health, we found that they believed states were generally supportive but provided little in terms of technical assistance or other resources. One LPHA director noted that the state provided limited assistance around training and the exercise, and that they "understood" what PPHR was all about. Another interviewee noted that the state department of health provided support in the development of a work plan and assistance and resources for training. One state health department representative noted that the department staff's understanding of their role evolved as the project went on. She noted that they initially viewed it as an LPHA and educational partnership, but "as we got down the road [we] realized the importance of state health departments." This

particular state DOH believes it reaped the benefits of the PPHR framework in ways that exceeded the participation of a single constituent LPHA. It now refers other LPHAs in the state to PPHR as a strategy for public health emergency planning and believes that the structure it provides will have some role in statewide planning in the future.

Others were frustrated that the state did not recognize PPHR achievements as contributing to other BT preparedness requirements. One LPHA director noted that "a problem was that the state department of health never really bought in or acknowledged it as a way to meet state contract deliverables," so PPHR became an "unfunded mandate" for staff. In this same state, there was no consistent state DOH representative involved in PPHR—one person attended the initial PPHR meeting but was "not committed."

State DOH representatives' comments make clear that the frustration was felt on both sides. One state official noted that staff had received no notice that one of their constituent LPHAs would be a PPHR participant and that if the state is informed late in the process, the state will be "at arm's length and there will be a disconnect." The interviewee noted that the staff see similar issues with federal initiatives that engage LPHAs and that it can usurp state control and the level and helpfulness of state participation: "We want to work with everyone, but need to be in the loop." Additionally, while this interviewee viewed the recognition involved with PPHR as valuable, he was unprepared to use it as a marketing or visibility tool because the late notification did not provide the state with time to think about how to share the information with policymakers and others. He summarized his experience by noting that better collaboration equals better outcomes. This feedback was echoed during one of the other state health department interviews. State health department interviewees also made clear that the state-LPHA relationship prior to PPHR had a substantial impact on collaboration during the project.

Some LPHA interviewees said that they thought that CDC would have been or should be more involved in providing technical assistance. One interviewee stated that a lot of the information that the LPHAs needed "is already out there," but that CDC was not talking to the sites about where to find it.

What were the key barriers to participation of local health departments, their staff, and local and academic partners?

Interviewees noted a number of key barriers to their successful completion of the PPHR requirements. These included inadequate staffing, shifting PPHR priorities and expectations, lack of state department of health and CDC buy-in regarding PPHR's contribution to their preparedness requirements, and competing priorities related to day-to-day public health practice. One explained that this was "one of 40 things to do." Another noted that "staff were drowning" as they worked to schedule training for everyone. Several said that this is par for the course in public health. Illustrative responses included:

- "The short timeframe was impossible. If they had not extended the timeline, [we] could not have done this. [We] didn't understand up front how big it was."

- "At the highest levels [of state DOH], they did not recognize PPHR as a valid component of public health preparedness [so did not issue] press releases … [and] were skeptical versus supportive."

- "Unlike the military where all you do is prepare and exercise with no other 8 to 5 activities," LPHAs have other jobs, which is a "fundamental flaw in the public health system."

In the end, however, all but one of the 13 pilot sites were recognized as "public health ready," so we asked them how they overcame barriers that arose. Several sites noted that having one staff person driving the process was key, with one site explaining that you "need someone to push, drive, and stress importance" of the project and make sure that the health officer is brought in as needed. One dealt with the time burden associated with training by "doing more with less time," such as limiting trainings to one morning per week and scheduling training three times during that morning so that staff could rotate.

What were the catalysts for completion of PPHR for LPHAs and LPHA staff?

We also asked about the key catalysts for completion of the PPHR requirements. Strong health department leadership participation and buy-in was resoundingly the most important ingredient for most of the sites. One LPHA director noted that if he "hadn't been pushing, it would not have happened." He said that a key motivating factor for him was that "the only thing harder than preparing is explaining why you didn't." Support from other local leaders was also seen as key. Another director noted that the mayor announced the community's participation in PPHR at his weekly press conference and that the Board of Health also offered its support.

Illustrative responses included:

- "Dedication to the cause from the top. … [Director] was the driving force. … Knowing leadership is committed is important."

- "NACCHO's support, people, and accountability."

- "Characteristics of staff—a culture we have developed over a period of years … teamwork, pride, and helping [one another]."

What are participants' most important recommendations for future participants—and PPHR leaders—moving forward?

Interviewees had a number of suggestions and recommendations for future PPHR participants. Several noted the importance—and indeed necessity—of having one person assigned the responsibility to

carry the project through. Another advised LPHAs to start learning about and incorporating ICS early on so that there is time to filter it throughout the staff. Other specific recommendations included:

- "Clarify what the agency wants to get out of it." This interviewee explained that his LPHA's needs assessment was very complex and very specific with respect to the nine core PPHR-related public health competencies. As a result, staff were "not prepared to implement or address issues" raised through the assessment.

- "Set up an interdisciplinary team from all departments of the agency … [with] one lead team on each task."

We asked participants more broadly about their recommendations for future rounds of Project Public Health Ready—whether these were wishes regarding additional tools and resources or project components that absolutely should remain a part of the PPHR package. Many participants acknowledged that many of the tools and resources (such as examples of standard operating procedures) they were looking for were not available because preparedness planning is relatively new in public health—they were in many ways pioneers and were expected to create the tools and best practices that others would use in the future. That said, many were frustrated with the level of ambiguity—and in some cases changing requirements—that pervaded the early stages of the project.

Other specific recommendations that NACCHO could address more immediately included:

- NACCHO should help weed through the wide array of training opportunities, helping LPHAs understand which address "public health 101," and which are intermediate or advanced—and of better and worse quality. For one interviewee, the process of selecting appropriate training tools was "mind boggling," noting that there is too much duplication among training offerings. This interviewee had hoped to get more assistance with this issue from the LPHA's academic partner but was "left with communication with other sites to see what they had used."

- "NACCHO should better define what it means by functional versus full-scale exercises," and make clear which is acceptable. This interviewee noted that the two terms had been used interchangeably and that led to confusion regarding the LPHA's exercise requirements. This particular LPHA did a full-scale exercise around Strategic National Stockpile (SNS) receipt that involved 60 volunteers. The interviewee noted in retrospect that they "probably could have gotten away with a less extensive exercise" but were concerned about not meeting NACCHO's requirements.

- Similar issues were raised around the lack of specificity of training requirements and some redundancy among the planning criteria that one interviewee perceived as a "waste of time."

- NACCHO should help raise PPHR visibility within participating communities. One interviewee noted that it would be helpful for NACCHO to be involved with exercises to help raise their visibility with participating community partners. This interviewee stated that his "biggest job is

getting community support" and that having a NACCHO or CDC representative at the exercise would help disseminate lessons learned to other sites.

- NACCHO should provide additional feedback regarding LPHA recognition applications and the recognition process in general. One interviewee noted that some of their reviewers "contradicted each other," although that is unavoidable when the recognition standards are so subjective. She was frustrated that NACCHO simply compiled and sent out reviewers' comments, rather than serving as a "clearinghouse" and synthesizing the comments. While one reviewer noted that "the plan needs lots of work," another called it "great stuff."

- NACCHO should provide guidance and technical assistance regarding participating LPHAs' internal process evaluations. Some LPHAs were not able to keep track of time, money, and other resources associated with PPHR participation, making it difficult to complete an informed analysis of the costs and value of the program.

Other recommendations were related to broader political and bureaucratic issues:

- One interviewee (as well as others at the same LPHA) stated that the PPHR core competencies need to be revisited. They believed that they "outgrew" the competencies and that the competencies should be examined with an eye to whether they are still the appropriate areas and whether all nine are needed.

- A number of interviewees believed that completion of PPHR requirements could be enhanced if this work was viewed by the state departments of health and CDC as in line with other required BT preparedness activities. One LPHA director noted the PPHR program would be significantly improved "if CDC would acknowledge that steps in going through this are 'countable' toward their levels of preparedness and appropriate activities," and that it may be appropriate for CDC to word its requirements to allow grantees "to show something at least as effective" as their benchmarks. If this were done, states might buy into PPHR a little sooner.

- One interviewee believed that there were inadequate evaluation metrics built into the project around (for example) training and epidemiology requirements and that the core PPHR competencies should have been spelled out more specifically.

- A number of interviewees said that funding to implement PPHR activities should be part of participation and would facilitate their ability to complete the requirements without taking away from other public health activities.

Though not directly a recommendation, several interviewees emphasized that the dual use nature of Project Public Health Ready is a key strength of the approach. One LPHA director noted that because this work fits in with day-to-day public health concerns, there was more staff acceptance. If it had been purely about BT, it would have been "less sellable."

Other Key Issues Raised by Interviewees

We provided interviewees with an opportunity to provide additional information or address questions that they believed we should have asked. Some interviewees offered additional reflections on PPHR implementation or outcomes that reflect their insight into the broader public health preparedness arena and are worth mentioning here. One LPHA director noted that some national leaders that work on the front lines of national preparedness activities probably found it helpful to see that actual experiences at LPHAs may not reflect their expectations. As a result, this individual believes that now "their view of preparedness may be broader." Another noted that having completed the PPHR process helps her "sleep better at night" knowing that a plan for her community is in place.

Several interviewees offered that PPHR recognition bought them both publicity and support within their communities. One LPHA director noted that in addition to the formal recognition from NACCHO and its partners, he received a note from a city council member and issued a press release. A director from an LPHA responsible for leading its regional planning effort noted that because most of her agency's preparedness work was done in lockstep with other LPHAs in the region, the other regions essentially went through a *pro forma* review of her agency's plans. She believes that these other agencies should have had the opportunity to submit their own materials and earn some type of regional recognition.

A number of the LPHAs recognized the importance of public health staff members' individual and family response plans and made the development of these plans a high priority in their PPHR activities. Interviewees explained that this helped public health staff not only feel more personally prepared but also made them feel that the LPHA had an investment in their well-being, and, in turn, this enhanced loyalty.

Finally, several interviewees described their as-yet-unmet challenges with respect to preparedness. Future rounds of Project Public Health Ready may wish to incorporate resources that address these needs. These included developing a Medical Reserve Corps and integrating it into community response plans. One LPHA director noted the challenges associated with these tasks and believes it is important to fund such roles: "You need to pay people to take on responsibility and risk."

IV. EXERCISE FINDINGS

At three of the pilot sites, we conducted a three-hour bioterrorism tabletop exercise based on a pneumonic plague outbreak scenario. Although the exercise was not a proficiency test *per se*, we expected to glean from the exercise a better understanding of the level of preparedness with respect to both health department knowledge and capacity. Additionally, we expected to provide feedback to sites regarding their performance on the exercise and its implications for future planning.

Participants from the LPHA[4] and its local partners were presented with information about a potential outbreak and asked how they would respond. Overall, their responses were excellent – participants worked together as a team to quickly develop an effective public health response. Where deficiencies emerged, local participants were generally able to diagnose them and use the exercise as an opportunity to learn and improve. The LPHAs felt that they performed better on the exercise than they would have before the PPHR program. Additionally, the RAND researchers were able to qualitatively compare local public health departments' performance to that of a number of health departments in California that participated in similar exercises during a 2003 RAND project.[5] The Project Public Health Ready sites uniformly demonstrated greater knowledge and capacity than the California sites participating in the other project.

Participants at each of the exercises were able to list and describe with varying degrees of specificity the key components of an initial epidemiologic response developed by the project team. Key components included: establish case definitions; find existing definitions; confirm that the cases are "real" and identify the agent; establish background rate; decide if there is an outbreak; identify new cases through active surveillance; investigate suspected cases identified by surveillance; examine descriptive epidemiology; define the scope of the outbreak; generate hypotheses about the source of exposure; test hypotheses about the source of exposure; collect and test environmental samples; implement control measures; and inform the media and the public. At the end of the exercise, we asked the health director to "present" a short briefing to local officials after a 10-minute break. In all three cases, the director asked key staff for input during the break, and the briefing was clearly a group effort. Each director then effectively and concisely responded to the issues that we asked them to address, namely: (1) What is the current situation? (2) What steps have you taken? (3) What additional steps do you plan to take in the next 48 hours? and (4) What additional help or resources do you need? We also observed that LPHA directors in each of the sites tended to step back and largely allowed their staff to respond to the exercise scenario. While this varied in degree by

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[4] Participants included the health director, bioterrorism or emergency response coordinator, epidemiologist, public health nurse, and other key staff invited by the health director with RAND's input.

[5] N. Lurie, J. Wasserman, M. Stoto, S. Myers, P. Namkung, J. Fielding, and R. B. Valdez, "Local Variation in Public Health Preparedness: Lessons from California, *Health Affairs -Web Exclusive,* June 2, 2004. Online at http://content.healthaffairs.org/cgi/reprint/hlthaff.w4.341v1 (as of September 8, 2005).

site, we concluded that they were able to do so because their planning had been so participatory that they had confidence that their staff knew how to respond. In one site, the emergency response coordinator (who essentially drove the planning process) was nearly silent. It was clear that this was not out of a lack of interest in the exercise, but rather a high level of confidence in his staff.

Another observation was that the sites were able to help us organize the exercises on very short notice, including securing participation from an impressive level of community partners. This was also a significant improvement over past RAND tabletops, although we acknowledge that, as a result of our prior experience, the level of guidance we provided has evolved and become more explicit.

V. REVIEW OF PPHR APPLICATION MATERIALS

A detailed review and assessment of PPHR application materials—which included sites' emergency response plans, training documentation, and exercise materials—was beyond the scope of this project. The PPHR advisory committee reviewed the applications for recognition purposes. However, we did review the materials to become familiar with sites' activities and thought it would be useful to make some comparisons across the plans. We discuss a few aspects of the plans here, just for the purpose of giving the reader an overview—not to make judgments about their content.

A number of participants felt strongly that PPHR should be better aligned with other preparedness efforts. As one state health department representative noted: "Project Public Health Ready should require things that are consistent with CDC and other [preparedness] work. If not, lots of resources go in different directions, which takes time and leads to redundancy … there are precious few resources and you can't meet two sets of standards." Most of the sites' PPHR emergency response plans were part of broader regional or state plans. Examples of such broader plans included:

- City Emergency Operations Plan Annex: Local Public Health Bioterrorism and Communicable Disease Outbreak Emergency Response Plan
- Local Health Department's Public Health Emergency Plan (Annex to City Emergency Operations Plans)
- Tri-County Area Bioterrorism Preparedness and Response Annex.

Additionally, the level and type of community partner involvement with these broader plans varied. Some examples of the number and type of groups involved are listed below. Note that these groups were included within the respective plans and actual participation levels and roles are not known.

- City Health Department; Ambulance Service; Regional Homeland Security; Homeland Security Coordinating Committee; County Medical Examiner; City Police Department; City Fire Department
- County Board of Health; Regional American Red Cross; County Board of Supervisors; County Sheriff's Department; County Homeland Security; two city police departments; two city fire departments; Regional Medical Center; Regional Hazmat Unit; Regional Human Service Division
- County Deputy Prosecuting Attorney; Director, County Water and Waste Management; Manager, Financial Services; Coroner's Office; two district Fire Chiefs; Chief Administrative Officer; County Assessor; Public Information Program Manager, Community and Environmental Programs; Director, Public Health and Social Services; Deputy Director, Communications Director; Maintenance Manager, Roads and Transportation Services Department; Director, Central Services Department; Director, Development Services Department; County Assessor; County Human Resources Manager; County Sheriff's Office.

VI. CONCLUSIONS AND RECOMMENDATIONS

Overall, Project Public Health Ready was a positive force in the participating LPHA efforts to prepare for bioterrorism and public health emergencies. Participation in the project provided these LPHAs with (1) a framework to use in organizing their preparedness activities; (2) ideas, materials, and support from their colleagues in the national program, academic public health preparedness centers, and elsewhere; and (3) recognition for their departments' efforts. Additional positive results included improved relationships with critical local partners and an improved sense of purpose and understanding of public health functions among department staff. It was not possible to clearly differentiate PPHR activities from other preparedness efforts mandated by CDC and state health departments, but participating departments generally felt that their participation in PPHR helped them to better meet all of their expectations. In particular, PPHR deadlines and requirements led LPHAs to become prepared earlier than if they had not participated in the program. Although a systematic outcome assessment was beyond the scope of our work, we were impressed with the professionalism of the LPHAs that received site visits, and especially with their performance in the tabletop exercise that we conducted.

Most of the limitations of the project were associated with its status as a pilot program and the early state of development of standards, materials, and knowledge about public health preparedness. LPHAs began the project without a clear idea of the requirements, which were developed during the pilot year. PPHR requirements were, to some extent, inconsistent with state and CDC expectations, themselves very much in flux. Guidance and materials that participants thought would be provided were either not available at all, or the partner academic centers and state health departments were not able to locate and supply them. Support from academic centers and state departments generally was variable, depending in part on these partners' own state of development. NACCHO staff were praised for their efforts, especially given the challenging start-up situation.

Although there were non-reimbursed costs of participating in Project Public Health Ready, each of the participating departments said that they were glad to have chosen to be part of the program and would participate again. More specifically, we offer the following evaluation findings and conclusions, followed by associated recommendations.

SPECIFIC RECOMMENDATIONS REGARDING ONGOING EVALUATION STRATEGIES

In a sense, because the first year of Project Public Health Ready was a pilot year, NACCHO embarked on a continuous quality improvement process. It tried things out and learned by trying, as did the participating LPHAs. The end of the pilot year should not be seen as the end of this process. We recommend that NACCHO adopt a continuous quality improvement (CQI) mindset around PPHR.

Evaluation can be easily built into a CQI framework. While we found that key information interviews and on-site tabletop exercises provide useful—and actionable—findings, it is quite possible that there are additional opportunities for ongoing data collection.

We are keenly aware of the time and resource constraints—and heavy workload—placed on LPHAs. Consequently, any evaluation strategy must be built upon the need to reduce the data collection burden on participating LPHAs while still accessing relevant and useful information. To that end, all data collection tools should be developed with sites' input (perhaps input from the pilot sites) and should automate the processes to the greatest extent possible. For example, sites should not be required to develop their own tables and graphs documenting their process toward meeting requirements, but should rather be provided with spreadsheets into which they simply enter data to update standardized graphs. This would enhance the collection, analysis, and display of consistent information across the sites, making it easier for NACCHO to track progress and share it with stakeholders.

In the future, the evaluation team would ideally observe the review of the LPHA achievement of PPHR requirements and could play a role in synthesizing reviewers' comments. This would allow for continued improvement of both PPHR and the evaluation process in subsequent rounds.

VII. LIMITATIONS

This evaluation had several limitations, many resulting from its limited scale and scope, short timeline, and limited budget. First, any evaluation of a pilot project inherently lacks generalizability due to the small number of research subjects. Because the participating LPHAs vary on a number of different levels, we believe that we were able to minimize this issue. Additionally, because so many key themes emerged despite these differences, we suspect that many of our findings are generalizable.

NACCHO project leaders provided us with the names and contact information for at least two people at most of the participating LPHAs—usually the director and a key PPHR contact—and in most cases we interviewed both of those individuals. However, this was not always possible due to non-response or job turnover. In a few cases, only one person in the health department was closely involved in PPHR. We also asked interviewees if anyone else in the department had been closely involved in PPHR implementation and we attempted—and were often successful—in completing additional interviews with those individuals. However, this process led to an imbalance of the number and level of individuals interviewed from each site. For example, we were able to interview four individuals at two of our site visits, whereas we could interview only one individual from three of the LPHAs (one due to non-response, one due to the nature of the health department, and one due to lack of adequate time for follow-up). Despite this, key themes again emerged so clearly that we suspect we would not have gained much from additional interviews. Finally, we primarily interviewed individuals involved with PPHR leadership and implementation, not the end recipients of the activities on the front lines of public health. This was a reflection of the need to limit the scope of this evaluation. However, gleaning feedback from LHPA staff that are not in leadership roles must be built into future PPHR evaluations.

We visited only three sites for more in-depth case studies, and these sites were selected based on convenience and NACCHO staff recommendations rather than representativeness. This is a significant shortcoming that resulted from time and resources constraints.

Because we decided to interview academic partners and state DOH representatives late in the project, we interviewed only those from the three states that we visited. The summary of those findings should not be considered representative despite what we believe to be valuable information obtained. In future years, academic and state DOH partners should be incorporated into evaluation plans from the start.

One of our stated broad evaluation objectives was to describe any improvement in participant sites' preparedness to respond to public health emergencies following participation in the project. Given the current lack of consensus—and even disagreement—about what the proper performance measures for preparedness are, there was no objective way to assess this. Indeed, the PPHR recognition process was in effect an evaluation of sites' preparedness, albeit based on one set of potential criteria that has certainly not been endorsed by all parties involved. So, as with the rest of our data collection, we relied on self-reports.

A key reason for conducting the exercises at three sites was to see if exercise performance validated what sites reported in their PPHR applications and our interviews.

At a different level, respondents continually found it challenging to comment on PPHR activities and outcomes as separate from those associated with other preparedness activities, especially those sites that had already made substantial inroads in preparedness prior to their participation. This will continue to be a challenge as long as PPHR is seen as distinct from other efforts. As stated earlier, these sites tended to be among the "cream of the crop" and, as such, were likely well-prepared early in the process, which will probably not be the case in future PPHR rounds.

The tabletop exercises that we facilitated during the three site visits may in fact have been too "easy" for such high-performing sites, as evidenced by their appropriate and well-practiced responses to the exercise scenario and their apparent ability to function seamlessly as teams. However, we anticipate that future PPHR participants will not enter the project with the same level of preparedness and believe that such exercises are appropriate ways to assess preparedness—not only with respect to participants' actual responses to the scenarios but also to the more general observations that we were able to make about the leadership role of the health director, the level of teamwork, and a general ability to think quickly and clearly with a reliance on solid plans.

VIII. DISCUSSION

This report has described our approach and results associated with the pilot evaluation of Project Public Health Ready. In the process, we gleaned a number of unexpected insights that went well beyond PPHR. We embarked on this process with a good deal of knowledge about the current public health context in which LPHAs are conducting their work. They are faced with multiple requirements, tightly stretched resources, a lack of widely agreed-upon performance standards for preparedness, and, in the absence of an actual event, no definitive answer to the question, "Are we better prepared?"

We found that despite the limitations associated with it being a pilot year, Project Public Health Ready was a useful model and process for participating LPHAs. Many had been struggling to meet—or even think about how to meet—CDC and other requirements around emergency preparedness, and PPHR enabled them to go in the right direction.

Many of the sites were already quite engaged in preparedness planning at a rather high level due in part to the fact that many of these particular LPHAs have directors that are active in NACCHO. This made it difficult for them to separate PPHR's contribution from that of other activities or to credit PPHR with specific accomplishments.

There are a number of large-scale evaluation efforts under way to examine preparedness efforts at the national, state, and local levels. Though focused on one small pilot project, lessons learned from this evaluation may be particularly useful to those examining preparedness on a broader scale. The themes identified likely reflect at least some of the issues, challenges, and opportunities experienced by other sites seeking the best ways to meet the myriad requirements and, in the end, be better prepared to protect the public's health.

APPENDIX: RAND PROJECT PUBLIC HEALTH READY EVALUATION - PARTICIPATING LOCAL PUBLIC HEALTH AGENCY INTERVIEW PROTOCOL

Interview methods: RAND staff will conduct the interviews in person at three sites and via telephone for up to six additional sites. For the in-person interviews, one individual will conduct the interviews and a second will take notes. For the telephone interviews, one individual will conduct the interviews and take notes, using a second notetaker only as needed.

Interviewees: Local public health agency directors, Project Public Health Ready (PPHR) key contacts, and up to three additional staff members involved in implementing PPHR (potentially additional community collaborators).

Background and consent: Thank you for agreeing to meet/speak with me today to talk about your agency's experience in implementing PPHR, as well as you opinions regarding its impact on the agency's preparedness to protect the public health. Before we begin, let me assure you that everything you discuss with me today will be held in strict confidence.

Your participation in the evaluation is completely voluntary. You are free to choose not to participate and we can stop the interview at any time. Your willingness to participate will have absolutely no impact on your future PPHR participation or recognition. We will not provide NACCHO project leaders with the names of individuals who chose not to participate, nor will we report their names in any written materials resulting from this project. We will not quote or cite you in any of our written documents without your prior approval, and we will not share your comments with anyone who is not a part of the project team, including other people whom we talk with in connection with the project, except as required by law. We will also keep all notes from our discussion today in a locked file cabinet and/or on a password-protected computer, and they will be destroyed at the end of the project.

Do you have any questions regarding the voluntary nature of your participation or our data confidentiality and safeguarding procedures? [If yes, respond to all questions. If no, continue with script.] Are you ready to proceed with the discussion? Thank you.

Interview Questions:

- **How and to what extent was Project Public Health Ready implemented at different sites and what was the impact of different approaches?**

1. Can you tell me a little bit about why (xyz) health department chose to apply for participation in PH Ready?
    a. What did you think it could help you accomplish?
    b. What were your specific objectives for participation?

2. When did you actually begin the PPHR activities? How did you launch the project?

3. Can you describe your overall approach to completing the requirements of PPHR? *(probes=partner involvement, level of reliance on technical assistance, staffing to meet goals)*
    a. What worked well about this approach?
    b. What would you do differently if you could do it over?
    c. What, from your perspective, is the single most important thing future PPHR participants should learn from your approach?

- **What is the time and staff burden and actual cost, if any, involved in participation?**

1. If possible, can you quantify the number of days spent on PPHR activities across the Department or by individual staff? Can you translate that into dollars?

2. How much time, if any, did this add to the time spent on BT activities in general? Did it help you use your time devoted to BT-related activities more efficiently?

- **Did the project enhance participating agencies' ability to meet the requirements of their CDC cooperative agreements or otherwise improve their preparedness for public health emergencies?**

1. Many health departments have been consumed with BT planning over the past several years, and there are numerous sources of advice and support. Did participation in PPHR specifically help you achieve the benchmarks set by CDC or your state related to BT funding? What was its value added to this endeavor from your perspective?

2. From your perspective, was the value you received "worth" the time and money spent? Please explain.

- **What impact did the project have on preparedness? What were the other outcomes of the project (positive and negative)?**

1. Has your department had actual public health emergencies or outbreaks since your participation in PPHR? (*probes: West Nile, chemical spills, etc.)*
    a. If so, do you believe your participation enhanced your ability to address them? How?
    b. What did you do differently?

2. Has your department participated in exercises or drills since your participation in PPHR other than the one used as a condition of PPHR participation? *(Probes: countywide drills, hospital drills, etc.)*
    a. If so, did your participation enhance your response to the scenario presented?
    b. Can you tell me how?

3. What are some of the other outcomes—positive or negative—of participation in PPHR from your perspective? I'd like you to focus on actual preparedness, staff knowledge, partnerships formed, etc. versus processes *(e.g. Our staff are better able to describe the public health competencies versus our staff felt burned out)*

- **What are participants' most important recommendations for the program moving forward?**

1. If you were to advise NACCHO and its partners regarding changes to PPHR, what would your wish list look like? (*Probes: are there specific tools, forms, resources, etc.?)*
    a. What is essential to change?
    b. What is not essential, but would help?
    c. What would you want to see done just the same?

2. Would your health department participate in PPHR again if given the option?
    a. Why or why not?

- **What were participants' objectives for participation? Did these differ substantially from NACCHO and its Project Public Health Ready partners' objectives? Did the project meet participants' objectives?**

1. Thinking back to your department's objectives for participation in PPHR that you mentioned at the beginning of our conversation, do you believe that you achieved them?

a. Please explain.

- **Did NACCHO project leadership and technical assistance help enhance participating agencies' involvement? How could these areas be improved?**

1. Can you tell me about the interactions you had with NACCHO project staff while you were implementing PPHR?
    a. What kinds of support did you request?
    b. What kinds of support did they proactively offer?

2. Can you talk about which types of support noted above were more or less helpful as you worked to complete PPHR recognition? Was there support that you believe you needed but could not or didn't know how to access?

- **What was the level of interaction with and technical assistance from the Academic Centers for Public Health Preparedness and other resources leveraged by NACCHO project staff? What are participants' perceptions of the usefulness of these contacts?**

1. Did you receive technical assistance and other support from other entities such as your local Academic Centers for Public Health Preparedness or other PPHR sponsors such as CDC?
    a. What kinds of support did you request?
    b. What kinds of support did they proactively offer?

2. (If applicable) Do you believe that you could have accessed these same supports if you were not participating in PPHR?
    a. Why or why not?

3. What state or other formal non-Project Public Health Ready assistance was received (specific to PH Ready) to help complete the Project Public Health Ready activities?

- **What were the key barriers to participation of local health departments, their staff, and local and academic partners?**

1. What, if anything, hindered your ability to complete PPHR, or complete it to your satisfaction?

2. How did you address these barriers (if any)?
    a. What type of support, if any, would you have liked to help you address these barriers?

- **What were the catalysts for participation of local health departments, their staff, and local and academic partners?**

1. What, if anything, most enhanced your ability to complete PPHR, or complete it to your satisfaction?

2. What would you recommend to other health departments as most key to success in completing PPHR?

Summary Questions

1. Did your health department produce plans, procedures, exercises, etc. as a result of PPHR that you believe would be helpful to future participants (and other health departments)? Please describe.

2. Stepping back from the broader health department to your role as a public health professional, what, if anything, did participation in PPHR help you achieve personally?

3. Is there anything you would like to tell me about your participation in PPHR that I did not ask?

4. Are there others in the community who were closely involved in PPHR with whom we should be in contact?

5. May we contact you again if we have additional questions?

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