



# Building Capacity to Apply Patient-Centered Outcomes Research and Comparative Effectiveness Research Findings Through Local Health Departments

September 2020



**NACCHO**  
National Association of County & City Health Officials

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## INTRODUCTION

Local health department (LHD) awareness and application of patient-centered outcomes research (PCOR) and clinical effectiveness research (CER) to their work is likely very limited. In fact, only 37% of LHDs participated in any kind of research study in the past year.<sup>1</sup> However, PCOR and CER are particularly important sources of data to inform local population health decisions. Opportunities exist to increase LHD and their community partners' awareness and use of PCOR and CER to improve patient and population health. Therefore, the National Association of County and City Health Officials (NACCHO) conducted research to assess LHD awareness and use of PCOR and CER.

## KEY FINDINGS AND RECOMMENDATIONS

- **PCOR and CER information can be valuable to inform LHDs' work as community health strategists and cross-sectoral partners.** LHDs recognize the value of data-informed processes and evidence-based programs, but many are unaware of the value associated with engaging in PCOR/ CER and applying results to public health practice. Specifically, PCOR and CER can help LHDs strengthen their programs and services, aligning them to community needs and ensuring they are based in practices effective for the specific populations they serve.

- **LHDs are unaware of PCOR and CER and their application to public health practice.** In addition to the value of PCOR and CER, LHDs also need improved awareness about the variety of ways they can engage in this type of research (e.g., as an engaged partner, conducting own research) and what its application looks like in a variety of contexts (e.g., small, medium, large, urban, rural, de/centralized systems). This includes understanding ways to apply PCOR/CER findings to inform current public health practice, including in community health (needs) assessment and planning (CH[N]A/CHIP), community health education/promotion, cross-sectoral partner engagement, service delivery, and related efforts.
- **LHDs provide a unique perspective in a research partnership.** As entities with typically established relationships with their communities, LHDs can provide researchers with contextual knowledge about the applicability of research to their community, informing the strengths and limitations of the research approach, encouraging community engagement in research, and supporting the packaging and messaging of results so they are useful and accessible to public health practitioners.





- **LHDs experience capability, opportunity, and motivational barriers to engaging in and using PCOR and CER.** Barriers to capability relate to LHD staff lacking knowledge and skills about a range of research topics, including PCOR terminology, research grant writing, data sharing, research partnerships development, the IRB process, and translation and adaptation of research results. Barriers to opportunity are primarily focused on the availability and accessibility of resources needed to engage in research activities. Specifically, LHDs that are underfunded and understaffed are unable to prioritize research activities. This additionally prohibits LHDs from dedicating resources to search for, translate, and apply research results. Barriers to motivation to engage in and use research results include a lack of awareness about PCOR and CER's value to their work and community, a focus on clinical research topics rather than population-based ones, and cultural differences between practice-based and research-based approaches.
- **The capacity of LHDs to engage in and use PCOR and CER can be built through individual, organizational, and systemic efforts.** Specifically, training and peer sharing opportunities for public health practitioners and their partners can be developed to recognize and disseminate LHD experiences with PCOR and CER. At an organizational level, the awareness among LHDs and research institutions about the value of LHD engagement in research partnerships can be improved. Systemically, cultures inclusive of population and public health can be cultivated in funding and research entities. NACCHO and other national organizations can bolster LHD capacity by being educators, conveners, connectors, and advocates.

# METHODS

Data collection elicited information about the value of PCOR/CER to LHD work, the facilitators and barriers to engaging/using PCOR/CER, and opportunities to effectively build LHD capacity in this area.

## Literature Review<sup>ii</sup>

A literature review was conducted to gather initial data to inform key informant interviews and focus group data collection. The review was guided by three primary questions:

1. Do public health practitioners engage in PCOR/CER?
2. Do public health practitioners use PCOR/CER findings?
3. What is the engagement of users in program and service design at LHDs?

The literature review included scholarly and grey literature. The Patient-Centered Outcome Research Institute’s (PCORI) portfolio was searched to preliminarily identify how LHDs may engage in PCOR/CER. Then, scholarly sources (e.g., PubMed, Web of Science, ProQuest, Google Scholar) were searched for published literature relevant to public health practice. Finally, a broad Google search was conducted to discover unpublished literature.

## Key Informant Interviews

NACCHO convened an expert advisory group of individuals familiar with PCOR and CER to inform this project. Advisory group members include a local health official, an LHD chronic disease program director, and five (inter) national organizations that support research engagement (Table 1).

**Table 1. Expert Advisory Group Members**

Organization Type	Organization	State
County or city health department	Harris County Public Health	TX
	Public Health – Seattle & King County	WA
National nonprofit member association	AcademyHealth	DC
	American Hospital Association	IL
	National Network of Public Health Institutes	LA
International nonprofit member association	Planetree International	CT
National nonprofit research institute	RTI International	NC

From April to May 2020, structured phone interviews were conducted with four members of the group, including staff from the two LHDs. Interviews focused on confirming or disconfirming literature review findings, gaining additional context on the facilitators and barriers LHDs may experience in engaging in and/or using results from PCOR/CER, and gathering lessons learned from organizations that support research engagement.

## Focus Group

NACCHO conducted a virtual focus group with LHDs and their partners during NACCHO's 2020 annual conference, NACCHO 360. Eleven people participated in the focus group, with varying levels of engagement. Out of the 11 participants, eight work at an LHD, another two work at the Centers for Disease Control and Prevention (CDC), and one works at a state health department (Table 2). Participants represented administration and operations, as well as CH[N]A/CHIP, quality improvement, nursing, and environmental health programs.

**Table 2. Focus Group Participants**

Organization Type	Organization	State	LHD Size*	Urban/ Rural
County or city health department	Chicago Department of Health	IL	Large	Urban
	Harris County Public Health	TX	Large	Urban
	Maricopa County Department of Public Health	AZ	Large	Urban
	Marshall County Public Health Department	KY	Small	Rural
	Olmsted County Public Health	MN	Medium	Urban
	Portage County Combined General Health District	OH	Medium	Urban
	Tri-County Health Department	CO	Large	Urban
Public health partner	Centers for Disease Control and Prevention (CDC)	GA	NA	NA
	Nebraska Department of Health & Human Services	NE		

\*LHD size is defined by the size of the population served. Small serves a population of <50,000 people; medium serves 50,000–499,999 people; large serves 500,000+ people.

## Analysis

All interviews and the focus group were audio recorded with the verbal consent of participants. Audio recordings were transcribed. Data were analyzed to identify themes throughout the interviews. Coding and analysis were performed using NVivo 11.

## RESULTS

### Summary of Literature Review Results<sup>iii</sup>

Although evidence from the literature review features public health practitioners engaged in PCOR/CER, it highlights that few LHDs do so. Primary drivers for LHD engagement appeared to include partnerships with academic institutions and a focus of the research on population health topics. Furthermore, LHDs that serve larger populations or provide clinical services seemed to have a higher awareness of PCOR/CER than their peers. Despite challenges with engaging in PCOR/CER themselves, LHDs can play a valuable role in encouraging hard-to-reach and minority populations to participate in research. PCOR/CER results can also be used to inform health policy at the local level by applying lessons learned from public health practitioners that have engaged in research at the state and federal level.

The literature highlighted opportunities for LHD engagement in and use of PCOR/CER. For instance, effective use of research results could guide the prioritization of health issues identified in CHIPs, inform messaging to increase service provision for hard-to-reach populations, and support the identification of evidence-based interventions. In addition, lessons learned about patient engagement in research can be applied to community engagement in program/service delivery at the local level.





Gaps in available literature underscored the potential for training opportunities geared towards public health practitioners working at the local level. There is an apparent lack of awareness with PCOR/CER terminology among LHDs, and partnerships with academia seem to facilitate LHD engagement in research. Therefore, LHD capacity may be bolstered with trainings on topics including defining PCOR/CER and its value to LHDs and facilitating and sustaining partnerships with research institutions.

## Interview and Focus Group Results

### The Value of PCOR and CER to Public Health Practice

Participants underscored the value PCOR and CER can bring to the work of LHDs, including by ensuring LHDs address community needs and provide effective services and programs. In particular, research can strengthen an LHD's ability to effectively address community needs. The foundation of PCOR is the patients; they guide the research agenda. Therefore, PCOR conducted by engaging patients that represent members of an LHD's community will produce results that highlight the specific needs of the community. LHD programs and services informed by these results will align with the community's needs and more likely to effectively address them.



**Local health departments are on the front line of meeting community needs, and if they are able to do it in a way that's community/patient-centered and also with the evidence that comes from CER, then they would be more effective at addressing the public health challenges in their communities.**

PCOR and CER can help support LHD service development and delivery. For example, engaging with results—and its results—may help them identify evidence-based practices (EBP) and gain confidence in developing services that integrate EBP. Specifically, one participant noted, “They have the ability to see what programs or activities are more or less effective than others, and so it allows them to be more targeted and efficient in their use of resources and the effectiveness of their programs.”



## Engaging in the Research Process

### Type of LHD Staff Engaged in Research

Respondents noted that all levels of an LHD (e.g., leadership, program directors, frontline workers) can be engaged in the research process, depending on the research topic and level of engagement. Overall, leadership can provide the perspective of the LHD, as a whole, while program directors and frontline staff can provide the lens of a public health subject matter expert.

However, PCOR and CER may be more relevant to certain staff. In particular, leadership buy-in emerged as an important factor in whether an LHD engaged in research. Leaders must champion the work and identify it as a priority in the strategic plan. Additionally, interview and focus group participants included epidemiologists and other staff representing particular programs, including CH[N]A/CHIP, chronic disease, food-borne disease, climate change, and nursing.

## The Role of LHDs in the Research Process

LHDs play an important role in several phases of the research process, including crafting research questions and methods, encouraging community engagement, and disseminating results. Specifically, LHDs can provide contextual knowledge about the question to be answered and its relationship with the patients in their community. Furthermore, LHDs have a deep understanding of what it is like to operate in and serve their communities. This can help researchers understand the strengths and limitations of their research methods and dissemination approach. LHDs can also help package the results in a way that is most useful and accessible to other public health practitioners.

LHDs can also support community and patient engagement in research. They often have established relationships with the communities they serve that research entities, and other entities even in those communities, may not. In addition, LHDs are trusted in their communities; conversely, certain patient populations—especially those historically under-represented—deeply distrust researchers. Furthermore, LHDs act as a convener of partners, including patient and community representing organizations. Therefore, they can facilitate the engagement of both community members and organizations in PCOR and CER.

## Facilitators and Barriers to Engaging in the Research Process

According to the Theoretical Domains Framework (TDF) and COM-B system of the Behavior Change Wheel, three primary domains act as facilitators (if present) or barriers (if absent) to behavior change, such as participating in research studies: capability, opportunity, and motivation (Table 3).<sup>iv</sup>



**Table 3. Mapping of the Behavior Change Wheel’s COM-B System to the TDF Domains, copied from Cane et al. (2012)**

<b>COM-B Component</b>	<b>TDF Domain</b>
<b>Capability</b>	Knowledge Skills Memory, Attention, and Decision Processes Behavioral Regulation
<b>Opportunity</b>	Social Influences Environmental Context and Resources
<b>Motivation</b>	Social/Professional Role and Identity Beliefs about Capabilities Optimism Beliefs About Consequences Intentions Goals Reinforcement Emotion

### Capability

In support of literature review results, the interviews and focus group found that many LHDs lack awareness about the PCOR/CER approach and, especially, of its applicability to their work. In addition to increasing this awareness, LHDs capable of engaging in research need improved staff knowledge and skills about a variety of related topics, including statistics, data sharing, and the institutional review board (IRB) process. In some cases, LHDs lack knowledge of administrative aspects of setting up partnerships with research and academic institutions, such as how to set up data use agreements and navigate regulatory components of research.



**“Finding that initial capacity to get [LHDs] the resources they need to be at that table is that key element. I don't know that a lot of researchers are willing to put that energy forward. That's where we often see local health departments being left out.”**

## Opportunity

The opportunity to engage in the research process is primarily determined by resource (e.g., funding, staffing) availability. Specifically, LHDs often do not receive funding to participate in or conduct research. At least one quarter of their funding originates from federal agencies,<sup>y</sup> including the Centers for Disease Control and Prevention (CDC), and much of their work is directly tied to grant deliverables. Therefore, research is not an LHD priority because it is not a funder priority. In addition to funding, LHDs that are understaffed cannot allocate time and capacity to research. Interview and focus group results underscore the literature review findings that larger LHDs are more likely to engage in research; smaller LHDs with smaller budgets and fewer staff prioritize providing the basic essential services to their communities and can struggle with capacity to engage in research. Furthermore, genuine engagement in research involves building relationships with researchers, which requires staff time and capacity.



**“I actually think local health departments are under-represented in PCOR and CER research, unless they’re used as a research site. . . . It seems that, many times, these studies are conceptualized in academic institutions.”**

Notably, LHDs are “willing partners” when researchers or health care delivery partners reach out to them. In addition, when asked what role LHDs could play in research, conducting the research was identified. This suggests LHDs may not consider themselves as research entities and may not actively pursue research collaborations. Adding to this, LHDs noted that not having an internal research infrastructure, including an IRB, ethics committee, or other regulatory resources, was a barrier.

## Motivation

LHDs are motivated to engage in the research process when doing so is within their scope. Leadership at some larger LHDs have set a research vision or identified research as a strategic priority. This results in research being planned and budgeted for—financially and in terms of staff capacity. Most LHDs are pragmatic in nature, so as was found in the literature review, LHDs with an academic health department partnership were more likely to deem research as within their scope.



LHD leaders that buy-in to the value proposition of PCOR and CER were also more likely to identify research as a priority for the agency. LHDs align their work with their mission, so PCOR and CER must be aligned for them to engage. In addition, spending resources to engage in research needs to help them more effectively serve the community and bolster the work they are already doing.

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**“It makes sense for health departments to be engaged in this work, because it’s going to ultimately allow them to be more effective as public health agencies. . . . The primary perspective is ensuring the health, safety, and wellbeing of the community. So, the patient-centered outcomes research aspect becomes a secondary approach to how do you achieve that.”**

Similar to a finding of the literature review, LHDs engage in PCOR and CER when the research topic is important to the agency. Specifically, engagement is encouraged when topics are relevant to the way LHDs function, the priority services they provide, or the issues important to the community they serve. Notably, LHDs highlight the culture differences between practice and research settings. Navigating these culture differences can be a barrier, and some LHDs may have a sense that their perspective is not valued by researchers. For example, LHDs have experienced one-sided partnerships with researchers who focus on their own agenda. They conduct the research project without genuinely engaging LHDs to identify shared goals and appropriate activities to ensure a benefit to the local community.

## Using Research Results

### Facilitators and Barriers to Using Research Results

Many LHDs indirectly use research results to inform the development of their programs and services. Most often, they look to federal agencies (e.g., CDC) and national organizations (e.g., NACCHO) to provide examples of “evidence-based practices” that are translated from research. Few LHDs look for undigested research results (such as in journal articles) to inform their work. Most LHDs do not use PCOR and CER results, specifically.

### Capability

LHD capability to use PCOR and CER results is dependent upon staff knowledge and skills to translate and adapt results to their specific programs, services, and needs. In addition, staff need to know how to evaluate whether the results and adaptations put into practice are effective. These research-specific knowledge, skills, and abilities do not seem to be commonly found within LHDs.

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It puts the onus on the people in local health departments to have the skills to take the research and put it into practice in their local environment. The challenge there is knowing how much of the fidelity they can tinker with to still have an effective intervention, knowing what to adapt.”



## Opportunity

LHDs have difficulty accessing research results due to barriers, including the cost of subscribing to journals and general difficulty finding research on a specific topic. Notably, one of the most common appears to be that results are not packaged or messaged in a way that is relevant to public health. In some cases, this is a consequence of the guidance provided by funders about what information is to be included in research reports. Specifically, if funders do not indicate that recommendations and implications should be relevant to public health, the application of research in that setting may not get addressed.

## Motivation

LHDs are motivated to use PCOR and CER results when the research is conducted with patients representative of their community and in a community setting that is similar to their own. For example, if a research study is conducted in a large urban context, the results may not be applicable to a smaller, more rural context.

Similar to understanding the value of engaging in research, LHDs also need a value proposition for taking their time to find and apply research results to their work. Specifically, LHDs should be made aware of how using PCOR and CER results can strengthen the effectiveness of their work and help them address strategic priorities.







**“If you have health departments that are doing advanced work in this area, have stories about those health departments. If you have health departments that are engaged in it, but maybe not so much, have stories about those as well. And then, you have health departments that are not even putting their toes in the water.”**

## Opportunities for Building LHD Capacity

Four roles emerged for NACCHO to play in building LHD capacity to engage in and use results from PCOR and CER: educator, convener, connector, and advocate. In all these roles, NACCHO should aim to increase the visibility of LHDs as a key player in research.

### Educator

As an educator, NACCHO can increase awareness, knowledge, and skills for LHDs and their partners about the role and value of LHDs in this work. For example, NACCHO can provide case examples of diverse LHDs engaged in research at a variety of levels (e.g., conducting research, being an engaged stakeholder) or a toolkit that describes the work, why it is important, and the elements critical to success. In addition, opportunities for LHD staff to learn about research skills can strengthen their capability to participate in research. Specifically, NACCHO can create and disseminate resources on PCOR terminology, writing research grants, data sharing, relationship building with the community, setting up research partnerships from administrative perspective, the IRB process, and how to find relevant research results. In addition, NACCHO can promote smaller research funding opportunities, such as the PCORI Pipeline to Proposal Awards, to LHDs who need practice in conducting research and applying for larger grants. Furthermore, NACCHO can work with researchers to help them understand what products would be useful to LHDs.

### Convener

As a convener, NACCHO can provide opportunities for LHDs to engage in research together. For example, a venue for LHDs to share their experiences with engaging in, conducting, or using PCOR and CER does not exist. National meetings targeted to LHDs are primarily focused on practice, and those focused on research are not targeted to LHDs.

## Connector

As a connector, NACCHO can foster partnerships among researchers and LHDs. Because culture differences between practice-based and research-based institutions is a barrier to engaging in research, NACCHO can promote a culture of inclusivity and open dialogue.

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**“NACCHO can play a role in helping these groups that come from different cultural milieus be able to communicate more effectively with each other in order to find the shared agenda and the shared priorities.”**



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“[PCOR] seems very focused on healthcare, and I think a lot of our projects aren’t so much in that healthcare realm. We have a lot that are focused not so much on clinicians and healthcare-driven decisions, but more on those social determinants of health and community-based systems.”

### Advocate

As an advocate, NACCHO can support changes at the research funder level. For example, organizations that fund research, including PCORI and the National Institutes of Health (NIH), present PCOR and CER as exclusive of public health. For example, PCORI defines engagement in research as focused on “patients, caregivers, clinicals, and other healthcare stakeholders.” This language does not explicitly include public health, although they may be considered “healthcare stakeholders.”<sup>vi</sup> In addition, LHDs have noticed a similar situation in applications for research funding. For example, the person completing the application may need to select the type of institution with they are affiliated; in some cases, there is health department, local government, or public health option. NACCHO can advocate to close this gap presented in research opportunities so they are inclusive of population and public health.





**“[PCOR is focused on] things like, ‘How are we going to engage patients in research? What’s the impact of this research on individuals?’ That’s great, but I wonder, ‘How are you going to work with concepts that are well beyond the individual benefit, like collective impact and collective benefit?’ I think that’s where a local health department perspective and the PCOR perspective can marry.”**

## Summary and Next Steps

Results show that engaging in and using results from PCOR and CER is relevant to the work of public health practitioners. LHDs can provide a unique perspective about the context of the community and applicability of the research. However, LHDs experience several barriers to engaging in research and using research results, including challenges to capability, opportunity, and motivation. Capability can be strengthened by providing training and resources tailored to LHDs and other population health practitioners on PCOR/ CER and its application to their work. Opportunity relies on relevant funding and other resources are available and accessible. Finally, LHDs are motivated to engage when the research is relevant to their work and their perspective is valued as an equal partner. Prerequisite to addressing these barriers is the need to increase LHD awareness of PCOR and CER and their understanding of how to engage in and apply findings to population health practice.

NACCHO will develop and implement an LHD PCOR CER capacity-building plan based on these results, focusing primarily on increasing LHD and partner awareness of PCOR and CER and providing resources on the practical application of findings to LHD practice, including in collaboration with cross-sectoral partners.

# ACKNOWLEDGEMENTS

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NACCHO would like to thank the Patient-Centered Outcomes Research Institute (PCORI) for providing financial support for this work, under contract #15894-NACCHO.



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# NACCHO

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