

Knowledge Dissemination Among State, Tribal, Local, and Territorial Public Health Agencies Through Communities of Practice During the COVID-19 Pandemic

September 26, 2024

Submitted to:

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200 Independence Ave. S.W.
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Work performed under:

Contract No. HHSP233201500035I, Task Order No. 75P00122F37070

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Acknowledgments

The authors thank the community of practice lead organizations; state, local, Tribal, and territorial public health staff; and federal agencies who shared their perspectives for their valuable contributions to this work. We also thank Sue Felt-Lisk, Chris Palo, and Donovan Griffin from Mathematica and Azmeh Khan from the Office of the Assistant Secretary for Planning and Evaluation (ASPE). We are especially grateful for the guidance from our project officer, Deborah Porterfield at ASPE.

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Acronyms

ASPE	Office of the Assistant Secretary for Planning and Evaluation
CDC	Centers for Disease Control and Prevention
CoP	community of practice
K2A	Knowledge to Action
STLT	state, Tribal, local, and territorial

Executive Summary

The COVID-19 pandemic created an urgent need for state, Tribal, local, and territorial (STLT) public health agencies to translate knowledge and guidance into effective programs, policies, and practices. Federal agencies produced and disseminated this guidance. At the same time, nonfederal organizations (including academic institutions, philanthropic groups, and partner organizations funded by the federal government) played crucial roles in translating this guidance into actionable strategies and supporting STLT agencies in developing and implementing their COVID-19 responses. In this context, communities of practice (CoPs), traditionally valued for knowledge exchange and problem solving, emerged as essential collaborative mechanisms.

Under the Lessons Learned from the COVID-19 Pandemic contract funded by the Office of the Assistant Secretary for Planning and Evaluation (ASPE), Mathematica conducted an environmental scan to identify CoPs led by nonfederal organizations that supported STLT public health agencies and staff. The study also included in-depth interviews with 21 people, including leaders and participants from nonfederal CoPs and federal agencies that supported nonfederal CoPs or understood the CoP landscape during the COVID-19 pandemic. This study primarily explored the experience and perspectives of participants, leaders, and partners in nonfederal CoPs for STLT public health agencies. We focused on these CoPs to help understand how they aligned with or coordinated with federal efforts to reach STLT public health agencies, acknowledging that federally led CoPs and CoPs for other types of organizations took part in the effort. The goal of the study was to generate lessons and considerations for the federal government in funding, engaging, and coordinating with nonfederal CoPs in future public health emergencies.

Key findings

The study identified three types of CoPs that played significant roles in supporting STLT public health agencies during the COVID-19 pandemic. These CoPs differed by their lead organization, and two were nonfederal:

- CoPs led by partner organizations. Partner organizations, defined as those that receive federal grants or cooperative agreements to enhance the effectiveness of the public health system, used their existing networks to tailor federal guidance to STLT needs. Existing CoPs adapted quickly by increasing how often they met, introducing new platforms and approaches for sharing COVID-19 resources, and engaging federal agencies.
- CoPs led by other types of nonfederal organizations. Led by organizations such as academic institutions and nonprofits, these CoPs filled crucial gaps in early guidance and provided unique insights because of their specialized expertise and networks. They created forums for discussing sensitive topics and challenges.
- CoPs led by federal agencies. These CoPs supported pandemic responses by disseminating accurate guidance quickly and directly from the source. Their resources and connections enabled them to bring together key contributors to the response to present emerging guidance and address questions.

We refer to nonfederal CoPs as CoPs throughout the report unless otherwise specified. These CoPs brought together STLT public health agencies, nonfederal partners, and federal staff to translate COVID-

19 guidance into practice (Exhibit 1). By adapting the Knowledge to Action (K2A) Framework from the U.S. Centers for Disease Control and Prevention (CDC), we evaluated how CoPs facilitated moving guidance into actionable practices through tool creation, information dissemination, and enhanced collaboration. CoPs produced practical resources like checklists and protocols, shared data and updates, and connected various public health practitioners; in these ways, they enhanced the ability of STLT public health agencies to respond to the pandemic. They also promoted policy adoption by showcasing successful strategies and supported implementation with peer sharing and collaborative problem solving.

Key factors in the success of CoPs during the COVID-19 pandemic included a clear focus on issues important to members, strong connections between members, and a structure tailored to the group’s goals. Trustworthy facilitators, regular meeting schedules, and protective measures for confidentiality facilitated strong connections between members. Structures that could be tailored to the goals of the group included meeting frequency, the meeting format, and the number and variety of participants. For example, fewer participants facilitated more open communication, interaction, and learning, whereas more participants enabled broader information dissemination.

Among the nonfederal CoPs we interviewed, most engaged with federal agencies, often by inviting their staff to participate in calls to listen or share information. This coordination allowed federal agencies to clarify guidance and provide updates while they gained insight into STLT public health agencies’ needs. CoPs that received advance notice of guidance were better prepared to respond, whereas those that received updates simultaneously with or through the media faced challenges in preparing a response.

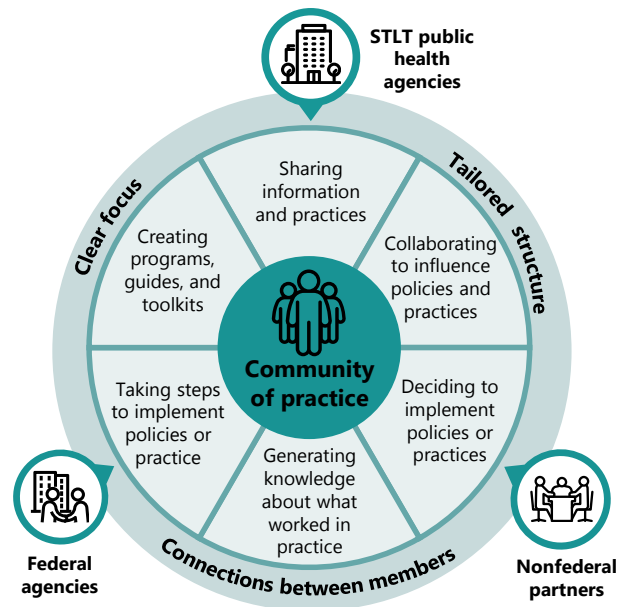
Having multiple information sources, including receiving guidance directly from federal sources and receiving other support through nonfederal CoPs, benefited CoP participants. Both CoP lead organizations and STLT participants noted that these channels served distinct purposes: federal agencies provided timely, accurate information, and CoPs offered tailored insights and lessons learned.

Lessons learned and considerations

Our study identified several lessons learned and considerations for how federal agencies can fund, engage, and coordinate with nonfederal CoPs during future public health emergencies:

- Consider ways to solidify federal support for nonfederal CoPs through active participation and information sharing, when invited.

Exhibit 1. Nonfederal CoPs brought together STLT public health agencies, nonfederal partners, and federal staff to help move knowledge into action



- Consider ways to formalize the role for partner organizations as CoP leads during public health emergencies.
- Consider additional avenues for federal agencies to identify and keep leaders of large, nonfederal CoPs informed about guidance development.
- Continue and consider expanding federal funding for nonfederal organizations to lead CoPs specifically for Tribal, local, and territorial communities.
- Consider ways the federal government, in collaboration with public health partners, can identify channels to disseminate useful tools and resources developed under nonfederal CoPs to make them widely available and to improve efficiency.
- Consider ways the federal government can support nonfederal CoPs in evaluating their efforts to evolve into the best structure for their specific needs.

I. Overview

The COVID-19 pandemic created an urgent need for state, Tribal, local, and territorial (STLT) public health agencies to translate knowledge and guidance into effective programs, policies, and practices. In this context, communities of practice (CoPs) emerged as crucial collaborative mechanisms by bringing together key partners to support STLT public health agencies. In addition to STLT public health agencies, these partners included federal agencies responsible for generating and disseminating guidance and nonfederal organizations—academic institutions, philanthropic groups, and partner organizations funded by the federal government—that played essential supporting roles.

Although CoPs existed prior to the pandemic, no study that we are aware of has examined their collective role in supporting STLT public health agencies including those implemented during the COVID-19 pandemic. To address this gap, we conducted a study of how CoPs supported STLT public health agencies during the COVID-19 pandemic (see study design text box). This study primarily focused on nonfederal CoPs to understand the extent of their alignment or coordination with federal efforts and to identify any unintended consequences or challenges faced by STLT public health staff when receiving guidance from multiple sources. We acknowledge that there were also federally led CoPs and CoPs for other types of organizations, but our study does not focus on them.

Our study findings are informed by in-depth interviews with 21 people, including nonfederal CoP leaders, STLT public health agency staff who participated in nonfederal CoPs, and federal agency staff who supported nonfederal CoPs or understood the CoP landscape during the COVID-19 pandemic. We included CoP leaders and STLT public health staff that could speak to the state, Tribal, local, and territorial perspectives. We ensured our sample included the perspective of leaders and participants in CoPs not funded through federal cooperative agreements because of their potential unique challenges in aligning with federal initiatives and navigating guidance from multiple sources. More details about our methods and interview participants appear in Appendix A.

This report conveys the key findings of this study, organized around the following questions:

- What is a community of practice?
- What types of CoPs emerged to support STLT public health agencies during the COVID-19 pandemic?
- How did CoPs assist STLT public health agencies in translating knowledge and guidance into practice during the COVID-19 pandemic?
- What characteristics of CoPs were helpful to STLT public health agencies?
- How did nonfederal CoPs coordinate with federal efforts and what was the experience for STLT participants receiving guidance and information from multiple channels?

The report concludes with a summary of lessons learned and considerations about how federal agencies can fund, engage, and coordinate with nonfederal CoPs during future public health emergencies.

Study design

- **An environmental scan** to define CoPs and describe characteristics associated with their success
- **Web searches and scoping calls** with key informants to identify CoPs that facilitated disseminating, translating, and implementing the U.S. Department of Health and Human Services guidance to STLT public health agencies during COVID-19
- **In-depth interviews** with 21 people, including leaders and participants from 9 CoPs and federal agencies responsible for developing and disseminating COVID-19 federal guidance

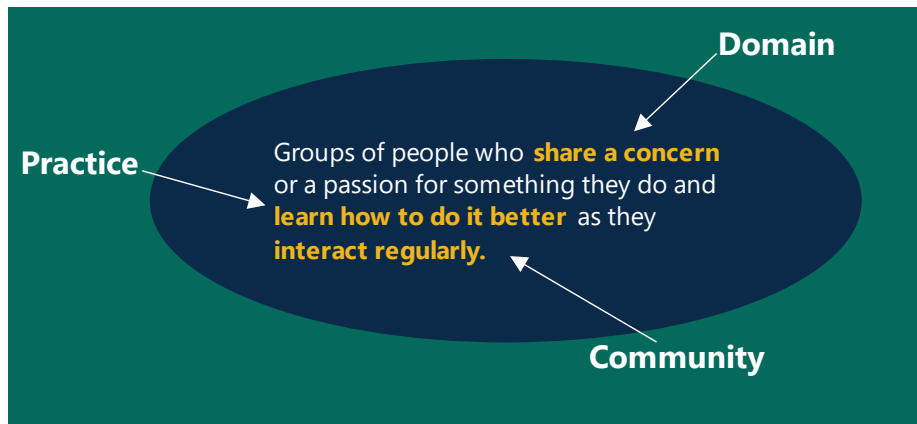
II. Key Findings

Following are the key findings that are the results from a literature review and interviews with CoP leaders, federal agencies, and STLT public health agency participants.

A. What is a community of practice?

CoPs are “groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly” (Wenger-Trayner and Wenger-Trayner 2015). Cognitive anthropologists Jean Lave and Etienne Wenger coined the term “community of practice” when studying apprenticeships as a learning model (Lave and Wenger 1991). CoPs coalesce around topics of significance to individuals and through ongoing interaction foster the creation, exchange, and expansion of knowledge (James-McAlpine et al. 2023). CoPs have a **domain** or common interest, a **community** of relationships and connections fostered among members, and a **practice** of learning and shared resource development as members engage with one another (Exhibit 2).

Exhibit 2. Elements of communities of practice

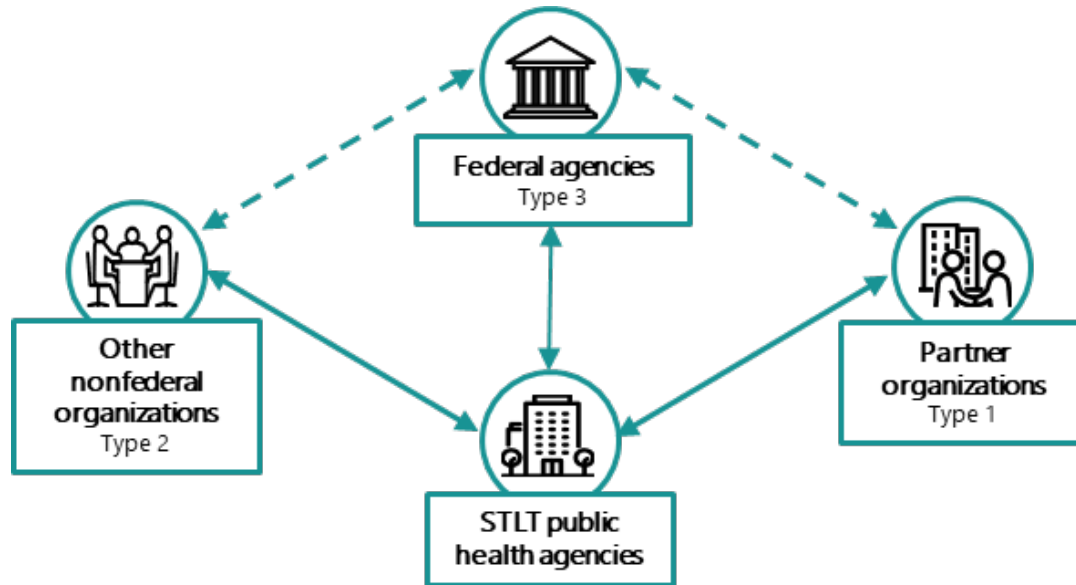


Note: Adapted from <https://www.communityofpractice.ca/background/what-is-a-community-of-practice/>.

B. What types of CoPs emerged to support STLT public health agencies during the COVID-19 pandemic?

We identified three types of CoPs, differentiated by their lead organization, that played significant roles in supporting STLT public health agencies during the COVID-19 pandemic (Exhibit 3). For each type, we discuss common reasons they were initiated, how they were funded, and their unique advantages and challenges in supporting STLT public health agencies.

Exhibit 3. Three types of CoPs played significant roles in supporting STLT public health agencies during the COVID-19 pandemic



Notes: Solid lines represent primary information sharing channels within each CoP type. Dotted lines indicate additional communication channels. Partner organizations are those that receive federal grants or cooperative agreements to enhance the effectiveness of the public health system. Other nonfederal organizations include academic institutions, philanthropic organizations, or nonprofits.

CoPs led by partner organizations (type 1). Partner organizations are organizations that receive federal grants or cooperative agreements to enhance the effectiveness of the public health system (Centers for Disease Control and Prevention [CDC] 2024). Partner organizations often used existing convenings to create COVID-19 CoPs. Several of these convenings were already aimed at distilling information and supporting peer learning opportunities for STLT public health staff. During the pandemic, these groups often layered additional activities on existing workgroups or convenings of their memberships to meet emerging needs. For example, they increased the frequency of meetings or introduced new opportunities or platforms for resource sharing and conversations with federal agencies. Several partner organizations are membership based (see the study terms text box). Their membership base allowed them to deploy resources quickly and efficiently. They used their deep understanding of STLT participants’ contexts to distill and tailor federal guidance. Through COVID-19 CoPs, partner organizations enhanced their understanding of members’ needs, helping them to determine how they or their federal partners could best provide support for their members’ pandemic response efforts. However, they often focused on their specific public health members, a focus that limited opportunities for broader collaboration with other essential partners in pandemic response.

Study terms

- **Partner organizations** are organizations that receive federal grants or cooperative agreements to enhance the effectiveness of the public health system. Examples include the National Association of County and City Health Officials, the Association of State and Territorial Health Officials, and the Council of State and Territorial Epidemiologists.
- **Other types of nonfederal organizations** include academic institutions, philanthropic organizations, and nonprofits.

CoPs led by other types of nonfederal organizations (type 2). Nonfederal organizations such as academic institutions, philanthropic organizations, or nonprofits led these CoPs. The CoPs operated independently and were funded from sources outside of the federal government, but occasionally engaged federal agencies. For example, one CoP described reaching out to testing experts at the federal government to present during meetings and answer questions. Early in the pandemic, when there was limited formal guidance and knowledge of COVID-19, organizations created some of these CoPs to fill specific gaps or achieve specific goals related to the COVID-19 response. These CoPs provided forums for discussing sensitive topics, such as challenges faced or concerns with the feasibility of implementing specific guidance in different political environments. In some cases, CoPs led by nonfederal organizations offered unique access to subject matter experts—such as researchers from academic institutions or communications specialists from emergency response organizations—based on the organization’s expertise and networks. However, nonfederal organizations often did not have existing STLT public health networks on which to draw. In some cases, this limited their ability to quickly find and gather CoP participants.

CoPs led by federal agencies (type 3). Federal agencies often initiated these CoPs to disseminate new guidance to a wide audience, answer questions from STLT public health agencies, and support STLT public health response. Some federal CoPs included calls hosted by CDC with state public health agency leaders in geographic divisions or regions. These CoPs helped distribute guidance directly from the source. Federally led CoPs could gather diverse federal staff important to specific response efforts to present emerging guidance or answer questions in CoP meetings. However, some interviewees perceived that these CoPs were top-down groups, focused on information delivery and at times too large to foster dialogue or discuss translation to specific contexts.

Through an environmental scan and scoping calls with key informants, we identified 32 COVID-19 STLT public health CoPs led by nonfederal organizations (types 1 and 2). In the rest of this report, we use “CoP” to refer to COVID-19 STLT public health CoPs led by nonfederal organizations, unless we specify otherwise. Appendix B presents the list of CoPs. These CoPs reflected a wide variety of topics and participants. Some CoPs formed to discuss implementing and adapting guidance for particular contexts. These included CoPs composed of Tribes implementing guidance as sovereign nations and of territories implementing guidance that was largely intended for U.S. states. Several CoPs focused their membership on STLT public health agency staff with specific roles in the pandemic response, such as epidemiologists, immunization program managers, or preparedness directors. Others included a variety of STLT public health agency staff. CoPs also focused on specific topics, such as responding to workplace outbreaks or preparing for and managing a medical surge. Many CoPs that supported STLT public health agencies are still active in some form today, underscoring their value. Their initial focus during the pandemic shifted, and these CoPs have adapted to address broader themes such as general preparedness, capacity building, and other emerging priorities.

In Exhibit 4, we list the characteristics of the CoPs we identified, including topic area, member type, activities performed by CoP leads to support CoP members, and type of lead organization. The CoPs we identified offer insight into the variety of CoPs available but likely do not represent a comprehensive accounting of all STLT public health CoPs led by nonfederal agencies during the COVID-19 pandemic.

Exhibit 4. Characteristics of nonfederal COVID-19 STLT public health CoPs

CoP characteristics	Percentage of CoPs with characteristic (N = 32)
CoP topic areas^a	
Vaccination	31 (n = 10)
Health equity in the COVID-19 response	16 (n = 5)
General COVID-19 response best practices	13 (n = 4)
Preparedness capacity	13 (n = 4)
Prevention for a specific population (for example, K–12 schools, incarcerated individuals)	13 (n = 4)
Contact tracing and exposure notification	7 (n = 3)
Testing	6 (n = 2)
Immunization information systems	6 (n=2)
Laboratory	6 (n = 2)
Clinical care and services	3 (n = 1)
Therapeutics	3 (n = 1)
CoP member types^a	
Multiple	37 (n = 12)
Specific categories of STLT staff (for example, epidemiologists, preparedness directors, immunization information system staff)	16 (n = 5)
Tribal	13 (n = 4)
Local	9 (n = 3)
State	9 (n = 3)
Territorial	6 (n = 2)
CoP activities^a	
Calls/meetings	56 (n = 18)
Online community	25 (n = 8)
Webinars	9 (n = 3)
Workshops	9 (n = 3)
Cohort trainings	6 (n = 2)
Newsletters	6 (n = 2)
Coaching	6 (n = 2)
Roundtables	3 (n = 1)
CoP lead organization	
Partner organizations (type 1)	59 (n = 19)
Other nonfederal organization (type 2)	38 (n = 12)
Lead organization uncertain	3 (n = 1)

^a These numbers may not sum to 100 percent because some CoPs covered more than one of the topics or activities. In addition, because these findings are based on publicly available information and a limited number of interviews, they may underrepresent the true number of CoPs with these characteristics.

C. How did CoPs assist STLT public health agencies in translating knowledge and guidance into practice during the COVID-19 pandemic?

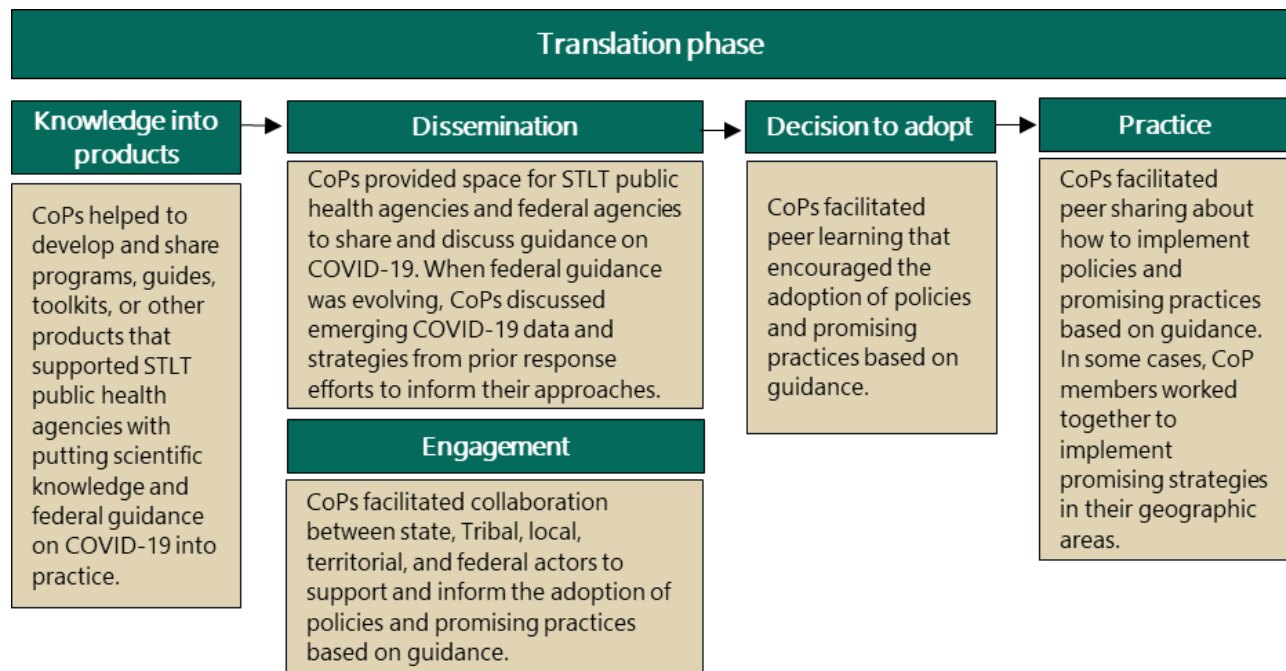
We applied and adapted the CDC’s Knowledge to Action (K2A) Framework to understand the role of CoPs in translating knowledge and guidance the federal government generated into practice at STLT public health agencies during the COVID-19 pandemic. The CDC’s three-phase K2A framework (see the K2A text box; Wilson et al. 2011) demonstrates how scientific knowledge and evidence-based policies, programs, and practices are moved into sustainable actions to improve public health. We focused on the translation phase of the framework to understand the experience of STLT public health agencies implementing federal guidance. Although CoPs likely supported scientific research around COVID-19 and the decision to translate that research into guidance at the federal level (research and translation phases)—as well as sustaining and improving COVID-19 response policies, programs, and practices over the long term (institutionalization phase)—these aspects of CoPs were outside the scope of our study.

CoPs played the role of “translation supporting structures,” defined in the K2A framework as structures that enhance organizational capacity to “plan, implement, evaluate, or sustain the translation phase of the intervention process” (CDC 2014). As translation supporting structures, CoPs supported planning and developing policies and practices in response to COVID-19 guidance, shared tools and resources to help STLT public health agencies with implementing policies and practices informed by the guidance, and offered peer learning opportunities to evaluate what was working. In Exhibit 5, we outline the elements of the translation phase in the K2A framework and how CoPs supported STLT public health agencies with these elements during the COVID-19 pandemic. Although we list CoP activities under a single element, some activities supported multiple aspects of translation.

Knowledge to Action Framework phases

1. **Research:** Generating scientific knowledge through discovery, including efficacy and effectiveness studies and evaluations
2. **Translation:** Implementing science-based knowledge, policies, and programs and generating practice-based evidence for further research
3. **Institutionalization:** Maintaining and further improving evidence-based programs, policies, and practices

Exhibit 5. How CoPs supported the translation phase of the K2A framework for STLT public health agencies during the COVID-19 pandemic



Note: We adapted the structure of this exhibit from the CDC’s K2A framework ([An Organizing Framework for Translation in Public Health: The Knowledge to Action Framework](#)) to include examples of CoP roles in translation identified in this study.

CoPs supported the elements of the translation phase in the K2A framework in several ways:

- **Creating programs, guides, toolkits, and other products (knowledge into products).** During the COVID-19 pandemic, STLT public health agencies developed and shared products through CoPs that translated federal guidance into policies, programs, or interventions. For example, several CoP leaders mentioned that participants created and shared checklists and protocols for COVID-19 vaccine rollout that were informed by federal guidance on priority populations for vaccination.
- **Sharing information and promising practices (dissemination).** When federal agencies issued guidance, CoPs shared and discussed it with their members, often focusing on how it could be applied in CoP members’ communities. When formal federal guidance was still evolving, CoPs often shared emerging COVID-19 data or lessons learned from other response efforts to support STLT public health agencies with pandemic response strategies. Some CoPs also supported their members in disseminating guidance to their communities. For example, one CoP for Tribal communities created a messaging toolkit to communicate guidance about COVID-19 testing, masking, and vaccination in a way that was culturally relevant.
- **Collaborating to influence policies and promising practices based on guidance (engagement).** CoPs brought together different actors in the COVID-19 response and served as a central place for collaboration. CoPs that partnered closely with federal agencies often provided STLT public health agencies with a venue for bidirectional communication: they served as both a place to hear about emerging federal guidance and an opportunity for STLT public health agencies to share with federal agencies what was happening on the ground. A few participants noted that CoPs formed an important

community for STLT public health agencies to advocate for new guidance, resources, or supports in the pandemic response. CoPs also presented an opportunity for different types or levels of STLT public health to connect with one another. For example, Tribal health agencies could connect with states to discuss approaches, and states could connect with local jurisdictions. As one CoP participant described, although state and local public health agencies do often have relationships, they don't often have a venue for dialogue. The CoP provided a place where the states could learn more about what was working in the local context and gather feedback and information.

- **Deciding to implement policies or promising practices based on guidance (decision to adopt).**

The guidance-based policies and practices peers shared in CoPs helped STLT public health agencies encourage the adoption of similar policies and practices in their settings. For example, one CoP leader described that participants often shared other CoP members' successful strategies with their leadership to motivate similar action and work. They shared an example of a CoP participant who learned about another jurisdiction's approach to school testing and convinced their own jurisdiction's school leadership to replicate the strategy.

- **Implementing policies or promising practices based on guidance (practice).**

Peers in CoPs often shared what was and was not working when implementing guidance-based policies and practices in their settings. This information helped CoP members to refine their approaches and address challenges. In some cases, CoP members also took collaborative action to implement a strategy. For example, one CoP with members in the same geographic area worked together to establish a distribution system for sharing vaccines when supplies were limited.



"I think it's really helpful being in the same room with other jurisdictions.... It's always nice to hear about what challenges other jurisdictions face, what unique or innovative programs they've implemented that could potentially be replicated."

—CoP participant

CoPs also generated practice-based discoveries and evidence that helped to advance the COVID-19 response. Through the process of supporting STLT public health agencies with translation activities, CoPs generated knowledge and evidence about what was working in practice (called "practice-based discoveries" in the K2A framework). Sometimes CoPs shared this practice-based knowledge with federal agencies and the public health field more broadly to advance the COVID-19 response. For example, one CoP generated a step-by-step guide for implementing COVID-19 testing guidance in schools; the federal government then shared this resource more broadly.

D. What characteristics of CoPs were helpful to STLT public health agencies?

Several common themes emerged as key contributors to the success of CoPs in the literature. Our interviews with CoP leaders, federal agencies, and STLT public health agency staff confirmed these key themes and provided context on their applications for STLT public health CoPs. We describe each theme further below.

A clear focus on a shared problem or topic is critical to the success of CoPs generally (Bowman 2016; Edmonton Regional Learning Consortium n.d.; National Network of Public Health Institutes [NNPHI] 2020). The COVID-19 pandemic provided a clear and significant focus for STLT public health. Some CoPs adopted a singular focus within the pandemic and found doing so beneficial for achieving specific goals. In contrast, other CoPs addressed multiple topics. Often, these CoPs focused on whatever topics were of greatest interest to their members at that time; these interests evolved as the COVID-19 pandemic and response efforts changed.

Strong connections between members and a safe environment are also important supports for sharing ideas and problem solving (Baker and Beames 2016; Bozarth 2013; NNPHI 2020; Wenger et al. 2011). The connections between members and the safe environment cultivated in COVID-19 CoPs helped STLT public health agency staff protect their mental health. Having a dedicated space for discussion with others facing similar challenges often helped participants feel supported during a difficult and stressful time. CoP leaders and participants described various approaches to ensure members felt connected with one another and comfortable sharing challenges in a safe environment:

- **Using a trusted facilitator.** This person was often someone who had preexisting relationships with participants and experience facilitating groups. In some CoPs, facilitators worked to build relationships with participants by meeting with them one on one outside of regular CoP calls, to learn more about their successes and challenges.
- **Establishing a predictable cadence.** Establishing a regular time for participants to meet helped to build connections between members. CoPs mentioned that members often felt more comfortable over time.
- **Creating opportunities for participants to connect.** Several CoP leads described incorporating icebreakers or opportunities for participants to socialize that helped to build connections and reinforce their shared goals.
- **Protecting confidentiality.** CoP leads tried to ensure participants were not concerned about other participants sharing their challenges with the media or others outside of the group. Specifically, they often opted not to record sessions or developed rules and norms stating that sensitive discussions wouldn't be shared with people outside of the CoP.
- **Dedicating time for federal involvement.** Having federal partners actively participate and interact helped participants feel comfortable and valued. However, some CoP leads also purposefully reserved time or sessions without federal partners. They noted that STLT public health agency participants were often most comfortable sharing challenges among peers.



"[The CoP] is also just a place to check up on people. COVID was really stressful. When we talk about workforce and the mental health of the public health workforce, [the CoP] was a place where you're looking through the screen or you're picking up the phone, [and] you knew that someone understood."

—CoP leader

A structure tailored to the goals of the group is another component of successful CoPs (Baker and Beames 2016; Barbour et al. 2018; NNPHI 2020; Vital Strategies 2020). We anticipated identifying a specific way of organizing CoP meetings that was most helpful for STLT public health agencies during the COVID-19 pandemic. Instead, we found that variations in meeting frequency, structure, federal involvement, and participant composition each offered distinct advantages. In Exhibit 6, we outline different characteristics of nonfederal COVID-19 STLT public health CoPs and how each attribute contributed unique benefits.



Key insight: Variation in characteristics such as frequency and structure of meetings, federal influence, and variety and number of participants each had advantages depending on the individual CoP.

Exhibit 6. Advantages of variations in key structural characteristics of nonfederal CoPs

Characteristic	Advantages of less	Advantages of more
Meeting frequency	<ul style="list-style-type: none"> Less frequent meetings enabled participants more time to focus on their jurisdiction’s pandemic response, potentially resulting in higher turnout. Less frequent but longer meetings allowed for intensive work on specific goals. 	<ul style="list-style-type: none"> More frequent meetings enabled participants to share newly released guidance and allowed participants to react and share operational or implementation approaches quickly for time-sensitive topics.
Meeting structure	<ul style="list-style-type: none"> Less structured meetings allowed participants to shift focus to issues most pertinent to them, fostering organic peer learning. 	<ul style="list-style-type: none"> More structured meetings, with detailed agendas and presentations, ensured participants were up to date on certain information and helped with achieving specific goals.
Number of participants	<ul style="list-style-type: none"> Fewer participants allowed for more open communication, interaction, and learning. Fewer participants allowed them to focus on specific topics and goals in more depth or to give feedback on emerging guidance. 	<ul style="list-style-type: none"> More participants allowed for more efficient and broad dissemination of information.
Federal influence	<ul style="list-style-type: none"> Less federal influence in nonfederal CoPs contributed to participants’ perception that it was a safe space for sharing challenges or discussing politically sensitive topics. 	<ul style="list-style-type: none"> More federal influence in nonfederal CoPs enabled bidirectional communication.
Variety of participant roles	<ul style="list-style-type: none"> Less variety in participant roles (for example, including participants that served in the same role across jurisdictions) fostered relationships through a common understanding of responsibilities and helped participants feel more comfortable sharing challenges. 	<ul style="list-style-type: none"> More variety in participant roles (for example, including participants that served in different aspects of the COVID-19 response) promoted cross-sector collaboration and resource sharing.

CoP leads generally used informal approaches to assess which structures were best suited to their members’ goals and to understand their CoP’s impact. CoP leads emphasized the importance of using different methods, such as participant surveys or one-on-one meetings with participants, to ensure the CoP remained responsive to participants’ needs. However, CoPs made few formal efforts to understand which structures were most effective, and only one CoP leader reported conducting a formal assessment of their CoP’s impact.

E. How did nonfederal CoPs coordinate with federal efforts and what was the experience for STLT participants receiving guidance and information from multiple channels?

Most nonfederal CoPs engaged with federal agencies in some form. Many nonfederal CoPs invited federal representatives to participate in calls as presenters or resources on an ad hoc basis. In some instances, particularly for CoPs led by partner organizations, federal agencies received standing invitations to listen to or participate in calls. These interactions sometimes occurred during dedicated portions of the agenda.

Coordination between nonfederal CoPs and federal agencies benefited both parties. As discussed in Section C, federal agency participation in nonfederal CoPs provided STLT participants with clarifications on guidance and updates on federal response efforts. When federal agencies participated in nonfederal CoPs, their involvement helped STLT participants build trust and confidence in the guidance by providing a direct connection to the source. At the same time, federal agencies gained valuable insights into the needs and experiences of STLT participants through the CoPs that could help them in their work.



"[STLT public health staff] needed not just the information, but they needed to have a sense of who the person was giving them the information and confidence that they could trust the person."

—Federal agency participant

Nonfederal CoPs leads and STLT public health agencies participating in CoPs appreciated engaging with federal agencies on new guidance, either as sounding boards or as partners receiving advance notice. One nonfederal CoP lead said that they were included in a federal call on messaging guidance later in the pandemic, which they noted was helpful. However, some CoPs leads and STLT participants reported not being engaged early in the pandemic and as a result receiving updates on guidance simultaneously with, or through, the media. When this occurred, STLT public health agencies had less time to react to the guidance before receiving calls from the media and public asking for their response. STLT participants preferred when they were engaged more as collaborators in the following ways:

- **Role in guidance development.** Federal agencies involved some CoPs in developing their guidance. For example, they asked CoPs to survey all their members on specific issues or to identify smaller groups of members with highly relevant experience to serve as sounding boards. Federal agencies found using CoPs to identify relevant guidance users was valuable for understanding how STLT public health agencies might interpret or perceive proposed guidance before its broader release.
- **Advance notice of guidance release.** CoPs that received advance notice of guidance before it was public found this approach beneficial. STLT participants valued this early notice because it allowed them to prepare talking points, which helped show the public a united front between federal agencies and STLT public health.

In our limited sample of CoP participants, very few STLT public health staff reported significant unintended consequences or challenges of integrating information from various dissemination channels. Conversely, several STLT public health staff found having both federal and nonfederal information sources to be helpful and productive. STLT public health groups appreciated receiving guidance directly from federal agencies as well as through CoP lead organizations. Both CoP lead organizations and STLT

participants noted that these channels served distinct purposes: federal agencies provided timely, accurate information, and CoPs generated more tailored insights and lessons learned.

Having multiple channels for receiving guidance proved beneficial for overcoming specific challenges including when guidance was insufficiently tailored or detailed, when there was turnover in key roles, and when frontline staff did not receive guidance directly. Nonfederal CoPs addressed these challenges by tailoring guidance, interpreting the guidance, and engaging frontline public health staff.



Key insight: Several CoP participants believed that receiving information and support from both federal and nonfederal sources was helpful and productive.

Nonfederal CoPs helped when guidance was not tailored to specific contexts. STLT participants did not always perceive the guidance provided by federal agencies as sufficiently tailored to their specific contexts or clear enough for them to confidently implement it. CoPs composed of Tribal and territorial public health groups—whose resources, infrastructure, and governance structures differ significantly from those of state and local public health groups—expressed this sentiment more strongly than did other participants.

Nonfederal CoPs helped when guidance was not focused on supporting implementation. CoPs sometimes perceived guidance as more science or research focused, with limited implementation details for practice settings. For example, an STLT public health participant in a CoP focused on case investigation and contact tracing reported that federal guidance did not cover topics such as technology systems for managing high caseloads or the staffing and training needs associated with case investigation and contact tracing.

Nonfederal CoPs helped when there was turnover in key roles. Turnover in key roles on both the federal and nonfederal side caused serious challenges for response efforts. Nonfederal CoPs served as a valuable tool for managing the challenges of turnover by providing a centralized repository of knowledge and connections. That is, when an individual came into a new role, they could enter the CoP and immediately build necessary connections.

Nonfederal CoPs helped fill a gap with direct federal engagement with frontline staff, including those in local health jurisdictions. For example, one CoP participant working on the COVID-19 response at a local health department said that federal agencies often shared guidance on COVID-19 with states and states sometimes did not share it with the local organizations or communicated it ineffectively. This participant described that nonfederal CoPs, particularly those with strong federal engagement, were an important way to stay informed on the latest guidance directly from the federal government. One federal agency also shared the importance of investing in frontline public health staff to ensure that there was adequate capacity and staff on the ground who had time to attend and learn from CoPs. This participant mentioned that if CoPs focus on the leadership level only, it limits their ability to translate guidance into practice.

III. Lessons Learned and Considerations

This study affirmed the crucial role of nonfederal CoPs in supporting STLT public health agencies with knowledge dissemination during the COVID-19 pandemic and underscored the benefits of federal collaboration with these CoPs. Additionally, the study highlighted the importance of maintaining designated spaces for public health staff and leaders at state, Tribal, local, and territorial levels to discuss their unique strategies, successes, challenges, and needs.

Although this study offered important insights on the role of nonfederal CoPs during the COVID-19 pandemic, it was exploratory in nature and included insights from only 21 interviewees. Therefore, it may not reflect the experience of all nonfederal CoP leaders, STLT public health agencies, and federal partners. We also recognize the important role that federally led CoPs played in disseminating information during the COVID-19 pandemic, though examining this role was outside the scope of this study.

In Exhibit 7, we summarize key lessons learned from our study. We also identify how these lessons might inform future considerations about how federal agencies can fund, engage, and coordinate with nonfederal CoPs during future public health emergencies.

Exhibit 7. Lessons learned about using CoPs to support STLT public health agencies during the COVID-19 pandemic and future considerations

Lessons learned	Future considerations
<ul style="list-style-type: none"> STLT public health agencies benefited from having multiple information sources. They received guidance directly from federal sources and received tailored support through nonfederal CoPs. CoP lead organizations and STLT participants both noted that these channels served distinct purposes: federal agencies provided timely, accurate information, and CoPs offered more tailored insights and lessons learned. When federal agencies supported nonfederal CoPs through their active engagement, coordination improved. 	<ul style="list-style-type: none"> Consider ways to further solidify federal support for nonfederal CoPs through active participation and information sharing, when invited. Active federal support for nonfederal CoPs can enhance the translation of guidance into practice.
<ul style="list-style-type: none"> Partner organizations, defined as those that receive federal grants or cooperative agreements to enhance the effectiveness of the public health system, offer an effective infrastructure for quickly engaging STLT public health agencies in CoPs during public health emergencies. Their established networks and resources facilitate rapid and efficient response coordination. 	<ul style="list-style-type: none"> Consider ways to formalize the role of partner organizations as CoP leads during public health emergencies. Federal agencies could incorporate enhanced CoP roles into grant funding for partner organizations and specify how these CoPs would coordinate with federal agencies during emergencies. One example is specifying how these CoPs could advise on guidance development and release.
<ul style="list-style-type: none"> CoPs led by nonfederal organizations such as academic institutions and nonprofits were especially important in filling gaps before guidance was available. They also created forums for discussing sensitive topics and challenges that STLT public health agencies might not be comfortable discussing with federal agencies. Although federal agencies included some leaders of these CoPs in calls about messaging guidance, they did not include CoP leaders consistently. 	<ul style="list-style-type: none"> Consider additional avenues for federal agencies to identify and keep leaders of large, nonfederal CoPs informed about guidance development. Integrating these CoP leaders into federal channels for discussing guidance early in a public health emergency can help to ensure that messaging is consistent and federal guidance accurately disseminates through multiple channels.

Lessons learned	Future considerations
<ul style="list-style-type: none"> • Nonfederal CoPs played a key role for Tribal, local, and territorial public health staff because federal CoPs didn't consistently reach these organizations. Additionally, these CoPs helped nonfederal staff to tailor federal guidance to fit their contexts. These CoPs were also important avenues for the federal government to identify emerging needs for resources and additional support in these communities, as well as opportunities to improve guidance. 	<ul style="list-style-type: none"> • Continue and consider expanding federal funding for nonfederal organizations to lead CoPs specifically for Tribal, local, and territorial communities. Providing consistent backing and resources to nonfederal organizations that lead CoPs in these communities can help ensure they have reliable avenues to discuss and tailor guidance to address their needs during public health emergencies.
<ul style="list-style-type: none"> • Nonfederal CoPs played a crucial role in translating guidance into practice. CoPs helped by generating and sharing products, disseminating information (and supporting information dissemination), engaging partners in the pandemic response, and facilitating peer sharing about successful strategies and approaches to overcome challenges. 	<ul style="list-style-type: none"> • Consider ways the federal government, in collaboration with public health partners, can identify channels to disseminate useful tools and resources developed under CoPs to make them widely available and to improve efficiency. Federal agencies could partner to develop platforms to facilitate sharing tailored products and tools. A consistent communications channel would also support quicker and more efficient responses.
<ul style="list-style-type: none"> • Effective CoPs focused on problems of significance to their members, fostered strong connections between members, and had a structure tailored to the group's goals. We found that variations in meeting frequency, federal involvement, and participant composition offered distinct advantages in different contexts. CoPs evolved over time to continue to meet participants' needs. Relatively few CoPs in our sample conducted formal evaluations of their work, although several used informal approaches to identify what structures and supports were most helpful. 	<ul style="list-style-type: none"> • Consider ways the federal government can support nonfederal CoPs in evaluating their efforts to evolve into the best structure for their specific needs. Providing resources and support for CoP leads to help them understand what's working and not working in their specific context could enhance their ability to support public health agencies in responding to public health emergencies and advancing evidence-based policies and practices.

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Appendix A. Methods

We conducted an environmental scan and a series of in-depth qualitative interviews to answer the following research questions:

1. What were the nonfederal communities of practice (CoPs) that supported implementing federal guidance in state, Tribal, local, and territorial (STLT) public health practice during the COVID-19 pandemic?
2. Why were these CoPs initiated and what gaps did they fill? How were these funded?
3. Which CoP efforts were helpful to STLT public health agencies? How and why?
4. To what extent were the CoPs operated by nonfederal organizations aligned or coordinated with federal efforts?
5. What were any unintended consequences or challenges for STLT public health agencies to integrate knowledge arriving through a variety of dissemination channels?
6. What are lessons learned for future pandemics, for federal agency actions including collaborations with nonfederal CoPs? What are critical steps in the knowledge to action pathways that can be more efficient in the next pandemic?

Environmental scan

To identify nonfederal CoPs supporting STLT public health agencies with the implementation of federal guidance during the COVID-19 pandemic (question 1 above), we conducted an environmental scan. We used a targeted search strategy to identify CoPs, including searching the websites of (1) key nonfederal organizations that provide technical assistance and support to STLT public health agencies, (2) organizations recommended by the Office of the Assistant Secretary for Planning and Evaluation, and (3) organizations such as Candid and Grantmakers in Health that compile tools and resources for foundations or philanthropies that may fund CoPs. We also conducted broad searches in Google and Google Scholar to look for additional COVID-19 STLT public health CoPs.

We searched websites (search strategy and list of websites described in Exhibit A.1 below) specifically for CoPs that met the following criteria:

- Based in the United States
- Led by a nonfederal organization
- Active during the COVID-19 public health emergency
- Intended for or substantially involving STLT public health agency members or other governmental public health staff
- Structured in a way that is suggestive of a community of practice (that is, involved in regular interaction and shared learning to develop member capabilities and to build and exchange knowledge)
- Focused on topics related to U.S. Department of Health and Human Services guidance on the COVID-19 pandemic, including but not limited to the following:

- COVID-19 testing, treatment, vaccination, and therapeutics
- COVID-19 case reporting and surveillance
- COVID-19 pandemic response for specific populations or settings (for example, rural communities, K–12 schools, prisons/jails, individuals in nursing homes)
- Promoting health equity in the COVID-19 response

We also identified any relevant publicly available evaluations on the CoPs identified.

Exhibit A.1. Websites included in search for CoPs and search strategy

Website	Date Accessed	Search Strategy
Association of State and Territorial Health Officials	1/30/2024	<ul style="list-style-type: none"> • Reviewed site pages including peer network, COVID-19, and preparedness pages. • Searched site for COVID-19 community of practice, COVID-19 convening, and COVID-19 learning network
Academy Health	1/30/2024	<ul style="list-style-type: none"> • Reviewed site pages including interest groups page. • Searched site for COVID-19 community of practice and COVID-19 interest groups.
Alaska Native Tribal Health Consortium Epidemiology Center	2/1/2024	<ul style="list-style-type: none"> • Searched site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.
Albuquerque Area Southwest Tribal Epidemiology Center	1/31/2024	<ul style="list-style-type: none"> • Reviewed COVID-19 page • No website search bar available
American Immunization Registry Association	2/7/2024	<ul style="list-style-type: none"> • Reviewed site pages including workgroups and events pages, pandemic, and outbreak response pages. • Searched site for COVID-19, COVID-19 workgroup, COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.
Association of Asian Pacific Community Health Organizations	1/30/2024	<ul style="list-style-type: none"> • Reviewed COVID-19 response page and links to networks on the page.
Association of Immunization Managers	1/30/2024	<ul style="list-style-type: none"> • Reviewed site pages including partnership page. • Searched site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.
Association of Public Health Laboratories	2/7/2024	<ul style="list-style-type: none"> • Reviewed site pages including CollABorate online communities, public health updates, and public health preparedness and response page. • Searched site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.
Big Cities Health Coalition	1/29/2024	<ul style="list-style-type: none"> • Reviewed site pages including the COVID-19 page. • Searched site for COVID-19 community of practice COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.

Website	Date Accessed	Search Strategy
California Tribal Epidemiology Center	1/31/2024	<ul style="list-style-type: none"> Reviewed site pages including public health updates page. Searched site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.
Candid	1/31/2024	<ul style="list-style-type: none"> Searched site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.
CDC Foundation	1/31/2024	<ul style="list-style-type: none"> Reviewed site pages including COVID-19 page. Searched site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.
Council of State and Territorial Epidemiologists	1/31/2024	<ul style="list-style-type: none"> Reviewed site pages including COVID-19 response page. Searched site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.
de Beaumont Foundation	1/31/2024	<ul style="list-style-type: none"> Reviewed site pages including programs and past programs page. Searched the site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.
Duke Margolis Center for Health Policy	1/31/2024	<ul style="list-style-type: none"> Reviewed site pages including COVID-19 Response page and list of projects (such as the Equity Learning Network) focused on the COVID-19 response. Searched the site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.
Google	2/8/2024	<ul style="list-style-type: none"> Searched US public health COVID-19 community of practice, COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.
Google Scholar	2/8/2024	<ul style="list-style-type: none"> Searched US public health COVID-19 community of practice, COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.
Grantmakers In Health	1/31/2024	<ul style="list-style-type: none"> Searched site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.
Great Lakes Intertribal Epidemiology Center	1/31/2024	<ul style="list-style-type: none"> Reviewed site pages including COVID-19 response and public health updates page. Searched the site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.
Great Plains Tribal Leaders' Health Board	1/31/2024	<ul style="list-style-type: none"> Reviewed site pages including COVID-19 response and public health updates page. Searched the site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.

Website	Date Accessed	Search Strategy
Infectious Disease Society of America	1/31/2024	<ul style="list-style-type: none"> Reviewed site pages including COVID-19, professional development opportunities, and COVID-19 real time learning network pages. Searched the site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.
Inter-Tribal Council of Arizona	1/31/2024	<ul style="list-style-type: none"> Reviewed site pages including COVID-19 response, public health preparedness, public health updates, and vaccine page. Searched site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, COVID-19 learning network.
Johns Hopkins Bloomberg School of Public Health	3/19/2024	<ul style="list-style-type: none"> Searched site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, COVID-19 learning network.
National Academy of Medicine	3/19/2024	<ul style="list-style-type: none"> Searched site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, COVID-19 learning network.
National Academy of State Health Policy	1/31/2024	<ul style="list-style-type: none"> Reviewed site pages including COVID-19 response page. Searched site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, COVID-19 learning network.
National Association of City and County Health Officials	1/30/2024	<ul style="list-style-type: none"> Reviewed site pages including virtual communities page, education and events, preparedness, health equity, infectious disease, and membership pages. Searched site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, COVID-19 learning network
National Governor's Association	1/31/2024	<ul style="list-style-type: none"> Reviewed site pages including COVID-19 projects page. Searched site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, COVID-19 learning network.
National Indian Health Board	1/29/2024	<ul style="list-style-type: none"> Reviewed site pages including current and past projects. Searched site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, COVID-19 learning network.
National Network of Public Health Institutes	1/31/2024	<ul style="list-style-type: none"> Reviewed site pages including COVID-19, network engagement directory, and events page. Searched site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, COVID-19 learning network.
Navajo Epidemiology Center	1/31/2024	<ul style="list-style-type: none"> Reviewed site pages including infectious disease and public health updates page. Searched site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, COVID-19 learning network.

Website	Date Accessed	Search Strategy
Northwest Portland Area Indian Health Board	1/31/2024	<ul style="list-style-type: none"> Reviewed site pages including projects, programs, COVID-19, and public health updates page. Searched site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, COVID-19 learning network.
Oklahoma Area Tribal Epidemiology Center	1/31/2024	<ul style="list-style-type: none"> Reviewed site pages including COVID-19 response and public health updates page. Searched the site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.
Pacific Islands Health Officers Association	1/31/2024	<ul style="list-style-type: none"> Reviewed site pages including COVID-19 page. Searched the site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.
Partners in Health	1/31/2024	<ul style="list-style-type: none"> Reviewed site pages including COVID-19 response page, and how we work page. Searched the site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.
Public Health Foundation	1/31/2024	<ul style="list-style-type: none"> Reviewed site pages including focus areas, programs, and events pages. Searched the site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.
Resolve to Save Lives	1/31/2024	<ul style="list-style-type: none"> Reviewed site pages including epidemic response and US COVID-19 response pages. Searched the site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.
Robert Wood Johnson Foundation	1/31/2024	<ul style="list-style-type: none"> Searched the site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.
Rockefeller Foundation	1/30/2024	<ul style="list-style-type: none"> Reviewed site pages including STAT: State and Territory Alliance for Testing page. Searched the site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.
Rocky Mountain Tribal Leaders Council	2/1/2024	<ul style="list-style-type: none"> Reviewed site pages including COVID-19 response and other programs page. Searched the site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.
United South and Eastern Tribes Inc	2/1/2024	<ul style="list-style-type: none"> Reviewed COVID-19 response page and other programs page. Searched the site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.

Website	Date Accessed	Search Strategy
Urban Indian Health Institute	2/1/2024	<ul style="list-style-type: none"> Reviewed COVID-19 response page and other programs page. Searched the site for COVID-19 community of practice, COVID-19 convening, COVID-19 learning collaborative, and COVID-19 learning network.

We compiled a list of CoPs that met our selection criteria. We shared this list with key informants that included representatives from federal agencies and nonfederal organizations who were familiar with the COVID-19 response and the breadth of CoPs available, to identify additional COVID-19 STLT public health CoPs and to refine our list. We identified 42 CoPs total and excluded 10 from our list because they did not meet inclusion criteria. The final 32 included CoPs appear in Appendix B below.

In-depth interviews

To add depth and perspective to our understanding of CoPs, we conducted a series of in-depth qualitative interviews with nonfederal CoP leaders, STLT public health agency staff who participated in CoPs, and federal agency staff who participated in or partnered with COVID-19 STLT CoPs. To capture a diverse range of experiences, we used a purposive sampling approach to identify CoPs that represented distinct STLT public health staff populations and had a strong emphasis on peer learning through regular meetings. In total we were able to interview CoP leads from 9 of the 32 CoPs we identified through our environmental scan (Appendix B). These 9 CoPs could speak to the state, Tribal, local, and territorial perspectives and included a mix of type 1 and type 2 CoPs. We first reached out to leaders of these CoPs and used a snowball sampling approach to identify others with distinct roles in CoPs, such as participants and federal partners. We also used input from our early key informant interviews to identify federal leaders and other leaders of nonfederal CoPs who could provide perspective on the landscape of COVID-19 STLT CoPs.

We conducted 19 interviews with 21 participants (a few interviews included multiple participants), including nine CoP leads, six STLT participants in CoPs, and six representatives of federal agencies. We recorded and transcribed all interviews. The Health Media Lab Institutional Review Board approved the interview protocol and procedures (IRB #00001211, IORG #0000850).

Analysis

A team of three researchers coded and analyzed interview transcripts to identify themes. Specifically, we identified key themes related to (1) how CoPs supported STLT public health agencies during COVID-19, particularly in translating knowledge into action; (2) barriers and facilitators to alignment or coordination between CoPs and federal efforts, and any challenges or unintended consequences encountered by STLT public health agencies when assimilating knowledge from various dissemination channels; and (3) lessons learned for future pandemics. One researcher coded each transcript, and another researcher reviewed the key themes identified. The team met regularly to discuss themes and interpretations of interview findings.

Appendix B. List of Nonfederal Communities of Practice Supporting STLT Public Health Agencies During the COVID-19 Pandemic

This table lists the 32 communities of practice that met inclusion criteria for our environmental scan (described in Appendix A).

Nonfederal led organization(s)	Communities of practice
Alaska Native Tribal Health Consortium	<ul style="list-style-type: none"> • Emergency Preparedness Support – Regular meetings with Tribal health partners and clinical staff that involved sharing insights and interpreting new COVID-19 information.
American Immunization Registry Association ^a	<ul style="list-style-type: none"> • Immunization Information System Best Practices Community of Practice – Regular meetings for immunization information system (IIS) partners, including in public health agencies, to discuss IIS practices. • Regional Workshops – Regular meetings for IIS staff in geographic regions that support peer learning and provide national IIS updates and developments.
Association of Asian Pacific Community Health Organizations	<ul style="list-style-type: none"> • COVID-19 & Other Infectious Diseases Health Equity Response Network (CHERN) – A series of monthly roundtables with health and community-based organizations serving Asian American, Native Hawaiian, and Pacific Islanders to discuss COVID-19 vaccination, clinical care, and other topics.
Association of Immunization Managers (AIM) ^b	<ul style="list-style-type: none"> • iREACH – Racial and Ethnic Approaches to Community Health – Regular calls, discussions, and an online forum with recipients of CDC’s REACH grants (including state and local health departments, Tribes, universities, and community-based organizations), focused on vaccine equity.
AIM, National Academy for State Health Policy (NASHP), and Academy Health ^b	<ul style="list-style-type: none"> • Vaccine Access Cooperative – Regular meetings and workgroups with state, territorial, and local public health agency teams to support COVID-19 vaccination in pediatric populations.
Association of Public Health Laboratories ^b	<ul style="list-style-type: none"> • CollABorate – Online communities and facilitated peer discussions between public health laboratory staff on topics such as wastewater surveillance and public health laboratory operations. • COVID-19 National Public Health Laboratories Calls – Regular calls held in partnership with CDC for public health laboratory staff to discuss updated guidance related to COVID-19 laboratory testing.
Association of State and Territorial Health Officials (ASTHO) ^a	<ul style="list-style-type: none"> • Public Health Preparedness Directors Peer Network – Monthly meetings and an online community for state and territorial public health agency staff to share best practices for preparedness policy, including COVID-19 preparedness. • State Health Official Member Calls – Weekly calls with ASTHO state health official members to discuss topics related to the COVID-19 pandemic and emerging guidance.
Council of State and Territorial Epidemiologists ^a	<ul style="list-style-type: none"> • COVID-19 Response Membership Webinar Series – A webinar series for state and territorial epidemiologists to discuss COVID-19 topics such as vaccination, therapeutics, and exposure notification.
Duke Margolis Institute for Health Policy	<ul style="list-style-type: none"> • Supporting State Leaders in Addressing Challenges in COVID-19 Vaccine Distribution, Access, and Uptake – A series of convenings for state public health leaders to discuss and address early challenges with COVID-19 vaccination.

Nonfederal led organization(s)	Communities of practice
Duke-Margolis Institute for Health Policy, National Governors Association Center for Best Practices, ^a and NASHP	<ul style="list-style-type: none"> • Equity Learning Network – A series of convenings with governor-appointed representatives, including state leaders in health equity, to discuss promising practices for improving equity in the COVID-19 response.
National Adult Immunization and Influenza Summit	<ul style="list-style-type: none"> • National Adult Immunization Coordinators' Partnership – Quarterly calls to share strategies and best practices for increasing access to and uptake of adult vaccinations.
National Association of City and County Health Officials (NACCHO) ^a	<ul style="list-style-type: none"> • Project Public Health Ready – Annual cohort program including regular meetings to support local public health agencies with planning, responding, and recovering from public health emergencies. • Roadmap to Ready – Workshops and coaching for cohorts of new preparedness directors at local health departments. • Workgroups – Regular meetings with local public health agency members of NACCHO on various topics including preparedness, immunization, and infectious disease prevention. • Virtual Communities – An online forum for discussing various topics including infection control and addressing health equity in the COVID-19 response.
National Congress of American Indians	<ul style="list-style-type: none"> • COVID-19 Task Force – Group including Tribal public health organizations focused on supporting Tribal COVID-19 relief and recovery.
National Indian Health Board ^a	<ul style="list-style-type: none"> • COVID-19 Tribal Resource Center – A series of webinars and all-tribe calls to discuss the COVID-19 response.
National Network of Public Health Institutes ^a	<ul style="list-style-type: none"> • COVID-19 Learning and Action Collaborative – Video calls and online discussion groups for participants to share best practices and challenges in the public health response to COVID-19.
National Governor's Association ^a	<ul style="list-style-type: none"> • Vaccinate with Confidence Learning Lab – Biweekly workshops with representatives from state public health agencies designed to support increasing COVID-19 vaccination.
Northwest Portland Area Indian Health Board ^b	<ul style="list-style-type: none"> • Tribal COVID-19 Weekly Update Calls – Regular calls with Northwest Tribal health leaders to share lessons learned, answer questions, and offer resources to support Tribes in the COVID-19 response.
Pacific Islands Health Officers Association ^b	<ul style="list-style-type: none"> • COVID-19 Zoom Calls – Weekly calls for all U.S.-affiliated Pacific Island health agencies to discuss the COVID-19 response.
Partners in Health	<ul style="list-style-type: none"> • U.S. Public Health Accompaniment Learning Collaborative – Regular learning sessions and an online community for public health agencies' COVID-19 response, including contact tracing and health equity.
Resolve to Save Lives	<ul style="list-style-type: none"> • COVID Response Learning Community – A community for public health teams and experts to share best practices in the COVID-19 response.

Nonfederal led organization(s)	Communities of practice
Rockefeller Foundation	<ul style="list-style-type: none"> • Pandemic Solutions Group – Biweekly convenings of senior STLT public health officials that initially focused on sharing best practices for COVID-19 testing but later expanded to cover vaccination and other topics. • State and Territory Alliance for Testing – An initiative that began with state governors banding together to purchase COVID-19 testing and later expanded to include the following: <ul style="list-style-type: none"> – All-State Calls – Regular meetings for state public health officials to exchange best practices related to COVID-19. – K–12 Action Network – Regular meetings with public health and education officials to address challenges with reopening schools. – Vaccination Action Network – Regular meetings with public health officials, vaccination leaders, and COVID-19 task force directors to address challenges with COVID-19 vaccination.
Wayne State University	<ul style="list-style-type: none"> • Mitigating COVID-19 in Jail Settings Community of Practice – A monthly webinar series focused on strategies to mitigate COVID-19 in incarceration settings.

Note: We identified recipients of cooperative agreements as listed on CDC’s [Cooperative Agreements, Grants, and Partnerships](#) page. We recognize that this list may not include other CDC or federal cooperative agreements and grants.

^a Recipient of a CDC [Strengthening Public Health Systems and Services Through National Partnerships to Improve Protect the Nation’s Health](#).

^b Recipient of other CDC cooperative agreement (APHL: <https://www.cdc.gov/csels/dls/funding/announcements/oe20-2001/index.html>; PIHOA: <https://www.cdc.gov/publichealthgateway/partnerships/capacity-building-assistance-OT21-2101.html>; NPAIHB: https://www.cdc.gov/tribal/cooperative-agreements/indian-country-services/nofo_overview.html).

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