TRACIE
HEALTHCARE EMERGENCY PREPAREDNESS INFORMATION GATEWAY

HEALTHCARE COALITION ENGAGEMENT IN COVID-19 ASSESSMENT

December 2021

Table of Contents

Executive Summary

Background

The U.S. Department of Health and Human Services (HHS) Office of the Assistant Secretary for Preparedness and Response (ASPR) Technical Resources, Assistance Center, and Information Exchange (TRACIE) assessed healthcare coalition (HCC) engagement in the response to the COVID-19 pandemic. In recent years, ASPR has promoted HCCs as a model for coordinating healthcare emergency preparedness and response and currently provides funding to support 326 HCCs nationwide. The COVID-19 pandemic tested the capacity and capabilities of the entire U.S. healthcare system. It also presented an opportunity to examine successes and opportunities in HCC responses to the pandemic.

ASPR TRACIE conducted a multi-phased project to gather and analyze information about the COVID-19 response to identify success stories and better understand the technical assistance (TA) needs of HCCs to prepare for future all hazards emergencies. Using quantitative and qualitative methods, ASPR TRACIE explored which HCC functions worked, which did not, and which should be emphasized for future responses. This project was also intended to help ASPR Hospital Preparedness Program (HPP) leadership understand potential avenues to advance patient care coordination through updates to the 2017-2022 Health Care Preparedness and Response Capabilities.

Topics explored included HCCs':

- Engagement in COVID-19 response operations
- Role in command and control
- Information sharing mechanisms
- Patient surge strategies, including the use of medical operations coordination cells (MOCCs) and alternate care sites (ACSs)
- Resource management efforts
- Implementation of crisis standards of care (CSC)
- Remaining gaps and areas of concern

Information gathered will inform ASPR TRACIE's ongoing efforts to share successful stories from the field, encourage the application of lessons learned to future emergencies, and develop TA resources.

Methodology

ASPR TRACIE used a mixed-method approach to gather and analyze information, which included:

- **A brief survey of ASPR Field Project Officers (FPOs).** This survey, open February 19 to March 1, 2021, captured FPOs' general perceptions of the performance and engagement of HCCs in the jurisdictions they worked in during the pandemic.
- **An environmental scan of available peer-reviewed, pre-prints, and grey literature related to the topic.** Conducted in February and March 2021, the environmental scan identified literature describing the role of HCCs in the COVID-19 response to that point, promising HCC practices, areas in need of additional TA, and issues for follow-up and exploration during later stages of the project.

- **An online survey.** ASPR TRACIE administered the survey to the primary point of contact of all known HCCs between April 14 and May 11, 2021, with a 58 percent response rate. The survey collected demographic and background information about the areas served by the HCCs and explored specific aspects of their COVID-19 response.
- **Virtual focus groups**. ASPR TRACIE conducted eight focus groups between June 22 and July 20, 2021, with 33 participants representing 29 different HCCs in all 10 HHS regions. Participants were selected based on their responses to the online survey and their willingness to share additional details about their activities. ASPR TRACIE also considered the findings of the FPO survey and environmental scan when inviting participants.
- **Virtual key informant work session**. ASPR TRACIE hosted a virtual key informant work session on November 8, 2021, which served as the capstone to the project. Sixteen participants—selected from among those who participated in earlier phases of the project, members of ASPR TRACIE's Subject Matter Expert Cadre, and representatives of ASPR's Regional Disaster Health Response System (RDHRS) pilot sites—provided feedback on key findings and helped ASPR TRACIE formulate recommendations for the future of HCCs.

Observations

Based on information gathered during the mixed-method approach, ASPR TRACIE observed common factors to be considered in efforts to strengthen the nation's healthcare system response to future emergencies.

Key strengths of HCCs include the following:

1. HCCs were pushed to their limits by the unprecedented scale and duration of the pandemic. Despite numerous obstacles and challenges, many HCCs raised their profiles during the response and nearly all found ways to add value to the overall response in the communities they serve. Some of these functions were pre-planned but many were ad hoc.
2. Many HCCs played a crucial role in providing training and TA to less resourced members and helping them access needed supplies. Some of these response partners were members of HCCs prior to the pandemic, but many of the dental offices, primary care practices, and other smaller healthcare providers were not previously engaged in emergency management structures and turned to HCCs to help them navigate their responses in the absence of guidance and support from other sources.
3. Years of planning prior to the pandemic allowed HCCs to cultivate strong relationships among their members and other response partners that were vital to the success of their response to COVID-19. HCC members were aware of each other's capacities and capabilities, trusted in each other's commitment to do the right thing for their communities, and collaborated to address tough challenges that impacted all members. The planning also provided a structure into which new members could be incorporated throughout the response.

When asked to select the top 3 factors that would help their HCC advance regional healthcare coordination, 65% of survey respondents selected "state policies recognizing and integrating HCC response operations," 41% chose "additional federal funding," and 38% indicated "better buy-in from hospital/other facility leadership." Only 9% selected "stronger HCC leadership."

4. Most HCCs do not have the authority to command an emergency response – and do not believe they should – but they played important roles in supporting unified command in their communities and many functioned officially or unofficially as a multi-agency coordinating group. Through their cross-disciplinary planning and membership, HCCs provided key linkages between healthcare providers, emergency management, public health, various government agencies, and other responders. In many cases, jurisdictional authorities assigned unexpected levels of responsibility to the coalitions for coordinating resources and their distribution.

> 52% of survey respondents said their members interfaced with the state *through the HCC* during COVID-19.

5. HCCs identified information sharing as their most important function during the pandemic. Using existing and new tools and practices, they established a common operating picture and provided situational awareness to their members, other response partners, and jurisdictional political leadership. These information sharing efforts allowed individual facilities and providers to determine effective response actions and led to informed decision making by healthcare, emergency management, and political executives. This information sharing included system level quantitative data (e.g., beds available) as well as crucial sharing of qualitative information (e.g., surge strategies being implemented).
6. Many HCCs brokered the acquisition and distribution of needed supplies for their members. While some had envisioned such a role for their HCC and had caches, warehouses, and other logistical support planned for prior to the pandemic, many others were surprised to take on this role. Activities included managing warehouses and donations, transporting supplies throughout their region, or being the point person for resource requests. Even those not involved in the direct management of resources played an important role in educating members how to request resources and translating healthcare resource needs to emergency management specialists.
7. HCCs were often a driving force behind consistent policies in their regions across a range of activities including clinical practice (e.g., CSC guidelines), visitor guidelines, or personal protective equipment (PPE) request, use, and distribution. In many cases a workgroup or subcommittee developed policies for voluntary use; in others, the HCC provided the sharing environment that drove consistency of policies through adoption/discernment of promising practices in the area by other facilities.

The project also revealed some areas of opportunity for HCCs, ASPR TRACIE, and ASPR HPP to explore, including:

1. The implementation of MOCCs was a key success in many jurisdictions for maximizing bed utilization and avoiding localized crisis conditions, but the models applied were diverse and often lacked necessary authorities and protections. Survey responses reflected a wide range of engagement from HCCs who considered patient movement their most successful response activity to those who believed HCCs should have no role in patient movement. Focus group discussions revealed varying levels of HCCs engagement in both formal and informal patient load-balancing efforts.

> 42% of survey respondents said a MOCC or other regional mechanism was used to handle patient transfers or move patients from overloaded facilities to ones with capacity during their COVID-19 response. 60% of these MOCCs or other systems did *not* exist prior to the pandemic.

Virtual key informant work session participants identified the essential supports HCCs would need to perform MOCC functions. While some HCCs had MOCCs or similar mechanisms in use prior to the pandemic, the concept was new to other HCCs. Opportunities exist to further explore promising practices related to MOCCs and provide guidance on how they may be applied during future emergencies with considerations for how they fit into existing command structures and authorities, patient referral patterns, and geographies.

> 58% of survey respondents said the area served by their HCC was challenged by capacity issues to the point where facilities/providers felt they were in crisis conditions.

2. A combination of patient load balancing, information sharing among HCC members about resource needs and bed status, implementation of common policies to reduce patient surge, and effective management of individual member and combined HCC resources mitigated the need to implement widescale CSC. However, a variety of contingency measures – including those related to the preservation of limited supplies of PPE, physical alterations to facility space, and modifications to staffing ratios and roles – were used, sometimes for an extended time period, and some individual crisis care decisions were made. Many HCCs noted they are revisiting their CSC planning and they are looking to their state government for guidance and frameworks with which they can align. Based on their feedback, HCCs would benefit from guidance on how they can shift their focus from scarce resource allocation to the support of provider crisis care decision making.
3. HCCs learned many valuable lessons that they have already begun incorporating in their plans and activities. However, they cautioned that not all lessons learned from COVID-19 are appropriate for application to other types of emergencies. For example, staffing became the limiting factor in operating ACSs because the entire nation (and world) was affected by the COVID-19 pandemic at the same time. While very few ACSs established during the COVID-19 response treated large numbers of patients, HCCs believe they may be an effective mechanism for addressing medical surge in other types of emergencies. ASPR TRACIE and HPP can support messaging that just because something did not work for COVID-19, does not mean it is no longer a viable option for future emergencies. HCCs need time to recover from the ongoing response to carefully consider other lessons learned from the pandemic and how to integrate them in future planning.

> Among survey respondents who said a community-based ACS was established, 46% said the ACS made no contribution to capacity.

4. Not all rural HCCs found that coalition-based MOCC operations were needed though those that had that capability described it as integral to building a common operating picture. Generally, rural healthcare coalitions had very few personnel or resources. Yet, they played a crucial role in helping maintain staffing, share information, and provide/distribute PPE and other supplies to their facilities and community partners. The strength of rural HCCs lies in their strong relationships with members and flexible solutions to unique challenges. In many cases, critical access hospitals may have had periods of closure if not for rural coalition efforts. Defining urban versus rural expectations for response roles is an important opportunity.

HCCs also continue to face challenges, including the following:

1. While many HCCs welcomed the increased engagement spurred by the pandemic, they are concerned about how they will sustain interest and participation as they transition into recovery. Many foresee needing a balance of "carrots and sticks" to maintain momentum. Engagement may not be able to be sustained with all the new partners (e.g., dental practices). Hospitals need to remain core members due to the clinical expertise and knowledge of available healthcare assets they bring to the table and public health agencies' engagement is important due to the authorities they offer. Future guidance on the expectations of HCCs for partner engagement will be important to ensure core functions and members are maintained.
2. Staffing across all roles and disciplines is an immediate and long-term concern for HCCs. Staff involved in the response have been under tremendous pressure for an extended period of time and resources are needed to lessen the burden. Costs of contract/traveler providers skyrocketed. In states that did not have a central, state-managed staffing contract/plan, this often resulted in smaller or unaffiliated facilities not being able to hire staff, while large systems were able to obtain contracts. Additionally, there was often widespread reluctance of staff to take on new roles in clinical care.
    a. HCCs generally felt they should not be responsible for managing staffing needs among and between facilities and systems.
    b. HCCs need tools and resources to support the behavioral health and resiliency of the healthcare and related workforces.
    c. HCCs and healthcare systems need better tools and templates to on-board and mentor outside staff as well as to educate and safely help existing staff increase the intensity of the care they are providing.
    d. HCCs also need strategies to enable retention of existing and training of new staff in light of high turnover rates across the spectrum. This includes staff of HCC members, but also staff of the HCCs themselves – many HCCs had limited staffing prior to the pandemic, with many personnel supporting HCCs as "other duties as assigned." Adequate staffing – both in quantity and expertise – is needed for HCCs to achieve their mission.
    e. National-level solutions are needed to ensure licensure transfer as well as develop other systems that can support movement of hospital staff from less affected areas to more affected areas. This is especially important for HCCs that may draw staff from an area that extends across state borders and for incidents that affect large geographic areas. In many cases, states played a key role in brokering staffing contracts and assigning staff; in other cases, the hospitals and other facilities were on their own.
3. Political decisions during the pandemic in several cases upended HCCs' plans and expectations about how their jurisdictions'

Prior to the pandemic, about 30% of survey respondents expected HCCs or public health agencies to coordinate the healthcare response to an emergency in their area while less than 3% thought a governor/political entity would do so. When asked to rate the role of various entities during the COVID-19 response, 29% and 27% respectively of survey respondents indicated governor/political entity and public health "led nearly all decisions/actions" while 46% responded that a governor/political entity "led some decisions and provided input/influence on others," which could suggest political leaders played a greater role in pandemic decision making than had been anticipated.

responses would be organized. In some instances, this was due to a lack of awareness of HCCs, and decisions were reversed once leaders became aware of the existing capabilities and relationships of the HCCs. Others faced challenges throughout the response as they were either relied on more heavily than what they prepared for or, more frequently, were underutilized due to the use of duplicative systems. Confusion about roles and responsibilities generated issues that most were able to resolve during the response, but it created an additional burden and uncertainty about where the HCCs will fit in future healthcare emergency responses. Better awareness and standardization of coalition functions could help avoid some of these issues in the future, but liaison between healthcare and the executive branch in most states needs to be stronger.

4. Some HCCs were and continue to be challenged in meeting cooperative agreement and other programmatic and funding requirements due to circumstances beyond their control. In some cases, there is no easy way to "fit" HCCs into their jurisdictions' existing emergency management systems and structures. For others, legal and regulatory requirements hinder their ability to lead or engage in response activities. Still others are in jurisdictions that do not recognize HCCs as having a role or even deliberately exclude them from response activities and response information. While these HCCs generally believe they can effectively participate in preparedness and information sharing activities, they request flexibility in how they achieve response requirements.

In addition to these wider observations, survey respondents and focus group participants shared a number of specific issues for consideration by their federal partners. These are included in Appendix E for ease of reference.

Considerations

Based on all phases of the project, ASPR TRACIE offers the following considerations to inform future efforts related to HCCs.

1. HCCs should continue to lead regional healthcare preparedness and response coordination, though modifications may be needed for some to achieve their mission.
2. HCCs are an important building block in the overall healthcare system response. They are a unifier that allows a coordinated scale up from individual facility responses to community and sub-state regional responses to statewide responses to multi-state and national level responses.
3. Information sharing is an essential role of HCCs and their situational awareness efforts support resource management decisions and response actions, including the implementation of CSC.
4. HCCs need empowerment to achieve their missions. This means recognition of the capabilities they offer and marrying them with the authorities necessary to effectively meet expectations.
5. MOCCs are an important mechanism to enable patient load balancing and reduce morbidity and mortality. HCCs can perform MOCC functions but they need support and the ability to scale up to the state or interstate level, depending upon the scope of the incident.
6. While flexibility is needed to meet the priorities and circumstances of the areas they cover, HCCs also need consistency in expectations of their roles and responsibilities to allow them to better

communicate their strengths and limitations and enable greater collaboration among HCCs and with other response partners.

7. Funding – preferably multi-year funding – is needed to support adequate staffing and enable flexibility in meeting priorities and programmatic deliverables.
8. HCCs need time to reflect on and incorporate the lessons learned from the pandemic. Their members are exhausted by a response that is still ongoing and need the space to deliberately consider how to integrate their pandemic response experience into their future readiness efforts.

Limitations

The findings and observations from this project are subject to several limitations.

1. The COVID-19 response was ongoing during the project period. The Delta variant was just beginning to take hold in the U.S. when the focus groups were held. Therefore, findings may not be reflective of new successes and challenges encountered during the fourth and subsequent waves of the pandemic.
2. The COVID-19 response may not be representative of HCCs' experiences responding to other emergencies. The scale and duration of the pandemic affected how they accomplished some of their response activities as did political decisions that temporarily or permanently altered the expected roles and responsibilities of some HCCs.
3. While ASPR TRACIE made a considerable effort to invite representatives from all HCCs to participate in the survey, the composition of HCCs is not static and it is possible some were unintentionally excluded.
4. Participation in the survey and focus groups was limited to representatives from HCCs and was voluntary. ASPR TRACIE did not seek additional input other than the perspectives of the ASPR FPOs, the environmental scan, and the virtual key informant work session participants. Therefore, the findings from the survey and focus groups may not be reflective of the experiences of other response partners.
5. The project focused on the *healthcare* response to COVID-19. While public health, emergency management, and other related aspects of the response were touched upon throughout the project, they were not explored in depth.
6. Finally, the experiences of the survey respondents and those invited to participate in the focus groups and the virtual key informant work session may not be reflective of the experiences of those who did not participate, and care should be taken to generalize the findings to all HCCs.

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Finally, ASPR TRACIE thanks the 186 survey respondents, 33 focus group participants, and 16 virtual key informant work session participants for sharing their insights, expertise, and lessons learned while continuing to respond to the COVID-19 pandemic and concurrent disasters and improving healthcare readiness for future emergencies.

Appendix A: Field Project Officer Survey Analysis

Background

The U.S. Department of Health and Human Services (HHS) Office of the Assistant Secretary for Preparedness and Response (ASPR) Hospital Preparedness Program (HPP) has placed significant emphasis on response functions of healthcare coalitions (HCC) for several years. These functions are in various stages of maturation. To help HCCs integrate promising practices from COVID-19, as well as help ASPR HPP leadership understand potential avenues to advance patient care coordination through updates to the 2017-2022 Health Care Preparedness and Response Capabilities, it is necessary to understand the functions that worked, those that did not, and those that should be emphasized for future responses. ASPR TRACIE is conducting a multi-modal gathering and analysis of information to support this effort.

Methodology

In this phase of the assessment, ASPR's Technical Resources, Assistance Center, and Information Exchange (TRACIE) surveyed the HPP Field Project Officers (FPOs) to ascertain their perception of HCC engagement in communication and coordination of resource allocation during the COVID-19 response. The FPOs were asked questions about the overall performance of HCCs in each of their States and what factors they felt contributed to the HCCs' level of engagement.

Findings

FPOs identified the need for rapid and broad information sharing as a primary reason for increased HCC engagement during the COVID-19 response. FPOs also indicated that for scarce resource allocation in particular, some HCC roles diminished because their State stepped in and took a larger or broader role in those areas, thus negating the need to duplicate efforts. FPOs also indicated there were challenges between the HCC role and the county-level emergency management role to coordinate unmet needs. This was especially difficult for HCCs that spanned multiple counties. In the absence of strong HCC engagement in COVID-19 response, FPOs indicated emergency management agencies, hospital associations, emergency medical services agencies, or health departments took a leadership role. However, they largely perceived that HCCs were the most engaged response partner.

Appendix B: Environmental Scan

In February and March 2021, a National Institutes of Health (NIH) Library medical librarian and U.S. Department of Health and Human Services (HHS) Office of the Assistant Secretary for Preparedness and Response (ASPR) Technical Resources, Assistance Center, and Information Exchange (TRACIE) staff conducted searches of the peer-reviewed and open source literature to identify articles and other resources mentioning COVID-19 response functions that may have involved the participation or leadership of health care coalitions (HCCs). The goal of these searches was to identify HCC involvement in:

- State/jurisdictional declarations and actions related to crisis standards of care (CSC), actions taken by the healthcare system in response to these CSC actions, instances of scarce resource allocation occurring in the absence of a public acknowledgement of or declaration of CSC, and implementation of new legal protections or suspension of regulations.
- The establishment or operations of alternate care sites (ACS).
- The establishment or use of a medical operations coordination cell (MOCC) or similar organizational structure for coordinating patient distribution.
- Regional response operations.

HCCs identified through the searches were considered for follow-up to gather additional details during the later stages of the project.

Peer-Reviewed Literature

A medical librarian searched the PubMed database for articles published between January 1, 2020, and February 24, 2021. The search strategy is included in Appendix B.1. Additionally, the medical librarian provided a selection of 18 articles focusing on HCCs prior to the pandemic to provide context for HCC response actions during the pandemic. After removing duplicates, the search identified 212 peer-reviewed journal articles and pre-prints (Figure 1). Upon an initial review, ASPR TRACIE excluded 90 articles that focused on COVID-19 response activities outside of the U.S. While many of the non-U.S. articles described regional approaches to the COVID-19 response, the focus of this project was on the HCCs supported by ASPR through U.S. states and territories.

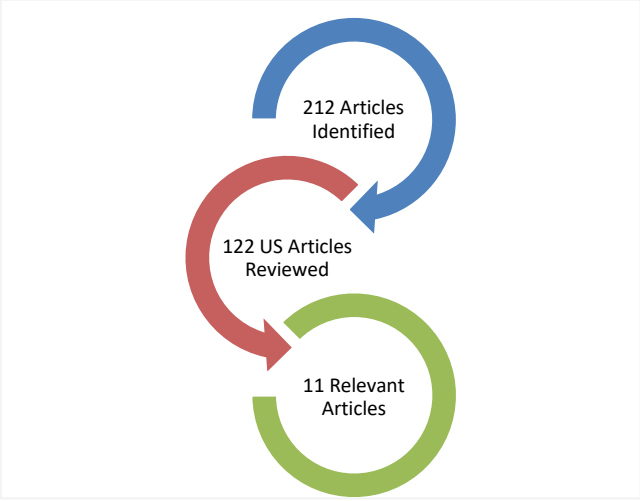

Figure 1

ASPR TRACIE staff reviewed each of the remaining 122 articles relative to the stated goal of the searches and deemed four articles directly and seven articles indirectly relevant to the project. Relevant articles were defined as those explicitly mentioning the role of an HCC in the COVID-19 response or describing regional response activities that may have been conducted by an HCC or similar entity. Annotations for these 11 articles are included in Appendix B.1. Citations for the

remaining 201 articles are also included in Appendix B.1.

Of the 122 U.S. articles, 35 could be categorized as being focused on surge capacity, though nearly all described approaches by a single facility or health system or dealt with the surge concept generally. None specifically mentioned HCCs.

ACS was the primary topic of 26 articles, though most were established by a single health system or at the direction of a governor or other government official. Many of the ACS articles concentrated on specific functions of the ACS, such as how to staff them or how to establish pharmacy services. One article mentioned communicating with HCCs and state and local emergency managers, but the authors noted that planning to establish the ACS was done internally without awareness of potential external resources to supplement the health system's efforts.

CSC was the main topic of 14 articles, but most discussed ethical questions surrounding CSC or offered perspectives on allocation of scarce resources frameworks. One of the articles provided context on the role of HCCs in CSC and another described engagement of HCCs in the development of CSC. A third article provided details about rapid formation and operationalization of a regional coalition to allocate scarce resources, but this coalition appeared to be a new clinician driven effort under the authority of public health rather than an existing HCC.

Eleven articles were cross-cutting or generally related to project topics. Of these, two separate articles describing a single health system's response to COVID-19 offered insight into how the health system played a role in the HCC and collaborated with the HCC and other response partners.

Coalitions were also the focus of 11 articles, though the types of coalitions described in many of these articles were not HCCs. Of these, one article offered a pre-pandemic assessment of HCCs and another offered a SWOT analysis of HCCs in the context of the COVID-19 response. A third article focusing on lessons learned from a skilled nursing facility mentioned the important role of HCCs in situational awareness and patient load balancing. A fourth article detailed how a system established as an umbrella for an HCC and a regional trauma organization coordinated the regional response to the pandemic, operated a surge operations call center, participated in ACS planning, and provided information and data sharing for the region.

Ten of the articles focused on patient transport, but typically addressed issues of patient or worker safety. One of the patient transport articles modeled a nationwide, inter-regional patient transport process to move patients from overwhelmed regions to those with unused beds, but the authors did not identify an HCC or any other specific entity as the proposed coordinator of such a patient load-balancing effort.

Open Source Literature

Concurrent with the search of peer-reviewed articles and pre-prints, ASPR TRACIE staff searched for open source articles. This involved a review of state websites for emergency declarations relevant to the project topic. It also included searches of Google using terms associated with the project goals. Search

terms are included in Appendix B.2. Annotations for relevant open source articles are also included in Appendix B.2.

Massachusetts and New Hampshire specifically activated CSC through an emergency declaration by the governor. Massachusetts provided statewide authorization for CSC to be activated at the facility level. In New York, the Chair of the Health Law Section of the New York State Bar Association issued a letter on the adoption of CSC within the state in response to the pandemic in March 2020, though the governor never authorized their use. In New Mexico, the governor issued a thorough explanation of crisis standards and how they were to be applied. Arkansas authorized the use of CSC as part of providing healthcare services "directed at the prevention, treatment, mitigation, or cure of COVID-19." Alabama authorized the use of "alternative standards of care" that meet the state's approved standards by healthcare facilities that invoked their emergency operations plans. Many other states vaguely referred to crisis standards within their public health emergency declarations, opening the door for providing care activities that vary from conventional operations. For example, Mississippi used phrases that could be interpreted as flexibility in treatment during the COVID-19 pandemic.

Open source literature searches did not reveal how HCCs actively coordinated the movement of patients and resources within their area of responsibility. Many HCCs, however, set up and continue to operate resource coordination centers available to healthcare providers and facilities within their area. Many of these coordination centers are listed on the HCC's website and include a number to call for requests and often a form to submit with a resource request. This speaks to a coordination of resources and possibly patient movement for load balancing. Upon examination of the forms, these mainly reference requests for hard resources, such as bottled oxygen, personal protective equipment (PPE), and ventilators. It is logical that patient movement and balancing would likely be handled through a phone call or standing communication within the HCC area. An informal conversation with a healthcare facility indicated that their HCC hosted a daily resource call to address resource, bed count, and staffing issues, though no open source information references this. An interim after-action report (AAR)/improvement plan from one HCC noted the HCC's important role in gathering situational awareness and providing resource coordination support, but it only covered the response period up to June 30, 2020. New coalitions were formed, often at the state or multi-state level, and referenced helping manage resources and while HCCs may have been key members of these larger coalitions, it is not specifically referenced.

Summary of Findings

The review of the peer-reviewed literature and pre-prints identified limited resources to inform subsequent stages of the project. Most articles were based on non-U.S. healthcare systems or described the activities of a single hospital or health system. Most of the U.S. articles were authored by clinicians and academics who not only are more likely than practitioners to seek publication in journals but are also less likely to be involved in the day to day operational planning of HCCs. For many of the authors, the COVID-19 pandemic provided an opportunity to expand beyond their expertise in patient care or research to reflect on and share insights on emergency preparedness and response topics. Some authors may be unfamiliar with HCCs or have limited knowledge of the role that HCCs have played in the COVID-19 response or even that HCCs exist. Those involved in HCC operations may be more likely to

pursue publication of lessons learned from the pandemic once activity subsides and AARs are completed.

Similarly, the review of the open source literature revealed news articles and other evidence indicating that healthcare providers and facilities engaged in patient load-balancing, established ACSs, coordinated resource sharing, and conducted information sharing activities. However, most of these articles did not explicitly mention the role of HCCs in these activities, though reviews of HCC websites suggested that HCCs have mechanisms in place to enable them. It is likely that many HCCs provided these services, but the articles were written by journalists who were unaware of the role of HCCs or chose not to emphasize that role in their articles. Additionally, while some states did enact CSC, it is unclear what role HCCs may have played in developing CSC plans, requesting that crisis standards be invoked, or implementing CSC. The HCC role in the response to the pandemic will likely become clearer once those involved in their operations complete AARs and begin sharing lessons learned at conferences and other venues.

Next Steps

- ASPR TRACIE identified three HCCs/regions for follow-up from the 11 selected peer-reviewed/pre-print articles: Northwest Healthcare Response Network, Central Ohio Trauma System, and San Diego.
- The open source search identified Alabama, Arkansas, Massachusetts, Mississippi, New Hampshire, and New Mexico as states that directly invoked or referenced CSC. Follow-up with HCCs in those states could be beneficial in understanding their roles, if any, in implementing CSC.
- The role of HCCs in the COVID-19 response will likely become better known as more AARs become publicly available. Because the pandemic has not yet ended, only interim AARs have been completed and they have not been widely shared due to their interim nature. ASPR TRACIE will continue to identify and review AARs as they become available publicly or are shared privately by HCC contacts.
- Several peer-reviewed articles and pre-prints were critical of the decisions in Maryland and New York not to officially invoke CSC despite extensive pre-pandemic planning to develop allocation of scarce resources frameworks. Follow-up with HCCs in those states may provide insight on the effects of those decisions on response operations.
- ASPR TRACIE identified multiple locations where an ACS was planned. While none of the articles mention HCC activities, additional follow-up may be warranted to determine whether HCCs played a role in the establishment or operations of these sites: Ann Arbor, Baltimore, Boston, Memphis, New York City, Philadelphia, Rhode Island, Vermont, and Worcester.

Appendix B.1: Peer-Reviewed Literature

Search Strategy

The literature search covered the time period of January 1, 2020, to February 24, 2021. The medical librarian used the following search strategies to identify relevant peer-reviewed literature:

- (COVID[tw] OR “SARS COV 2”[tiab] OR "COVID-19"[Majr] OR "SARS-CoV-2"[Majr]) AND (“alternate care site*”[tiab] OR “alternative care center*”[tiab] OR “field hospital*”[tiab])
- (COVID[tw] OR “SARS COV 2”[tiab] OR "COVID-19"[Majr] OR "SARS-CoV-2"[Majr]) AND “surge capacity”[tiab]
- (COVID[tw] OR “SARS COV 2”[tiab] OR "COVID-19"[Majr] OR "SARS-CoV-2"[Majr]) AND (coalition*[tiab] OR “regional response”[tiab] OR regional network*[tiab] OR “community network*”[tiab] OR partnership*[tiab])
- (COVID[tw] OR “SARS COV 2”[tiab] OR "COVID-19"[Majr] OR "SARS-CoV-2"[Majr]) AND (“patient distribut*”[tiab] OR “load balanc*”[tiab] OR “patient balanc*”[tiab] OR “patient movement”[tiab] OR “patient transportat*”[tiab] OR “patient coordination”[tiab] OR “critical care transport*”[tiab] OR “ICU transport*”[tiab])
- (COVID[tw] OR “SARS COV 2”[tiab] OR "COVID-19"[Majr] OR "SARS-CoV-2"[Majr]) AND (“inter facility transfer*”[tiab] OR “interfacility transfer*”[tiab] OR “interhospital transfer*”[tiab] OR “inter hospital transfer*”[tiab] OR “inter facility transport*”[tiab] OR “interfacility transport*”[tiab] OR “interhospital transport*”[tiab] OR “Inter hospital transport*”[tiab] OR “transportation of patient*”[tiab] OR “patient transfer”[tiab] OR “transport team*”[tiab] OR “intra hospital transport*”[tiab] OR “intra hospital transfer*”[tiab])
- (COVID[tw] OR “SARS COV 2”[tiab] OR "COVID-19"[Majr] OR "SARS-CoV-2"[Majr]) AND (“Medical Operations Coordination Cell”[tiab] OR MOCC[tiab] OR HIC*[tiab] OR “hospital information center”[tiab] OR “hospital emergency operation center”[tiab] OR “hospital incident command”[tiab])

Included Articles

ASPR TRACIE determined the following articles were directly or indirectly relevant to subsequent stages of the project:

Barnett, D., Knieser, L., Errett, N., et al. (2020). Reexamining Health-Care Coalitions in Light of COVID-19. Disaster Medicine and Public Health Preparedness.
The authors describe their findings from a SWOT analysis of HCCs in the context of the COVID-19 pandemic and offer four recommendations to strengthen HCCs for future pandemics.

Bell, S., Dossett, L., Cespero, J., et al. (2021). T-Minus 10 Days: The Role of an Academic Medical Institution in Field Hospital Planning. Prehospital and Disaster Medicine.
The authors describe planning efforts to establish the Michigan Medicine Field Hospital. While this alternate care site did not open, the article offers detailed considerations for other health systems contemplating establishment of a field hospital.

Devereaux, A., Yang, H., Seda, G., et al. (2020). Optimizing Scarce Resource Allocation During COVID-19: Rapid Creation of a Regional Health-Care Coalition and Triage Teams in San Diego County, California. Disaster Medicine and Public Health Preparedness.
The authors describe the rapid development of a healthcare coalition in response to the COVID-19 pandemic with a crisis care committee and other workgroups focused on sharing scarce resources, developing and training triage teams, and providing situational awareness.

Dudzinski, D., Hoisington, B., and Brown, C. (2020). Ethics Lessons from Seattle's Early Experience with COVID-19. (Abstract only.) The American Journal of Bioethics. 20(7):67-74.
The authors describe UW Medicine's ethical decision-making related to preparations for and early response to the COVID-19 pandemic. It includes the health system's contributions to healthcare coalition activities as the Regional COVID-19 Coordination Center and participation of faculty in drafting and revising the Northwest Healthcare Response Network's guidance for the region.

Keller, J., Kovach, S., Gascon, G., and Falcone, R. (2020). A Regional Trauma Organization as a Coordinating Body for a Regional Pandemic Response: A Brief Report. (Abstract only.) American Journal of Disaster Medicine. 15(4):227-240.
The authors describe the regional coordination role of the Central Ohio Trauma System during COVID-19, including hosting web-based information sharing and communications, alternate care site planning, personal protective equipment and ventilator cache deployment, and patient load balancing.

Kim, C., Lynch, J., Cohen, S., et al. (2020). One Academic Health System's Early (and Ongoing) Experience Responding to COVID-19: Recommendations from the Initial Epicenter of the Pandemic in the United States. Academic Medicine. 95(8):1146-1148.
The authors describe their health system's response to the COVID-19 pandemic, including how they collaborated with other regional and state partners.

Maves, R., Downar, J., Dichter, J., et al. (2020). Triage of Scarce Critical Care Resources in COVID-19: An Implementation Guide for Regional Allocation. Chest. 158(1):212-225.
This expert panel report by the Task Force for Mass Critical Care and the American College of Chest Physicians offers a framework to equitably meet the clinical needs of the greatest number of COVID-19 patients when resources are scarce.

Medcalf, S., Roy, S., Bekmuratova, S., et al. (2020). From Silos to Coalitions: The Evolution of the US Hospital Preparedness Program. (Abstract only.) Journal of Emergency Management. 18(2):163-169.
The authors provide an overview of the Hospital Preparedness Program including the evolution of HCCs and offer an assessment of continued challenges.

Michelson, K., Rees, C., Sarathy, J., et al. (2020). Inter-Region Transfers for Pandemic Surges. Clinical Infectious Diseases.
Using estimates of inpatient and intensive care unit COVID-19 cases, the authors modeled the effects of transferring patients from regions with bed shortfalls to the nearest region with unused beds.

Morris, S., Resnick, A., England, S., et al. (2020). Lessons Learned from COVID-19 in a Skilled Nursing Facility, Washington State. Journal of the American College of Emergency Physicians Open. 1(4):563-568.

The authors describe the early response to a COVID-19 outbreak in a skilled nursing facility and lessons learned that led to improved regional coordination later in the response.

Prekkar, M., Brunsvold, M., Bohman, J., et al. (2020). Regional Planning for Extracorporeal Membrane Oxygenation Allocation During Coronavirus Disease 2019. Chest. 158(2):603-607.
This article describes the role of an advisory body to the state health commissioner in developing an extracorporeal membrane oxygenation (ECMO) allocation framework.

Excluded Articles

ASPR TRACIE determined the following articles identified through the literature review were not relevant to subsequent stages of the project.

Acosta, J., Howard, S., Chandra, A., et al. (2015). Contributions of Health Care Coalitions to Preparedness and Resilience: Perspectives from Hospital Preparedness Program and Health Care Preparedness Coalitions. (Abstract only.) Disaster Medicine and Public Health Preparedness. 9(6):690-697.

Af Ugglas, B., Skyttberg, N., Wladis, A., et al. (2020). Emergency Department Crowding and Hospital Transformation during COVID-19, a Retrospective, Descriptive Study of a University Hospital in Stockholm, Sweden. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine. 28(1):107.

Agerstrand, C., Dubois, R., Takeda, K., et al. (2021). Extracorporeal Membrane Oxygenation for Coronavirus Disease 2019: Crisis Standards of Care. ASAIO Journal (American Society for Artificial Internal Organs. 67(3):245-249.

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Albrecht, R., Knapp, J., Theiler, L., et al. (2020). Transport of COVID-19 and other Highly Contagious Patients by Helicopter and Fixed-Wing Air Ambulance: A Narrative Review and Experience of the Swiss Air Rescue Rega. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine. 28(1):40.

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Baumrucker, S., Carter, G., Adkins, R., et al. (2020). Ethics Roundtable: Distribution of Critical Care Resources in the Setting of a COVID-19 Surge. The American Journal of Hospice & Palliative Care. 37(12):1096-1101.

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Bell, S., Dossett, L., Cespero, J., et al. (2021). T-Minus 10 Days: The Role of an Academic Medical Institution in Field Hospital Planning. Prehospital and Disaster Medicine. 1-6.

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Appendix B.2: Open Source Literature

Search Strategy

Open source literature searches occurred in March 2021. ASPR TRACIE staff used the following search terms to identify relevant open source literature:

- Crisis standards of care
- Alternate standards of care
- Care standards
- CSC
- Patient care COVID
- Standards COVID
- Public Health Declaration COVID
- Public Health Declaration (filtered by date only including dates since 2/1/2020)
- Emergency Declaration health COVID
- Governor declaration COVID standard
- State declaration health
- COVID declaration
- Healthcare coalition COVID
- health care coalition COVID
- Coalition (filtered by date only including dates since 2/1/2020)
- Coalition COVID
- Patient Surge COVID
- Moving patients COVID
- Resources Region COVID
- Local resources COVID
- Resource requests COVID
- Coalition patient surge COVID
- Region coordination COVID
- Regional coordination COVID
- Patient transfer COVID
- Overwhelmed COVID
- Overcrowded COVID
- Hospital overcrowding COVID
- Healthcare facility overcrowding COVID
- Bed count COVID coordination
- Hospital to hospital transfers

Referenced Articles

Alltucker, K. (2020). "A Very, Very Dark Place": Hospitals Brace for Crisis-Care Mode with Too Many Patients, Not Enough Staff. USA Today.

This article describes actions taken by hospitals and state governments to manage large numbers of COVID-19 related hospitalizations. The author shares information from Arizona, California, Colorado, New Mexico, New York, North Dakota, Rhode Island, and Utah.

Bharel, M. (2020). Order of the Commissioner of Public Health. Commonwealth of Massachusetts.

This order authorizes facilities throughout the Commonwealth and provides the process necessary to implement CSC when needed.

California Hospital Association, Hospital Council of Northern & Central California, Hospital Association of Southern California, and Hospital Association of San Diego & Imperial Counties. (2021). COVID-19: Hospital Resource Requests.

This document describes the process for requesting scarce hospital resources during COVID-19 and includes an algorithm to walk users through the process.

Cohn, M. and Wood, P. (2020). In Bid to "Match-Make" as Coronavirus Cases Rise, Maryland Agency Will Coordinate Bed Availability Across Hospitals. The Baltimore Sun.

This article describes how the Maryland Institute for Emergency Medical Services Systems was tasked to coordinate availability of intensive care beds across the state.

Conger, K. (2021). Stanford Medicine Accepts Hundreds of Patient Transfers to Relieve Regional Hospitals during Pandemic. Stanford Health Care.

This article describes how one health system was able to accept more than 500 patients from other hospitals experiencing patient surges as part of a mutual aid agreement.

D'Ammassa, A. (2020). "Our Hospitals are Full": New Mexico Medical Officers Warn Next Step is Rationing Care. Las Cruces Sun News.

This article describes actions by hospital directors and the state government to manage large volumes of COVID-19 patients. It also references the governor's executive order related to CSC.

Fernandez, H. (2020). COVID-19 New York Public Health Emergency and Disaster Conditions: Call for Essential Crisis Standards in New York. New York Bar Association.

In New York, the Chair of the Health Law Section of the New York State Bar Association issued a letter on the adoption of CSC within the state in response to the pandemic in March 2020, despite Governor Cuomo not activating them.

Gauntt, J. (2020). Jefferson County Healthcare Coalition Monitoring Evolving Coronavirus Situation. WBRC.

This news report features the role of an HCC in providing situational awareness as cases and hospitalizations in the region began to increase and planning for ACS and other actions to address an anticipated patient surge.

Gerstein, M. (2020). Patient Transfers from Northwest New Mexico Surged during Region's Virus Peak. Santa Fe New Mexican.

This article reports on the spring 2020 surge of COVID-19 in New Mexico and the resulting patient load-balancing efforts and establishment of an ACS.

Goldberg, C. and Bebinger, M. (2020). Boston Hospitals, Even Longtime Rivals, Work Together to Manage Flow of COVID-19 Patients. WBUR.

This news story highlights how Boston hospitals launched a group to manage capacity by load-balancing patients during the COVID-19 pandemic.

Hauck, G. (2021). "Care Now Has to be Rationed": Los Angeles COVID-19 Spike is Crushing Hospitals. USA Today.

This article reports on how healthcare providers responded to the COVID-19 surge in Los Angeles County, including directives from the Los Angeles Emergency Medical Services Agency that limited the use of supplemental oxygen by emergency medical services providers and prevented the transport of patients unable to be revived in the field to hospitals.

Hutchinson, A. (2020). EO-52: Executive Order Pursuant to the Public Health Emergency Concerning COVID-19, as Declared in Executive Order 20-37 and Extended by Executive Orders 20-45, 20-48, and 20-51. For the Purpose of Amending Executive Order 20-34 to Ensure Access to Healthcare Resources to Treat COVID-19. State of Arkansas.

This proclamation cites the need to increase flexibility required to meet the current demands of increased hospitalizations during this public health emergency and authorizes efforts by emergency responders to implement CSC.

Ivey, K. (2020). Proclamation by the Governor. State of Alabama.

This proclamation authorizes the use of Alternate Standards of Care and cites the state statute, section 6-5-542(2), Code of Alabama, which outlines those standards.

KRMG. (2020). Governor Stitt Announces New Plan to Coordinate Hospitals' Response to COVID-19.

This news story reported on the creation of Oklahoma's third surge plan in response to COVID-19 patient surge. The regionally-based plan assigned all hospitals to a tier based on utilization of intensive care unit and surgical bed capacity.

Laflin, N. (2021). How Hospitals are Working Together to Treat All Patients. KOAT.

This news story describes the collaboration among the three major hospitals in New Mexico to manage patient surge.

Lujan Grisham, M. (2020). Executive Order 2020-083. State of New Mexico.

This executive order renews the declaration of a public health emergency within New Mexico and provides triggers by which facilities and providers may move between different standards of care based on constrained resources.

Lynch, J., Duber, H., Sakata, V., et al. (2020). A Coordinated COVID-19 Response Helped Western Washington State "Flatten the Curve". American College of Surgeons.

This article describes a regional coalition-guided multifaceted approach that engaged health systems, long-term care facilities, state and local governments, and organizations to rapidly respond to outbreaks.

Miller, A. (2020). Rural Hospitals Face COVID Challenges of Patient Transfers, Staffing. Georgia Health News.

This article describes challenges faced by rural hospitals in Georgia in finding enough nurses to care for increased patient loads and identifying hospitals willing to accept patient transfers.

Muller, L. (2020). Hospital Association President Says Iowa Facilities are in "Dire" Situation. (Full text available to subscribers only.) The Red Oak Express.

This article describes the winter surge of COVID-19 cases and mentions six regional medical coordination centers established by the state earlier in 2020 to manage resources.

Office of Governor Janet T. Mills. (2020). Governor Mills Announces Plan to Open Alternative Care Sites in Coordination with Maine Hospitals and Cities of Portland and Bangor. State of Maine.

This press releases announces a partnership with the governor's office, National Guard, Maine Emergency Management Agency, state Department of Health and Human Services, MaineHealth, Northern Light Health, Central Maine Healthcare, MaineGeneral Health, the Maine Hospital Association, the cities of Portland and Bangor, and Cumberland and Penobscot

Counties to establish ACS and provide other support to healthcare organizations in response to increasing patient surge.

Ollove, M. and Vestal, C. (2020). Competing Hospitals Cooperate to Meet the Crisis. Stateline.

This article describes how various hospitals adapted their operations to manage patient surge, including planning to prevent some hospitals from becoming overwhelmed while others had capacity.

Reeves, T. (2020). Executive Order Number 1471. State of Mississippi, Office of the Governor.

This executive order provides a looser framework that allows the healthcare system to make changes to care as they see fit to continue to provide care and support the state's COVID-19 response.

Rose, J. (2020). U.S. Field Hospitals Stand Down, Most Without Treating Any COVID-19 Patients. NPR.

This news story discusses the ACSs established throughout the U.S. during the early phase of the COVID-19 pandemic.

Schorsch, K. (2020). The Pandemic Revealed Another Gap in Chicago Health Care: Hospitals are on Their Own to Transfer Patients. WBEZ.

This article describes efforts by Chicago area hospitals to transfer COVID-19 patients to balance loads in the absence of any single coordinating entity.

Stewart, R., Bulger, E., Epley, E., and Mitchell, S. (2020). How to Set Up a Regional Medical Operations Center to Manage the COVID-19 Pandemic. American College of Surgeons.

This article discusses the regional medical operations center concept and provides an overview of how to set up such a system for communication and coordination among multiple response partners within a region.

Sununu, C. (2020). Emergency Order 33: Activation of the New Hampshire Crisis Standards of Care Plan. State of New Hampshire, Office of the Governor.

This emergency order from the Governor of New Hampshire activates the state's Crisis Standards of Care plan.

Vermont Healthcare Emergency Preparedness Coalition. (2020). Vermont Healthcare Emergency Preparedness Coalition (VHEPC) COVID-19 Pandemic Response After-Action Report/Improvement Plan.

This interim AAR/IP reviews VHEPC's response to the COVID-19 pandemic between March 6, 2020, and June 30, 2020.

WLTX. (2021). Prisma Health to Create Regional COVID-19 Recovery Units.

This news report describes a partnership among Prisma Health; South Carolina's Emergency Management Division, National Guard, and Department of Health and Environmental Control; and the South Carolina Hospital Association to establish regional recovery units for low acuity COVID-19 patients who are not ready for discharge from inpatient care.

Appendix C: HCC Engagement in COVID-19 Assessment Survey Results

Background

The U.S. Department of Health and Human Services (HHS) Office of the Assistant Secretary for Preparedness and Response (ASPR) Technical Resources, Assistance Center, and Information Exchange (TRACIE) examined the role of healthcare coalitions (HCCs) in responding to the COVID-19 pandemic.

Methods

ASPR TRACIE conducted a survey (Appendix C.1) of HCC leadership across the country to learn about their experiences, insights, challenges, successes, and lessons learned responding to the COVID-19 pandemic.[1] ASPR TRACIE shared the survey invitation and link with individuals identified as the primary point of contact for each HCC on existing ASPR TRACIE distribution lists and validated by ASPR staff. The survey was administered online via Survey Monkey from April 14 to May 11, 2021.

For the quantitative analysis, ASPR TRACIE calculated frequencies for all survey items and categorized survey responses by the geographic density of the area (i.e., rural, suburban, or urban) primarily served by the HCC. ASPR TRACIE ran a chi-square test for each question to assess differences by geographic density. Those found to be statistically significant at $p \leq 0.05$ are reported.

More than one respondent from 22 HCCs submitted complete surveys. In these instances, only the survey from the individual who indicated they were the decision maker for their HCC was retained for quantitative analysis. If there were multiple respondents from a single HCC and none of them indicated they were the decision maker, then the respondent who answered the most survey questions was included in the quantitative analysis. ASPR TRACIE included all survey responses in the qualitative analysis; some HCCs may be overrepresented in those responses.

Throughout the survey, respondents were asked to reflect on the **healthcare delivery** aspects of the COVID-19 response rather than public health functions such as contact tracing and epidemiology.

Findings

Of the 320 HCCs invited to complete the survey, 186 (58.1%) responded. In their qualitative responses to the survey, respondents shared the following characteristics of their HCCs they found both beneficial and challenging during the COVID-19 response:

- Many respondents said the years of planning with members to develop their HCC strengthened relationships among community response partners, built trust, improved communication, and provided a strong foundation for collaboration during a hectic and extended response.
- Some respondents found the ability of HCCs to effectively share information and manage resources among members demonstrated their value during an emergency and in some cases even convinced HCC skeptics of their usefulness.

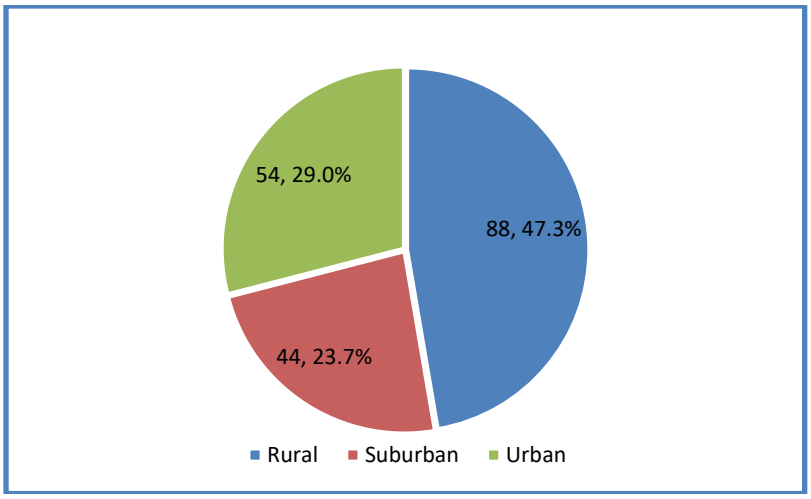
[1] The survey was conducted in accordance with the Paperwork Reduction Act under Office of Management and Budget Control Number 0990-0391, approved April 5, 2021. ICF's IRB reviewed and determined the project was exempt from IRB review on March 30, 2021.

- Several respondents noted that many of the personnel supporting HCCs do so as "other duties as assigned" on top of their responsibilities to HCC member entities, which is not sustainable during an extended response that affects all members.
- Some respondents indicated HCCs are not structured in a way that enables them to act in a response capacity.
- Many respondents stated their HCCs are intended only as a collaboration mechanism for preparedness and either have no interest in or cannot serve as a response organization.
- In some states, respondents felt their HCCs lacked authority to effectively engage in response activities. Other respondents noted their lack of authority over private entities that comprise most of their HCC's membership.
- Numerous respondents expressed challenges caused by a lack of clarity or common understanding of the role of HCCs in healthcare emergency response.
- Some respondents found their response role to be different from what was planned, leading to some HCCs being relied on more heavily than what they prepared for while other HCCs felt they were pushed to the sidelines and underutilized during the COVID-19 response.
- Information sharing was the HCC activity respondents most frequently mentioned being engaged in as well as an activity beneficial to their region's response to COVID-19.
- Many respondents indicated their HCC was heavily involved in efforts to manage personal protective equipment (PPE) and other resources during the pandemic, though some believed their HCC took on more responsibility than it should have.
- There was a wide range of responses related to patient movement from those who considered it their HCC's most successful response activity to those who believed their HCC should have no role in patient movement at all.
- Respondents did not provide much qualitative information about crisis standards of care (CSC) other than some who mentioned updating their CSC frameworks during the pandemic.
- References to alternate care sites (ACSs) more frequently mentioned activities undertaken to make their use unnecessary rather than descriptions of operations.

Demographics

Out of 186 total respondents, nearly half reported the geographic area covered by their HCC is mostly rural (*n*=88, 47.3%) while 54 (29%) said their region was mainly urban and 44 (23.7%) selected suburban (Figure 1). The following tables depict responses by geographic density of the area covered by the HCC.

*Figure 2. Would you describe the region covered by your HCC to be **mostly** rural, urban, or suburban? (select one) (N=186)*



Respondents represented almost all 50 states, American Samoa, and the District of Columbia (Table 1). No HCCs from Guam, Hawaii, Marshall Islands, Micronesia, New Mexico, North Dakota, Northern Mariana Islands, Palau, Rhode Island, South Dakota, or the U.S. Virgin Islands responded. Although the respondents differed significantly (p=0.004) based on the geographic density of the area served by the HCC, the findings may not be generalizable due to the small sample size in these comparison groups. Note that some states have only one coalition, thus one response equals 100%.

Table 1. Geographic Density of Survey Respondents by State & HCC Response Rate by State

	Survey Respondents				HCC Response Rate by State
	Rural	Suburban	Urban	**Total n(%)**	%
Alabama	4 (4.5%)	2 (4.5%)	1 (1.9%)	**7 (3.8%)**	77.8%
Alaska	0 (0.0%)	0 (0.0%)	1 (1.9%)	**1 (0.5%)**	100%
American Samoa	1 (1.1%)	0 (0.0%)	0 (0.0%)	**1 (0.5%)**	100%
Arizona	0 (0.0%)	0 (0.0%)	1 (1.9%)	**1 (0.5%)**	100%
Arkansas	0 (0.0%)	1 (2.3%)	1 (1.9%)	**2 (1.1%)**	28.6%
California[2]	5 (5.7%)	6 (13.6%)	6 (11.1%)	**17 (9.1%)**	41.5%
Colorado	3 (3.4%)	2 (4.5%)	0 (0.0%)	**5 (2.7%)**	55.6%
Connecticut	0 (0.0%)	1 (2.3%)	0 (0.0%)	**1 (0.5%)**	100%
Delaware	0 (0.0%)	1 (2.3%)	0 (0.0%)	**1 (0.5%)**	100%
District of Columbia	0 (0.0%)	0 (0.0%)	1 (1.9%)	**1 (0.5%)**	100%
Florida	2 (2.3%)	2 (4.5%)	6 (11.1%)	**10 (5.4%)**	90%
Georgia	1 (1.1%)	0 (0.0%)	0 (0.0%)	**1 (0.5%)**	7.1%
Guam	N/A	N/A	N/A	**N/A**	0.0%
Hawaii	N/A	N/A	N/A	**N/A**	0.0%
Idaho	1 (1.1%)	0 (0.0%)	0 (0.0%)	**1 (0.5%)**	33.3%
Illinois[3]	3 (3.4%)	1 (2.3%)	3 (5.6%)	**7 (3.8%)**	63.6%

[2] Includes HCC covering directly funded Los Angeles County.
[3] Includes HCC covering directly funded Chicago.

Indiana	5 (5.7%)	2 (4.5%)	0 (0.0%)	**7 (3.8%)**	70%
Iowa	4 (4.5%)	0 (0.0%)	0 (0.0%)	**4 (2.2%)**	50%
Kansas	3 (3.4%)	0 (0.0%)	0 (0.0%)	**3 (1.6%)**	42.9%
Kentucky	5 (5.7%)	0 (0.0%)	1 (1.9%)	**6 (3.2%)**	60%
Louisiana	2 (2.3%)	1 (2.3%)	1 (1.9%)	**4 (2.2%)**	44.4%
Maine	1 (1.1%)	0 (0.0%)	0 (0.0%)	**1 (0.5%)**	100%
Marshall Islands	N/A	N/A	N/A	**N/A**	0.0%
Maryland	2 (2.3%)	1 (2.3%)	1 (1.9%)	**4 (2.2%)**	100%
Massachusetts	0 (0.0%)	1 (2.3%)	0 (0.0%)	**1 (0.5%)**	100%
Michigan	2 (2.3%)	4 (9.1%)	0 (0.0%)	**6 (3.2%)**	75%
Micronesia	N/A	N/A	N/A	**N/A**	0.0%
Minnesota	3 (3.4%)	0 (0.0%)	0 (0.0%)	**3 (1.6%)**	37.5%
Mississippi	1 (1.1%)	0 (0.0%)	0 (0.0%)	**1 (0.5%)**	100%
Missouri	0 (0.0%)	0 (0.0%)	2 (3.7%)	**2 (1.1%)**	66.7%
Montana	4 (4.5%)	0 (0.0%)	0 (0.0%)	**4 (2.2%)**	100%
Nebraska	4 (4.5%)	0 (0.0%)	1 (1.9%)	**5 (2.7%)**	83.3%
Nevada	1 (1.1%)	0 (0.0%)	1 (1.9%)	**2 (1.1%)**	50%
New Hampshire	0 (0.0%)	1 (2.3%)	0 (0.0%)	**1 (0.5%)**	100%
New Jersey	0 (0.0%)	0 (0.0%)	4 (7.4%)	**4 (2.2%)**	100%
New Mexico	N/A	N/A	N/A	**N/A**	0.0%
New York[4]	1 (1.1%)	2 (4.5%)	1 (1.9%)	**4 (2.2%)**	60%
North Carolina	2 (2.3%)	1 (2.3%)	1 (1.9%)	**4 (2.2%)**	62.5%
North Dakota	N/A	N/A	N/A	**N/A**	0.0%
Northern Mariana Islands	N/A	N/A	N/A	**N/A**	0.0%
Ohio	1 (1.1%)	1 (2.3%)	3 (5.6%)	**5 (2.7%)**	71.4%
Oklahoma	2 (2.3%)	0 (0.0%)	1 (1.9%)	**3 (1.6%)**	50%
Oregon	2 (2.3%)	1 (2.3%)	0 (0.0%)	**3 (1.6%)**	60%
Palau	N/A	N/A	N/A	**N/A**	0.0%
Pennsylvania	3 (3.4%)	3 (6.8%)	1 (1.9%)	**7 (3.8%)**	100%
Puerto Rico	0 (0.0%)	0 (0.0%)	7 (13.0%)	**7 (3.8%)**	100%
Rhode Island	N/A	N/A	N/A	**N/A**	0.0%
South Carolina	2 (2.3%)	1 (2.3%)	0 (0.0%)	**3 (1.6%)**	75%
South Dakota	N/A	N/A	N/A	**N/A**	0.0%
Tennessee	0 (0.0%)	0 (0.0%)	4 (7.4%)	**4 (2.2%)**	50%
Texas	6 (6.8%)	5 (11.4%)	1 (1.9%)	**12 (6.5%)**	54.6%
Utah	4 (4.5%)	0 (0.0%)	1 (1.9%)	**5 (2.7%)**	71.4%
U.S. Virgin Islands	N/A	N/A	N/A	**N/A**	0.0%
Vermont	1 (1.1%)	0 (0.0%)	0 (0.0%)	**1 (0.5%)**	100%
Virginia	2 (2.3%)	2 (4.5%)	2 (3.7%)	**6 (3.2%)**	100%
Washington	1 (1.1%)	0 (0.0%)	1 (1.9%)	**2 (1.1%)**	100%
West Virginia	1 (1.1%)	1 (2.3%)	0 (0.0%)	**2 (1.1%)**	100%

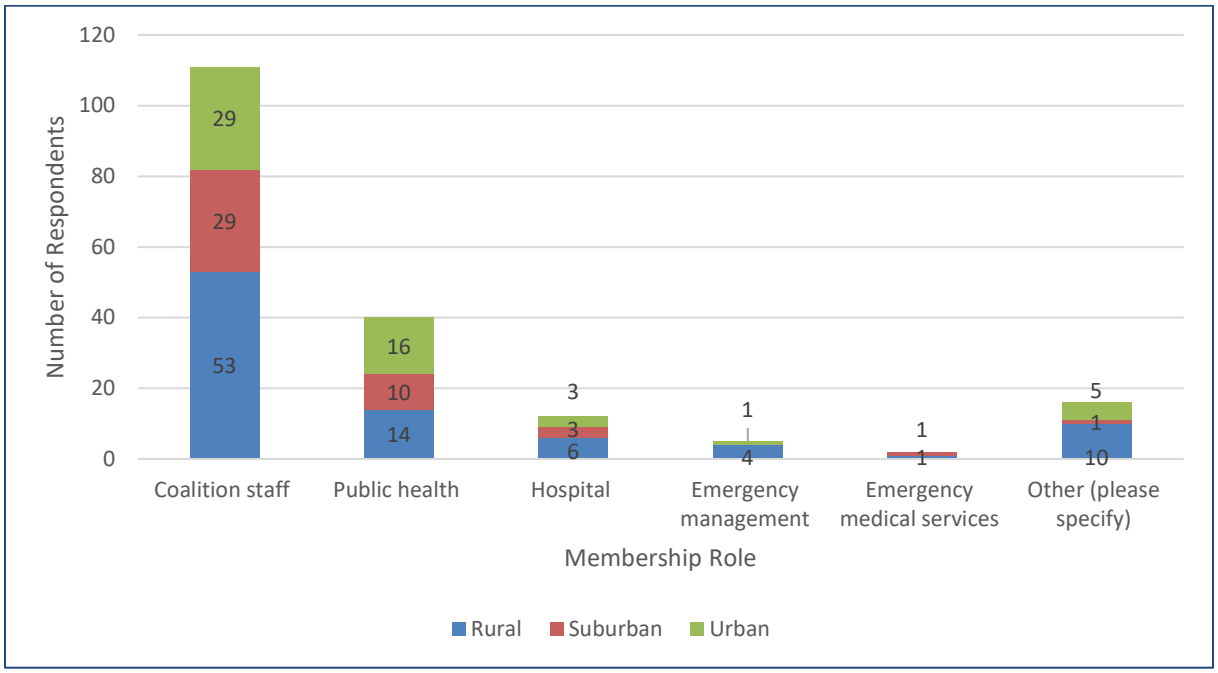
[4] Includes HCC covering directly funded New York City.

Wisconsin	1 (1.1%)	1 (2.3%)	0 (0.0%)	**2 (1.1%)**	28.6%
Wyoming	2 (2.3%)	0 (0.0%)	0 (0.0%)	**2 (1.1%)**	40%

P=0.004, statistically significant

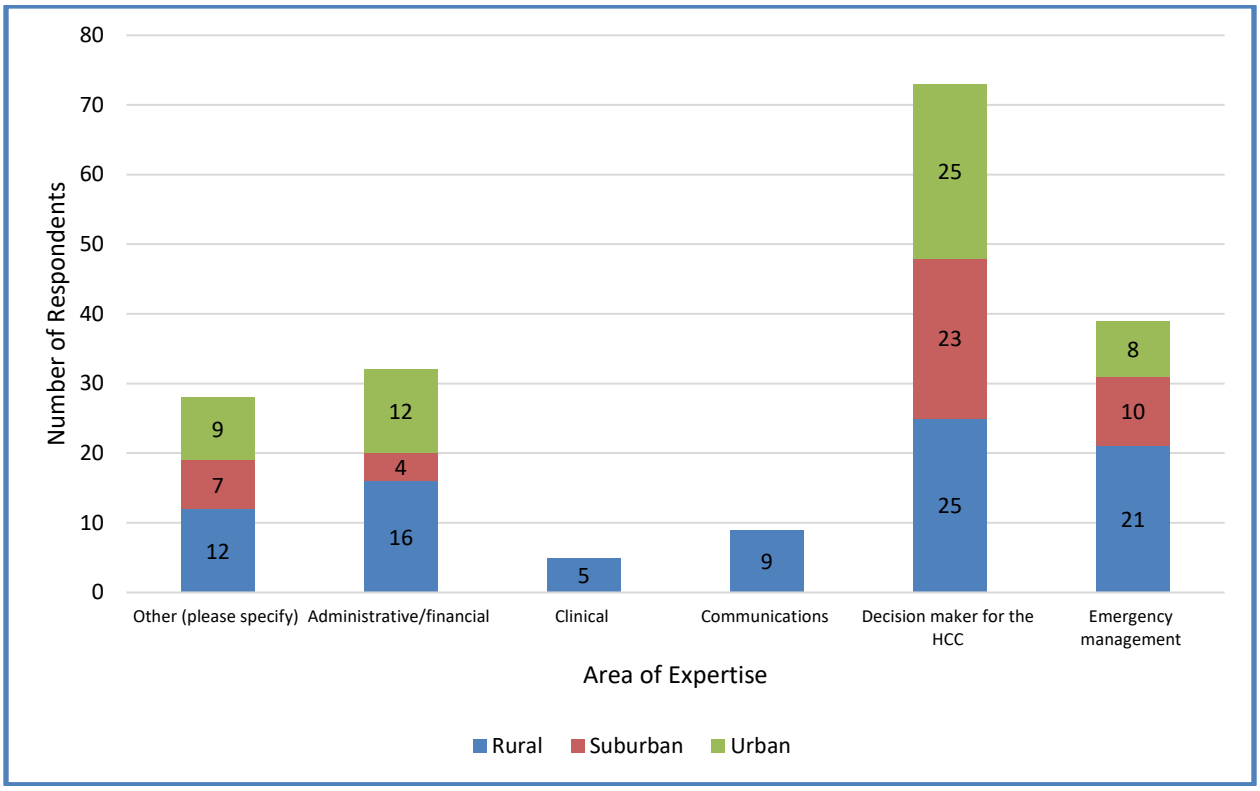
When asked to select their HCC membership role, the majority of respondents (*n*=111, 59.7%) said they were coalition staff (Figure 2). About a fifth selected public health (*n*=40, 21.5%). Fewer respondents selected hospital (*n*=12, 6.5%), emergency management (*n*=5, 2.7%), and emergency medical services (*n*=2, 1.1%). Sixteen respondents (8.6%) reported their membership role as "Other" and wrote in coordinator, coalition lead, director, advisor, and contractor, or named a specific employer.

*Figure 3. Which of the following **best** describes your membership role in your HCC? (select one) (N=186)*



Respondents reported various fields of expertise, including decision maker (*n*=73, 39.2%), emergency management (*n*=39, 21%), and administrative/financial (*n*=32, 17.2%). Fewer selected communications (*n*=9, 4.8%) and clinical (*n*=5, 2.7%) (Figure 3). There was a statistically significant association between the reported field of expertise and the geographic density of the area served by the HCC (p=0.005), with those having clinical or communications expertise only representing rural HCCs. Twenty-eight respondents reported their expertise as "Other", including those who did not specify their area of expertise, named some type of coordinator role, reported multiple areas of expertise, and responded all of the above.

*Figure 4. Which of the following **best** describes the expertise you bring to your HCC? (select one) (N=186)*



P=0.005, statistically significant

Background Questions

Half of respondents (*n*=93, 50%) reported there is a dominant health system in the region served by their HCC (Table 2). There was a statistically significant association between the existence of a dominant health system and the geographic density of the area served by the HCC (p=0.053), with dominant health systems less likely in mainly urban areas. Of those with a dominant health system in their region, nearly two-thirds (n=61, 65.6%) thought it enhances the HCC's functions. Fewer respondents said they thought the dominant health system has no effect (n=21, 22.6%) or hinders the HCC's functions (n=11, 11.8%) (Table 3).

Table 2. Is there a dominant health system in the region served by your HCC? (select one) (N=186)

	Rural	Suburban	Urban	**Total n(%)**
Yes	51 (58.0%)	22 (50.0%)	20 (37.0%)	**93 (50.0%)**
No	37 (42.0%)	22 (50.0%)	34 (63.0%)	**93 (50.0%)**
Total	**88 (100.0%)**	**44 (100.0%)**	**54 (100.0%)**	**186 (100.0%)**

P=0.053, statistically significant

Table 3. What effect do you think it has on your HCC's functions? (select one) (N=93)

	Rural	Suburban	Urban	**Total n(%)**
Enhances the HCC's functions	35 (68.6%)	16 (69.6%)	10 (52.6%)	**61 (65.6%)**
Has no effect on the HCC's functions	12 (23.5%)	4 (17.4%)	5 (26.3%)	**21 (22.6%)**
Hinders the HCC's functions	4 (7.8%)	3 (13.0%)	4 (21.1%)	**11 (11.8%)**
Total	**51 (100.0%)**	**23 (100.0%)**	**19 (100.0%)**	**93 (100.0%)**

Two-thirds of the respondents said their HCC has not attended the Center for Domestic Preparedness (Anniston) Healthcare Coalition Response Leadership class (*n*=118, 66.7%) (Table 4).

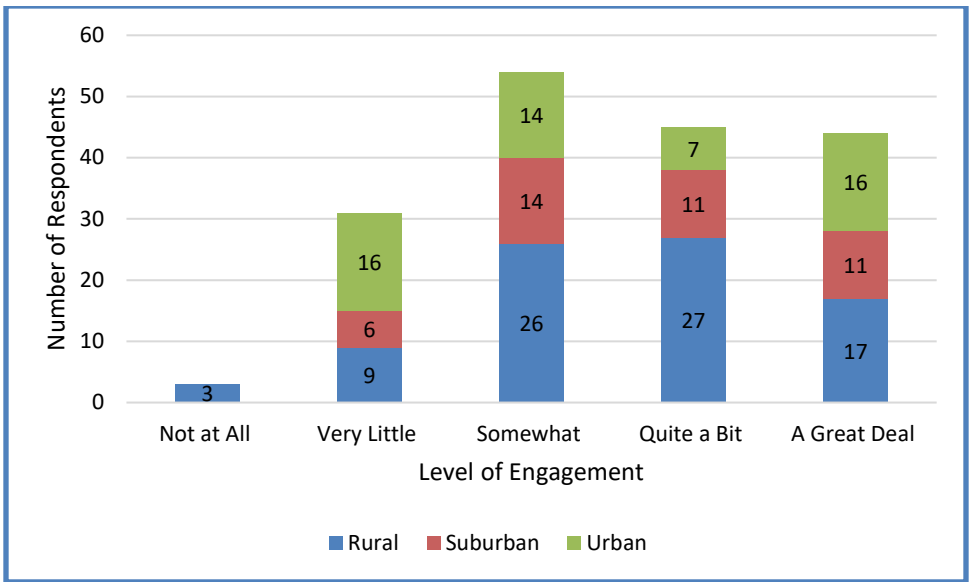
Table 4. Has your HCC attended the Center for Domestic Preparedness Healthcare Coalition Response Leadership Class? (select one) (N=177)

	Rural	Suburban	Urban	**Total n(%)**
Yes	25 (30.5%)	12 (28.6%)	22 (41.5%)	**59 (33.3%)**
No	57 (69.5%)	30 (71.4%)	31 (58.5%)	**118 (66.7%)**
Total	**82 (100.0%)**	**42 (100.0%)**	**53 (100.0%)**	**177 (100.0%)**

Level of HCC Engagement in Response Operations

Prior to COVID-19, a quarter of respondents (*n*=44, 24.9%) thought that their HCC was actively and effectively engaged (i.e., "a great deal") in response operations such as scarce resource allocation, information sharing during emergencies, and patient load balancing (e.g., tracking hospital bed availability and assigning or coordinating transfer of patients among facilities). Only three respondents (1.7%) – all from HCCs in mainly rural areas – said their HCC was not at all engaged prior to COVID-19 (Figure 4). There was a statistically significant association between engagement in response operations prior to COVID-19 and the geographic density of the area covered by the HCC (p=0.028).

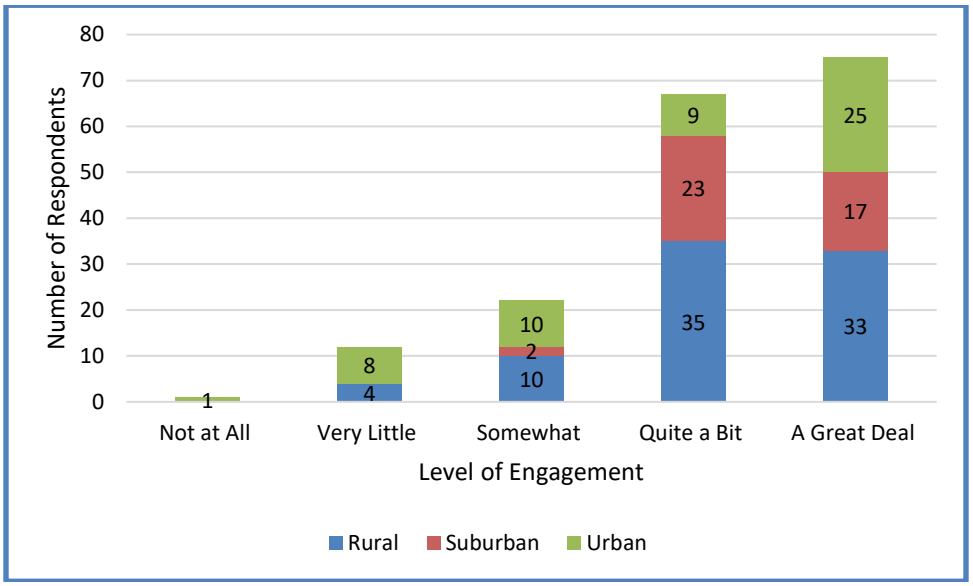
*Figure 5. **Prior to COVID-19**, how actively engaged was your HCC in response operations? (select one) (N=177)*



P=0.028, statistically significant

More than 40 percent of respondents (n=75, 42.4%) said their HCC was actively and effectively engaged (i.e., "a great deal") in COVID-19 response operations (Figure 5). Only one respondent (0.6%) from an HCC in a mainly urban area indicated their HCC has not at all engaged in COVID-19 response operations. There was a statistically significant association between level of HCC engagement in COVID-19 response and geographic density of the region covered by the HCC (*p*=0.028) .

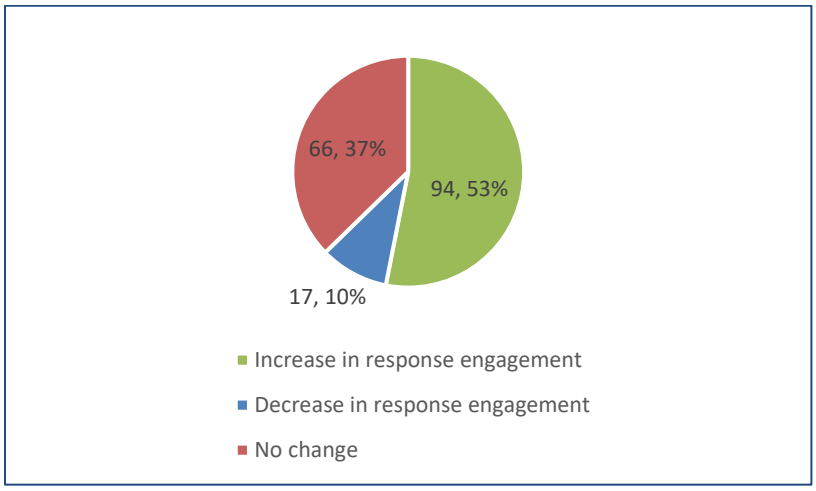
*Figure 6. **During COVID-19**, how actively and effectively engaged was your HCC in COVID-19 response operations? (select one) (N=177)*



P=0.002, statistically significant

Slightly more than half of respondents (n=94, 53%) reported a higher level of engagement of their HCC during COVID-19 compared to prior to the pandemic (Figure 6). There was a statistically significant association between how actively HCCs were engaged in response operations prior to COVID-19 and during the pandemic (p=0.002).

Figure 7. Change in engagement level of HCC prior to and during COVID-19. (N=177)

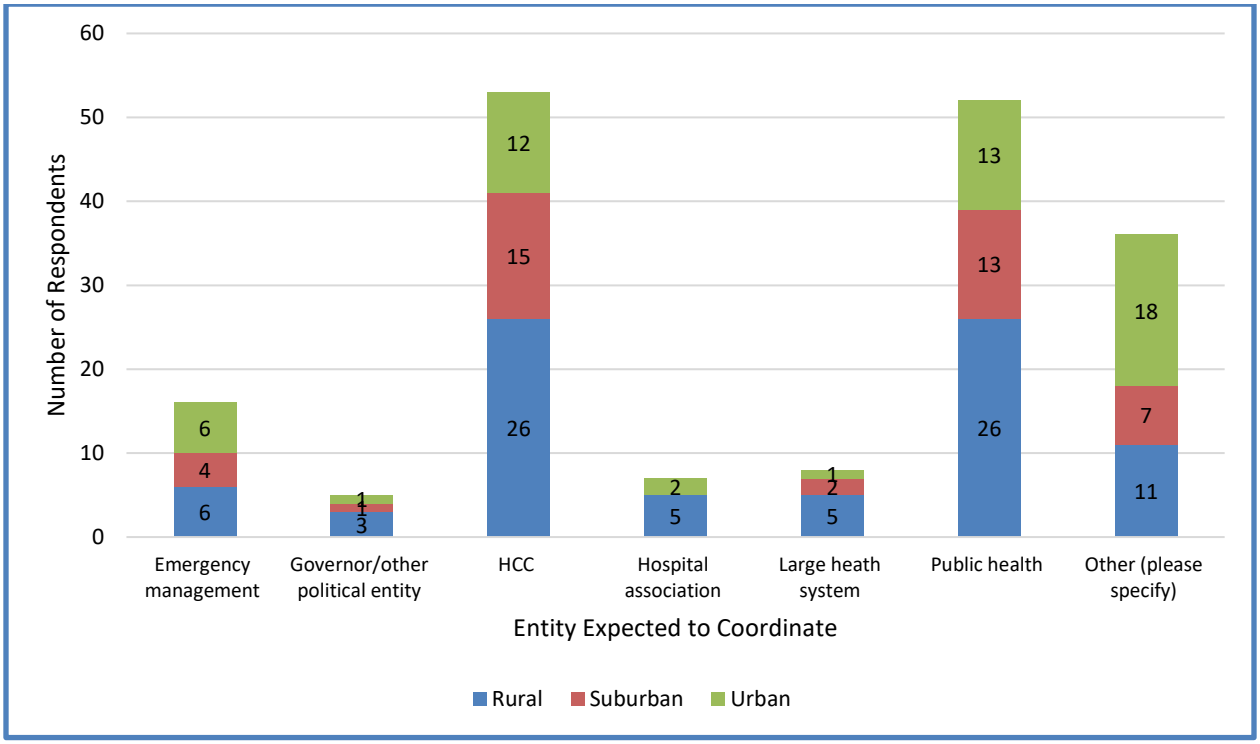


P=0.002, statistically significant

Entities Leading Emergency Response

Prior to COVID-19, about 30 percent of respondents expected HCCs (n=53, 29.9%) or public health (n=52, 29.4%) to coordinate the healthcare response to an emergency in the region served by their HCC. Sixteen respondents (9%) thought emergency management would lead the coordination effort. Five percent or fewer of respondents said that large heath systems (n=8, 4.5%), hospital associations (n=7, 4%), or governor/other political entities (n=5, 2.8%) were expected to coordinate the response to an emergency (Figure 7). The 36 respondents who selected "Other" wrote in a combination of entities, individual facilities/organizations, specific organizations, and state ESF-8, or indicated that it would depend upon the nature of the emergency.

*Figure 8. **Prior to the COVID-19 pandemic**, which entity did you expect to coordinate the **healthcare** response to an emergency in the region served by your HCC? (select one) (N=177)*



When asked to rate the role of various entities during COVID-19, the largest proportions of respondents indicated that political entities (*n*=52, 29.4%) and public health (*n*=48, 27.1%) "led nearly all decisions/actions" (Table 5). Additionally, 81 respondents (45.8%) said that a governor/political entity "led some decisions and provided input/influence on others," which could suggest that political leaders played a greater role in pandemic decision making than had been expected prior to the pandemic. Notably, nearly a third of respondents indicated that HCCs had "no or minimal input/influence/decision

making authority" (n=12, 6.8%) or "limited input/influence on some decisions" (n=46, 26%) during the pandemic.

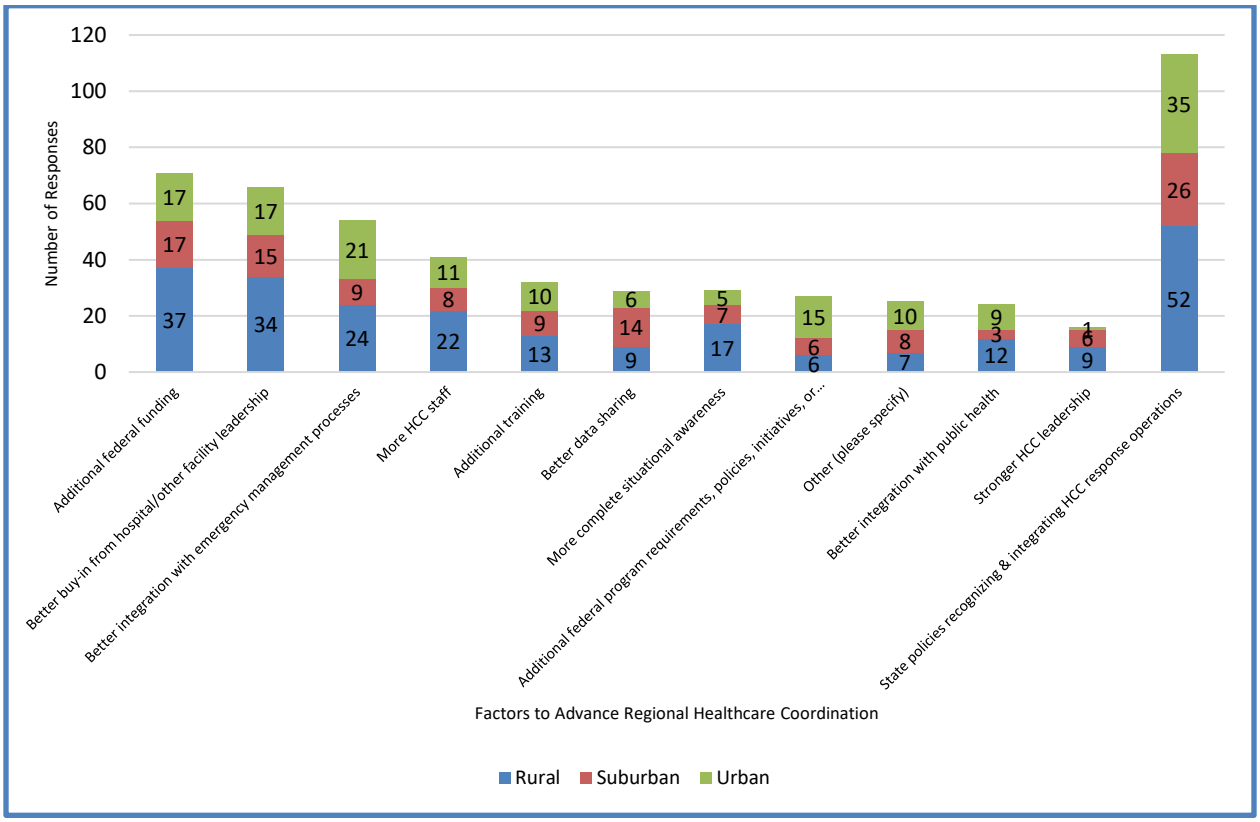
*Table 5. How would you rate the role the following entities played **during the COVID-19 pandemic** to coordinate the **healthcare** response in the region covered by your HCC? (select one in each row) (N=177)*

	No or minimal input/ influence/ decision making authority	Had limited input/ influence on some decisions	Had about as much influence as other entities	Led some decisions and provided input/ influence on others	Led nearly all decisions/ actions	Total
HCC	12 (6.8%)	46 (26.0%)	48 (27.1%)	53 (29.9%)	18 (10.2%)	**177 (100.0%)**
Rural	*9 (11.0%)*	*17 (20.7%)*	*30 (36.6%)*	*18 (22.0%)*	*8 (9.8%)*	*82 (100.0%)*
Suburban	*0 (0.0%)*	*8 (19.0%)*	*8 (19.0%)*	*23 (54.8%)*	*3 (7.1%)*	*42 (100.0%)*
Urban	*3 (5.7%)*	*21 (39.6%)*	*10 (18.9%)*	*12 (22.6%)*	*7 (13.2%)*	*53 (100.0%)*
Public Health	1 (0.6%)	21 (11.9%)	31 (17.5%)	76 (42.9%)	48 (27.1%)	**177 (100.0%)**
Rural	*1 (1.2%)*	*6 (7.3%)*	*18 (22.0%)*	*33 (40.2%)*	*24 (29.3%)*	*82 (100.0%)*
Suburban	*0 (0.0%)*	*9 (21.4%)*	*4 (9.5%)*	*25 (59.5%)*	*4 (9.5%)*	*42 (100.0%)*
Urban	*0 (0.0%)*	*6 (11.3%)*	*9 (17.0%)*	*18 (34.0%)*	*20 (37.7%)*	*53 (100.0%)*
Emergency Management	12 (6.8%)	41 (23.2%)	56 (31.6%)	59 (33.3%)	9 (5.1%)	**177 (100.0%)**
Rural	*3 (3.7%)*	*18 (22.0%)*	*26 (31.7%)*	*29 (35.4%)*	*6 (7.3%)*	*82 (100.0%)*
Suburban	*6 (14.3%)*	*7 (16.7%)*	*15 (35.7%)*	*14 (33.3%)*	*0 (0.0%)*	*42 (100.0%)*
Urban	*3 (5.7%)*	*16 (30.2%)*	*15 (28.3%)*	*16 (30.2%)*	*3 (5.7%)*	*53 (100.0%)*
Large Health System	16 (9.0%)	21 (11.9%)	73 (41.2%)	58 (32.8%)	9 (5.1%)	**177 (100.0%)**
Rural	*7 (8.5%)*	*13 (15.9%)*	*36 (43.9%)*	*20 (24.4%)*	*6 (7.3%)*	*82 (100.0%)*
Suburban	*0 (0.0%)*	*2 (4.8%)*	*17 (40.5%)*	*22 (52.4%)*	*1 (2.4%)*	*42 (100.0%)*
Urban	*9 (17.0%)*	*6 (11.3%)*	*20 (37.7%)*	*16 (30.2%)*	*2 (3.8%)*	*53 (100.0%)*
Hospital Association	10 (5.6%)	27 (15.3%)	68 (38.4%)	61 (34.5%)	11 (6.2%)	**177 (100.0%)**
Rural	*7 (8.5%)*	*12 (14.6%)*	*31 (37.8%)*	*25 (30.5%)*	*7 (8.5%)*	*82 (100.0%)*
Suburban	*2 (4.8%)*	*8 (19.0%)*	*13 (31.0%)*	*19 (45.2%)*	*0 (0.0%)*	*42 (100.0%)*
Urban	*1 (1.9%)*	*7 (13.2%)*	*24 (45.3%)*	*17 (32.1%)*	*4 (7.5%)*	*53 (100.0%)*
Governor/ Other Political Entity	12 (6.8%)	14 (7.9%)	18 (10.2%)	81 (45.8%)	52 (29.4%)	**177 (100.0%)**
Rural	*3 (3.7%)*	*5 (6.1%)*	*9 (11.0%)*	*38 (46.3%)*	*27 (32.9%)*	*82 (100.0%)*
Suburban	*0 (0.0%)*	*5 (11.9%)*	*2 (4.8%)*	*23 (54.8%)*	*12 (28.6%)*	*42 (100.0%)*
Urban	*9 (17.0%)*	*4 (7.5%)*	*7 (13.2%)*	*20 (37.7%)*	*13 (24.5%)*	*53 (100.0%)*

Factors to Advance HCC Healthcare Coordination

Respondents were asked to select the top three factors that would help their HCC advance regional healthcare coordination. The three most selected response options were: "state policies recognizing and integrating HCC response operations" (*n*=113, 65.3%), "additional federal funding" (*n*=71, 41%), and "better buy-in from hospital/other facility leadership" (*n*=66, 38.2%). The least frequently selected factor to help HCCs advance regional healthcare coordination was "stronger HCC leadership" (n=16, 9.2%) (Figure 8). The 25 respondents who selected "Other" offered various ideas to help HCCs advance regional healthcare coordination including: better support from the state, fewer restrictions/more flexibility in HPP funding, more cooperation/support from HCC members, local policies recognizing and integrating HCC response operations, incentives for member participation, a different funding allocation formula, coordination of facility emergency management policies, and less competing demands.

Figure 9. Please rank the top 3 from among the following on how much they would help your HCC advance regional healthcare coordination. (select top 3) (N=173)



General Qualitative Assessment

Respondents were asked to briefly describe successful aspects of their response that would not have been possible without an HCC; whether they developed any tools, policies, procedures, or other

resources that they would like to share; and to provide any additional comments about the role of HCCs in regional healthcare response based on their experience with COVID-19. They also had the opportunity to share open ended responses to some of the other survey questions.

When asked if their HCC developed any tools, policies, procedures, protocols, or other resources that they believe should be shared with other HCCs through the Hospital Preparedness Program (HPP) or ASPR TRACIE, 67 (41.4%) of the 162 who responded said yes (Figure 9). More than two-thirds (114, 67.5%) of 169 respondents said they would be willing to participate in a follow-up discussion to elaborate on some of their survey responses (Figure 10).

Figure 10. Did your HCC develop any tools, policies, procedures, protocols, or other resources that you believe should be shared with other HCCs through NHPP or ASPR TRACIE? (N=162)

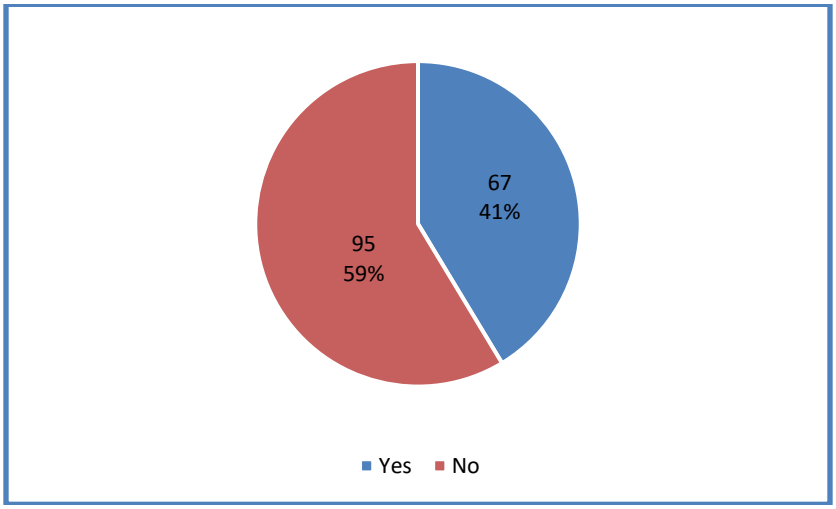
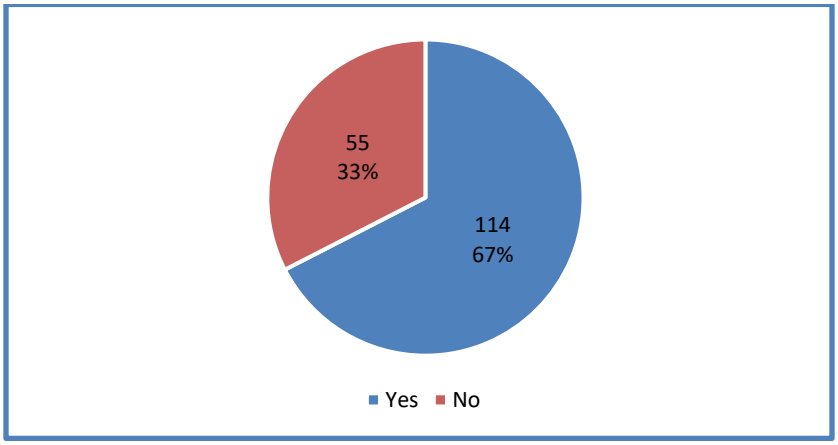


Figure 11. Would you be willing to participate in a follow-up discussion, scheduled at your convenience, to elaborate on some of your survey responses? (N=169)



Importance of HCC Preparedness Activities

Many respondents mentioned the development of their HCC required years of collaboration with diverse partners and those intensive planning efforts built strong relationships that clarified roles and responsibilities and enabled HCC members to effectively work together. Respondents in geographic areas that experienced other disasters concurrent to the pandemic noted the HCC structure helped them respond to multiple emergencies at the same time. Even those who reported the role of the HCC as minimal during the COVID-19 response found value in the HCC's planning and relationship building efforts. Other respondents described how their HCC grew during the COVID-19 response to include new partners. The following direct quotes further illustrate these findings:

- *HCCs are the mechanism to communicate, educate, engage, and respond to COVID-19 and other disasters or emergencies. They are the backbone of ultimate coordination between Federal, State, County, and local healthcare entities. (Public health member in coordinator role, urban HCC)*
- *HCCs are crucial to a fluid response and provide a neutral space for partners to collaborate. (Coalition staff in decision making role, rural HCC)*
- *I just want to emphasize the pre-planning activities that help in disaster response. I think we should view the coalition as a point of entry for all healthcare partners for information sharing and resource needs. (Public health member in coordinator role, urban HCC)*
- *Most of what worked well was based on solid relationships that were built before COVID. We had the trust of our coalition members to respond to us and take our calls when things got really chaotic. (Coalition staff in communications role, rural HCC)*
- *Due to continuous networking on blue sky days, regional collaboration was successful among the HCC and other key community response partners, including [local] Offices of Emergency Preparedness, [local] government (Mayor's Office), EMS, fire service, law enforcement, educational institutions, volunteer organizations, the business community, etc. Relationships built by the HCC prior to COVID-19 proved to be invaluable during the pandemic. (Coalition staff in emergency management role, urban HCC)*
- *The working relationships that were built in previous coalition activities laid the foundation for coordination in every area of COVID-19 response. Especially standing up testing and vaccination pods. (Emergency management member in coordinator role, urban HCC)*
- *[Our HCC] just happens to have the best group of participants. Literally every time one facility needed assistance the whole region was always willing to step up to support that facility in need. The [state hospital association] was also instrumental in assisting our region to such a high level of success. (Public health member in decision making role, rural HCC)*
- *For our area (and state) the HCC played a key role in all aspects of the response. From pre-event training and exercising, warehouse operations and PPE distribution, support to public health, development and operations of*

> *The HCC was an integral partner in all aspects of the COVID response and gave us the opportunity to get an early view of the stress that this pandemic was placing on the healthcare system through the healthcare surveillance project. (Public health member in emergency management role, suburban HCC)*

ACS, load balancing, data collection and public education via our website, managing staffing, 24/7 Duty Officer, as well as coordination and response through cascading events such as water main breaks, tornadoes, 2 hurricanes, riots/civil unrest, and an arctic blast. (Coalition staff with emergency management role, suburban HCC)

> *COVID-19 has truly defined our HCC as operational within our region and state. The information sharing, situational awareness, and resource identification roles were critical and quickly became integrated into established processes. There was some hesitancy, prior to COVID, but those are generally non-existent as we have shown how we can support (not take over) existing plans, operations, authorities, etc. (Coalition staff in decision-making role, suburban HCC)*

- *While the coalition coordinator had an enormous role within the region during the COVID-19 response, the coalition itself played a small role. The planning, exercising, and relationships built PRIOR to the pandemic were invaluable. (Coalition staff with facilitator role, rural HCC)*

Demonstration of Value

Respondents also described how the pandemic gave their HCCs an opportunity to demonstrate their value. Many noted skepticism about the HCC concept and the role of HCCs in emergency response that existed prior to the pandemic decreased as response partners saw the contributions of their HCC when responding to COVID-19.

- *COVID-19 has shown that the HCC can be a vital response agency that serves as a non-biased centralized hub for information and coordinated response to get the best treatment for the most people. (Coalition staff in decision making role, suburban HCC)*
- *The response to COVID provided an opportunity for hospital executive staff (CEO level) to see the importance of the planning, exercising and relationships developed through the local HCC. Truly, we were "on our own" in the initial response phase and heavily relied on each other. (Coalition staff in administrative/financial role, suburban HCC)*
- *COVID-19 has brought to the table multiple healthcare partners that would normally not seek assistance from the HCC – long term care, skilled nursing facilities, dialysis center – to name the most difficult to engage. Because community PPE distribution was established, it has driven awareness of the HCC and has brought the facilities to the table for other incidents that have occurred within our region. (Coalition staff in decision-making role, urban HCC)*
- *The HCC program became a vital resource for healthcare organizations at their greatest time of need. The pandemic forged strong relationships with partners otherwise unaware of how the coalitions can assist them. (Coalition staff in decision making role, suburban HCC)*
- *In my experience, the coalitions in [our state] provided a flexible component of the COVID-19 response. We were able to pivot from assisting with the distribution of PPE to monitoring and assisting with LTC outbreaks to working with partners in the vaccine roll-out, all the while providing that important piece of situational awareness to our partners and state funding agency. (Coalition staff in administrative/financial role, urban HCC)*

Challenge of Competing Priorities

Other respondents identified challenges during the COVID-19 response due to the difficulty of balancing overall HCC responsibilities with those of individual coalition members. The geographic scale, duration, and severity of the pandemic placed enormous pressure on the overall healthcare workforce and those managing the response. Respondents felt the burden of heavy workloads and constant pressure.

> *[It is important to] understand certain response aspects are very organizationally individualized and can't be standardized within a diverse coalition. (Public health member in coordination role, suburban HCC)*

- *In [our state], and highly likely many other states, we noticed early on that stakeholders and [health department] staff that were tasked with supporting one part of the response were also the same stakeholders and staff juggling many other crucial parts of the response. We have seen and heard this many times from our stakeholders regarding vaccination (both planning and implementation), testing, and mAb therapies especially. Many of the stakeholders being tapped for data or RFIs are the same stakeholders planning and implementing the next stage of the pandemic response, as they simultaneously continue to have a role in other response activities. This, in addition to the HPP requirements for coalitions that were ever-present throughout the last year, continued to tax the same stakeholders that play a role in the [HCC] and specific workgroups as they continued their contributions to the overall coalition goals as well as their facility or organization-specific needs for COVID-19 response. (Public health member in decision-making role, urban HCC)*
- *I think knowing that the lion's share of HCC participants are active in the Coalition as "other duties as assigned." While that often works during response, it is a heavy lift in blue sky/non-operational times. Conversely, while people often step up and "do the right thing" even disaster response can be a heavy lift if all facilities are affected (i.e., pandemic). (Coalition staff in decision-making role, urban HCC)*

> *Most coalitions during a pandemic are tied up with their everyday jobs and responsibilities. (Coalition staff in emergency management role, rural HCC)*

HCC Structural Challenges

Some respondents were confident that their HCC structures are well-suited for shorter duration, more geographically focused disasters but were not able to meet the extraordinary demands of a pandemic. Others did not think HCCs could be effective in any emergency response without making fundamental changes to their structure or a common understanding of their role.

- *For most major incidents in the region the HCC can be effective in helping when non-effected agencies can come together to help the effected agencies. In a worldwide pandemic, the members of the HCC were so focused on local issues there wasn't time, personnel, or resources for active regional response. (Emergency management member in emergency manager role, rural HCC)*
- *HCCs have to be required and participation has to be incentivized or the HCC doesn't work. (Public health member in communications role, rural HCC)*

- *The problem with HCCs - the membership is planners - this type of incident requires high-level buy in and support. But not a lot of executive leaders have the foundational knowledge in emergency response (especially something that should be a public health led response). HCC members need the support and power to be able to make financial decisions/make actual change. Communication needs to flow from system level leadership to the 'boots on the ground' responders. A lot of issues stem from lack of information sharing for emergency management individuals. Communication needs to improve between these groups: Hospital Executives --> Managers, Hospital --> Hospital Comms, HCC --> Members. (Coalition staff in communications role, suburban HCC)*

Intended Purpose of HCCs

In many cases, the benefits of and challenges to HCC engagement traced back to the purpose of each individual HCC. Numerous respondents emphasized that their HCC is intended for preparedness activities only and was not expected to have a response role during the COVID-19 pandemic or any other emergency.

- *HCCs are a preparedness entity and not a response entity. We train and help prepare for events but once one does happen, the HCC reverts to a role of liaison within and outside the HCC. (Hospital member in emergency management role, urban HCC)*
- *HCCs in [our state] are not and cannot ever be responding agencies. (Member in coordinator role, rural HCC)*
- *HCCs are valuable as a network but mislabeled as a healthcare emergency management entity. (Public health member in decision-making role, suburban HCC)*
- *HCCs in [our state] are not officially recognized and have no official response role. The hospital association serves as the collective voice of hospitals at all times and works through NIMS as a Multi-Agency Coordination Group (MAC). ASPR should focus on developing and improving the established and proven systems and spend less time trying to create new models with limited buy-in, such as coalitions. (Coalition staff in decision-making role, rural HCC)*
- *It depends on the disaster. COVID is primarily a PUBLIC HEALTH response; not a healthcare response (once it settled into a rhythm regarding quarantine/isolation/PPE). HCCs are great for sharing ideas/best practices/sharing resources/providing intel to inform state processes. HCCs (in this state) do not coordinate response and there is no single physical location where supplies/equipment/etc. can be managed. That is beyond the capacity of this region. Lastly, staffing - every agency I work with is barely hanging on to staff. Needs to be more capacity in every discipline and in our own state program. (Member in facilitator role, suburban HCC)*

> *I think the role of the coalition is about partner collaboration. The HCC itself is not responsible for response coordination. It is a planning, partner coordination, point of entry for resources and information sharing in disaster response. (Public health member in coordinator role, urban HCC)*

Lack of Authority

Others explained that state or local regulations or other government structural issues prevented their HCC from taking on an emergency response role. In some instances, the respondents viewed this as a positive because it helped define roles and responsibilities and reduce confusion during response. Other respondents found this to be an obstacle to the effectiveness of HCCs. Some respondents noted that HCCs lacked authority over the primarily private sector entities involved in the healthcare response to COVID-19.

- *In [our state], there is no regional authority during response. The HCC works very well at sharing information and other situational awareness during a response. (Coalition staff in decision-making role, suburban HCC)*
- *HCCs do not have jurisdictional authority. State agencies should not empower HCCs or insinuate that is the case. [The state health department] should not use HCCs as an extension of their government office. (Member in coordinator role, rural HCC)*
- *Per statute, [our state] gives authority to the [regional entity] for medical and health response coordination. HCCs' role of planning is the primary function and provides leadership and an advisory role to the [regional entity] in a response. (Member in decision-making role, urban HCC)*
- *Regional healthcare response looks different in [our state]. We already have [the state] divided into regions and we have RDMHS' who oversee the regional response, but all disasters are local, from beginning to end. HCCs need to be locally based and locally funded. Otherwise, the process does not work in [our state]. To bypass the local level is a huge injustice to those who have the responsibility to care for patients in their locations. [Our state] has the appropriate structure in place using [state emergency management]. It is the law in our state. State or regional control is opposed to that system that recognizes our local autonomy. We need state and federal support, NOT mandates and regulations. (Hospital member in emergency management role, rural HCC)*
- *Healthcare coalitions need to have more authority to coordinate, direct, participate with all the following stakeholders (healthcare systems, locality public safety, locality emergency management, incident management teams, communications centers [PSAPs, 911 centers, etc.], coordination points [MACs]). HCCs should also have a seat at the higher levels of state government without the filters of health system associations, state health departments, and other levels of government. (Coalition staff in multiple roles, suburban HCC)*
- *The coalition was not used as much as it could have been due to local public health control over what could and could not be done by the coalition. (Coalition staff in emergency management role, rural HCC)*

> *HCCs are expected to play a variety of roles and have a multitude of responsibilities, but often do not have the buy-in to execute on them. By virtue of their federal directive, HCCs offer tremendous opportunity for regional (statewide in our case) cooperation and coordination, but the success of that is predicated on authority - which may or may not exist based on recognition by partners. HCCs are mandated, but their ability to deliver on expectations can be limited. (Coalition staff in administrative/financial role, urban HCC)*

- *Health care coalitions may work for areas that have independent hospitals; they do not meet the needs or provide value to large health systems. (Coalition staff in decision-making role, urban HCC)*
- *Our health care coalition serves 6 different hospital systems, over 67 skilled nursing facilities, 60 dialysis centers and that's not counting hospice and home health care agencies in 24 different political jurisdictions. With such a large and varied region, we do not have the legal authority or regulatory authority to carry out some of the tasks that ASPR would like to see us control. Our larger corporate health systems do not see us as being able to do many things that they cannot do for themselves. A good example of this is purchasing PPE, pharmaceuticals, etc. as they have much deeper pockets and buying power than we would ever have. (Coalition staff in emergency management role, suburban HCC)*

Understanding of HCC Role

A number of respondents noted confusion, disagreement, or lack of a common understanding about the intended role of HCCs in emergencies. Many mentioned their HCC had a limited or no role at all during the response. Numerous respondents described repeatedly educating new partners and decisionmakers about their HCC. Others described expectations or actions of HCCs that were not within their planned scope.

> *I think coalitions are vital to the success of large scale health emergencies. However, the success of the coalitions is heavily dependent on statewide strategy for healthcare response that sets clear expectations for the coalition role and that the emergency response structures need to incorporate the coalition response role into them; we also can't assume that coalitions alone can manage all aspects of the healthcare response, especially for something on the scale of COVID-19. (Coalition staff in decision-making role, urban HCC)*

- *Formal recognition by state agencies and engaged healthcare and public health executives are fundamental to an HCC's success and are currently lacking. HCC response is a continuum and there is a substantial difference between information sharing and scarce resource allocation. (Coalition staff in administrative/financial role, suburban HCC)*
- *[Our state] believes this fallacy that coalitions have authority and ability to do things and make changes. Changes come from mandates and policy changes, not from a coalition. (Member in decision-making role, rural HCC)*
- *There is NO regional 'operation' component other than 'information sharing/situational awareness'. (Member in facilitator role, suburban HCC)*
- *Healthcare coalitions must be integrated in the entire process and response. When decisions are made at governmental, public health, and other levels without the inclusion of the coalition staff, this is a missed opportunity. (Coalition staff in emergency management role, rural HCC)*
- *Healthcare coalitions should be emphasized and marketed on a more widely based level. There should be outreach from the top down to ensure that agencies are joining the local coalition as well as what services can be offered. The larger our audience, the better we can serve them. (Coalition staff in decision-making role, rural HCC)*

- *During the major staffing shortages, a few hospitals were lobbying heavily for an alternate care site, and they wanted the HCC to staff it, but they didn't understand that the HCC didn't have a staff. (Member in coordinator role, rural HCC)*
- *Those HCC-contracted Coordinators were often making/attempting to make operational decisions for hospitals, which is far from their role. (Health system member in decision-making role, urban HCC)*
- *My HCC wasn't looked to for much of anything throughout COVID. Had very little support from the state. (Coalition staff in administrative/financial role, rural HCC)*
- *HCC should have had bigger part in state/county response to COVID - there was little or no communication to HCCs and HCCs [were] not allowed to participate in COVID distribution, testing, and communications. (Coalition staff in decision-making role, suburban HCC)*
- *[Our state] does not incorporate coalitions into their state response. The coalitions had no dependable source of information, had no ability to communicate circumstantial information to the state, resource request processes were not organized or standardized. Coalitions truly do not have any ability to make authoritative decisions in a disaster. (Member in decision-making role, rural HCC)*
- *There was much confusion as to which entities had command and control over each aspect of the response. (Coalition staff with multiple roles, suburban HCC)*

In particular, some respondents described difficulty coordinating with or being recognized by local or state public health or emergency management agencies, despite representatives from public health and emergency management being core HCC members.

> *The integration of HCCs into the State (public health and homeland security agencies) and Local Public Health Departments proved difficult. HCCs had no defined role because we so heavily relied on ESF-8 leads and State direction that we essentially just worked as an entity to pass along information sharing. The HCC's role was not clear to HCC leadership, nor really to the State or Public Health. HCCs intertwine so well with Public Health; however, when there is overlap in roles it seems like Public Health (rightly) takes the lead, but then HCCs are left unsure what the bigger defined role for them is. (Coalition staff in decision-making role, rural HCC)*

- *Our roles and responsibilities need to be better understood and respected by public health and emergency management. If it is in the HCC's scope of work that we need to collaborate with local public health, then it needs to be in their policies as well. (Coalition staff in coordinator role, rural HCC)*
- *I do think that at a federal and state level the HCCs need to be integrated into emergency management in a more formal way. Solidifying our role in policies, plans and procedures will keep us from having to continually introduce ourselves and working to insert ourselves into these state, regional, and local emergency management processes. Additional funding and full time staff will also help us to better staff our Regional Healthcare Coordinating Center before, during, and in the recovery phase of an emergency. (Coalition staff in emergency management role, suburban HCC)*

- *Having appropriate staffing levels who had formed pre-existing relationships with stakeholders made all the difference, as well as appropriate training (call the regional healthcare coordination center 800 number instead of individual team members--as we say, "When in doubt, give the RHCC a shout!"). Having the response role be more recognized by state emergency management would be significantly helpful. (Coalition staff in decision-making role, urban HCC)*
- *Recognition by state emergency management and state public health regarding the role of the HCC is a must! (Coalition staff in decision-making role, rural HCC)*
- *The [HCCs]s are critical to the success or failure of a statewide event and should be consulted with before decisions are made. If it had not been for the [HCCs], [our state] would have failed in its pandemic response. Emergency Management should not try to be lead agency in a pandemic response. (Coalition staff in emergency management role, urban HCC)*
- *If policy in [our state] was different and HCCs were recognized as a partner, we feel that we could have contributed more. For the first several months of the pandemic [the state health department and state emergency management agency] did not even engage HCCs regardless of our efforts. HCCs statewide came together and formed our own task force to share information and best practices amongst the state HCCs and healthcare partners within our respective regions. (Coalition staff in decision-making role, urban HCC)*

Planning Assumptions Versus Reality of Response

Several respondents expressed concern about the disconnect between planning assumptions of roles and responsibilities and the actual requests made of HCCs during the emergency response. A number of respondents mentioned the establishment of new structures in the midst of the response that duplicated or replaced the role of the HCC.

> *The political component to this response and the failure to recognize that the coalitions and their local partners have plans in place to respond versus having political pressures dictate changes that directly impact the local/regional planning efforts has been a source of frustration. Future planning efforts will need to take into consideration the politics behind some decisions. (Coalition staff in decision-making role, rural HCC)*

- *With two healthcare coalitions in [our] state, much of the healthcare coordination occurred at the state or local level. For example, state healthcare capacity dashboards and a statewide patient placement system were developed during COVID to support state response needs. This really helped the HCCs in terms of statewide visibility, but also replaced coalition capabilities. (Coalition staff in decision-making role, rural HCC)*
- *COVID-19 was too political and was difficult to work around many political decisions. HCCs were heading in one direction and then the next day another due to change of political mindsets. We were also hindered by hospital associations in performance with our duties and to receive timely situational awareness as they wanted to hold their information close and not share. (Coalition staff in decision-making role, rural HCC)*
- *Our coalition already had an integrated regional response role and strived to always be Response Ready. Without the existing regional coalitions during COVID-19, the State would have*

to build the response from the ground up. Unfortunately, the regional HCCs were not written into any of the State plans, so State leadership did not know the HCCs already existed, thus creating some work arounds for processes that were already in place. (Coalition staff in decision-making role, urban HCC)

- *The HCC in our state is not at the forefront as it should be in this type of a disaster. There should have been no questions as to who to go to for resources, but there were. The HCCs were completely left out in the cold. There was a push from the state to incorporate during the incident, but by that time it was too late. This had to be done before and needs to be understood in a hot wash. The role of the HCC was new to the state, but hopefully this will be resolved going forward. (Coalition staff in emergency management role, suburban HCC)*
- *The HCCs in [our state] were not utilized. The state put together their own regions leaving the HCCs out of the picture. The HCC readiness and response coordinators were pulled to work in the [new regional entities] along with the military and other locals who knew nothing about how the HCCs functioned. This created huge conflicts with local partners and pushed them away from participating in the HCCs. (Coalition staff in coordinator role, rural HCC)*
- *At times, the HCCs were left out of the loop by State Officials or were bypassed by state and federal partners that went direct to our hospitals and then asked us for help later when they didn't get cooperation. Also, this led to duplication of requests for the same information. (Member in liaison role, rural HCC)*
- *We have large hospital systems that sort of functioned in silos because the Governor assigned them a role. This response was not one that was expected and many folks were put out of their normal role and had to adapt. (Member in decision-making role, urban HCC)*
- *We believe they can be developed further into a stronger response role. The fact that [our state's] coalitions were new and the State leadership developed another system on top of the coalitions created significant hardship. (Coalition staff in administrative/financial role, urban HCC)*

HCC Perceptions on Role in Specific Activities

Respondents were asked specific questions about the following topics:

- Information Sharing/Essential Elements of Information/Data
- Coordination/Command and Control
- Patient Movement/Patient Load Balancing
- CSC
- Alternate Care Sites

Additional details about aspects of the response related to these five topics are included in the sections that follow. Respondents offered examples of numerous COVID-19 response activities they were involved in outside of these five topics.

- Contributing to the community-wide vaccination effort.
    - Activities included hosting planning meetings to coordinate mass vaccination efforts and implementing a vaccinator registry of actively licensed clinicians.

> *The Coalition has previously brought three competing hospital systems together to coordinate around seasonal surge in the urban center of the region and transitioned this group into a vaccine coordinating group with the Local Public Health Department to ensure all major players were working together during the vaccine roll-out. (Coalition staff in administrative/financial role, urban HCC)*

- Protecting healthcare workers by supporting existing respiratory protection programs or helping members develop them.
    - This included maintaining a cache of fit testing equipment/supplies, providing training and technical assistance, and conducting fit testing.
- Supporting SARS-CoV-2 testing and contact tracing efforts.
- Helping to coordinate allocation and provision of COVID-19 treatments, including Remdesivir and monoclonal antibodies, in various settings.

Many respondents described ways their HCC supported smaller or less-resourced members during the pandemic. Some of these entities were engaged members of their HCCs prior to the pandemic whereas others turned to the HCC for help during the response. Activities included:

- Serving as a central hub for information.
    - *Our small health entities needed the coalition for information and coordination. Without the coalition they had no one. (Coalition staff in decision-making role, rural HCC)*
    - *Providing daily situation reports to members that are not routinely connected to local or state emergency management. (Coalition staff in decision-making role, urban HCC)*
    - *Direct communication with more entities, such as clinics, that don't always have access to state or local public health. (Coalition staff in facilitator role, rural HCC)*
    - *Great information sharing between HCC agencies and coordination of PPE supplies from larger facilities to smaller ones. A true TEAM effort. (Hospital member in emergency management role, rural HCC)*
- Distributing personal protective equipment and other supplies and resources, including to long term care, EMS, and non-acute care facilities.
    - *The HCC was able to distribute over 77M units of PPE and DME to facilities across the region, which helped to keep facilities operating at expanded capacity. (Coalition staff in support role, suburban HCC)*

- *Resource management among healthcare facilities, particularly when PPE was in short supply and high demand. This was due, in part, to the ASPR hospital association grant as [our HCC] is housed at the [state] Hospital and Healthcare Association. [Our HCC] was able to purchase large quantities of PPE that we were able to allocate and distribute through partnership with the [state] National Guard. (Coalition staff in administrative/financial role, urban HCC)*
- *While not initially set up to handle inventory, storage and distribution, the PPE distribution to the healthcare community was appreciated and certainly brought awareness to the coalition, especially among the non-hospital healthcare providers. (Coalition staff in emergency management role, suburban HCC)*
- *Following H1N1, the HCC maintained a limited cache of PPE for regional hospitals and regional EMS use. This was used until the SNS and state could obtain PPE. The HCC provided guidance on PPE conservation and advocated for the smaller systems. (Coalition staff in clinical role, rural HCC)*
- *Early on in the CCOVID response one of our community hospitals ran short on ventilators. The relationships developed in the HCC made them comfortable to reach out to each other to share scarce resources. (Public health member in emergency management role, suburban HCC)*

- Helping members with planning.
  - *Nursing home evacuation tabletop which incorporated COVID-19 considerations. (Coalition staff in decision-making role, urban HCC)*
  - *We developed some burn rate sheets in Excel to help the smaller facilities understand the use of PPE and better determine their needs ahead of time. (Hospital member in emergency management role, rural HCC)*
  - *Develop protocol/procedures for engaging long-term care facilities in outbreak status. (Coalition staff in decision-making role, suburban HCC)*

> *Of the 9 counties in our HCC, they all had separate methods of resource requisition and they did not have a great means of communicating their requirements to their healthcare agencies. ReadyOp allowed the HCC to separate the communications in a streamlined way that got pertinent resource requisition methods into the right hands in a short amount of time and least amount of confusion. (Coalition staff in decision-making role, rural HCC)*

- Assisting with outreach to populations at greater risk during the pandemic.
- Providing access to expertise and scale of larger HCC members.
  - *Early in the response many nursing homes did not have expertise in use of or supplies of PPE available for infection control. The HCC shared resources and provided spot training and advisement. (Public health member in emergency management role, rural HCC)*
  - *With the networking achieved prior to the response larger hospitals were able to assist smaller hospitals in supplies, transfers, etc. (Emergency management member in communications role, rural HCC)*

- *Through years of practicing, playing, and drills we were able to form partnerships within the HCC to assist in the vaccine efforts, by allowing one larger hospital keep the vaccine frozen and allow the smaller hospitals to pick up as needed, whereas the only other option was to receive direct in the defrost stage and only allow 4 days to distribute. (Emergency manager in communications role, rural HCC)*

Some respondents indicated their engagement extended beyond their own membership and described collaborative efforts with other nearby HCCs.

165 respondents answered the request to, "Briefly describe one activity (COVID-19 related or overall) that your HCC prepared for that you no longer believe should be a role for your HCC in the future." Of these respondents, 83 (50.3%) did not name an activity. Instead, they responded the question was not applicable, there were no activities they planned for that they would not continue in the future, all activities they have planned for are within their HCC's role, or that the HCC's role should be expanded to include even more activities.

The other half identified specific activities, including:

- Vaccination, including allotment and distribution of vaccine among partners and participation in vaccine administration efforts. Several respondents believed this was a responsibility of public health and saw no role for their HCC.
- Donations and volunteer management.
- Surge planning.
- SARS-CoV-2 testing.
- Therapeutics distribution.
- Fatality management.
- Staffing management.
- Management of health care delivery.

> *I cannot identify one specific issue that should not be managed through the HCC. In fact, COVID-19 has identified a greater role that the HCC should play in the community and has driven a greater need for funding and staffing to manage day-to-day functionality that has become a standard expectation across the region. (Coalition staff in decision-making role, urban HCC)*

Interestingly, many respondents indicated that resource management should not be a role for their HCC despite many others describing managing resources as one of the greatest successes during their response. Most respondents did not provide details, but they frequently mentioned PPE; ventilators and pharmaceuticals were also specifically mentioned. Respondents mentioned managing logistics, ordering and purchasing products, allocating and distributing resources provided by their states, managing caches, and delivering products. Respondents indicated they did not have space to store these resources, the staff to manage them, or the tools to track them.

> *The HCC had to organize and respond to several Long Term Care monoclonal antibody therapies administration after large outbreaks in those facilities' residents. This required a huge amount of logistical support and organization of staff and equipment, including transportation of staff and equipment into those LTC facilities. This was time consuming and challenging, frequently without much, if any, warning. Since then, we were able to get several of our Regional LTC facilities to set up their own mAb treatment program. This allowed the HCC to monitor and provide logistic support without many of the other tasks. (Public health member in decision-making role, rural HCC)*

Respondents also shared specific comments and recommendations for NHPP about activities that should no longer be required of HCCs. These included:

- Granular involvement in business continuity planning. This was due to the wide variance in plans of private industry members.
- HCC-wide plans. Some believed it was more valuable to have a common understanding of individual member plans than to develop separate coalition plans.
- Having a clinical advisor. Because multiple clinical staff participate in HCC activities, this respondent did not believe a designated clinical advisor was necessary.
- The coalition surge test.
- Developing strategies to protect health care information systems and networks. While the respondent agreed that cybersecurity is important, they did not see the HCC as having influence over how the information technology staff of HCC members manage their systems.
- Pandemic planning and exercises. Respondents believed response to the COVID-19 pandemic should replace this requirement.
- Ebola-specific training and education. The respondent indicated that "highly infectious disease preparation includes disease preparation and mitigation so specific training does not have a role in the HCC response."

They also offered the following overarching comments about HCC requirements:

- *Not all HCCs are structured the same and although I recognize the difficulty in establishing a baseline for performance measures, often we find ourselves and how we are structured to be very different. (Coalition staff in decision-making role, suburban HCC)*
- *Our HCC is not a response entity. It is challenging to meet HPP demands in a State where we have 1 Coalition encompassing rural, urban, and low level 1 trauma or burn centers and a large*

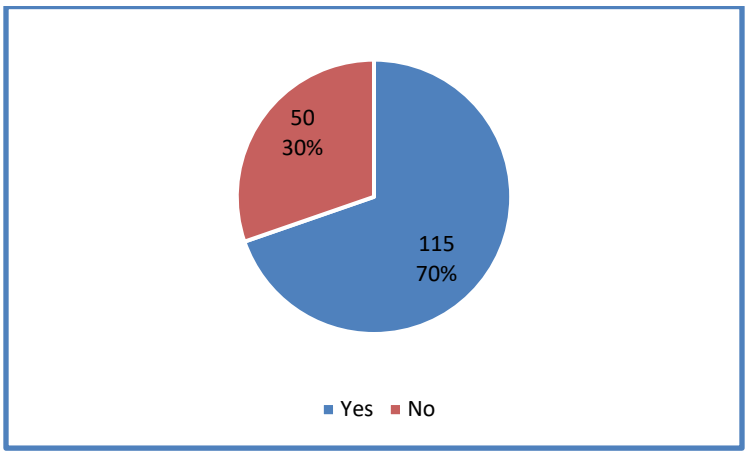
tribal health system encompassing a massive geographic area. This is very challenging and the annual plan requirements are tough to resolve in a substantive way, because our Coalition is a stakeholder group not a response entity. (Member in emergency management role, urban HCC)

- *HCCs need more latitude to be able to plan and conduct activities according to schedules that make sense for them. It's ok to have metrics and minimum standards, but they need to be prescribed more broadly than they currently are. (Coalition staff in facilitator role, rural HCC)*

Information Sharing/Essential Elements of Information/Data

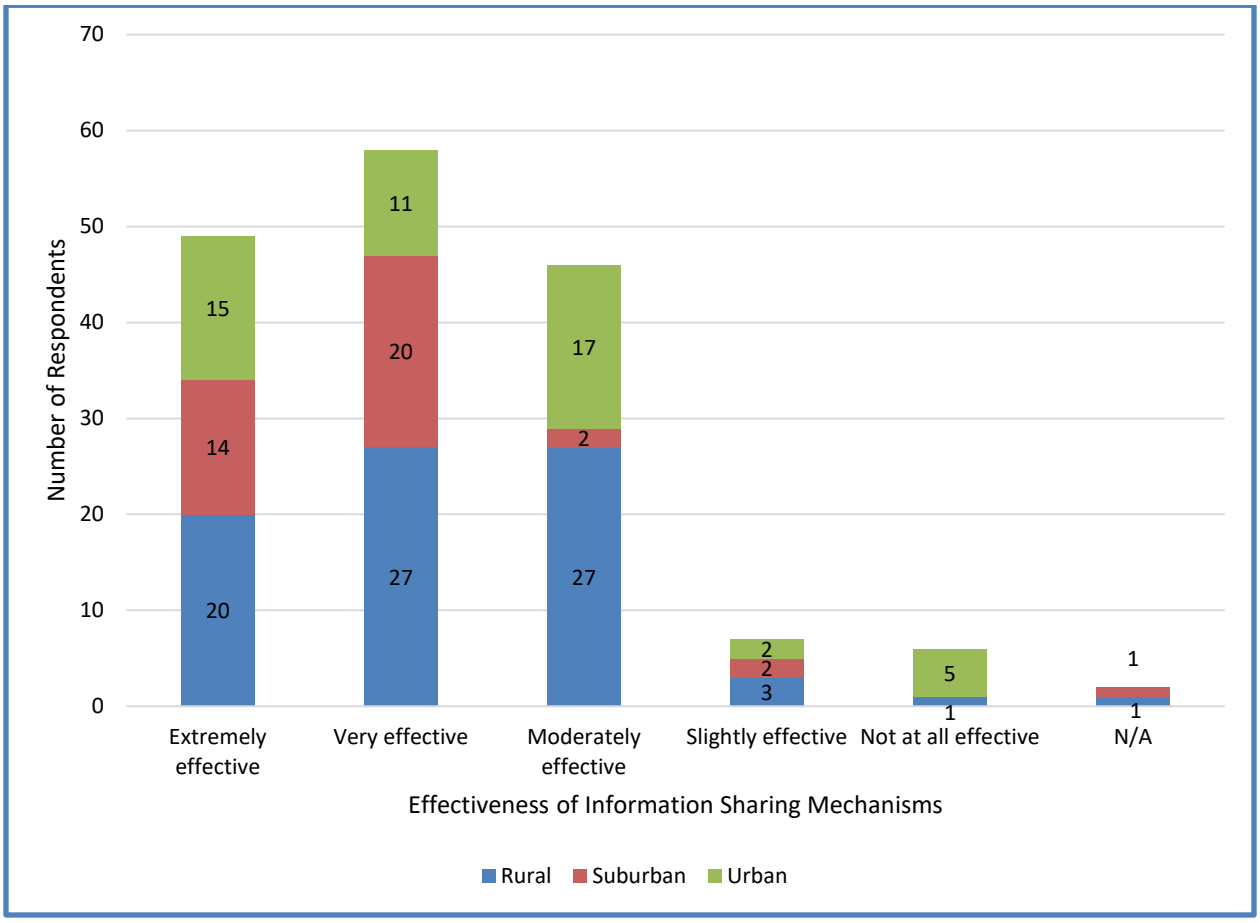
A majority of respondents said they had something to contribute to the topic of "Information Sharing/Essential Elements of Information/Data" (*n*=115, 69.7%) (Figure 11). Some respondents completed questions on this topic despite selecting "no."

Figure 12. Do you have information to share on this topic [Information Sharing/Essential Elements of Information/Data]? (select one) (N=165)



The highest proportion of respondents said they thought information sharing mechanisms put in place by their HCC have been very (*n*=58, 34.5%), extremely (*n*=49, 29.2%), or moderately (*n*=46, 27.4%) effective in supporting communication among their members during COVID-19. Fewer respondents said slightly (n=7, 4.2%), or not at all (n=6, 3.6%) effective (Figure 12). There was a statistically significant association between perceived effectiveness of information sharing mechanisms and the geographic density of the area covered by the HCC (p=0.005), but the findings may not be generalizable due to the small sample size in these comparison groups.

Figure 13. How effective have information sharing mechanisms put in place by the HCC been in supporting communication among your members during COVID-19? (select one) (N=168)



P=0.005, statistically significant

Information Sharing with Web-Based Platforms

Respondents who selected any answer other than "N/A" to the effective information sharing mechanisms question were asked about sharing information using web-based platforms. More than two-thirds of respondents (*n*=84, 71.8%%) said they share information among HCC members in real time using a web-based platform (Table 6). Of those who reported having a web-based platform, about two-thirds of respondents said the web-based platform was statewide (n=56, 67.5%) (Table 7).

Table 6. Did you share information among HCC members in real time using a web-based platform? (select one) (N=117)

	Rural	Suburban	Urban	**Total n(%)**
Yes	33 (67.3%)	24 (82.8%)	27 (69.2%)	**84 (71.8%)**
No	16 (32.7%)	5 (17.2%)	12 (30.8%)	**33 (28.2%)**
Total	**49 (100.0%)**	**29 (100.0%)**	**39 (100.0%)**	**117 (100.0%)**

Table 7. Is this a statewide system? (select one) (N=83)

	Rural	Suburban	Urban	**Total n(%)**
Yes	23 (69.7%)	17 (70.8%)	16 (61.5%)	**56 (67.5%)**
No	10 (30.3%)	7 (29.2%)	10 (38.5%)	**27 (32.5%)**
Total	**33 (100.0%)**	**24 (100.0%)**	**26 (100.0%)**	**83 (100.0%)**

Of respondents who have a statewide web-based platform for real time information sharing, most did **not** create it during the pandemic (*n*=47, 83.9%) (Table 8). There was a statistically significant association between the creation of web-based platforms during the pandemic and the geographic density of the area covered by the HCC, with no systems created in suburban areas (p=0.012).

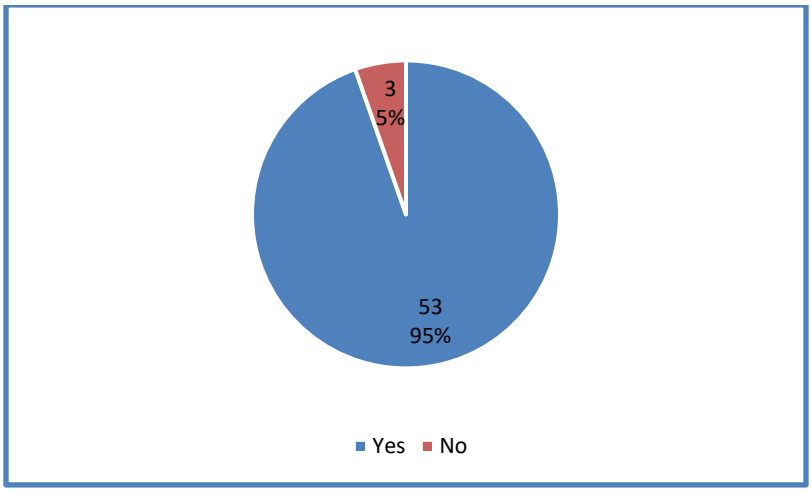
Table 8. Was this system created for the pandemic? (select one) (N=56)

	Rural	Suburban	Urban	**Total n(%)**
Yes	3 (13.0%)	0 (0.0%)	6 (37.5%)	**9 (16.1%)**
No	20 (87.0%)	17 (100.0%)	10 (62.5%)	**47 (83.9%)**
Total	**23 (100.0%)**	**17 (100.0%)**	**16 (100.0%)**	**56 (100.0%)**

P=0.012, statistically significant

Of respondents who have a statewide system, almost all found it useful (*n*=53, 94.6%). (Figure 13)

Figure 14. Was the system useful and effective in gathering data needed for decision making and reporting? (select one) (N=56)



Information Sharing with Non-Web-Based Platforms

Respondents who said they did not share information among HCC members in real time using a web-based platform were asked if HCC members shared information at least daily through a non-web-based platform. About two-thirds said yes (n=29, 63%). (Table 9)

Table 9. Did HCC members share information at least daily through a non-web-based platform? (select one) (N=46)

	Rural	Suburban	Urban	**Total n(%)**
Yes	17 (68.0%)	4 (80.0%)	8 (50.0%)	**29 (63.0%)**
No	8 (32.0%)	1 (20.0%)	8 (50.0%)	**17 (37.0%)**
Total	**25 (100.0%)**	**5 (100.0%)**	**16 (100.0%)**	**46 (100.0%)**

Qualitative Responses Related to Information Sharing

When asked to describe one successful aspect of their region's response to COVID-19 that they did not think would have been possible without an HCC, more than one-third of respondents mentioned something related to information sharing. Many of the respondents made general comments about being a central source of accurate information, providing situational awareness for all HCC members, and having an effective process or system for sharing information.

> *Each week we conducted "touch base" calls where all hospitals, EMS, Fire, EMC, PH, LTC, etc. got on and talked about the different issues happening in the different counties and working on best practices. If it were not for the HCC coordinating these calls and the relationships we have with our agencies then these conversations never would have taken place. (Coalition staff in administrative/financial role, rural HCC)*

- *Information sharing and situational awareness with hundreds of healthcare agencies would not have been possible without the coalition coordination. (Coalition staff in decision-making role, urban HCC)*
- *We provided an avenue for all types of healthcare to find resources and get questions answered that may have been delayed had normal routes been followed. (Coalition staff in decision-making role, suburban HCC)*
- *HCC staff utilized daily situational awareness data. We have been able to find scarce resources and share data quickly and nimbly. Hospitals began contacting us with requests and questions. (Coalition staff in communications role, rural HCC)*
- *The ability to communicate with each other. We held weekly and then bi-weekly meetings (WebEx) to maintain situational awareness within the coalition. We also discussed bedding strategies and multiple other topics. (Hospital member in communications role, rural HCC)*
- *Efficiency for information-sharing of state policies/regulations; federal recommendations on patient management, PPE; information on just-in-time trainings; response actions of ESF8 planning groups; PPE vendors' contact. (Coalition staff in coordinator role, suburban HCC)*
- *Through Threat Assessment Team calls with HCC Leadership, we were able to meet critical, life-saving equipment and just-in-time provider consultation for rural partners. I believe our Regional, frequent collaboration through this event has saved lives across our region. (Coalition staff in coordinator role, urban HCC)*

- *Rapid and widespread information sharing and updates related to operational status, resource needs, clinical guidance, best practices, and lessons learned. (Coalition staff in administrative/financial role, rural HCC)*
- *Critical information sharing, emergency PPE distribution to healthcare organizations, provision of pertinent healthcare organizations/facility status information to state Dept. of Public Health, Dept. of Emergency Management & the state hospital association. The state agencies simply did not have the capacity, facility, and the relationships with the myriad of healthcare organizations in the region. (Coalition staff in emergency management role, suburban HCC)*
- *Early on in the COVID-19 response it became clear that data requests and data sharing would become a major element of a successful response. [Our HCC] closely coordinates with stakeholders to share data and throughout this response this close partnership has helped the multiple data requests received. With that, [the state] onboarded a new hospital data reporting system during the pandemic. Introducing, training on, and standing up this new system was possible through the strong HCC partnerships forged pre-pandemic. (Public health member in decision-making role, urban HCC)*
- *Our coalition was a leader in developing a daily hospital status report that aggregated essential elements of information regarding COVID-19 in our [state] hospitals. We coordinated the daily collection of this data and reported it out to our state's health operation center and state's emergency operations center. As the response ramped up, we connected with the [state] data team to automate the hospital status report and collaborated with the state health department and HHS to send data directly from our coalition/state information platform directly to HHS. This helped reduce data burden, as [state] hospitals would only have to report their data once, not multiple times in various different platforms. (Coalition staff in coordinator role, rural HCC)*
- *The collaboration across the board with disciplines that would not have really known what the other does if they had not learned by the coalition meetings. There were sometimes weekly COVID sitreps by discipline and then every other week, and now monthly. They all shared what they were doing and their challenges and successes. (Coalition staff in decision-making role, rural HCC)*
- *Information sharing and coordination. The [HCC] led early on in recommending the formation of a Hospital Unified Command and initiated daily EEI submissions, which has continued as of today. The [HCC] collects the information through our information sharing platform (Knowledge Center) and provides summary updates to a variety of stakeholders. This information has been used by the Governor in his decisions regarding directive health measures, the PRAM model through UNMC, and by individual HCC members/partners for decision-making. The HUC, facilitated by the [HCC], also spawned numerous ad-hoc COVID-19 working groups, which the [HCC] either facilitated, led, or was included in. Groups included EMS/Hospital transfers, PPE-Reuse and Infection Prevention, PIO, IT, HR, Staffing and Volunteers, Morgue Surge Capacity, and Vaccination Planning. Our regular Pharmacy and Non-Hospital Healthcare workgroups consistently met throughout the response as well. (Coalition staff in decision-making role, urban HCC)*

Nearly one in five respondents who said they developed a tool, policy, procedure, protocol, or other resource they would be willing to share identified something related to information sharing. Most mentioned information sharing generically, but examples of specific resources include the following:

- *Operational Status & Capabilities Assessment Report (OSCAR) forms to understand current hospital functions with a 96 hour forecasting mechanism. (Public health member in decision-making role, urban HCC)*
- *[State Incident Management System] Snapshot was developed to provide daily information on the number of hospitalized patients, vents in use, ICU beds in use and deaths. It was a quick overview of bed availability for the county and a source for daily situational awareness. (Coalition staff in administrative/financial role, suburban HCC)*

> *Public information and messaging. While we have great communications with our partners, we are not an entity that the general public looks to for information. Our partners, as trusted members of their communities, are the best channel for public messaging. (Coalition staff in administrative/financial role, rural HCC)*

- *The [HCC] developed a briefing that would go out to the members that shared compiled information such as Mental Health resources, free hotel stays for healthcare workers, resource sharing options or resource availability. There should be a template created to be able to plug in that information to quickly share with members so they can put it to use. (Coalition staff in decision-making role, rural HCC)*
- *But the most significant was the Statewide Hospital Status "real time" Dashboard that allowed both the facilities & the RMRS to monitor and update to allow for rapid and ease of placing patients. An internal dashboard was developed just for the RMRS's where each (MERC) Medical Emergency Response Center, could see all patients each region was working on and the priority of said patients. This allows the highest priority patients to be worked on in literally every region of [the state]. (Public health member in decision-making role, rural HCC)*

While nearly all who mentioned information sharing described it as a positive activity for HCCs, a few respondents identified specific types of information they believed HCCs should not be responsible for managing. These included:

- Essential elements of information that are available through other avenues. Several respondents described the burden to HCCs of collecting and reporting information that is already collected by others.
- Surveying facilities for equipment needs.
- Bed count reporting.
- Non-healthcare situational awareness generated by other government sponsored systems (e.g., weather alerts, general emergency alerts).

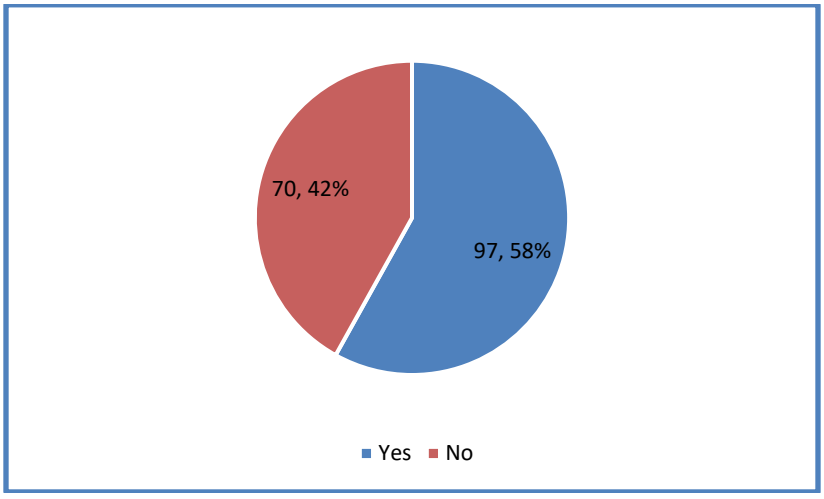
Several respondents took the opportunity to share additional comments related to information sharing. These included:

- *Unfortunately, most HCCs were cut out of the information sharing processes from the state level. We were often the last to know. (Coalition staff in decision-making role, rural HCC)*
- *Some standardized formats (reporting of beds, PPE, etc.) and regulations to healthcare facilities and states to use these systems to limit multiple reporting structures. (Coalition staff in decision-making role, rural HCC)*
- *We have communication policies in place, everyone needs to follow them, not just certain people. No one is important enough to bypass the way things are supposed to be done. (Coalition staff in decision-making role, rural HCC)*
- *The redundancy in reporting federal information has been difficult for hospitals and LTC and NH. They figure it takes .7 FTE per day and there is no funding for another position. (Coalition staff in administrative/financial role, rural HCC)*
- *Data collection for hospitals has been a significant impact on day-to-day operations and while extremely important the requests for data submission have been limited in definition and expectations, as well as the requests for data have often been mandated with limited or no notice. It's important that a tool be identified that will link directly to the major Electronic Medical Records (EMR) at hospitals to allow limited data to be provided, and then during a disaster a greater submission of data be toggled on at the facility level. In addition, the data must flow through the Regional HCC to allow the HCC to utilize the data for trending and reporting purposes. It is our belief the data should come to the HCC, and then to the State, and then to the Federal government. Not from Facility to Feds directly, bypassing Regional and State authorities. (Coalition staff in decision-making role, urban HCC)*

Coordination/Command and Control

A majority of respondents said they had information to share on "coordination/command and control" (*n*=97, 58.1%) (Figure 14). Some respondents completed questions on this topic despite selecting "no."

Figure 15. Do you have information to share on this topic [coordination/command and control]? (select one) (N=167)



Over half of respondents said their HCC maintained a virtual or physical emergency operations center at some point during COVID-19 (*n*=92, 55.1%) (Table 10). Respondents who said that their HCC maintained a virtual or physical emergency operations center were then asked if it was integrated with a jurisdictional entity. About two-thirds said yes (n=39, 63.9%) (Table 11). There was a statistically significant association between having emergency operations integrated with a jurisdictional entity and the geographic density of the area covered by the HCC (*p*=0.006). HCCs in urban areas were significantly more likely than those in rural or suburban areas to have their emergency operations integrated with a jurisdictional entity. When asked to specify the jurisdictional entity they integrated with, respondents wrote in various city or county government agencies, multiple partners, a regional entity, or a state agency.

> *For us one of the most beneficial processes was that the Coalition Coordinator was a Public Health employee. The information that she was able to share in the early phase of the pandemic was very beneficial to so many coalition partners. We were able to bring coalition board members into the regional command center to work also. (Public health member in administrative/financial role, suburban HCC)*

Table 10. Did your HCC maintain a virtual or physical emergency operations center at any point during COVID-19? (select one) (N=167)

	Rural	Suburban	Urban	**Total n(%)**
Yes	41 (52.6%)	26 (66.7%)	25 (50.0%)	**92 (55.1%)**
No	31 (39.7%)	10 (25.6%)	20 (40.0%)	**61 (36.5%)**
N/A	6 (7.7%)	3 (7.7%)	5 (10.0%)	**14 (8.4%)**
Total	**78 (100.0%)**	**39 (100.0%)**	**50 (100.0%)**	**167 (100.0%)**

Table 11. Was it integrated with a jurisdictional entity? (select one) (N=61)

	Rural	Suburban	Urban	**Total n(%)**
Yes (please specify which one)	11 (45.8%)	9 (56.3%)	19 (90.5%)	**39 (63.9%)**
No	13 (54.2%)	7 (43.8%)	2 (9.5%)	**22 (36.1%)**
Total	**24 (100.0%)**	**16 (100.0%)**	**21 (100.0%)**	**61 (100.0%)**

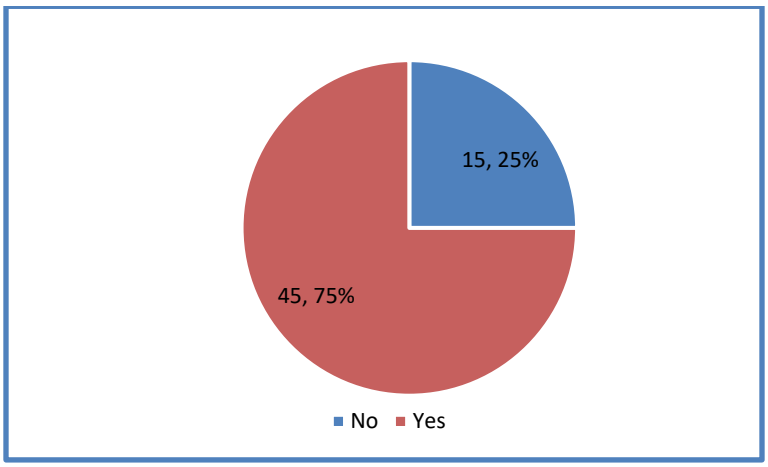
P=0.006, statistically significant

Of respondents who said that their HCC maintained a virtual or physical emergency operations center (EOC), more than half (n=34, 55.7%) had both a physical and virtual EOC. Only two (3.3%) reported their EOC was physical. (Table 12) Of respondents who said that their HCC maintained an emergency operations center, most reported that they used an incident command structure at some point during the COVID-19 response (*n*=45, 75%) (Figure 15). Among those who did not, nearly all responded that they lacked staff to fill incident command positions. Several explained that members filled incident command roles in their facilities and organizations and therefore could not fulfill the same role for the HCC. Others said that HCC staff were liaisons to other incident command structures rather than the HCC standing up its own structure.

Table 12. Was it virtual, physical, or both? (select one) (N=61)

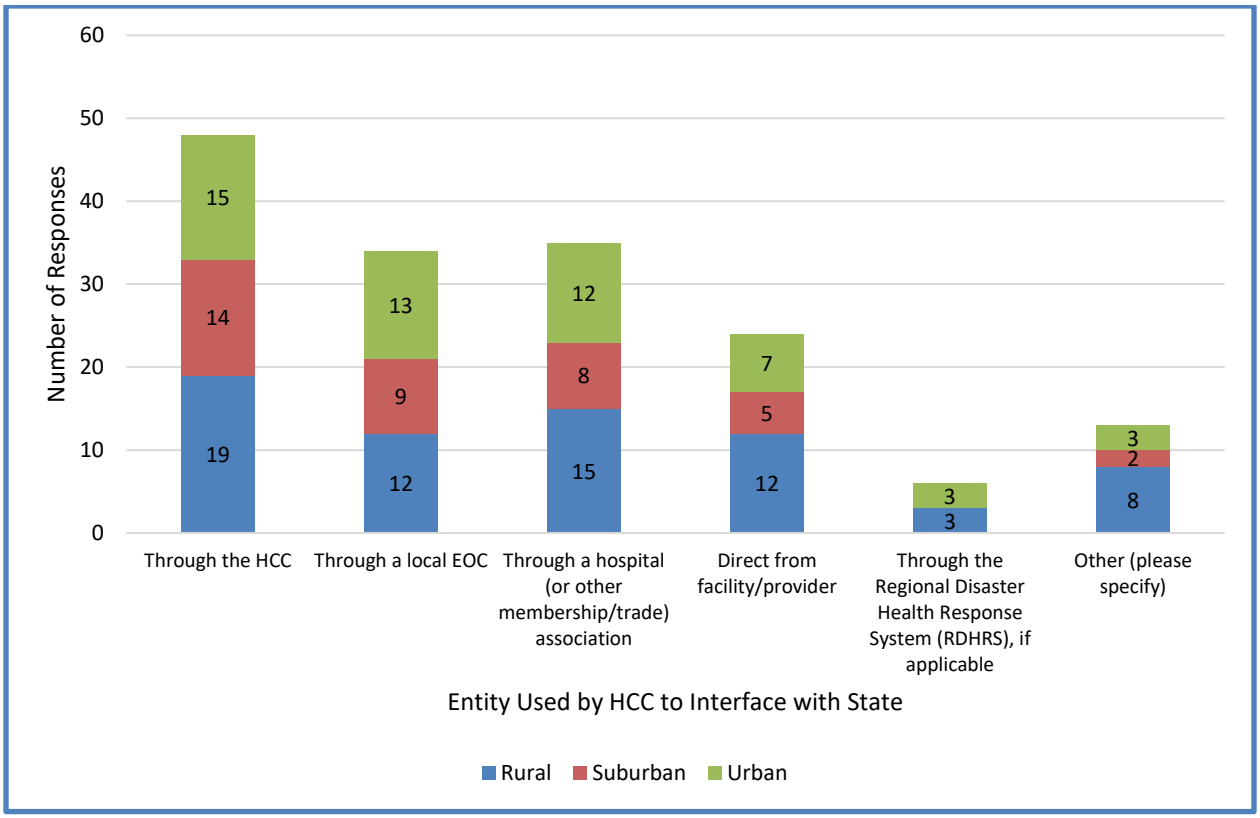
	Rural	Suburban	Urban	**Total n(%)**
Physical	1 (4.2%)	0 (0.0%)	1 (4.8%)	**2 (3.3%)**
Virtual	13 (54.2%)	6 (37.5%)	6 (28.6%)	**25 (41.0%)**
Both	10 (41.7%)	10 (62.5%)	14 (66.7%)	**34 (55.7%)**
Total	**24 (100.0%)**	**16 (100.0%)**	**21 (100.0%)**	**61 (100.0%)**

Figure 16. Did your HCC use an incident command structure at any point during the COVID-19 response? (select one) (N=60)



When asked how HCC members interface with the state, more than half (n=48, 52.1%) responded they did so through the HCC, more than a third through a hospital or other membership/trade association (n=35, 38%) or local EOC (n=34, 37%), about a quarter directly from their facility/provider (n=24, 26.1%), and seven percent (n=6, 6.5%) through the Regional Disaster Health Response System (Figure 16). Fourteen percent (n=13, 14.1%) identified other methods, including the health department, the emergency management agency, a regional incident management team, a regional response coordination center, a statewide healthcare coordination center, a regional coordinator, a virtual resource management system, or various means.

Figure 17. How did HCC members interface with the state? (select all that apply) (N=92)



ASPR TRACIE asked respondents who led various response functions in the area served by their HCC (Table 13). The highest proportion of respondents indicated that HCCs led PPE ordering/distribution (n=31, 36%), patient movement (n=24, 28.2%), just in time training (n=23, 27.1%), policy coordination (e.g., common hospital policies, EMS policies, etc.) (n=23, 27.1%), and staffing coordination (n=22, 26.5%). The highest proportion of respondents said public health led vaccine allocation and distribution (n=60, 70.6%), treatment allocation (e.g., monoclonal antibodies, remdesivir, etc.) (n=33, 38.8%), and support for provider CSC decision making (n=18, 22.2%). Respondents most frequently said activities related to alternate care sites did not happen (n=20, 23.5%), but when there was an ACS, the highest proportion of respondents indicated emergency management (n=18, 21.2%) led that activity.

ACS was the activity respondents most frequently indicated was led by emergency management. Respondents most frequently selected patient movement (n=16, 18.8%) as the activity led by large health systems, treatment allocation (n=11, 12.9%) as the activity led by hospital associations, and vaccine allocation and distribution (n=13, 15.3%) as the activity led by governors or other political entities.

More than 10 percent of respondents indicated that no one led the following activities: staffing coordination (n=19, 22.9%), just in time training (n=18, 21.2%), patient movement (n=12, 14.1%), support for provider CSC decision making (n=11, 13.6%), and policy coordination (n=10, 11.8%).

Table 13. Who led the following response functions in the area served by your HCC? (select one for each row) (N=86)

	HCC	Public Health	Emergency Management	Large Health System	Hospital Association	Governor/ Other Political Entity	Other	No One	N/A This activity did not happen	Total
Alternate care site	12 (14.1%)	17 (20.0%)	18 (21.2%)	8 (9.4%)	0 (0.0%)	3 (3.5%)	7 (8.2%)	0 (0.0%)	**20 (23.5%)**	85 (100%)
Rural	*5 (41.7%)*	*9 (52.9%)*	*7 (38.9%)*	*1 (12.5%)*	*0 (0.0%)*	*2 (66.7%)*	*2 (28.6%)*	*0 (0.0%)*	*14 (70.0%)*	*40 (100%)*
Suburban	*4 (33.3%)*	*4 (23.5%)*	*5 (27.8%)*	*5 (62.5%)*	*0 (0.0%)*	*1 (33.3%)*	*2 (28.6%)*	*0 (0.0%)*	*3 (15.0%)*	*24 (100%)*
Urban	*3 (25.0%)*	*4 (23.5%)*	*6 (33.3%)*	*2 (25.0%)*	*0 (0.0%)*	*0 (0.0%)*	*3 (42.9%)*	*0 (0.0%)*	*3 (15.0%)*	*21 (100%)*
Just in time training	**23 (27.1%)**	20 (23.5%)	3 (3.5%)	7 (8.2%)	3 (3.5%)	0 (0.0%)	7 (8.2%)	18 (21.2%)	4 (4.7%)	85 (100%)
Rural	*14 (60.9%)*	*12 (60.0%)*	*2 (66.7%)*	*2 (28.6%)*	*3 (100.0%)*	*0 (0.0%)*	*1 (14.3%)*	*6 (33.3%)*	*1 (25.0%)*	*41 (100%)*
Suburban	*4 (17.4%)*	*2 (10.0%)*	*0 (0.0%)*	*3 (42.9%)*	*0 (0.0%)*	*0 (0.0%)*	*5 (71.4%)*	*8 (44.4%)*	*2 (50.0%)*	*24 (100%)*
Urban	*5 (21.7%)*	*6 (30.0%)*	*1 (33.3%)*	*2 (28.6%)*	*0 (0.0%)*	*0 (0.0%)*	*1 (14.3%)*	*4 (22.2%)*	*1 (25.0%)*	*20 (100%)*
Patient movement	**24 (28.2%)**	6 (7.1%)	3 (3.5%)	16 (18.8%)	5 (5.9%)	2 (2.4%)	13 (15.3%)	12 (14.1%)	4 (4.7%)	85 (100%)
Rural	*12 (50.0%)*	*4 (66.7%)*	*1 (33.3%)*	*9 (56.3%)*	*2 (40.0%)*	*1 (50.0%)*	*4 (30.8%)*	*6 (50.0%)*	*2 (50.0%)*	*41 (100%)*
Suburban	*8 (33.3%)*	*0 (0.0%)*	*0 (0.0%)*	*3 (18.8%)*	*1 (20.0%)*	*1 (50.0%)*	*6 (46.2%)*	*3 (25.0%)*	*2 (50.0%)*	*24 (100%)*

Urban	*4 (16.7%)*	*2 (33.3%)*	*2 (66.7%)*	*4 (25.0%)*	*2 (40.0%)*	*0 (0.0%)*	*3 (23.1%)*	*3 (25.0%)*	*0 (0.0%)*	*20 (100%)*
Policy Coordination	**23 (27.1%)**	15 (17.6%)	3 (3.5%)	3 (3.5%)	9 (10.6%)	8 (9.4%)	9 (10.6%)	10 (11.8%)	5 (5.9%)	85 (100%)
Rural	*13 (56.5%)*	*8 (53.3%)*	*0 (0.0%)*	*2 (66.7%)*	*2 (22.2%)*	*4 (50.0%)*	*3 (33.3%)*	*5 (50.0%)*	*4 (80.0%)*	*41 (100%)*
Suburban	*6 (26.1%)*	*4 (26.7%)*	*1 (33.3%)*	*1 (33.3%)*	*3 (33.3%)*	*3 (37.5%)*	*4 (44.4%)*	*2 (20.0%)*	*0 (0.0%)*	*24 (100%)*
Urban	*4 (17.4%)*	*3 (20.0%)*	*2 (66.7%)*	*0 (0.0%)*	*4 (44.4%)*	*1 (12.5%)*	*2 (22.2%)*	*3 (30.0%)*	*1 (20.0%)*	*20 (100%)*
PPE ordering /distribution	**31 (36.0%)**	22 (25.6%)	16 (18.6%)	6 (7.0%)	0 (0.0%)	0 (0.0%)	5 (5.8%)	5 (5.8%)	1 (1.2%)	86 (100%)
Rural	*15 (48.4%)*	*12 (54.5%)*	*8 (50.0%)*	*2 (33.3%)*	*0 (0.0%)*	*0 (0.0%)*	*1 (20.0%)*	*2 (40.0%)*	*1 (100.0%)*	*41 (100%)*
Suburban	*9 (29.0%)*	*6 (27.3%)*	*2 (12.5%)*	*3 (50.0%)*	*0 (0.0%)*	*0 (0.0%)*	*2 (40.0%)*	*2 (40.0%)*	*0 (0.0%)*	*24 (100%)*
Urban	*7 (22.6%)*	*4 (18.2%)*	*6 (37.5%)*	*1 (16.7%)*	*0 (0.0%)*	*0 (0.0%)*	*2 (40.0%)*	*1 (20.0%)*	*0 (0.0%)*	*21 (100%)*
Staffing Coordination	**22 (26.5%)**	6 (7.2%)	5 (6.0%)	7 (8.4%)	7 (8.4%)	3 (3.6%)	12 (14.5%)	19 (22.9%)	2 (2.4%)	83 (100%)
Rural	*8 (36.4%)*	*5 (83.3%)*	*1 (20.0%)*	*3 (42.9%)*	*3 (42.9%)*	*2 (66.7%)*	*6 (50.0%)*	*9 (47.4%)*	*2 (100.0%)*	*39 (100%)*
Suburban	*9 (40.9%)*	*0 (0.0%)*	*1 (20.0%)*	*3 (42.9%)*	*2 (28.6%)*	*0 (0.0%)*	*4 (33.3%)*	*5 (26.3%)*	*0 (0.0%)*	*24 (100%)*
Urban	*5 (22.7%)*	*1 (16.7%)*	*3 (60.0%)*	*1 (14.3%)*	*2 (28.6%)*	*1 (33.3%)*	*2 (16.7%)*	*5 (26.3%)*	*0 (0.0%)*	*20 (100%)*
Support for provider CSC decision making	12 (14.8%)	**18 (22.2%)**	2 (2.5%)	4 (4.9%)	8 (9.9%)	5 (6.2%)	10 (12.3%)	11 (13.6%)	11 (13.6%)	81 (100%)

Rural	*6 (50.0%)*	*9 (50.0%)*	*1 (50.0%)*	*2 (50.0%)*	*2 (25.0%)*	*2 (40.0%)*	*3 (30.0%)*	*9 (81.8%)*	*5 (45.5%)*	*39 (100%)*
Suburban	*3 (25.0%)*	*6 (33.3%)*	*0 (0.0%)*	*2 (50.0%)*	*2 (25.0%)*	*0 (0.0%)*	*6 (60.0%)*	*1 (9.1%)*	*3 (27.3%)*	*23 (100%)*
Urban	*3 (25.0%)*	*3 (16.7%)*	*1 (50.0%)*	*0 (0.0%)*	*4 (50.0%)*	*3 (60.0%)*	*1 (10.0%)*	*1 (9.1%)*	*3 (27.3%)*	*19 (100%)*
Treatment Allocation	14 (16.5%)	**33 (38.8%)**	1 (1.2%)	4 (4.7%)	11 (12.9%)	9 (10.6%)	10 (11.8%)	2 (2.4%)	1 (1.2%)	85 (100%)
Rural	*7 (50.0%)*	*17 (51.5%)*	*0 (0.0%)*	*2 (50.0%)*	*4 (36.4%)*	*3 (33.3%)*	*5 (50.0%)*	*1 (50.0%)*	*1 (100.0%)*	*40 (100%)*
Suburban	*4 (28.6%)*	*6 (18.2%)*	*0 (0.0%)*	*2 (50.0%)*	*3 (27.3%)*	*5 (55.6%)*	*3 (30.0%)*	*1 (50.0%)*	*0 (0.0%)*	*24 (100%)*
Urban	*3 (21.4%)*	*10 (30.3%)*	*1 (100.0%)*	*0 (0.0%)*	*4 (36.4%)*	*1 (11.1%)*	*2 (20.0%)*	*0 (0.0%)*	*0 (0.0%)*	*21 (100%)*
Vaccine Allocation & Distribution	4 (4.7%)	**60 (70.6%)**	1 (1.2%)	1 (1.2%)	1 (1.2%)	13 (15.3%)	5 (5.9%)	0 (0.0%)	0 (0.0%)	85 (100%)
Rural	*4 (100.0%)*	*29 (48.3%)*	*0 (0.0%)*	*0 (0.0%)*	*0 (0.0%)*	*4 (30.8%)*	*3 (60.0%)*	*0 (0.0%)*	*0 (0.0%)*	*40 (100%)*
Suburban	*0 (0.0%)*	*15 (25.0%)*	*0 (0.0%)*	*1 (100.0%)*	*0 (0.0%)*	*7 (53.8%)*	*1 (20.0%)*	*0 (0.0%)*	*0 (0.0%)*	*24 (100%)*
Urban	*0 (0.0%)*	*16 (26.7%)*	*1 (100.0%)*	*0 (0.0%)*	*1 (100.0%)*	*2 (15.4%)*	*1 (20.0%)*	*0 (0.0%)*	*0 (0.0%)*	*21 (100%)*

Qualitative Responses Related to Coordination/Command and Control

Respondents offered examples of their activities that supported coordination and command and control. These included:

- Developing common guidance, policies, procedures, and protocols for the HCC. Topics included resource request protocols, facility visitation, regional EMS transport, PPE distribution, supplemental staffing, and isolation and quarantine.
- Mobilizing strike teams. These teams included a medical assistance team to support testing and vaccine missions, a disaster mental health strike team, a regional triage team, and a strike team to provide monoclonal antibody infusions to prison inmates.
- Leading drills and exercises.
- Developing plans, including the HCC infectious disease surge annex, a catastrophic incident response annex, a vaccination plan, and a medical operations coordination cell plan. They also developed plan templates for HCC members, such as long-term care facilities.

When asked to describe one successful aspect of their region's response to COVID-19 that they did not think would have been possible without an HCC, more than a quarter of respondents mentioned something related to resource coordination or command and control. Examples include the following:

- *From the beginning of the incident, our HCC implemented processes, procedures and policies that successfully managed our surge at the very peak. Many of our hospitals surged well over the established 20% IBA. All of our hospitals and many of our LTCs coordinated their responses with the Medical Emergency Response Center throughout this incident. (Coalition staff in administrative/financial role, rural HCC)*
- *Integration of our Regional Incident Management Team and the acceptance, management, and distribution of PPE (especially old obsolescent PPE to be retrofitted and revived to operational condition). Resource Allocation to include standing up a call center, conference call, and coordination center activity through the RHCC. (Coalition staff with multiple roles, suburban HCC)*
- *Consortium supply (PPE, etc.) procurements across local government and member hospitals Regionalized standards for providers, for example donning and doffing procedures for EMS at hospitals. (Coalition staff in decision-making role, urban HCC)*
- *Development of the regional surge plan. (Coalition staff in decision-making role, rural HCC)*
- *The coordination between hospitals, EMA, EMS, Public Health, long term care and the coalition was possible thanks to the existing coalition within our region. (Coalition staff in decision-making role, suburban HCC)*
- *Sharing of scarce resources (PPE/ regional cache distribution/ ventilators), information sharing, mutual aid process previously established/ MOUs in existence - so that way partnerships can help to respond to large scale incidents. (Coalition staff in communications role, suburban HCC)*
- *Access to situational awareness of bed availability, resource management, and data sharing via EMResource. (Coalition staff in coordinator role, rural HCC)*
- *Through our coalition partners we were able to combine resources and develop a management team that helped navigate the response. (Coalition staff in emergency management role, urban HCC)*

- *A regional triage team and resource coordination process developed specifically for healthcare during a medical surge or crisis. We also would not have established a county DCAC without the coalition. (Coalition staff in decision-making role, rural HCC)*

Respondents identified a handful of coordination activities they did not think their HCC should be involved in, including hosting frequent meetings, conducting after action reviews, and coordinating among healthcare systems. One respondent specifically mentioned that HCCs should not establish their own EOC, but rather support the existing EOC and ESF-8 structure.

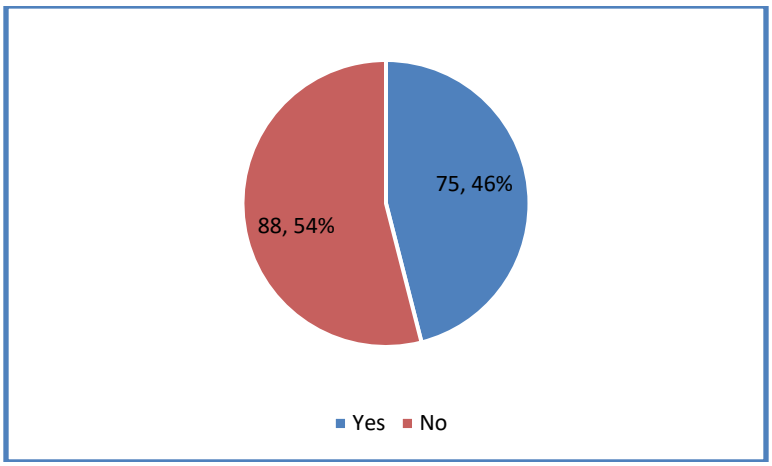
Two respondents shared additional comments about command and control.

- *When I became the coordinator in October 2018, I encouraged the Executive Committee to simplify the structure and processes for streamlining and flexibility. We did away with a complex Emergency Coordination Center (i.e., HCC EOC) and developed an HCC Representative model. I believed the ECC would never be workable in a situation (like COVID) because we would not be able to staff it (everyone would be busy with their own ICS, etc.). We have had overwhelmingly positive feedback and multiple facilities have thanked us for helping them get through the response (both hospitals and LTC). We are set up and ready to coordinate with the right entities (e.g., Hospital Unified Command, County EOCs, State Medical Emergency Operations Center) but we know our role and try not to go beyond scope into unrealistic expectations. We are not Command and Control, we help support and coordinate and act as a liaison. It has worked. (Coalition staff in decision-making role, urban HCC)*
- *Incident Command System does not provide instruction on how to establish or function as a system during a public health emergency. Now a Fire and Law Enforcement centric system is being used and led by non-public health experts directing public health tasks. This is a challenge that FEMA and ASPR need to overcome through the establishment of an ICS - PUBLIC HEALTH course. (Public health member in decision-making role, urban HCC)*

Patient Movement/Patient Load Balancing

Less than half of respondents said they had information to share on patient movement (n=88, 54%) (Figure 17). Some respondents completed questions on this topic despite selecting “no.”

Figure 18. Do you have information to share on this topic [patient movement/patient load balancing]? (select one) (N=163)



Less than half of respondents also indicated there was a regional mechanism/medical operations coordination cell (MOCC) to handle patient transfers or move patients from overloaded facilities to ones with capacity (n=69, 41.8%) (Table 14). More than half of these centers/systems did **not** exist prior to the pandemic (n=28, 59.6%) (Table 15). They most frequently covered a sub-state regional geographic area (n=22, 46.8%) though more than a third were statewide (n=18, 38.3%) (Figure 18). Most did **not** have the authority to require a hospital to accept a transfer (n=39, 86.7%) (Figure 19). More than half responded that the center integrated with EMS to provide transportation matching (n=27, 57.4%) (Table 16). Respondents most frequently rated their center/system as very important (n=18, 39.1%) or moderately important (n=17, 37%) (Figure 20). Respondents who had a regional mechanism reported their center was run by a variety of entities, including the HCC, a state-level agency, a hospital association, state unified command/ESF-8, a regional entity, a single or group of hospitals/health systems, and contracted staff under the supervision of another established entity. These centers were staffed by HCC staff, state or regional agency employees, hospital staff, Medical Reserve Corps or other volunteers, EMS staff, and contracted personnel.

Table 14. Was there a regional mechanism/MOCC to handle patient transfers or move patients from overloaded facilities to ones with capacity? (select one) (N=165)

	Rural	Suburban	Urban	**Total n(%)**
Yes	31 (40.3%)	20 (51.3%)	18 (36.7%)	**69 (41.8%)**
No	36 (46.8%)	14 (35.9%)	26 (53.1%)	**76 (46.1%)**
N/A	10 (13.0%)	5 (12.8%)	5 (10.2%)	**20 (12.1%)**
Total	**77 (100.0%)**	**39 (100.0%)**	**49 (100.0%)**	**165 (100.0%)**

Table 15. Did this center/system exist prior to the pandemic? (select one) (N=47)

	Rural	Suburban	Urban	**Total n(%)**
Yes	5 (27.8%)	7 (46.7%)	7 (50.0%)	**19 (40.4%)**
No	13 (72.2%)	8 (53.3%)	7 (50.0%)	**28 (59.6%)**
Total	**18 (100.0%)**	**15 (100.0%)**	**14 (100.0%)**	**47 (100.0%)**

Figure 19. What geographic area did the center/system cover? (select one) (N=47)

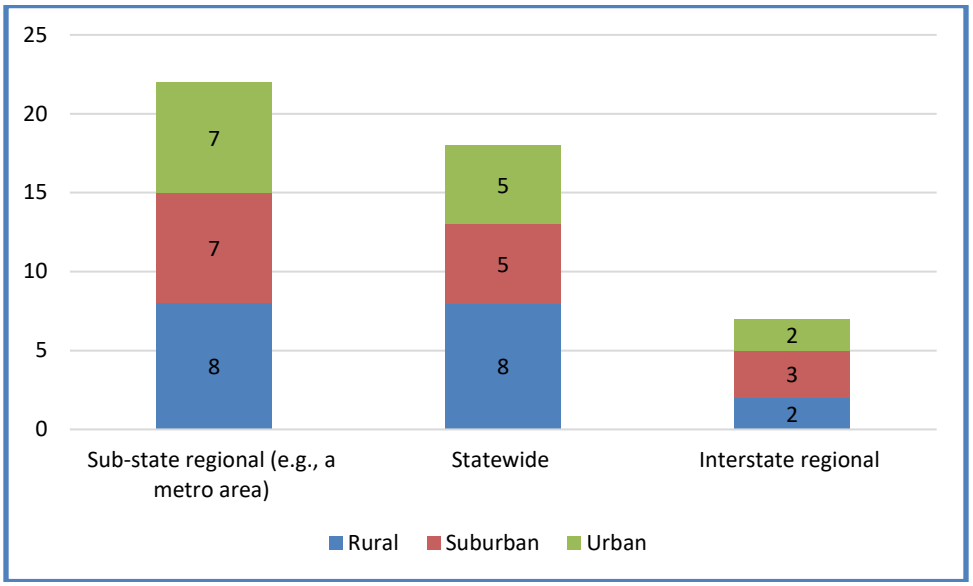


Figure 20. Did they have the authority to require a hospital to accept a transfer? (select one) (N=45)

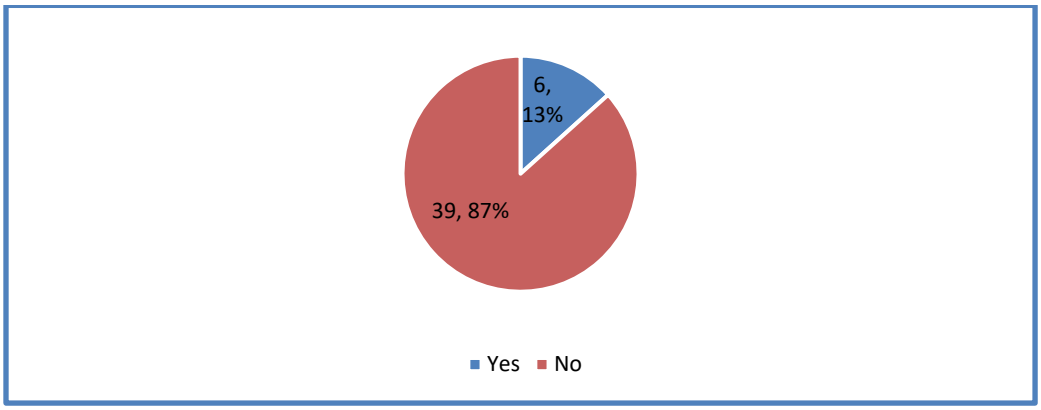
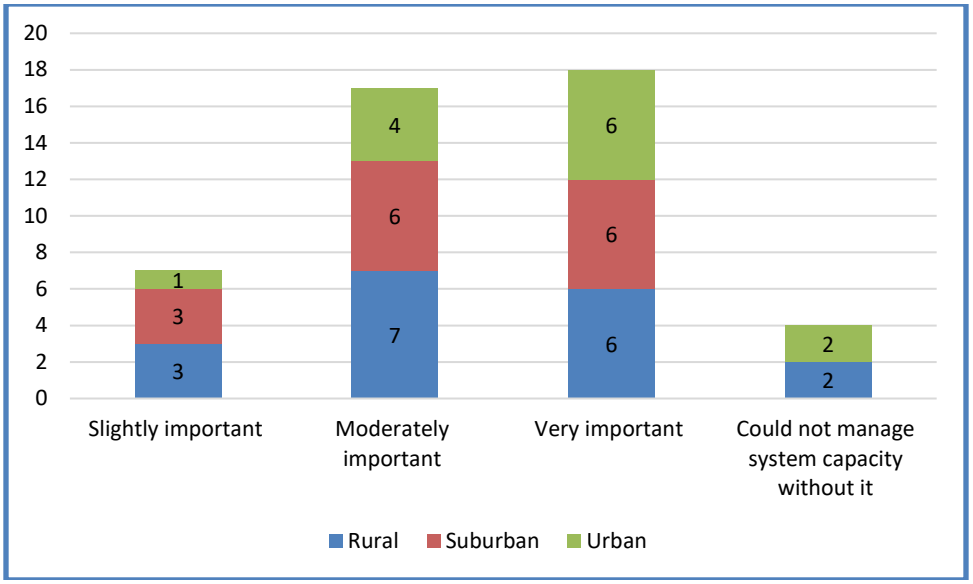


Table 16. Was the center integrated with EMS to provide transportation matching? (select one) (N=47)

	Rural	Suburban	Urban	**Total n(%)**
Yes	9 (50.0%)	9 (60.0%)	9 (64.3%)	**27 (57.4%)**
No	9 (50.0%)	6 (40.0%)	5 (35.7%)	**20 (42.6%)**
Total	**18 (100.0%)**	**15 (100.0%)**	**14 (100.0%)**	**47 (100.0%)**

Figure 21. How important was the center/system to managing system capacity? (select one) (N=46)



Qualitative Responses Related to Patient Movement/Patient Load Balancing

Respondents who did not establish a MOCC or other regional coordination mechanism for patient movement shared several common methods for managing patient surge capacity:

- Surge strategies within individual facilities that boosted capacity and negated the need for patient load balancing within the HCC region.
- Use of situational awareness tools to monitor hospital bed status in the region or state to provide a common operating picture of facilities within the covered area and inform EMS which facilities had the capacity to receive patients.
- Coordination through ESF-8 of requests for bed space, patient transportation assets, or other resource needs.
- Efforts by health systems, usually through existing transfer centers, to coordinate patient load balancing across facilities within each health system.
- Direct contact and collaboration between individual facilities or between health systems to find available beds for hospitals beyond capacity.

> *We completed a surge analysis of every hospital in late 2019 which allowed the hospital staff to utilize locations that were not previously thought of as a surge location. This analysis allowed quick placement of patients in those areas without having to take valuable time to consider and discuss the possibility of the use of that area. (Coalition staff in emergency management role, rural HCC)*

Most of the respondents who did not establish a MOCC or other coordination mechanism said their patient load balancing strategies during the COVID-19 pandemic were the same strategies they used day to day and they did not experience a need to implement new processes or systems to manage patient surge. Others mentioned the benefits of years of planning prior to the pandemic that helped build relationships among partners, improved individual facility preparedness for patient surge, resulted in MOUs, and established patient referral patterns and policies. Several respondents noted that even if their HCC wanted to establish a MOCC or other coordination mechanism, they did not have the authority to do so. One HCC that did have a MOCC found it impractical to implement during an extended duration pandemic that affected all facilities.

> *Our regional medical coordination plan is only capable of mitigating short-term impacts to the health care system and was incapable to meet this need for COVID-19. We still had mechanisms in place for information sharing, including daily bed availability tracking, but the load balancing happened organically between partners with very limited, if any, action from the HCC. (Coalition staff in administrative/financial role, rural HCC)*

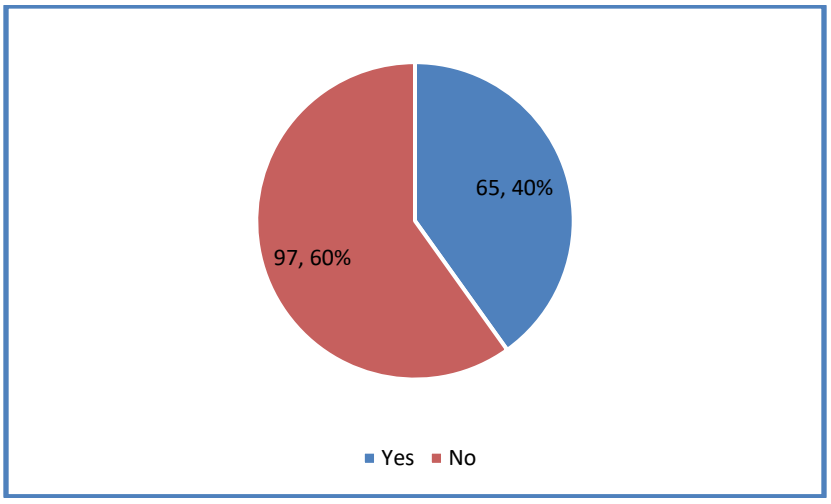
Multiple respondents named patient movement/patient load balancing as a successful activity or story to share from their COVID-19 response. They mentioned using geographic information systems (GIS) to inform patient transport decisions and described using dashboards and daily situational updates to keep HCC partners aware of bed availability in the region. One respondent noted that effective patient load balancing throughout the area served by the HCC prevented them from having to open an alternate care site. Another respondent said their HCC adapted the MOCC for their trauma resource coordination plan. Several talked about how relationships established during planning helped them communicate and collaborate during the pandemic. However, another respondent observed that stronger regional collaboration and partnerships would have been helpful for localities, especially in managing patient surge between health networks. When asked to describe one activity their HCC prepared for they believed should not be a role for their HCC in the future, six respondents specifically mentioned activities related to patient movement and patient load balancing.

> *Each of our health systems has transfer centers that are staffed 24/7/365. Using their existing transfer policies and procedures, they are much better staffed and equipped to manage patient beds and transfers. (Coalition staff in emergency management role, suburban HCC)*

Crisis Standards of Care

A majority of respondents said they did **not** have information to share on CSC (n=97, 59.9%) (Figure 21). Some respondents completed questions on this topic despite selecting “no.”

Figure 22. Do you have information to share on this topic [crisis standards of care]? (select one) (N=162)

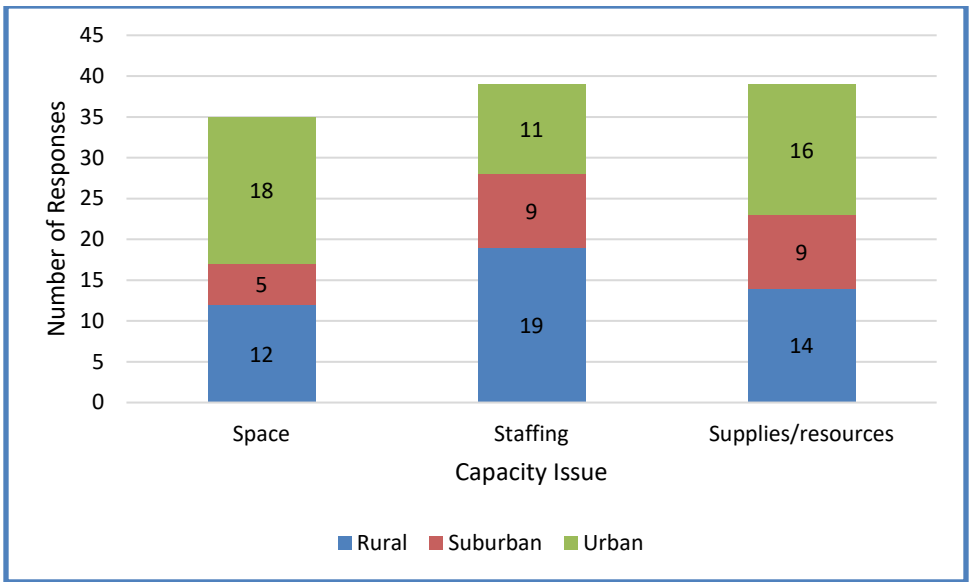


More than half of respondents (n=95, 57.9%) said the area served by the HCC was challenged by capacity issues to the point where facilities/providers felt they were in crisis conditions (Table 17). Of respondents who reported their HCC was challenged by capacity issues, staffing (n=39, 81.3%), supplies/resources (n=39, 81.3%), and space (n=35, 72.9%) were all widely affected (Figure 22). Forty-eight percent of respondents selected all three capacity issues (n=23). Forty percent of respondents selected two of the three capacity issues (n=19).

Table 17. Was the area served by the HCC challenged by capacity issues to the point where facilities/providers felt they were in crisis conditions? (select one) (N=164)

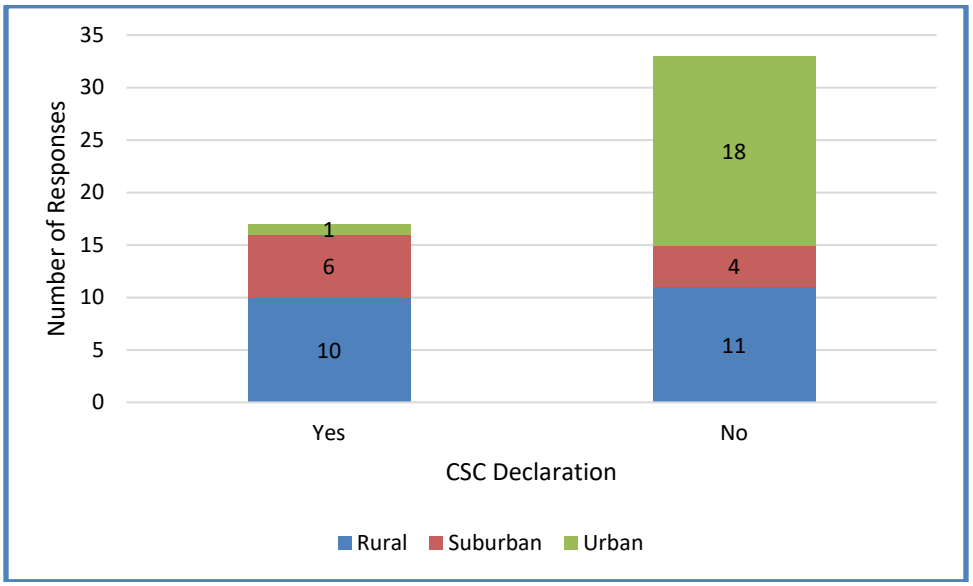
	Rural	Suburban	Urban	**Total n(%)**
Yes	46 (60.5%)	20 (51.3%)	29 (59.2%)	**95 (57.9%)**
No	23 (30.3%)	15 (38.5%)	17 (34.7%)	**55 (33.5%)**
N/A	7 (9.2%)	4 (10.3%)	3 (6.1%)	**14 (8.5%)**
Total	**76 (100.0%)**	**39 (100.0%)**	**49 (100.0%)**	**164 (100.0%)**

Figure 23. Was the capacity issue related to space, staffing, or supplies/resources? (select all that apply) (N=95)



Of respondents who reported that their HCC was challenged by capacity issues, most (n=33, 66%) had **not** officially declared CSC (Figure 23). There was a statistically significant association between official declaration of CSC and the geographic density of the area served by the HCC (p=0.003) with declarations more likely in mainly urban areas.

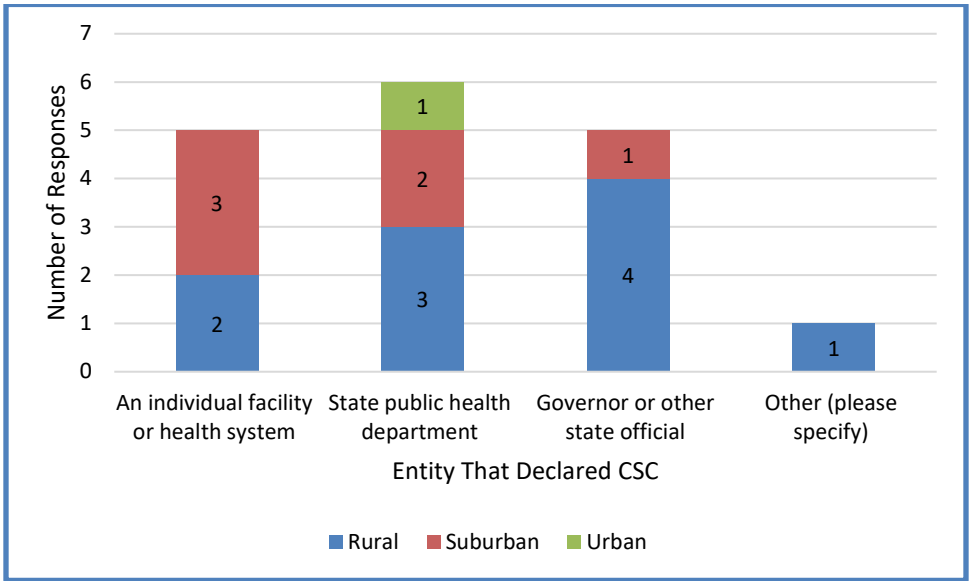
Figure 24. Were crisis standards of care officially declared? (select one) (N=50)



P=0.003, statistically significant

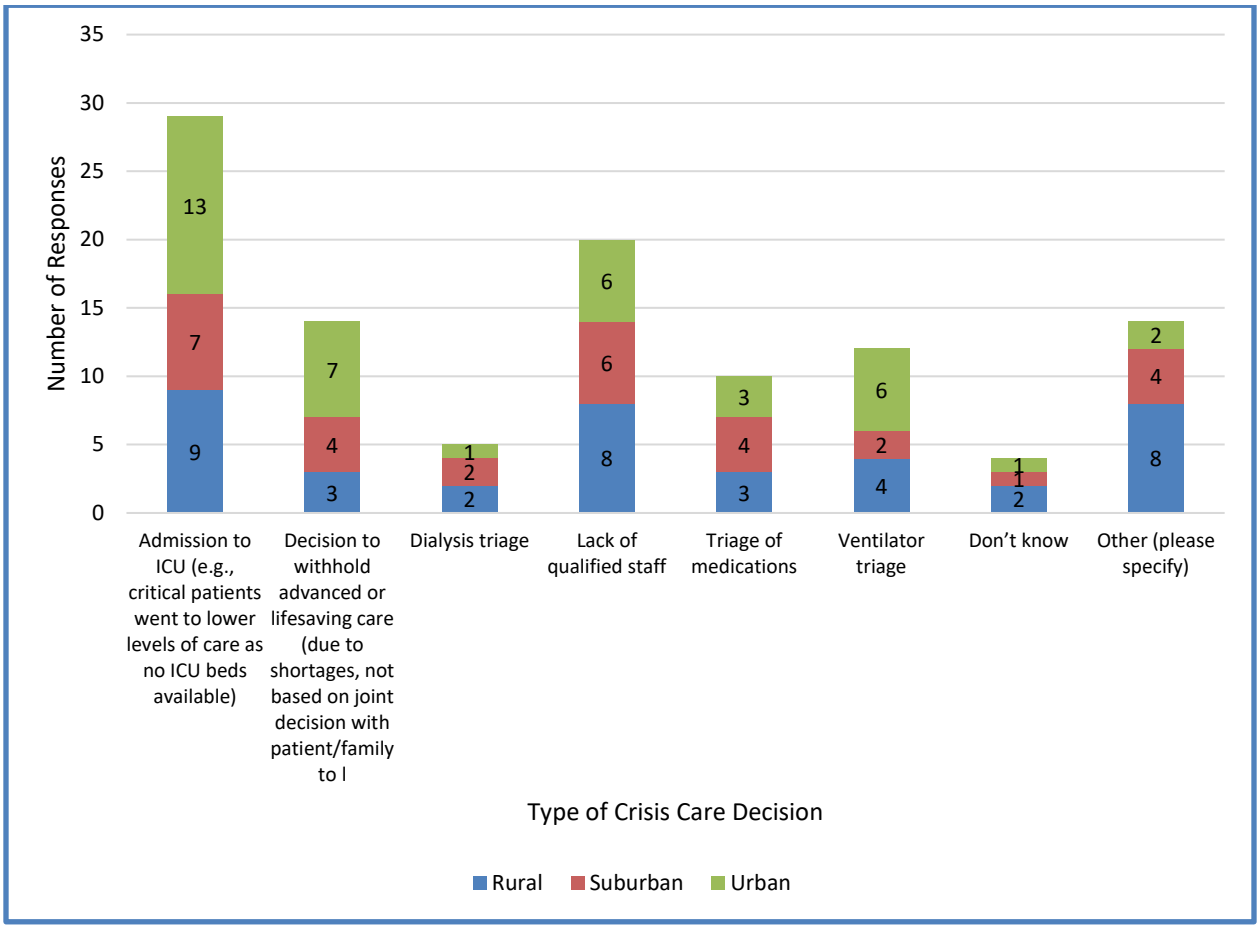
Of respondents who said that CSC were officially declared, nearly equal numbers reported they were declared by a state public health agency (n=6, 35.3%), an individual facility or health system (n=5, 29.4%), or a governor or other state official (n=5, 29.4%) (Figure 24). Single respondents said CSC were declared by a local hospital association and EMS and fire districts and two respondents suggested that declarations were based on existing CSC frameworks. (Note: While only one HCC decision maker selected "Other," the qualitative responses include entities named by respondents who were not HCC decision makers.)

Figure 25. Who declared CSC? (select all that apply) (N=17)



Regardless of whether CSC were officially declared, most respondents (n=29, 87.9%) indicated that crisis care decisions were made about ICU admissions (e.g., critical patients went to lower levels of care as no ICU beds were available). Large proportions of respondents also said crisis care decisions were made due to the lack of qualified staff (n=20, 60.6%), about withholding advanced or lifesaving care (due to shortages, not based on joint decision with patient/family to limit care) (n=14, 42.4%), related to ventilator triage (n=12, 36.4%), and about triage of medications (n=10, 30.3%). Fewer respondents said crisis care decisions were made about dialysis triage (n=5, 15.2%). Four respondents (12.1%) did not know whether any crisis care decisions were made (Figure 25).

Figure 26. Regardless of whether CSC were officially declared, to the best of your knowledge, were crisis care decisions made related to any of the following situations? (select all that apply) (N=33)



When given the opportunity to share other examples of crisis care decisions, respondents mentioned practices related to PPE, rapid access to transport resources, changes in staffing ratios, cancellation of non-emergency procedures, reentry of patients back to facilities, and the lack of bed space. Other responses included:

- *Many ICU patients were treated in other areas (ED for example) and the nursing shortage increased the nurse/patient ratio, changes in charting and brought administrator level RNs back to the bedside after JIT. (Coalition staff in administrative/financial role, suburban HCC)*

> *It was discussed in great deal, but ICU capacity was not exceeded to the point of diminished care for others. (Emergency management member with emergency management role, rural HCC)*

- *Transfers to the hospital, staying at home if not meeting certain criteria in coordination with family physician/patient and family members. (Member in emergency management role, rural HCC)*

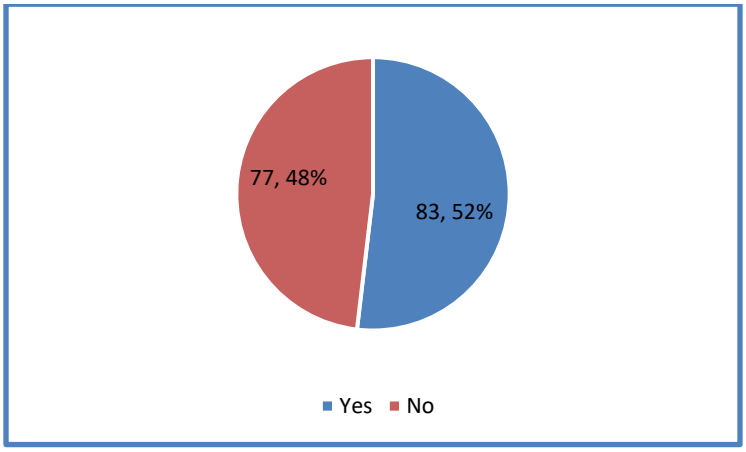
A couple of respondents said that discussions took place, but CSC were not implemented.

One respondent indicated that CSC best practices were a successful aspect of their region's response to COVID-19 they did not think would have been possible without an HCC. Another respondent suggested their HCC should not be involved in CSC as that issue is under the purview of their state health department. Three respondents indicated they would be willing to share their CSC guidelines.

Alternate Care Sites

About half of respondents (n=83, 51.9%) said they had information to share on alternate care sites (Figure 26). There was a statistically significant association between having something to share and the geographic density of the area covered by the HCC (p=0.007) with respondents from suburban and urban HCCs more likely to respond yes. Some respondents completed questions on this topic despite selecting "no."

Figure 27. Do you have information to share on this topic [alternate care sites]? (select one) (N=160)



ASPR TRACIE asked respondents whether a community-based ACS was established. These sites were defined as those established at a site in the community (often by public health or emergency management) rather than one established on the campus of a hospital or health system. A majority (n=95, 57.9%) said they had **not** established a community-based ACS (Table 18). There was a statistically significant association between establishing a community-based ACS and the geographic density of the area covered by the HCC (p=0.013). Mainly urban areas were more likely to establish a community-based ACS.

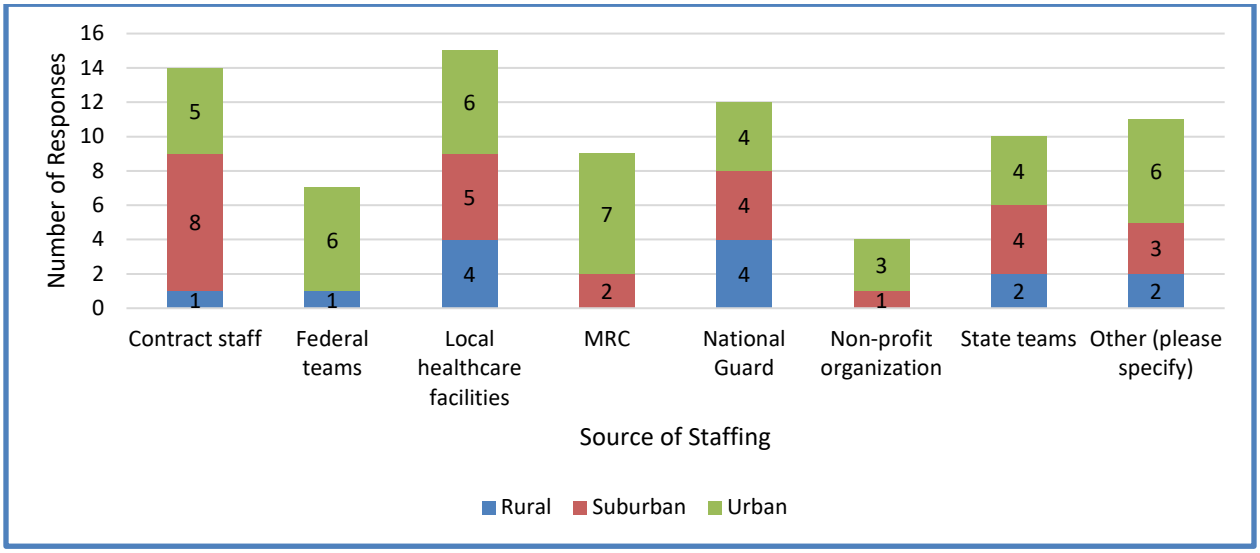
Table 18. Was a community based ACS established? (select one) (N=164)

	Rural	Suburban	Urban	**Total n(%)**
Yes	17 (22.4%)	15 (38.5%)	25 (51.0%)	**57 (34.8%)**
No	52 (68.4%)	20 (51.3%)	23 (46.9%)	**95 (57.9%)**
N/A	7 (9.2%)	4 (10.3%)	1 (2.0%)	**12 (7.3%)**
Total	**76 (100.0%)**	**39 (100.0%)**	**49 (100.0%)**	**164 (100.0%)**

P=0.013, statistically significant

Of respondents who reported establishing a community-based ACS, a large proportion were staffed by personnel from local healthcare facilities (n=15, 26.3%), contract staff (n=14, 24.6%), and members of the National Guard (n=12, 21.1%). State teams (n=10, 17.5%), MRC volunteers (n=9, 15.8%), federal teams (n=7, 12.3%), and non-profit organizations (n=4, 7%) also staffed these sites. (Figure 27) Among those who selected "Other", one respondent each mentioned staffing by municipality and tribal personnel, the state police, EMS, and the Army Reserves. Multiple respondents used public health staff or Department of Defense personnel. One used an Emergency System for Advance Registration of Volunteer Health Professionals (ESAR-VHP) solicitation to find available staff.

Figure 28. How was it staffed? (select all that apply) (N=57)



Of respondents who indicated a community-based ACS was established, nearly half (n=18, 46.2%) said the ACS made no contribution to capacity (Figure 28). Most respondents (n=31, 79.5%) said a hospital license was **not** issued for the facility (Figure 29). Of those, the license was held by five hospitals (62.5%) and one health department (12.5%), and one other undefined entity (12.5%) (Figure 30). Most respondents (n=25, 71.4%) also indicated a CMS inspection was **not** obtained for the facility (Figure 31). Among those with a community-based ACS who answered the questions about licensing and inspection, 22 (62.9%) had neither a hospital license nor a CMS inspection; six (17.1%) of the community-based ACSs that did not have a hospital license did have a CMS inspection (Table 19).

Figure 29. How important a contribution did the ACS make to capacity? (select one) (N=39)

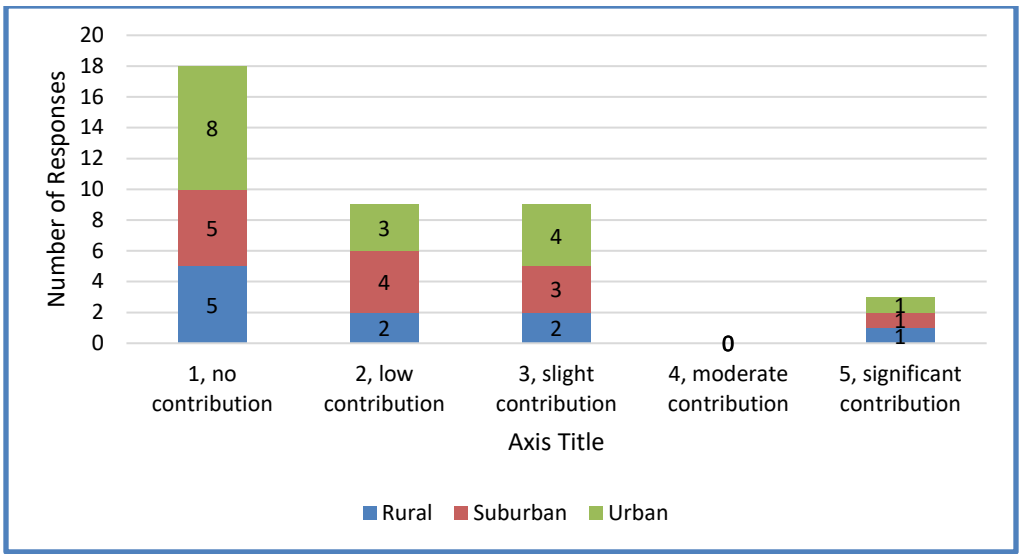


Figure 30. Was a hospital license issued for the facility? (select one) (N=39)

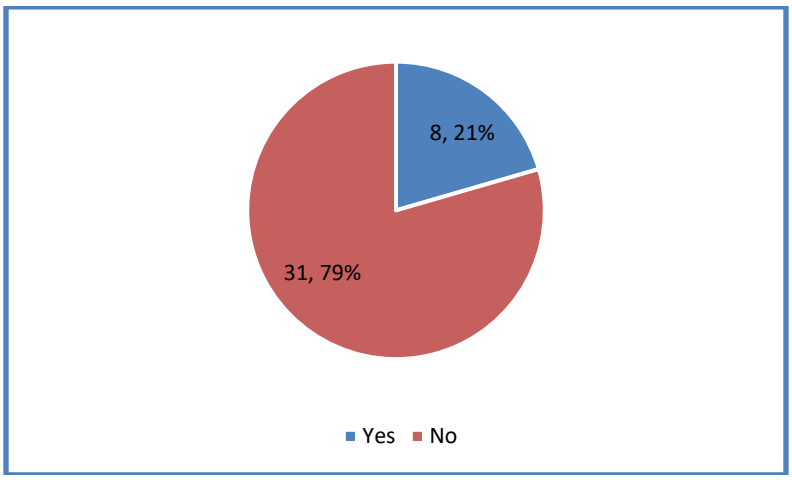


Figure 31. Who held the license for the facility? (select one) (N=8)

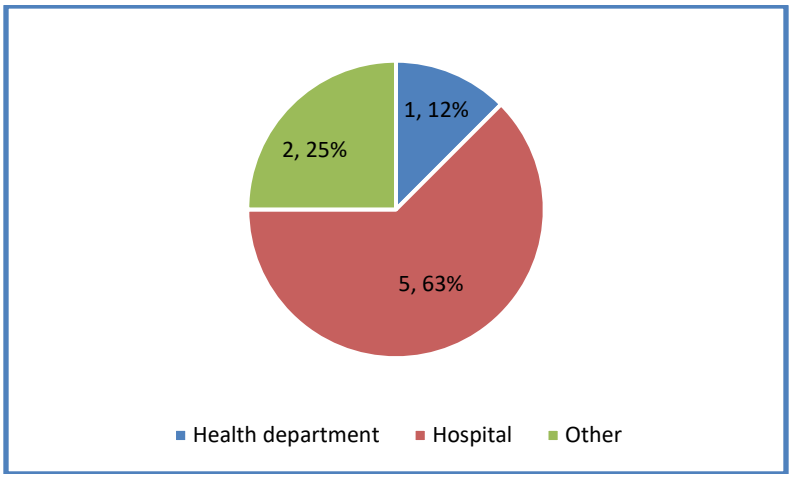


Figure 32. Was a CMS inspection obtained for the facility? (select one) (N=35)

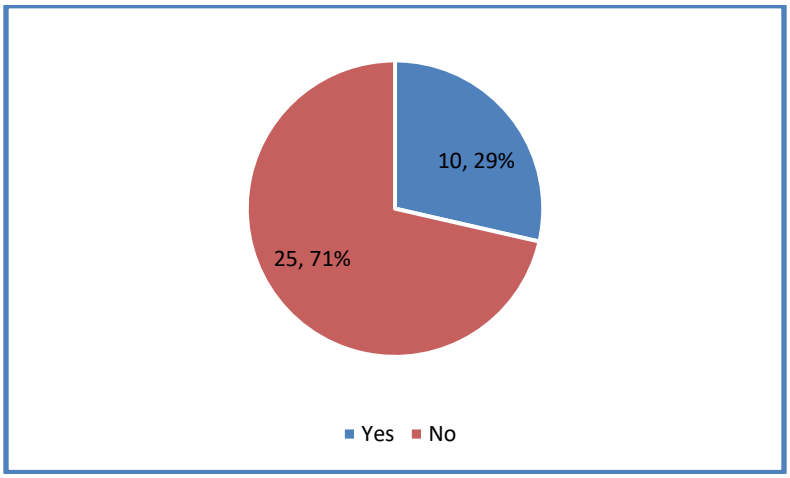


Table 19. Comparison of community based ACS with a hospital license and those with a CMS inspection. (N=35)

		Was a CMS inspection obtained for the facility?		
		Yes	No	**Total**
Was a hospital license issued for the facility?	Yes	4 (40.0%)	3 (12.0%)	**7 (20.0%)**
	No	6 (60.0%)	22 (88.0%)	**28 (80.0%)**
	Total	**10 (100.0%)**	**25 (100.0%)**	**35 (100.0%)**

Respondents who indicated a community-based ACS was established most frequently stated that the types of care provided were general/floor care (n=20, 35.1%), post-acute/limited medical care (n=20, 35.1%), and respite/isolation or quarantine care (n=15, 26.3%). Four respondents each (7%) selected intensive care or mechanical ventilation (Figure 32). Most (n=20, 71.4%) of the community-based ACSs

provided care only to COVID-19 patients. Four respondents each (14.3%) said their community-based ACS only cared for non-COVID-19 patients or both COVID-19 negative and positive patients (Figure 33). ACSs were used for a wide range of timeframes and numbers of patients. Some of the established ACSs never opened for patients.

Figure 33. What types of care were provided at the ACS? (select all that apply) (N=57)

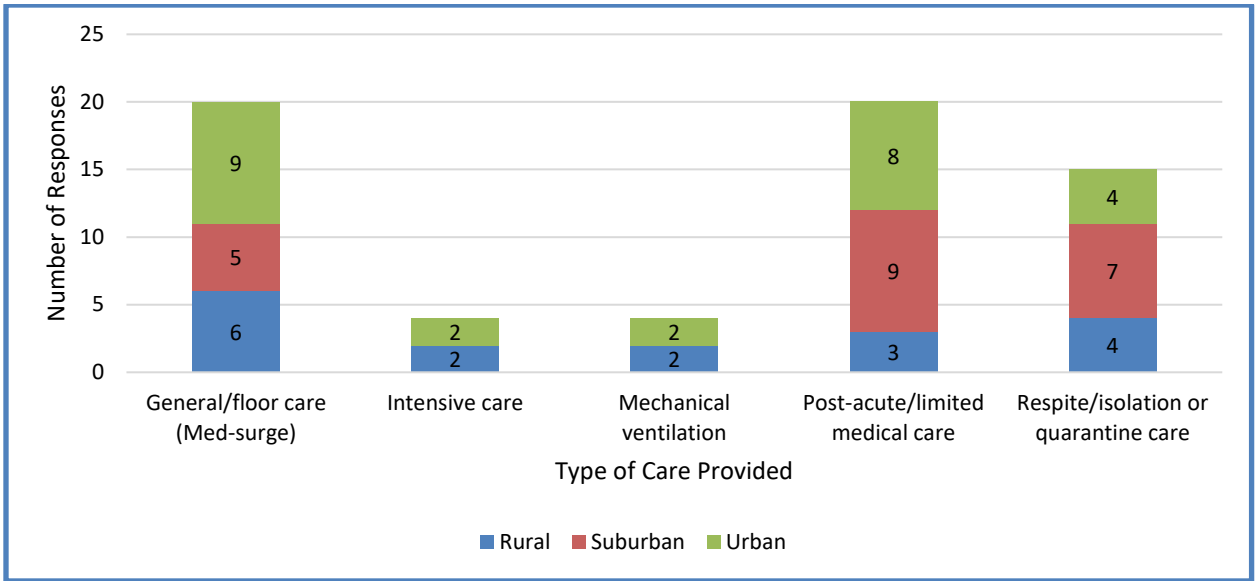
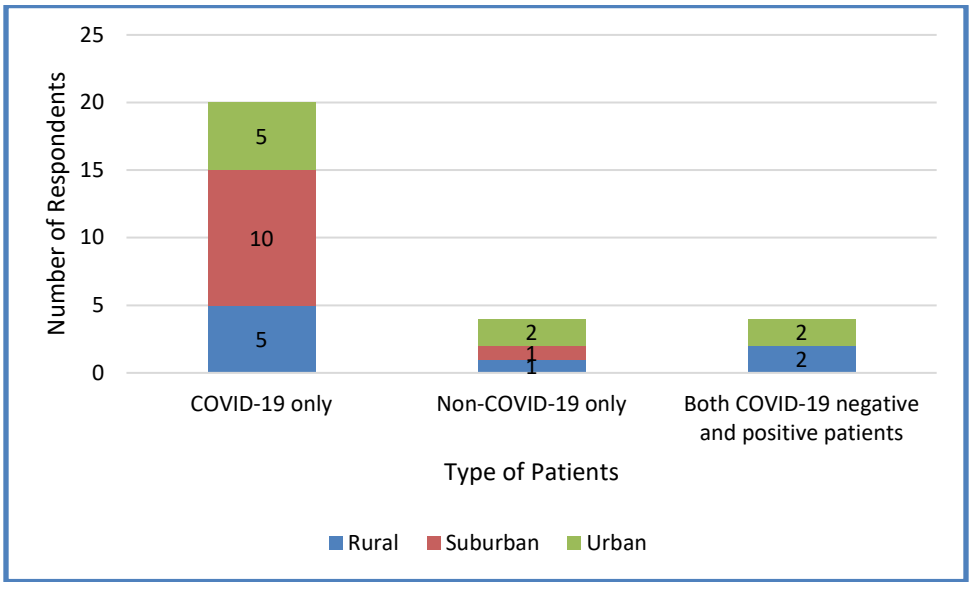


Figure 34. What types of patients were cared for at the ACS? (select one) (N=28)



When asked to describe one successful aspect of their region's response to COVID-19 that they did not think would have been possible without an HCC, three respondents mentioned ACSs. One of these respondents stated the HCC efforts to place more than 3,000 supplemental staff members across 92 facilities allowed those facilities to operate at peak capacity and made an ACS unnecessary. When given the opportunity to share additional comments, responses included:

- *The state health department did try to place the responsibility of alternate care sites on to the HCCs, which contradicted local public health planning that has been in place for years. The HCCs will continue to support ACS planning and utilization but should not be leading this effort. (Coalition staff in decision making role, suburban HCC)*
- *While public health and local jurisdictions were looking to put up tent structures for ACS, we reached out to our coalition members to combine inpatients and opened three ACS in LTAC facilities. Each capable of caring for general med/surg type COVID+ patients and one with ICU step-down capability. We placed 1478 patients into these ACS. (Coalition staff with subject matter expertise, suburban HCC)*

Appendix C.1: Survey Instrument

The U.S. Department of Health and Human Services (HHS) Office of the Assistant Secretary for Preparedness and Response (ASPR) Technical Resources, Assistance Center, and Information Exchange (TRACIE) is conducting this survey to identify successes and opportunities in healthcare coalition (HCC) responses to the COVID-19 pandemic. The results of the survey will be used in conjunction with interviews and roundtables with stakeholders to identify best practices, challenges, and lessons learned for HCC operations during the COVID-19 pandemic that would be applicable to future disaster responses.

Your participation in this survey is completely voluntary. You may choose not to participate or to end the survey at any time. We will keep your responses confidential, and unless you wish to participate in a follow-up phone interview, we will not ask for any personal information such as your name or email address.

If you have any questions about the survey, please contact: askasprtracie@hhs.gov.
Please indicate whether or not you consent to participate in this survey:

- I consent [proceed to question 1]
- I do not consent [ineligible]

While your name and contact information are not required, we hope you will provide that information so we may follow up on any key issues and potentially invite you to participate in an interview. We welcome and encourage you to provide detailed information in the free text responses to help with understanding the specifics of the issue. Thank you in advance for your time, service, and expertise in helping us advance healthcare response in the United States.

Demographics

1. Select your State/Territory (drop down, required)
2. What is your zip code? (text box, required)
3. What is your HCC Name? (text box)
4. Which of the following ***best*** describes your membership role in your HCC? (select one, required)
    a. Coalition staff
    b. Emergency management
    c. Emergency medical services
    d. Hospital
    e. Public health
    f. Other, please specify (text box, required if they check other)
5. Which of the following ***best*** describes the expertise you bring to your HCC? (select one, required)
    a. Administrative/financial
    b. Clinical

c. Communications
d. Decision maker for the HCC
e. Emergency management
f. Other, please describe (text box, required)

Background/Initial Questions

6. Would you describe the region covered by your HCC to be ***mostly***: (select one, required)
    a. Rural
    b. Suburban
    c. Urban
7. Is there a dominant health system in the region served by your HCC? (select one, required)
    a. Yes
        i. What effect do you think the dominant health system in your region has on your HCC's functions? (select one)
            1. Enhances the HCC's functions
            2. Has no effect on the HCC's functions
            3. Hinders the HCC's functions
    b. No
8. Has your HCC attended the Center for Domestic Preparedness (Anniston) Healthcare Coalition Response Leadership class? (select one, required)
    a. Yes
    b. No

For the following questions, your responses should reflect the **healthcare delivery** aspects of the COVID-19 response. That is, you may exclude contact tracing, epidemiology, and other functions that are considered "public health" functions.

9. **Prior to COVID-19:** How actively engaged was your HCC in response operations such as scarce resource allocation, information sharing during emergencies, and patient load balancing (e.g., tracking hospital bed availability and assigning or coordinating transfer of patients among facilities)? (select one on scale of 1-5, required)
    a. Not at All (1)
    b. Very Little (2)
    c. Somewhat (3)
    d. Quite a Bit (4)
    e. A Great Deal (5)
10. **During COVID-19:** How actively and effectively engaged is your HCC in COVID-19 response operations such as scarce resource allocation, information sharing during emergencies, and patient load balancing? (select one on scale of 1-5, required)
    a. Not at All (1)
    b. Very Little (2)
    c. Somewhat (3)
    d. Quite a Bit (4)

e. A Great Deal (5)

11. **Prior to COVID-19:** Which entity did you expect to coordinate the ***healthcare response*** to an emergency in the region served by your HCC? (select one, required)
    a. Emergency management
    b. Governor/other political entity
    c. HCC
    d. Hospital association
    e. Large heath system
    f. Public health
    g. Other: please specify (text box, required)

12. **During COVID-19:** How would you rate the role the following entities played during the COVID-19 pandemic to coordinate the ***healthcare response*** in the region covered by your HCC? (select 1 in each row, required)

	1 – No or minimal input/ influence/ decision making authority	2 – Had limited input/ influence on some decisions	3 – Had about as much influence as other entities	4 – Led some decisions and provided input/ influence on others	5 – Led nearly all decisions/ actions
Emergency Management					
Governor/ Other Political Entity					
HCC					
Hospital Association					
Large Health System					
Public Health					
Other: please define (optional)					

Overall

13. Please rank the top 3 from among the following on how much they would help your HCC advance regional healthcare coordination. (select top 3)

	Select 3
Stronger HCC leadership	
Better integration with emergency management processes	
More complete situational awareness	
Better data sharing	

State policies recognizing & integrating HCC response operations	
Better integration with public health	
Better buy-in from hospital/other facility leadership	
More HCC staff	
Additional federal program requirements, policies, initiatives, or advocacy/support (non-funding)	
Additional training	
Additional federal funding	
Other: please specify (text box)	

General Qualitative Assessment Questions

14. Briefly describe one successful aspect of your region's response to COVID-19 that you do not think would have been possible without an HCC. (open text, optional)
15. Briefly describe one activity (COVID-19 related or overall) that your HCC prepared for that you no longer believe should be a role for your HCC in the future. (open text, optional)
16. Did your HCC develop any tools, policies, procedures, protocols, or other resources that you believe should be shared with other HCCs through NHPP or ASPR TRACIE? (select one)
    a. No
    b. Yes (please specify) (text box)
17. Please briefly share any additional comments you believe ASPR TRACIE and NHPP should know about the role of HCCs in regional healthcare response to disasters, based on your experience with COVID-19. (open text, optional)
18. Would you be willing to participate in a follow-up discussion, scheduled at your convenience, to elaborate on some of your survey responses? (select one, required)
    a. Yes
        i. Name (text box, optional)
        ii. Email (text box, optional)
    b. No

The following section contains groups of questions pertaining to:

- Information Sharing/Essential Elements of Information/Data
- Coordination/Command and Control
- Patient Movement/Patient Load Balancing
- Crisis Standards of Care

- Alternate Care Sites

If you have limited time, please consider completing the section where you feel the HCC had the largest role or where you have the most to share. We encourage you to complete each section, as the information you provide will be valuable to understanding the capabilities of HCCs.

Information Sharing/Essential Elements of Information/Data

19. Do you have information to share on this topic? (select one)
    a. Yes
    b. No, I have no information to share on this topic.
20. How effective have information sharing mechanisms put in place by the HCC been in supporting communication among your members during COVID-19? (required, select one on scale of 1-5)
    a. Not at all effective (1)
    b. Slightly effective (2)
    c. Moderately effective (3)
    d. Very effective (4)
    e. Extremely effective (5)
    f. N/A
21. Did you share information among HCC members in real time using a web-based platform? (select one, required)
    a. Yes
        i. Follow up: Is this a statewide system? (select one, optional)
            1. Yes
                a. Was this system created for the pandemic? (select one, optional)
                    i. Yes
                    ii. No
                b. Was the system useful and effective in gathering data needed for decision making and reporting? (select one, optional)
                    i. Yes
                    ii. No
            2. No
    b. No
        ii. Did HCC members share information at least daily through a non-web-based platform? (select one)
            1. Yes
            2. No

Coordination/Command and Control

22. Do you have information to share on this topic? (select one)
    a. Yes
    b. No, I have no information to share on this topic.

23. Did your HCC maintain a virtual or physical emergency operations center at any point during COVID-19? (select one, required)
    a. Yes
        i. Was it integrated with a jurisdictional entity? (select one)
            1. No
            2. Yes (please specify which one) (text box, required)
        ii. Was it virtual, physical or both? (select one)
            1. Physical
            2. Virtual
            3. Both
    b. No
    c. N/A
24. Did your HCC use an incident command structure at any point during the COVID-19 response? (select one)
    a. Yes
    b. No (please briefly explain why not) (text box, required)
25. How did HCC members interface with the state? (select all that apply)
    a. Through the HCC
    b. Through a local EOC
    c. Through a hospital (or other membership/trade) association
    d. Direct from facility/provider
    e. Through the Regional Disaster Health Response System (RDHRS), if applicable
    f. Other (please specify) (text box, required)
26. Who led the following response functions in the area served by your HCC? (select one for each row)

	Emergency Management	Governor/ Other Political Entity	HCC	Hospital Association	Large Health System	Public Health	Other	No Entity Led	N/A – This activity did not happen
Alternate care site									
Just in time training									
Patient movement									
Policy Coordination (common hospital									

policies, EMS policies, etc.)									
PPE ordering & distribution									
Staffing Coordination									
Support for provider CSC decision making									
Treatment Allocation (monoclonal antibodies, remdesivir, etc.)									
Vaccine Allocation & Distribution									

Patient Movement/Patient Load Balancing

27. Do you have information to share on this topic? (select one)
    a. Yes
    b. No, I have no information to share on this topic.
28. Was there a regional mechanism/medical operations coordination cell (MOCC) to handle patient transfers or move patients from overloaded facilities to ones with capacity? (select one, required)
    a. Yes
        i. Did this center/system exist prior to the pandemic? (select one)
            1. Yes
            2. No
        ii. What geographic area did the center/system cover? (select one)
            1. Sub-state regional (e.g., a metro area)
            2. Statewide
            3. Interstate regional
        iii. Who ran the center/system? (text box)
        iv. Did they have the authority to require a hospital to accept a transfer? (select one)
            1. Yes
            2. No
        v. Who staffed the center/system? (text box)
        vi. Was the center integrated with EMS to provide transportation matching? (select one)
            1. Yes

2. No

vii. How important was the center/system to managing system capacity? (select one)

1. Not important
2. Slightly important
3. Moderately important
4. Very important
5. Could not manage system capacity without it

b. No

i. Briefly describe patient load balancing and surge capacity management processes in your HCC region. (open text, optional)

c. N/A

Crisis Standards of Care

29. Do you have information to share on this topic? (select one)
    a. Yes
    b. No, I have no information to share on this topic.
30. Was the area served by the HCC challenged by capacity issues to the point where facilities/providers felt they were in crisis conditions? (select one, required)
    a. Yes
        i. Was the capacity issue related to (select all that apply)
            1. Space
            2. Staffing
            3. Supplies/resources
        ii. Were crisis standards of care officially declared? (select one, required)
            1. Yes
                i. Crisis standards of care officially declared by whom? (select all that apply)
                    1. An individual facility or health system
                    2. Local public health department
                    3. State public health department
                    4. Local elected official
                    5. Governor or other state official
                    6. Other: please describe (optional)
            2. No
        iii. Regardless of whether CSC were officially declared, to the best of your knowledge were crisis care decisions made related to any of the following situations? (select all that apply)
            1. Admission to ICU (e.g., critical patients went to lower levels of care as no ICU beds available)
            2. Decision to withhold advanced or lifesaving care (due to shortages, not based on joint decision with patient/family to limit care)

3. Ventilator triage
4. Dialysis triage
5. Triage of medications
6. Lack of qualified staff
7. Don't know
8. Other (please specify)

b. No
c. N/A

Alternate Care Sites

31. Do you have information to share on this topic?
    a. Yes
    b. No, I have no information to share on this topic.
32. Was a community based alternate care site (ACS) established? By community-based, we mean one that was not established on the campus of a hospital or health system, rather one established at a site in the community (often by public health or emergency management). (select one, required)
    a. Yes
        i. How was it staffed? (select all that apply)
            1. Contract staff
            2. Local healthcare facilities
            3. MRC
            4. State teams
            5. Federal teams
            6. National Guard
            7. Non-profit organization
            8. Other (please specify) (text box)
        ii. How important a contribution did the ACS make to capacity? (select on scale of 1- 5, 1-no contribution, 5-significant contribution - required)
        iii. Was a hospital license issued for the facility? (select one, required)
            a. Yes
                i. Who held the license for the facility?
                    1. Health department
                    2. Hospital
                    3. Other
            b. No
        iv. Was a CMS inspection obtained for the facility? (select one)
            a. Yes
                i. Do you have any comments/learning to share related to obtaining a CMS inspection for the facility? (text box, optional)
            b. No
        v. How long was the facility in operation? (text box)

vi. What was the total estimated number of patients cared for at the facility? (text box)
vii. What types of care were provided at the ACS? (select all that apply)
    1. General/floor care (Med-surg)
    2. Intensive care
    3. Mechanical ventilation
    4. Post-acute/limited medical care
    5. Respite/isolation or quarantine care
viii. What types of patients were cared for at the ACS? (select one)
    1. COVID-19 only
    2. Non-COVID-19 only
    3. Both COVID-19 negative and positive patients

b. No

Thank you for completing this survey. The information you shared will be valuable to our assessment of HCC engagement during the COVID-19 response. If you have any questions, please contact askasprtracie@hhs.gov.

Appendix D: Focus Groups

Background

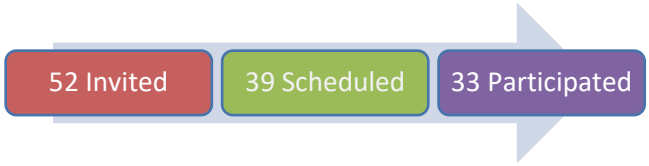
The U.S. Department of Health and Human Services (HHS) Office of the Assistant Secretary for Preparedness and Response (ASPR) Technical Resources, Assistance Center, and Information Exchange (TRACIE) conducted focus groups to examine the role of healthcare coalitions (HCCs) in responding to the COVID-19 pandemic.[5]

Methods

ASPR TRACIE held eight focus groups with representatives from HCCs who completed the HCC Engagement in COVID-19 Assessment Survey (Appendix C) and indicated a willingness to share additional information. From among those willing to participate in follow-up activities, ASPR TRACIE identified HCCs that mentioned resources or practices that other HCCs may benefit from, unique challenges or solutions, or other notable information. ASPR TRACIE also attempted to include representatives from HCCs identified for follow-up through the Field Project Officer survey and environmental scan. Focus groups were a mix of general topics and those concentrated on specific issues of interest as follows: two on coordination/command, one on information sharing, one on patient surge (patient load balancing/crisis standards of care [CSC]/alternate care sites [ACS]), three on a variety of general topics, and one comprised of representatives from rural HCCs. Focus group discussion guides are included in Appendix D.1. Those invited to participate reported various areas of expertise and roles within their HCC and represented HCCs from across the country with different compositions and governance structures.

The eight focus groups occurred between June 22 and July 20, 2021. ASPR TRACIE invited 52 individuals to participate (Figure 1). 39 individuals accepted an invitation and were assigned by ASPR TRACIE to one of the focus groups. 33 individuals participated in a focus group. One individual unable to attend the rural focus group submitted written responses to the discussion guide and those responses are included in the analysis. More than one representative attended from three HCCs; therefore, participants represented 29 HCCs in total.

Figure 35. Focus group outreach & participation.



Focus group participants represented HCCs in 25 states located in all 10 HHS regions (Figure 2). Five of the 29 (17.2%) HCCs represented covered the geography of an entire state. Based on their survey responses, 11 of the HCCs covered a geographic area that is either mostly suburban or mostly urban (37.9% each) and seven of the HCCs served a mainly rural area (24.1%) (Figure 3).

[5] The focus groups were conducted in accordance with the Paperwork Reduction Act under Office of Management and Budget Control Number 0990-0391, approved April 5, 2021. ICF's IRB reviewed and determined the project was exempt from IRB review on June 22, 2021.

Figure 36. Geographic representation of focus group participants (N=33)

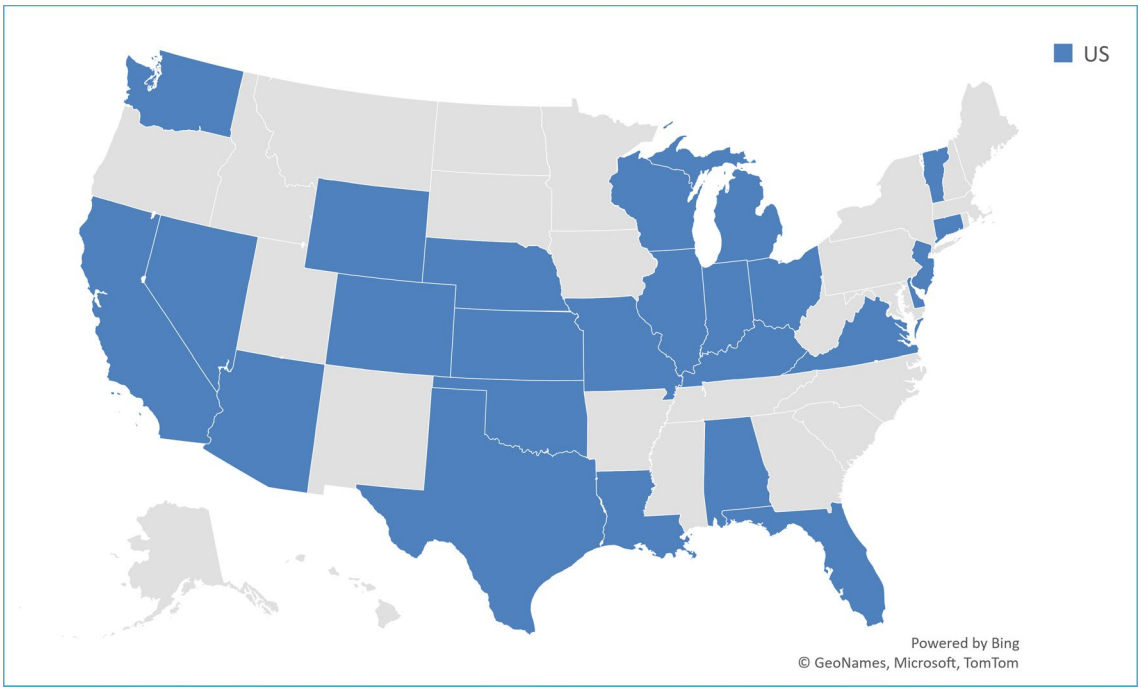
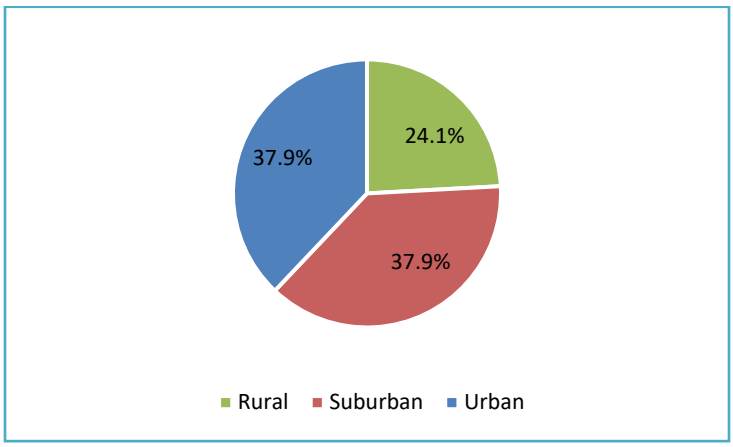


Figure 37. Geographic density of areas served by participating HCCs (N=29)



Based on their survey responses, the membership role of most focus group participants was HCC staff (n=24, 82.8%) (Figure 4). Twelve focus group participants (41.4%) identified their area of expertise as being a decision maker for the HCC while five (17.2%) indicated they had administrative/financial expertise and four (13.8%) said their expertise was in emergency management (Figure 5). Seventeen of the focus group participants (58.6%) indicated their HCC was located in a geographic area that had a dominant health system (Figure 6).

Figure 38. Membership role of focus group participants in their HCC (N=29)

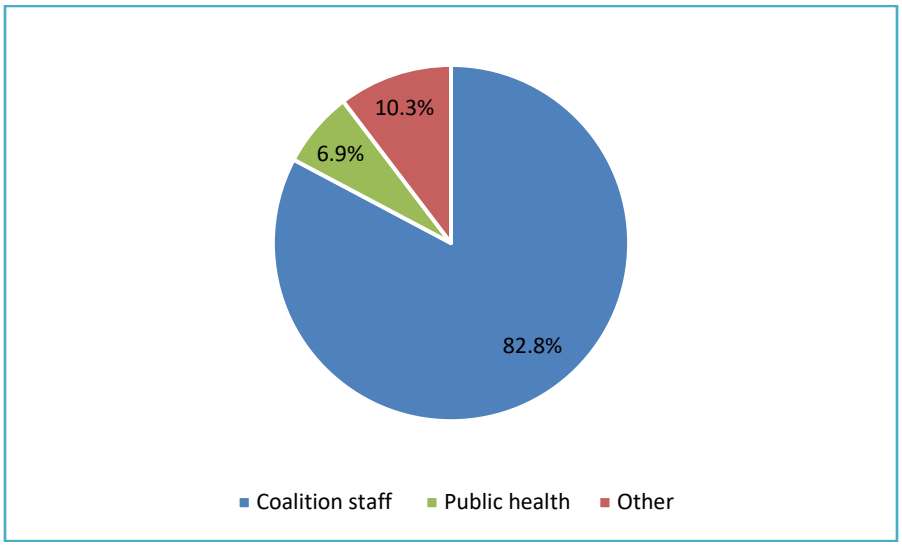


Figure 39. Area of expertise of focus group participants (N=29)

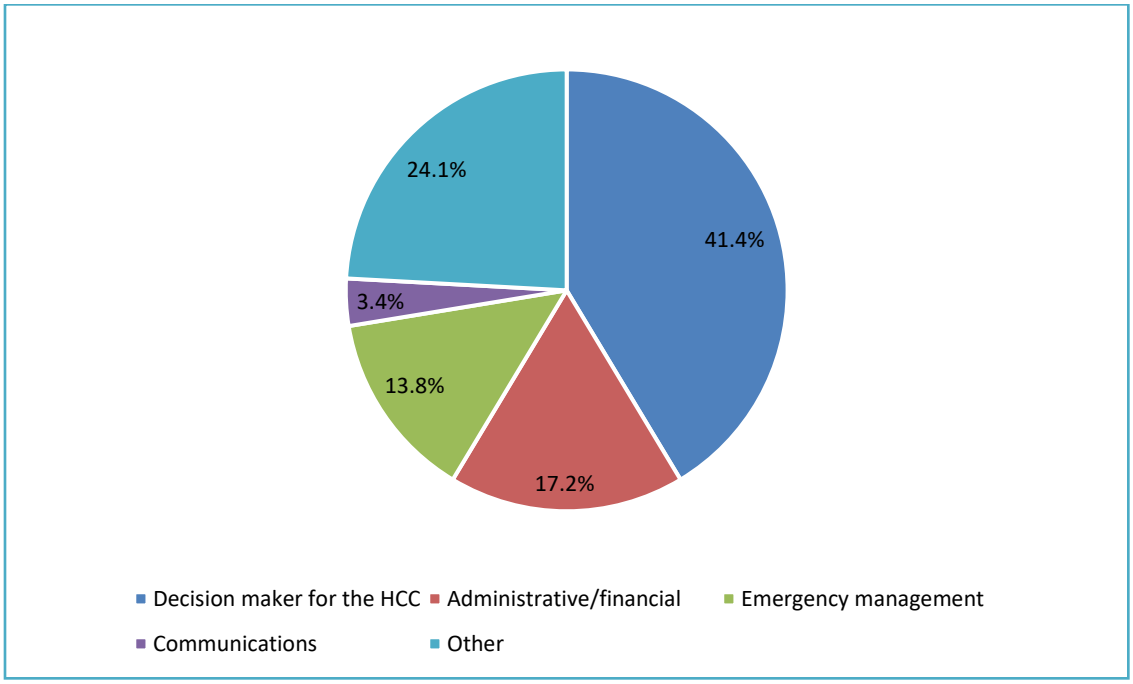
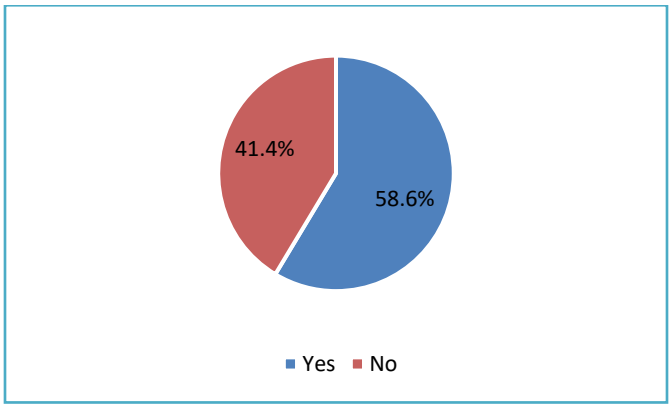


Figure 40. Proportion of focus group participants who reported a dominant health system in the region served by their HCC (N=29)



ASPR TRACIE's Senior Editor facilitated all eight focus groups. Staff from ASPR TRACIE, ASPR's Hospital Preparedness Program (HPP), and the Yale New Haven Health Center for Emergency Preparedness and Disaster Response listened to the discussions and took notes. ASPR TRACIE obtained informed consent from all participants at the beginning of each focus group to allow the sessions to be recorded for notetaking purposes. Participants were informed that all information shared would be anonymized and not attributable to any individual or the HCC they represented.

Findings

The following are key findings from the focus groups:

- Focus group participants highlighted the value HCCs added to the COVID-19 response.
- The way that many of the focus group participants described their COVID-19 experiences suggested a need to shift the focus to the critical functions expected of HCCs rather than the formalized structures to achieve those functions, i.e., specify function instead of form.
- Nearly all focus group participants identified information sharing and situational awareness as their most important function during the COVID-19 response.
- While none of the HCCs represented in the focus groups had direct command over the response, the HCCs played a critical role in coordination and collaboration within the healthcare sector and with other response partners, often serving in a multi-agency coordination role or supporting unified command.
- Many focus group participants reported their HCC took on a significant resource management role, particularly in brokering the acquisition of supplies for smaller members that did not have pre-existing vendor relationships or lacked financial resources to compete with larger purchasers.
- While many HCC members implemented contingency measures to address patient surge, none of the focus group participants believed their HCC reached crisis standards of care. A combination of patient load balancing, information sharing among HCC members about resource needs and bed status, implementation of common policies to reduce patient surge,

and effective management of individual member and HCC resources mitigated the need for implementation of crisis standards.

- Several HCCs were involved in the establishment of ACSs. While most of these sites saw few or no patients, focus group participants cautioned this was due to the widespread nature of the pandemic and expressed hope that ACSs would be a viable option for other types of emergencies.
- An important role of HCCs noted by several focus group participants was the assistance they provided to less resourced members. Whether it was linking larger facilities with smaller ones or providing training and technical assistance or helping them access needed resources, HCCs became the go to for facilities and providers not otherwise engaged with existing emergency management structures.
- Focus group participants shared significant concerns about the effects of the pandemic response on their staffing. These included concerns about how to address the short and long term behavioral health effects on staff who worked in unprecedented conditions as well as how to retain existing and train new staff in an environment of high turnover.
- The pandemic provided an opportunity for HCCs to raise their profile among response partners and political leadership and to increase engagement of new members. However, focus group participants expressed uncertainty about how to sustain that interest over the long term as well as concerns about continuing to involve such a broad group of stakeholders, often with nominal ties to disaster response (e.g., dental practices).
- A few focus group participants found their existing plans and expectations regarding their HCC's role in emergency response were upended by political decisions made during the pandemic about how jurisdictional responses were organized. These HCCs are prioritizing working with their response partners and jurisdictional political leadership to clarify whether these new roles and responsibilities are permanent or simply a temporary function of an extraordinarily complex response.

Additionally, it should be noted that COVID-19 cases and hospitalizations began to grow during the timeframe ASPR TRACIE conducted the focus groups. While focus group participants believed they had learned many lessons during the first 18 months of the pandemic and their HCCs' preparedness for a potential fourth pandemic wave had increased, many expressed anxieties about less than desirable vaccination rates in their communities and anti-science decisions of their jurisdictions' political leaders and the corresponding effects on already burnt out staff and healthcare facilities that still had not recovered from earlier waves.

Value Added

The HCC focus groups highlighted many trends, champion successes, and persistent challenges. It was clear that COVID-19 had a pervasive impact that stressed even the most resilient and established systems. Of all the data, stories, similarities, and differences, a common theme expressed by HCCs in every region of the country was their ability to provide value to the nation's healthcare response to the pandemic.

The value provided by the HCC was as different and diverse as the geographic areas HCCs serve. Based on the trajectory of the pandemic, HCCs from different areas of the country identified varying impacts, needs, and challenges. Many of the focus group participants indicated that the role of the HCC response coordinator in response to COVID-19 was very different from what had been envisioned or planned for in response to emergencies. The creativity, readiness, and steadfast commitment to their mission enabled HCCs to quickly pivot their roles and fill in critical response gaps within their areas of responsibility. HCCs recognized early on that their "function" mattered far more than their "form."

> *"It's really validating to know when you put these plans in place for your coalition and you think it's going to work and then it actually turns out and works the way you thought it should."*

The experience and expertise of the HCCs became a highly sought resource by some HCC members and other response partners. Examples of how that experience and expertise was used include:

- Many HCCs provided fit testing or trained others on how to do it. In particular, long term care (LTC) facilities lacked respiratory protection programs and their staff were unfamiliar with the PPE required for COVID-19.
- One HCC organized a strike team to administer monoclonal antibodies in a prison to negate the need to transport infected inmates to an infusion site.
- Another HCC established a process to conduct virtual LTC site inspections, so staff did not have to physically enter facilities.
- Several HCCs helped smaller facilities and healthcare providers update their infection prevention practices to reduce outbreaks.
- A few HCCs assisted critical access hospitals and other rural providers by providing virtual clinical consultations on the correct use of advanced medical equipment or treatment not typically offered in those settings, enabling patients to stay in their communities and reducing surge in referral hospitals.

Several HCCs reported that their support provided the "additional horsepower" the region needed to minimize further adverse operational impacts to the healthcare system. Some interviewees reported that HCC leadership became "the easy button" for member organizations who were overwhelmed by the circumstances of the pandemic. The direct and indirect support provided by the HCC staff, leadership, and member organizations was instrumental to the response and recovery efforts for the healthcare system and the patients they serve. This was true even for those HCCs that faced structural or political obstacles to their operations, such as HCCs that were not recognized by their states or those whose political leadership established new organizations and structures for the COVID-19 response. Despite the pervasive and unprecedented impacts of the COVID-19 pandemic, HCCs across the country found ways to adapt their operations to add value within their communities.

Command and Coordination

None of the HCCs represented by focus group participants had direct command over the response. Several focus group participants suggested having direct command would have been inappropriate given the pervasive clinical and healthcare impact of COVID-19. In many jurisdictions, HCCs lack the formal authority to command widespread response, which required executive government action and collaboration among many private healthcare partners. However, many HCCs played an integral support role in the coordination of the response, often outside of the established incident command system structure.

> *"We became the centralized hub that a long term care, assisted living or [other] facility would call when they had a staffing crisis or when they had COVID and felt they needed to evacuate their 40 bed facility. I can't tell you how many middle of the night phone calls we received on our emergency line saying, 'This is so and so and we're evacuating our facility because we have COVID and we're sending them all to the emergency room.' To which my response was, 'No, you're not. Give me 20 minutes. I'll call you back.' We actually wound up doing really well with that. Using our incident command structure, using the structure we developed at the beginning of COVID with everybody onboard, and really the buy in from our region assisted with that."*

A statement that resonated through many, if not all, of the focus groups suggested that HCCs who knew their partners "on a first name basis" were highly successful in helping to coordinate a response. The strong and trusting relationships enabled HCCs to engage executive hospital leadership and other response partners early. The relational framework identified by the HCC interviewees facilitated information sharing, helped align response actions of partners, and improved the accuracy and consistency of messaging throughout the region.

> *"They really sang the praises of being coalition members because it allowed them to be on a first name basis and know who to call. Not only do you know the first person you would think of calling like the trauma coordinator, but also key staff down the line because the trauma coordinator might be out with COVID. So who do you call instead? They credited being part of the coalition as the reason they are all close and know each other on a first name basis."*

In some locales, HCCs played an essential role in helping coordinate policy-style decisions within specific and defined areas of responsibility. While drafting or approving policy-style documents occurred in only a small number of situations, HCCs reported being able to help coordinate dialogue with HCC partners around policy type implications. Enabling policy alignment among hospital and healthcare partners (who are typically day-to-day competitors) allowed executive hospital leadership to focus on caring for patients and maintaining the safety of their staff, patients, and visitors.

> *"The coalition never dictated certain policies but brought the chief medical officers and senior leadership from the healthcare systems and hospitals together on these unified command calls to discuss some of this stuff. The hospitals were on the same page and knew what other hospitals were doing."*

One such policy-type example that was frequently discussed included the canceling of non-emergency surgeries and closure of small clinics and the resulting financial impact on those facilities. Coordinating weekly meetings through the HCCs provided a forum for hospital and healthcare executives to align tough decisions and ensure equity among competitors.

> *"It's kind of a big deal to make sure, 'We don't want to change our policy if you're not changing your policy.' We don't want to have people hospital shopping. We kind of want to do everything as a region for consistency."*

Another example of policy-style decisions was the creation of consistent messaging and expectations for the public and for smaller HCC partners. The public did not have to sift through information as to what types of facilities were closed, or what types of services were being offered among HCC partners. Smaller independent providers (primary care practices, dentists, physical therapists, etc.) were able to turn to the HCC to align their response, needs, and expectations as well.

Another best practice that emerged during the focus groups was the partnerships between HCCs and hospital associations. Partnerships with State and regional hospital associations proved to be extremely valuable when the HCC had trouble getting executive attention. Hospital associations generally have closer ties to chief executive officers (CEOs) and chief medical officers (CMOs) and state government than some HCCs. Partnering with hospital associations allowed HCCs to bring their resources to bear, often in a "plug and play" method, by plugging in to the existing CEO/CMO and government conduits. Partnerships with State and regional hospital associations reduced duplication of effort in terms of resource sharing, information and data gathering, and developing a common operating picture.

There were a few HCCs where relationships were not well established prior to the pandemic. In some of these environments, HCCs indicated a lack of interest and engagement by the healthcare facility executives. Other HCCs struggled to engage non-core members in their preparedness activities. This translated to confusion and, in some instances, a complete lack of awareness about the existence and role of HCCs. Many focus group participants described educating new members, facility executives, and political leadership about the existing plans, resources, and capabilities of their HCCs. These educational efforts often reduced duplication of effort or curtailed the formation of new structures intended to address issues the HCCs were already equipped to handle. They also allowed focus group participants to set more realistic expectations about the overall role of their HCCs in the pandemic response.

> *"Very early on they thought this coalition is this puppy dog, rainbow answer and coalitions across the state are going to set up these alternate care sites and we're going to take care of medical surge and I'm like, 'Whoa, whoa, whoa. I cover multiple counties. I answer all calls from the health department, emergency management, hospitals, EMS, long term care. I am the point person. And you want me to set up this alternate care site with what staff, with what doctors, with what nurses'? I started weekly virtual calls with them to tell them, 'No, we're not going to set up an ACS and this is why,' or saying, "Yes, your facility is welcome to set up an ACS and to use coalition assets, but the coalition is not going to staff it. There are no coalition staff.' There was just an overwhelming misunderstanding at a very high level."*

Information Sharing and Situational Awareness

In considering the following question, "What was the key function your HCC fulfilled during the COVID-19 response?", the majority of answers were, "Information Sharing and Situational Awareness." It was a common experience shared by the focus group participants that early in the response executive leaders were overwhelmed with calls, meetings, and time demands. Similarly, clinicians struggled to keep up with the rapidly evolving evidence base to provide the most effective treatment for the new disease and facility leaders sought best practices on infection prevention and increasing surge capacity while protecting staff, patients, and visitors. Throughout the healthcare sector, staff in every role experienced extreme information overload exacerbated by rapidly changing – and sometimes conflicting – federal, state, and local guidance.

The following are examples of best practices that emerged regarding HCC information sharing efforts:

- CEO/CMO/chief nursing officer (CNO) calls with hospital leaders, public health leaders, and the HCC.
    - This enabled C-suite executives to understand the situation beyond their walls and fostered collaboration among private entities who were all starving for critical resources.
    - These calls also allowed facility executives to align policies with regional partners, further streamlining consistent communications for the public.
- Other calls within and across disciplines and roles.
    - Several HCCs described hosting some calls with specific disciplines such as hospitals or LTC facilities only, other calls with staff in similar roles (e.g., emergency managers, critical care providers, infection prevention staff) in different member types, and still other calls with mixed disciplines and roles.
    - This allowed participants to hear what was occurring in disciplines and roles similar to their own as well as to learn from those that were different.
- Situation Reports (SitReps) to combat the friction caused by lack of time and information overload.
    - SitReps offered a credible source of distilled and concisely presented critical information.
    - SitReps supported the HCC members' Essential Elements of Information (EEIs) and in some cases became the "source of truth" for the region or the state.

> *"There was the standard guidance about reuse and those types of things that were coming out from the federal level, from the state level. But on our coordination calls with our hospitals and our ancillary healthcare partners and EMS, we would make that an agenda item so that we could constantly share what different facilities were doing within those disciplines. A really good benefit was our hospitals were being very creative in figuring out ways to reuse and save PPE so we were able to share that down with our smaller partners. And so it was both within the discipline across facilities but then cross disciplinary as well to help out across the entire continuum."*

    - Those who were time bound and unable to attend HCC calls used SitReps to stay updated and aligned with actions and policies taken on the part of other healthcare partners.
    - Some HCCs made their SitReps available to anyone while others restricted distribution to HCC members only or other defined groups.
- Digests or summaries of guidance, scientific literature, and best practices.
    - HCCs compiled these digests so that members could quickly identify the latest, most important information.
    - Members found it easier to keep up with information based at defined time intervals than to manage the constant stream of data.
    - They included policies coordinated by the HCC, which was sometimes shared with SitReps.
    - Some HCCs distributed these digests via email or newsletters while others posted them in a location accessible to all members.
- Agreement between HCCs and state partners on cadence.
    - The cadence of communication updates varied depending on the intensity of the response, but the established intervals helped streamline information sharing and set expectations for reporting deadlines.
- Emphasis on actionable data.
    - The combination of information overload and data reporting requirements placed a significant burden on many HCCs and their members.
    - Information that drove decision making was highly valued across the spectrum.
- Sharing of qualitative as well as quantitative data.
    - Many focus group participants expressed the importance of not limiting information sharing to a defined set of numbers. They found that less tangible, qualitative data provided additional context that helped their HCCs better understand the current situation and detect trends.

> *"The bidirectional piece [of data collection] was really key and along with that was being an advocate for our members who oftentimes feel like they push data up into the state or other systems and don't ever see what happens to it. They don't see an outcome. They don't see how decisions are made utilizing it. So we really tried to hone in on actionable data, sharing it both up and down the chain."*

Another area of tremendous growth for HCCs during the COVID-19 response was the use of "dashboards" and data sharing platforms. Some had systems in use prior to the pandemic but established data sharing platforms were non-existent for many HCCs. In some cases, HCCs had selected data management platforms without middle-ware software that automatically updates the system. HCCs demonstrated creativity and resourcefulness in responding to data management and information-sharing technology platform challenges.

- Some HCCs noted leveraging Microsoft Power-BI, a database tool that allows for creation of real time dashboards and real time queries of existing resources.

- Other HCCs developed common operating pictures using Google Sheets, which could be accessed by approved users. Many HCCs used large Microsoft Excel spreadsheets, sent out at a regular cadence as their common operating picture. Other HCCs leveraged Juvare's EMResource or WebEOC to facilitate this function.
- One HCC reported leveraging existing ArcGIS software produced by ESRI to develop a common operating picture. Using ArcGIS, the HCC was able to combine data into simple-to-digest dashboards showing metrics such as overall census, ICU bed availability, ventilator availability, total COVID positive inpatients, etc. The HCC paired this with a built-in survey tool called Survey 123, allowing hospitals and partners to update the dashboard in real-time, without the need to connect the HCC system to the hospitals' electronic health record (EHR) systems. Additionally, this HCC reported they had acquired a statewide license and were able to grant restricted access to critical partners. Since hospital partners provided non-PHI data from a survey form, HIPAA risk was minimal as there was no direct link between the ArcGIS system and the hospital EHR systems. The focus group participant indicated that based on the regional success of their data management and information sharing system it was adopted by the state as the common operating picture for the pandemic response.
- Another HCC was able to integrate their hospitals' EHR systems with EMResource for reporting to the federally required TeleTracking system. This reduced the data reporting burden on the individual facilities. It also allowed for auto-reporting to stakeholders of key data points, further strengthening information sharing efforts.

A common theme for the HCCs that leveraged the above technologies was the existing unfamiliarity with the systems. Many described taking crash courses and learning the basics overnight so they could accomplish the mission of information sharing and situational awareness. As the pandemic continued, HCCs indicated some processes were formalized and automated but many described still operating at a manual process for publishing their information on their common operating picture.

A common struggle expressed by the HCCs responsible for gathering data was data definitions. As hospitals rapidly shifted operations to accommodate the surge of COVID patients, complexities such as how a hospital bed is defined were noted. For example, HCC members expressed concerns in attempting to ascertain if a hospital bed was "currently available" or whether it was a "surge bed." Defining surge beds became difficult, as partners employed multiple categories (e.g., licensed surge bed, surge bed staffed in 24 hours, surge bed staffed in 48 hours). Similar challenges existed with definitions of "staffing" and "alternate care site beds." Focus group participants indicated that the struggle over defining data resources hampered their ability to rapidly scale the common operating picture. A lack of consistent data definitions added complexity for HCCs and their partners to get a clear understanding of the resource needs, and exacerbated

> *"Definitions mattered significantly. . . We ended up with a number of different ICU bed categories and really had to work with the state and the hospital association on definitions to ensure we were collecting the most appropriate data, especially because of the importance in the way it helped across-the-state decision making. So that was a big lesson learned across our state, I think, is those definitions are key."*

communication and information sharing inefficiencies. While an often-cited challenge, most HCCs were able to overcome the issues caused by unclear data definitions early in the pandemic.

Information overload and data requests by multiple agencies were other commonly experienced stressors for HCCs. As HCCs struggled to gather data from unengaged (or internally focused) partners, HHS and CMS reporting requirements provided the necessary regulatory authority for the HCCs to gather the needed data. In some instances, the HCCs were cut out of the reporting processes established pre-pandemic, but they found workarounds to access the reported data. HCCs were much appreciative of the regulatory "teeth" offered by the CMS reporting requirements but were also keen to note that some of the requests were unduly burdensome. This is an area which could be explored in detail to ensure the essential elements of information at different levels of response (national, state, HCC, hospitals, etc.) are aligned and the data reporting requirements are as efficient as reasonably possible.

> *"The last thing we want is our little community hospitals closing up shop because they can't [meet regulatory requirements]. We don't want to drive them to that point. That's defeating the purpose with regulatory oversight and burden. But when we make something optional, when we try to bring them to the table just by 'carrot and no stick,' we're still always going to have holdouts."*

Resource Management

HCCs took tremendous efforts to ensure they were adaptable and able to add value to their area's response resource needs. Some HCCs had pre-pandemic caches of varying sizes and product mixes, which they tended to distribute among members early in the pandemic to address supply shortfalls while awaiting shipments from the Strategic National Stockpile (SNS). Others had not contemplated managing supplies as a role for their HCC but took on that responsibility in the absence of any other entity leading the effort.

> *"The coalition was never meant to replace the supply chain."*

A handful of HCCs reported supporting the warehousing of supplies for their regions. One focus group participant remarked, "I never thought I would need to get certified in operating a forklift." Some of the successful practices by those involved in warehousing included:

- HCCs used Google or Microsoft forms to handle orders from partners.
- Some found it beneficial to assign at least one person to be in the warehouse to coordinate operations.
- HCCs developed "push packs," specific to the type of facility and delivered following a defined and agreed upon schedule. For example:
    - A push pack for a skilled nursing facility (SNF) would contain a standard inventory of items, adjusted only based on the size of the facility.
    - SNF days would be on Tuesday. This allowed the HCC staff time to build the packs and the SNFs to monitor their usage
    - It also allowed the SNFs to anticipate shortages and provided a date by which they needed to request special changes to the pack.

- This streamlined the workflow for the HCC staff working the warehouse and improved the flow of PPE and supplies to partner facilities.

Those not involved in warehousing still had significant roles in tracking resource needs, identifying supply sources, maintaining potential vendor lists, brokering exchanges of resources among HCC members, and transporting supplies between locations. While PPE was the resource most frequently mentioned by focus group participants, they also mentioned ventilators and other respiratory products, treatments such as Remdesivir, specialized medical equipment, and vaccines. In some instances, these resource management efforts were not for the COVID-19 response, but to access routinely used products whose supply was constrained by logjams in the global supply chain.

> *"Even if we weren't making decisions or facilitating the actual fulfillment of the resource, there was a massive education for so many healthcare organizations, smaller clinics, and others that really didn't understand the emergency management process and a lot of emergency management not understanding what healthcare's needs were going to be. A lot of what we did was actually helping organizations know how to fill out the form, helping emergency management understand how to interpret the form, what kind of resources were being made, and so that kind of brokering of information to support the process."*

During the early stages of the pandemic, HCCs reported overwhelming resource requests from community providers that had not previously been active with the HCC. Focus group participants reported being surprised by the number of dental offices, single primary care practices, and family practice physicians who immediately turned to the HCC for PPE resources and guidance. The requests came at a time when PPE was scarce across the nation and guidance was ever changing. The number of requests combined with scarce resources and lack of existing relationships created significant challenges for the HCCs. HCCs rose to the occasion and supported their new partners, despite the additional challenges. Some HCCs reported being able to coordinate PPE allocations for smaller members. Other HCCs advocated for the needs of the members through existing relationships with state emergency management or public health agencies.

> *"We found most of our time was spent on smaller facilities. They were actually a lot easier to help than larger facilities, at least in my opinion, because they were asking for a lot less items."*

Patient Surge

Much of the response early on was focused on securing and allocating PPE along with ensuring there was enough bed space and surge capacity within the acute care hospitals. HCCs reported that as the response evolved and the supply chain became more robust, catching up with PPE demands was less of a priority. However, surge capacity remained a concern and decanting hospitals became a main effort of support for the HCCs.

> *"This was a stuff crisis at first, but it became and will continue to be a staffing crisis."*

Focus group participants reported regions establishing ACSs as one solution for reducing the impact of surge capacity. HCCs assisted partners in standing up and preparing ACSs to provide additional surge capacity within some regions. Using arenas, old hospitals, or other community sites, ACSs were opened from the ground up usually in a matter of days. However, focus group participants reported that most alternate care sites treated no or few patients. HCCs indicated a common constraint was inadequate staffing to support the ACSs. While some hospital partners considered committing staff resources to an ACS, there was a hesitancy regarding how long staff could be committed and how it would be coordinated. As noted by HCCs, hesitancy to support staffing was exacerbated by the personnel shortages member hospitals were experiencing. Focus group participants reported as challenges of operating ACSs mounted, hospital partners determined that increasing surge capacity within a hospital facility was the best course of action as it provided tighter control for staffing and resource management. HCCs shifted their focus to supporting load balancing among partner hospitals.

> *"The [ACS plan] is a beautifully written plan. It was implemented. It was set up and ready to go. It was a functional space. But I don't know how we would staff that if we were at a point where we were doing elective surgeries and didn't have that staff to be able to move there. I don't know how we would do it."*

> *"All of our CEOs agreed we will make it happen within the four walls of our hospitals."*

Focus group participants reported being able to support some form of load-balancing to help coordinate the transfer of COVID-19 patients. In some cases, patient transfers were coordinated according to the usual referral patterns and were often led by large health systems in the geographic area covered by the HCC, usually with little to no input from the HCC. In other instances, the HCC or another response partner established a medical operations coordination cell (MOCC) or similar entity to manage the distribution of patients. Some of these MOCCs existed pre-pandemic while others were established in response to COVID-19. Still other HCCs used less formalized processes, often relying on bed status reported in HCC SitReps or data dashboards to determine where space was available. Some focus group participants indicated they had MOCC plans or other strategies in place, but ultimately did not implement them due to the unique characteristics of the pandemic.

Load-balancing often focused on LTC and SNFs. In one instance the focus group participant described how the use of a transfer line mitigated a SNF from transferring over 20 patients to a local emergency department, which likely would have exacerbated the surge crisis and overwhelmed the hospital.

Another lesson learned was combining the transfer line with data management tools provided the ability to monitor ambulance waiting times. One HCC described how using a transfer line in coordination with the EMS CAD system allowed them to monitor hospital census in a way more accurate than once a day reports provided by the hospital. This improved the availability of ambulance crews on the road as well as the appropriate load balancing of patients to acute care facilities.

A limiting factor across all surge activities was the availability of staff. In addition to the lack of staff for ACSs, HCCs and their members struggled to find adequate staff for various roles, especially as cases

surged nationwide. Some of the staffing solutions identified by focus groups participants included the following:

- HCCs working through their standing CEO/CMO calls supported the development of policies that did not allow any nurse or clinical "traveler" personnel to live within a specific distance of the hospital (e.g., travelers must live 200 miles away). This helped stop staffing companies from recruiting local employees and contributing to the staffing shortages.
- Some HCCs reported serving as a clearinghouse and validator for staffing agencies. The HCCs' role involved conducting due diligence and coordination to ensure the staffing agencies were able to provide the services offered and deliver on contracts. By conducting compliance checks, HCCs were able to offer consistent guidance to partners with questions regarding travelers or staffing agencies.
- One HCC described a database that matched out-of-work healthcare providers with facilities in need of staff.
- Similarly, another HCC brought in staff from member organizations who could not work from home to help with resource management and the transportation of assets around the large geographic area covered by the HCC.
- Another HCC provided training on healthcare-specific needs to the emergency management agency's incident support team so the team could augment the HCC's staff and support their coordination and resource management activities.
- One HCC established a statewide vaccinator registry.

Despite the issues with staffing and supplies, focus group participants described how their HCCs managed the pandemic without resorting to the use of crisis standards of care (CSC). It was not uncommon for focus group participants to describe deviations from conventional care such as:

- Hospitals treating patients of a higher acuity level than typical for them.
- Facilities adjusting staffing ratios.
- Facilities providing just-in-time refresher training to enable administrative nurses to return to providing patient care.
- The use of various PPE preservation practices.

However, most of these adjustments reached contingency rather than crisis levels.

The majority of HCCs described convening focus groups or using their standing CEO/CMO calls to have discussions regarding the status of their CSC and the potential trigger points before activation. Most HCCs reported that they along with governments and hospital partners understood their current situation regarding CSC and what potential actions they would be willing to take. However, HCCs were reluctant to memorialize their understanding and actions into a formal plan, especially if no CSC plan had been developed at the state level. HCCs described discussions around the issue of CSC which would quickly devolve from having sound guiding

> *"It's kind of interesting because when we were in the early stages of development [of CSC] and prior to COVID, the hospitals did not want the state telling them what to do. But when COVID hit and there were lots of very difficult decisions that had to be made, they wanted the state telling them what to do."*

principles, to the tactical level of ventilator rationing. In addition, some HCCs cited the lack of legal indemnity and legislative support within a CSC environment exacerbated a reluctance to memorialize formal CSC plans during the COVID-19 response.

Future concerns

There were considerable commonalities in the remaining and future concerns of focus group participants. HCCs are actively developing after action reports and improvement plans, revising existing plans, reevaluating their vulnerabilities, identifying training needs, and planning future exercises. Focus group participants found the COVID-19 response challenging, but they also believed their HCCs were strengthened through their lessons learned.

Focus group participants were encouraged by the increased engagement and interest in their HCCs. They leveraged the new relationships to build their regional networks. Additionally, HCCs noted a desire to maintain these new relationships as they provide additional "ground truth," personnel, and coalition engagement. However, they expressed uncertainty about how they would sustain this engagement in the future in the absence of regulatory requirements when they are no longer, as one participant said, giving stuff away for free.

Another significant short and long term concern for HCCs is staffing. Many named behavioral health support for staff as their number one priority. Whether working as HCC staff, in hospitals, public health agencies, EMS, LTC, emergency management agencies, or other settings, everyone involved in the response to COVID-19 has worked long hours in difficult environments seeing the devastating effects of the virus firsthand while also worrying about their own health and that of their loved ones. Not only has the experience stressed the mental health of workers, but it has also led to significant staffing shortages and the loss of institutional knowledge. One focus group participant noted a 15 percent turnover rate in nursing home administrators. Another mentioned a hospital CEO quitting in the middle of the day. Others described the challenges of maintaining required certifications in a no travel environment. Employee training and retention efforts will be critical to future emergency response efforts.

> *"Anyone who could retire retired. I mean, really, they just don't want to work anymore and that includes people in all fields, not just medical. People were just like, 'Ok, I have enough money. I have no desire to work anymore. I'm exhausted. I don't want to do this.' So we really need a lot of training and certification."*

The supply chain also remains a concern. While many of the initial shortages have resolved, focus group participants expressed concern about continued lack of domestic manufacturing capacity for some supplies. After struggling through the free for all atmosphere during earlier supply shortages, some focus group participants argued for the need for a national effort to identify and validate vendors so that HCCs could be confident in making purchases at a fair price.

Underlying all these concerns is the current status of the pandemic itself. Vaccine hesitancy combined with the increased prevalence of variants is leading to increased cases, hospitalizations, and deaths. Political decisions restricting or discouraging evidence-based community mitigation efforts are further

fueling the pandemic. The extended response is delaying the shift to the recovery phase and preventing HCCs, their members, and their staff from taking a much needed break to recharge before continuing their preparedness for future emergencies.

Finally, focus group participants identified several specific "asks" of their federal partners:

- Shape cooperative agreement requirements to enable critical functions over formal HCC structures.
- Consider establishing an alternate mechanism for HCCs to access federal funding if the eligible entity through which they typically are passed down funds does not apply.
- Ensure that jurisdictions/facilities are fully reimbursed in a timely fashion for expenses incurred in the establishment of ACSs.
- Consider not reducing the required proportion of funds allocated to the state/territory versus what is passed down to HCCs, particularly in those jurisdictions with statewide HCCs.
- Host resiliency workshops for healthcare providers.
- Consider defining cooperative agreement deliverable as "musts" and "shoulds" to enable some consistency across the nation while also allowing some flexibility for the varying HCC structures and capabilities.
- Balance using regulatory and programmatic "sticks" to achieve some priorities without being overly burdensome.
- Educate on considerations for how to support provider CSC decision making rather than focus on allocation of scarce resources.
- Recognize that some best practices will never work for certain HCCs due to various circumstances outside the control of those HCCs.
- Remove requirements that do not benefit HCCs or the healthcare system.

Appendix D.1: Focus Group Discussion Guide

Informed Consent Process

Discussion of Purpose and Review of Informed Consent

Thank you for agreeing to speak with us today. My name is X and we are conducting this focus group on behalf of the Office of the Assistant Secretary for Preparedness and Response (ASPR) Technical Resources, Assistance Center, and Information Exchange (TRACIE), which we will refer to as ASPR TRACIE. I work for ICF, a contractor supporting ASPR's TRACIE project. Others who may be listening and taking notes during the focus group are listed on the slide on your screens.

Purpose and Procedures

ASPR TRACIE is conducting this project to identify successes and opportunities in healthcare coalition (HCC) responses to the COVID-19 pandemic. You are among several HCC members we invited to participate in a focus group. During our discussion, we will review your responses to the online survey. I'll ask you some questions to expand upon what you shared, so we can get a fuller understanding of your perspective on the role of HCCs in supporting the health and medical response to disasters or emergencies. Our discussion should take about one hour.

Voluntary Participation

Your participation in this discussion is completely voluntary. You do not have to answer any question that you do not want to answer. You may choose not to participate or to leave the discussion at any time. We will record the discussion. Please speak clearly to ensure proper recording.

Privacy

The digital recording and notes of the focus group will be stored in a password-protected folder. The recording will be destroyed when the project is over. Only members of the project team will have access to the notes and recordings, and they will not be allowed to share them with anyone else. Your name and HCC name will not be used in any documents written based on this project. Data will be presented in aggregate so responses will not be attributed to individual participants or organizations with which they are affiliated. A final report will be posted on the ASPR TRACIE website. The research may also be submitted for publication in a peer-reviewed journal. If you have any questions about this project, you can reach out to askasprtracie@hhs.gov.

Do you agree to participate in the interview?

- Yes [proceed]
- No [ask them to disconnect]

Thank you. I'll now turn the focus group over to our facilitator.

Coordination/Command

Based on your responses to our survey, insights from ASPR FPOs, and an environmental scan of activities taking place across the country, we would like to hear more about your HCC's activities related to coordination, resource management, and command and control. You will have an opportunity to talk about other aspects of your response toward the end of today's call, but those topics will be our primary focus.

1. Briefly orient us to your coalition location, key members, and your role.
2. Tell us about the role of your coalition in coordination during your response.
    a. How involved was your HCC in coordinating policy decisions (e.g., facility visitation, EMS transport, etc.) across the region served by your HCC? Looking back, do you think the HCC should have been more involved, less involved?
3. Many of you mentioned your HCC played a considerable role in managing resources, ranging from PPE to ventilators to COVID-19 treatments. Can you tell me more about this process, including whether this was a role your HCC planned for or if it was in response to an unmet need?
4. For those of you whose HCC had a physical command/coordination center, where was it located and how did that affect your ability to coordinate response activities with other partners? For those who did not have a physical location, what processes did you put in place to effectively coordinate with others?
5. How does healthcare and your coalition fit into the emergency management response?
6. Did your HCC provide any just-in-time training for healthcare workers? In what areas? (Prompts: clinical care, infection prevention/PPE, ACS, vaccination, test sample collection)
7. How was your HCC able to support less resourced members during the COVID-19 response?
8. How do you think your regional response could be improved in future disasters?
9. Were any of your HCCs involved in interstate coordination? What was your role?
10. Are there any other unique aspects of your HCC's coordination activities you'd like to share?

Switching to your HCC's overall response . . .

11. From your perspective, what was the key function your HCC fulfilled during the COVID-19 response?
12. What are you still worried about from a command and coordination standpoint?
13. What is the number one thing you want/need from ASPR TRACIE or NHPP to support your future efforts?
14. Is there anything else we haven't covered that you want to be sure we know about?

Thank you. Those are all the questions I have for you today. Is there anything else you'd like to share that you believe will be helpful to our project?

Your feedback today was extremely valuable and we appreciate your willingness to share your insights. Please contact us at askasprtracie@hhs.gov if you think of anything else you'd like share. As I mentioned at the beginning, this is one of several focus groups that we will be conducting. Your name and your HCC's name will not be connected to your responses. We will analyze the collected data across all focus groups for major themes and trends. We will then document our findings in a report.

Thanks again for taking time out of your busy day to share your feedback.

Crisis Standards of Care and Patient Load Balancing, Including Alternate Care Sites

Based on your responses to our survey, insights from ASPR FPOs, and an environmental scan of activities taking place across the country, we would like to hear more about your HCC's activities related to patient surge, alternate care sites, and crisis standards of care. You will have an opportunity to talk about other aspects of your response toward the end of today's call, but our primary focus will be on how your HCC contributed to patient load balancing and how patient surge influenced your ACS and CSC decisions.

1. What specific challenges did you have with staff, space, and stuff? What processes will you be keeping for future responses and what did not work well?
2. How was patient load balancing addressed in the area served by your HCC?
3. Several of you indicated that a MOCC or other regional mechanism was used to coordinate patient movement. Please briefly describe your HCC's role. What benefits and challenges did you experience when using this mechanism? Was this an expected function or something that was developed for COVID-19?
4. Some survey respondents mentioned basing their HCC's patient surge plan on the HPP Coalition Surge Test. How did that plan influence your HCC's response to COVID-19? Did anyone else have a similar experience?
5. A number of HCCs indicated their area planned for the establishment of an alternate care site, but one was never opened. Did anyone in today's focus group have that experience? Are you happy about that decision? Did your HCC have any role in the decision to open? For everyone - What gaps do you believe need to be addressed in ACS planning by your HCC?
6. Crisis standards of care were declared in various jurisdictions and facilities during the COVID-19 response. For those in today's focus group who had such a declaration, how did you communicate those conditions to patients, their loved ones, and the greater community? How did CSC conditions end? What was the 'trigger' for the declaration and what was done to address the needs?
7. Regardless of whether crisis standards of care were implemented in your region, what gaps do you believe need to be addressed in CSC planning by your HCC?
8. What policies did your HCC enact to support provider decision making about CSC?
9. Did your CSC activities follow your existing plans? If not, what was different and why?

Switching to your HCC's overall response . . .

10. From your perspective, what was the key function your HCC fulfilled during the COVID-19 response?
11. What are you still worried about?
12. What is the number one thing you want/need from ASPR TRACIE or NHPP to support your future efforts?
13. Is there anything else we haven't covered that you want to be sure we know about?

Thank you. Those are all the questions I have for you today. Is there anything else you'd like to share that you believe will be helpful to our project?

Your feedback today was extremely valuable and we appreciate your willingness to share your insights. Please contact us at askasprtracie@hhs.gov if you think of anything else you'd like share. As I mentioned at the beginning, this is one of several focus groups that we will be conducting. Your name and your HCC's name will not be connected to your responses. We will analyze the collected data across all focus groups for major themes and trends. We will then document our findings in a report. Thanks again for taking time out of your busy day to share your feedback.

General

Based on your responses to our survey, insights from ASPR FPOs, and an environmental scan of activities taking place across the country, we'd like to hear more about your HCC's response to COVID-19 and how you plan to approach future emergencies.

1. Briefly tell us where your HCC is located, who comprises your membership, and what your role is.
2. What was the key function your HCC fulfilled during the COVID-19 response?
3. What was the one experience that went the best – the success story you tell – and what is the one thing that you would have done differently or learned from?
4. How did the coalition's role and engagement with members change during the COVID-19 response compared to before the pandemic?
5. Tell us about your HCC's role – how did you integrate into the command chain, share information, and manage resources?
6. How are patient transfers and load balancing addressed in the area served by your HCC?
7. Was an alternate care site established in the area served by your HCC? Are you happy about that decision? Did your HCC have any role in the decision to open or in the ACS's day-to-day operations? What gaps do you believe need to be addressed in ACS planning by your HCC?
8. What was your experience with crisis standards of care during the COVID-19 response? What changes to CSC planning are needed?
9. What are your priorities for your HCC going forward and how are those different from pre-COVID?
10. What are you still worried about from a healthcare response standpoint?
11. What do you want ASPR TRACIE and NHPP to know about your response and how can we best help you?
12. Is there anything else we haven't covered that you want to be sure we know about? Thank you. Those are all the questions I have for you today. Is there anything else you'd like to share that you believe will be helpful to our project?

Your feedback today was extremely valuable and we appreciate your willingness to share your insights. Please contact us at askasprtracie@hhs.gov if you think of anything else you'd like share. As I mentioned

at the beginning, this is one of several focus groups that we will be conducting. Your name and your HCC's name will not be connected to your responses. We will analyze the collected data across all focus groups for major themes and trends. We will then document our findings in a report. Thanks again for taking time out of your busy day to share your feedback.

Information Sharing

Based on your responses to our survey, insights from ASPR FPOs, and an environmental scan of activities taking place across the country, we would like to hear more about your HCC's activities related to information sharing. You will have an opportunity to talk about other aspects of your response toward the end of today's call, but our primary focus will be on how you collected data, shared information, and maintained situational awareness among HCC members and other response partners.

1. What were the most valuable/successful mechanisms used by your HCC to share information?
2. How did you adjust your HCC's information sharing during the COVID-19 response? (Prompts: For instance, did you change the frequency of your information sharing, your mechanism for sharing information, who you shared information with? In other words, how did you get to the place that worked for your HCC's information sharing efforts?)
3. What key data points, if any, did your HCC routinely track during the COVID-19 response? Were these identified as key elements of information prior to the pandemic or were they recognized as a need during the pandemic?
4. What was the most valuable/important/actionable information shared among HCC members?
5. What information, if any, did your HCC members wish you were able to share with each other, but were unable to access/collect/compile?
6. What was the most valuable/important/actionable information you received from the federal government (possibly through your state government)?
7. What information, if any, did you **not** get from the federal government that your HCC members wished you had to inform decision making?
8. How did your HCC data collection intersect with TeleTracking?
9. Were there any effective methods by which you were able to ease data collection burdens? Were you able to automate any collection directly from electronic health records?
10. Are there any other unique aspects of your HCC's information sharing activities or platforms you'd like to share?

Switching to your HCC's overall response . . .

11. From your perspective, what was the key function your HCC fulfilled during the COVID-19 response?
12. What are you still worried about in the near term?
13. What is the number one thing you want/need from ASPR TRACIE or NHPP to support your future efforts?
14. Is there anything else we haven't covered that you want to be sure we know about?

Thank you. Those are all the questions I have for you today. Is there anything else you'd like to share that you believe will be helpful to our project?

Your feedback today was extremely valuable and we appreciate your willingness to share your insights. Please contact us at askasprtracie@hhs.gov if you think of anything else you'd like share. As I mentioned at the beginning, this is one of several focus groups that we will be conducting. Your name and your HCC's name will not be connected to your responses. We will analyze the collected data across all focus groups for major themes and trends. We will then document our findings in a report. Thanks again for taking time out of your busy day to share your feedback.

Rural

Based on your responses to our survey, insights from ASPR FPOs, and an environmental scan of activities taking place across the country, we would like to hear more about your HCC's response to COVID-19 and how you plan to approach future emergencies. All of you indicated the region covered by your HCC is mostly rural. During this discussion, we'd like you to keep that rural perspective in mind and share your thoughts on how it affects your HCC's functions.

1. Briefly orient us to your coalition's location, key members, and your role.
2. What was the key role that your coalition played during the COVID-19 response?
3. What were the most valuable/successful mechanisms used by your HCC to share information?
4. What was the most valuable/important/actionable information shared among HCC members? How about information you received from the federal government (possibly through your state government)?
5. What information, if any, did your HCC members wish you were able to share with each other, but were unable to access/collect/compile?
6. Can you tell me about your HCC's role in managing resources (e.g., PPE, ventilators, staff, treatments)? Was this a role your HCC planned for or was it in response to an unmet need?
7. Where does your HCC fit in healthcare command and coordination for your region?
8. Is your coalition rural-only? If so, how did you coordinate patient transfers/load balancing with referral centers/receiving centers? With EMS?
9. How do you think your regional response could be improved in future disasters? What needs to change about coalition expectations in rural areas to improve disaster healthcare delivery?
10. Are there any other unique aspects of your COVID-19 response you'd like to share? Prompts:
    a. Did any of your HCCs develop specific resources or training for your members or take the lead on any non-medical aspects of the response?
    b. How did your HCCs help coordinate the response across your membership? Did you develop any common tools or guidelines?
    c. Some survey respondents indicated there are legal or regulatory requirements that constrain HCC activities in their states. Others mentioned a lack of clarity among response agencies about the role of HCCs in response. Do any of your HCCs face those types of challenges?

Speaking more generally,

11. What are you still worried about?
12. What is the number one thing you want/need from ASPR TRACIE or NHPP to support your future efforts?
13. Is there anything else we haven't covered that you want to be sure we know about?

Thank you. Those are all the questions I have for you today. Is there anything else you'd like to share that you believe will be helpful to our project?

Your feedback today was extremely valuable and we appreciate your willingness to share your insights. Please contact us at askasprtracie@hhs.gov if you think of anything else you'd like share. As I mentioned at the beginning, this is one of several focus groups that we will be conducting. Your name and your HCC's name will not be connected to your responses. We will analyze the collected data across all focus groups for major themes and trends. We will then document our findings in a report.
Thanks again for taking time out of your busy day to share your feedback.

Appendix E: Specific Requests by HCCs of Federal Partners

ASPR TRACIE asked survey respondents and focus group participants their opinions on activities they did not believe should be required of HCCs, things they need from HPP to improve their chances of success, and other issues they wanted to share for HPP's consideration. This feedback is included in Appendix C and Appendix D but is compiled in this appendix for ease of reference.

Survey respondents shared the following list of activities they believe should no longer be required of HCCs:

- Granular involvement in business continuity planning. This was due to the wide variance in plans of private industry members.
- HCC-wide plans. Some believed it was more valuable to have a common understanding of individual member plans than to develop separate coalition plans.
- Having a clinical advisor. Because multiple clinical staff participate in HCC activities, this respondent did not believe a designated clinical advisor was necessary.
- The coalition surge test.
- Developing strategies to protect health care information systems and networks. While the respondent agreed that cybersecurity is important, they did not perceive the HCC as having influence over how the information technology staff of HCC members manage their systems.
- Pandemic planning and exercises. Respondents believed response to the COVID-19 pandemic should replace this requirement.
- Ebola-specific training and education. The respondent indicated that "highly infectious disease preparation includes disease preparation and mitigation so specific training does not have a role in the HCC response."

Survey respondents also shared the following comments:

- While respondents understand the need for and difficulty in establishing performance measures, they find it difficult to meet those measures due to how their HCCs are structured.
- HCCs in jurisdictions where they are not recognized as response entities and instead focus their efforts on preparedness activities find it difficult to meet federal requirements.
- HCCs asked for greater latitude in how and when they achieve performance measures.

Focus group participants shared the following specific "asks" of their federal partners:

- Shape cooperative agreement requirements to enable critical functions over formal HCC structures.
- Consider establishing an alternate mechanism for HCCs to access federal funding if the eligible entity through which they typically are passed down funds does not apply.
- Ensure that jurisdictions/facilities are fully reimbursed in a timely fashion for expenses incurred in the establishment of ACSs.
- Consider not reducing the required proportion of funds allocated to the state/territory versus what is passed down to HCCs, particularly in those jurisdictions with statewide HCCs.
- Host resiliency workshops for healthcare providers.

- Consider defining cooperative agreement deliverable as “musts” and “shoulds” to enable some consistency across the nation while also allowing some flexibility for the varying HCC structures and capabilities.
- Balance using regulatory and programmatic “sticks” to achieve some priorities without being overly burdensome.
- Educate on considerations for how to support provider CSC decision making rather than focus on allocation of scarce resources.
- Recognize that some “best practices” will never work for certain HCCs due to various circumstances outside the control of those HCCs.
- Remove requirements that do not benefit HCCs or the healthcare system.

Appendix F: Virtual Key Informant Work Session

The U.S. Department of Health and Human Services (HHS) Office of the Assistant Secretary for Preparedness and Response (ASPR) Technical Resources, Assistance Center, and Information Exchange (TRACIE) hosted a virtual key informant work session to refine recommendations and considerations for the Hospital Preparedness Program (HPP) about the functions and responsibilities of healthcare coalitions (HCCs) in the future.

The November 8, 2021, work session was the culminating event of ASPR TRACIE's multi-phased HCC Engagement in COVID-19 Assessment project. The agenda built on observations from earlier phases of the project. The work session was intended to inform three overarching questions:

1. How should HCCs be structured to effectively lead regional healthcare system preparedness and response efforts?
2. What are the primary roles that HCCs should perform?
3. What roles do HCCs play in certain special scenarios?

Most of the three-hour work session's time was dedicated to a facilitated discussion to draw out participants' perspectives on these questions based on their lessons learned and experiences with COVID-19 and other emergencies.

ASPR TRACIE invited 16 participants to the work session. Participants included a mix of individuals who also participated in earlier phases of the project, members of the ASPR TRACIE Subject Matter Expert Cadre with knowledge of HCCs or regional preparedness issues, and representatives from pilot sites of ASPR's Regional Disaster Health Response System (RDHRS). Prior to the work session, participants responded to a 13-question survey (Appendix F.1) intended to focus the discussion. ASPR TRACIE also invited eight observers from ASPR and the National Institutes of Health Library.

Based on the virtual key informant work session and pre-work session survey, ASPR TRACIE identified the following considerations:

1. **"Healthcare coalition" is an acceptable general label for entities coordinating regional healthcare preparedness and response activities, but most HCCs have found it useful to adopt more descriptive formal names.**

The term "healthcare coalition" has been in use for several years and is generally understood among those in the field. From a practical standpoint, ASPR should continue using this terminology when referring to the construct broadly and to distinguish HCCs from other regional efforts such as the RDHRS pilot. However, many HCCs have found the term too generic to convey to partners what an HCC is and does. They have added descriptive words such as "preparedness," "response," and "operations" to their names to better reflect their expected missions and focus. Flexibility in naming is important for HCCs to accurately communicate with members, partners, and the public about what they do.

2. **HCCs should be aligned with other existing coverage areas within a state or territory, when possible, but with additional considerations for geography and topography, population, state lines, and health system markets.**

Most HCCs find it beneficial to mirror the boundaries of their coverage area to other existing boundaries. They most commonly align with established healthcare referral patterns. Some use trauma or emergency medical services (EMS) regions to match where patients are typically transported within the area. Others match emergency management, homeland security, or public health regions to enable more effective coordination with those partners. Topographical features such as mountain ranges and waterways are also considered as these features may make it difficult or impossible to access a healthcare facility during an emergency even if it is geographically close, especially during natural disasters like floods, ice storms, or wildfires. HCCs in sparsely populated rural and frontier areas may cover a vast geography. Some HCCs that lack a tertiary hospital among their membership designate a "lead" hospital or use hub and spoke models to coordinate healthcare surge in the region.

HCCs often communicate and coordinate with coalitions in bordering areas, including across state lines, since many disasters extend beyond a single catchment area or require support from outside the region. Cross-state coordination can present some challenges during emergency operations, especially related to staffing issues such as licensure or differing personnel policies. ASPR RDRHS pilot sites may offer a solution to such challenges by providing consistency across a multi-state region. Regardless of their level of engagement in HCCs, healthcare facilities that are part of larger health systems often prefer to coordinate with other healthcare facilities within their enterprise first, particularly when issues like reimbursement for services come into play.

3. **Regardless of geographic composition, HCCs are ultimately accountable to their state or territorial government. While this is typically through the state health department, it should be acknowledged that not all state health departments have the focus, time, and expertise to properly support coalitions or help with medical response.**

Most HCCs are accountable to their state or territory through the health department from regulatory, policy, and fiscal standpoints. At the same time, they are accountable to meeting the needs of members. HCCs may be most effective when they leverage their members' knowledge of their healthcare capabilities, clinical expertise, and preparedness and response priorities to establish policies and coordinate operations that meet deliverables set by the state, which are often derived from deliverables required by funders such as ASPR.

4. **An independent entity may be best suited to manage an HCC, but hospitals should play a primary leadership role.**

ASPR requires HCCs to include four core members: hospitals, public health, emergency management, and EMS. Generally, HCCs believe it is important to continue inclusion of these four key groups. Many HCCs have found it useful to establish an independent and neutral entity, often in the form of a 501(c)(3) organization, to coordinate their efforts. These organizations have dedicated staff to coordinate and serve as the unifier for their HCC's membership. In most cases, staffing is limited, and

the organization must rely on support from the HCC's members to maintain operations. From a leadership perspective, hospitals play an essential role through their medical expertise, understanding of clinical coordination, and awareness of healthcare assets in an area. Many HCCs designate a lead hospital for their coverage area or select a hospital representative for a leadership role, such as their committee chair, to guide the HCC's efforts. In other areas, hospital associations have taken on the leadership of the HCC. Hospital associations already have buy-in from hospital leadership, tend to have closer ties to political leadership, and can be effective in communicating healthcare needs to political leaders and the public. However, they may not be as connected to non-hospital members or able to lead engagement of diverse partners. Depending on where they are located, the hazards in their communities, the populations they serve, and their available capabilities, HCCs include a broad membership beyond the four core member types. Most frequently, they include long-term care facilities, home health, and first responder agencies. Inclusivity is desired by most HCCs to better coordinate overall patient surge, but it can be difficult for HCCs to meet the expectations and sustain the engagement of large numbers of members, especially during an emergency like the pandemic when all members have unmet needs.

5. **HCCs rely on voluntary cooperation and have little authority. During a disaster response, most direction comes from a state or territorial governor or health department. However, the authority that is most compelling for healthcare is the Centers for Medicare & Medicaid Services (CMS).**

Generally, HCCs lack their own authority. They rely on voluntary compliance and cooperation among their membership. They may have boards or committees to direct their activities and are supported by coalition plans, partnership agreements, memoranda of understanding, or purchasing agreements, but they lack authority to require participation or enforce polices.

Most laws and regulations governing public health and medical issues exist at the state and territorial level and, therefore, HCCs derive most of their authority from their state, most frequently through requirements or duties set by the health department. During declared emergencies, additional authorities may be derived through the orders of governors or health officials. Beyond their states, HCCs find that CMS requirements provide the best drivers to engage their membership and achieve compliance.

HCCs identified multiple authorities they wish they had during the pandemic, including authorities to:

- Establish and operationalize a medical operations coordination cell (MOCC) or similar mechanism to load balance patients, monitor diversion status, and coordinate patient transfers and discharges.
- Require data reporting to inform response actions.
- Ensure consistency among response partners on resource allocation and logistics processes.
- Redirect funding and make purchasing decisions to address critical needs.

HCCs do not necessarily need to have direct authority, but they do need to be closely aligned to the entity that does have authority.

Another need that became apparent during the COVID-19 response was for states to recognize the existence of HCCs and empower them to maximize their capabilities. Some HCCs felt they were overlooked, duplicated, or forced to change their focus during the pandemic. Having a voice at the table to share "boots on the ground" information from their membership would enable the HCCs to contribute to a more cohesive and informed response throughout the state. The RDHRS may be able to improve alignment and coordination across multiple states.

6. **Sharing information to inform decisions is an appropriate HCC function, but HCCs cannot broker staffing for large responses or lead resource management activities. This responsibility needs to be elevated to the state or territorial level when an incident affects all members of the HCC and beyond.**

Information sharing is an essential role for HCCs. The collection and dissemination of information enables coalitions to establish situational awareness among their members, determine where support is needed, and inform decision-making by individual members, the HCC as a whole, and the state. Consistency in essential elements of information (EEI) collected, limiting data requests to those necessary to inform response actions, better information technology infrastructure and technical support, and adequate staffing to manage data contribute to effective HCC information sharing efforts.

HCCs also have a role to play in resource management, including managing any healthcare supply stockpiles established for their region, connecting those in need of resources to those who have supply, coordinating various equipment and supplies, and providing lists of potential vendors to members. Especially in the early months of the COVID-19 pandemic, HCCs were often the only avenue through which less-resourced members could access personal protective equipment (PPE), ventilators, and other supplies and equipment.

However, during the pandemic, many HCCs assumed an outsized role in managing the acquisition and allocation of staff and other scarce resources. Some had to establish and operate warehouses, transport supplies and equipment, and perform data analytics to inform decisions about supplemental staffing placement. Most have limited dedicated staff to take on these responsibilities, lack stockpiles or access to resources to meet requests, and do not have the expertise or data to assess who has and who needs resources. Inconsistent resource request processes, changing policies and guidance, and siloed distribution channels further added to the burden. These activities also put HCCs in a difficult position of competing for resources rather than working collaboratively to meet the healthcare needs in their communities. HCCs can most effectively contribute to large-scale response efforts by gathering and sharing information to support prioritization and decision-making by state leadership with the authority and resources to direct the response.

7. **HCCs or other sub-state regional entities can manage patient load balancing through a MOCC or similar mechanism during smaller, geographically-limited incidents, but states and territories must have the capability to scale up and possibly even expand to a multi-state region depending on the size of the disaster.**

Where medical operations coordination occurs is dependent on the type and scale of the incident. EMS dispatch and existing hospital transfer centers can handle patient load balancing and transport decisions during less complicated incidents. Mechanisms are needed at the state and sub-state regional levels when transfer centers do not exist and to coordinate larger and more complex incidents. HCCs are positioned to lead these efforts at the sub-state regional level, but they need to be supported by and coordinated with state level efforts. The RDHRS pilot shows promise to lead multi-state coordination when an incident exceeds the capabilities of a single state or extends across multiple states but needs better definition of its operational structure, authorities, and interface at the state and coalition level.

8. To perform MOCC functions, HCCs need plans, visibility, authority, buy in, and staffing/expertise.

While HCCs are suited to perform MOCC functions for their communities, they identified various needs to be effective. These include:

- Plans. MOCC operations need to be based on pre-written plans with clear roles and responsibilities and backed by agreements acknowledging the expected cooperation among participants.
- Visibility. Access to data on staffed bed availability, ideally pulled from electronic health records or other integrated data sources, is needed to provide visibility into near real-time status of where patients are located, which facilities are beyond capacity, and which facilities can accept additional patients.
- Authority. Those staffing the MOCC must be empowered and have the authority to make decisions about patient placement, transfer, and discharge.
- Buy in. Governmental leaders; hospital and long-term care facility executives; EMS, emergency management, and public health agencies; and healthcare associations must buy in to the MOCC concept and accept the decisions of MOCC staff.
- Staffing/expertise. MOCCs need adequate staffing to achieve their mission. This includes not only enough trained staff to maintain 24/7 operations during a response, but also staff with the medical expertise and knowledge of available healthcare assets necessary to make placement decisions.

HCCs also identified CMS's regulatory authority as a potentially effective incentive to enforce healthcare organization participation in MOCCs.

9. States and territories must lead the development of crisis standards of care (CSC) templates and frameworks embraced by all parties. HCCs can support CSC and coordination of regional policies by serving as a data hub for visibility into crisis conditions so decisions can be made at the state level.

As part of their readiness efforts, states need to develop CSC frameworks with input from all stakeholders. There should be a common understanding of what it means to operate along the conventional, contingency, and crisis care continuum. HCCs and individual healthcare facilities should also have their own frameworks that align with their state. During an emergency, HCCs work with their members to implement common policies and practices to mitigate the need to shift to crisis standards. HCCs also play an important role in providing their state with information – both quantitative data such

as bed availability and staffing shortages and qualitative data such as the effects on hospitals of the inability to discharge patients to long-term care – that enables decision-making and resource allocation to address crisis conditions. Often, political concerns prevented states from enacting their CSC plans and hospitals were reluctant to change their practices without state action.

10. HCCs can support brokering or allocation of scarce resources by clearly defining roles and responsibilities beforehand and providing visibility and common practices during an incident.

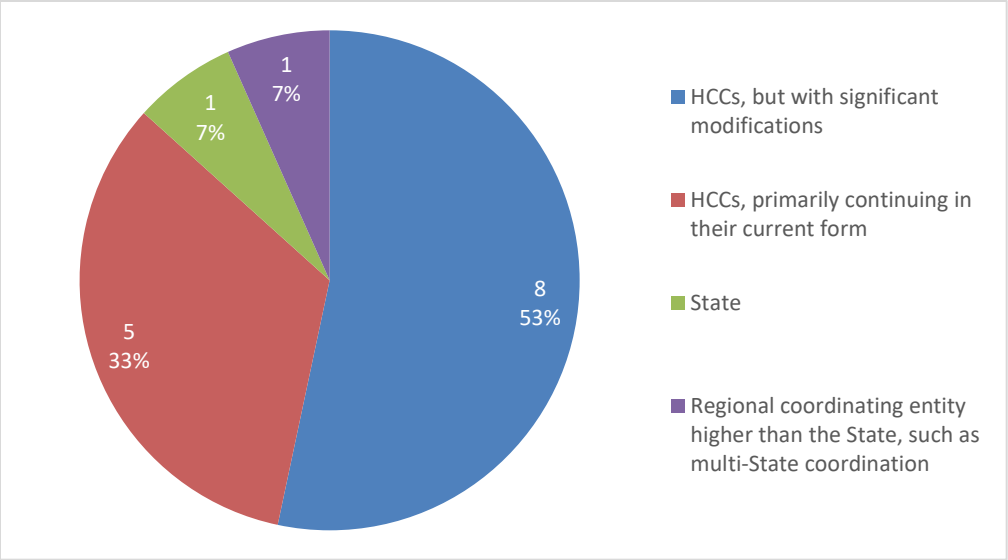
Most HCCs reported challenges among their members during various phases of the COVID-19 response in accessing and managing three types of resources: staff, PPE, and critical care resources, such as ventilators and extracorporeal membrane oxygenation (ECMO). With the exception of some limited stockpiles, HCCs had difficulty filling these member needs. Instead, they supported their members by convening them to network and share information, encouraging the adoption of common policies and practices, linking those in need of resources with potential suppliers, and providing TA on how to implement contingency measures. Having standardized and transparent request and allocation procedures and clearly defined roles and responsibilities ahead of time eased the burden and reduced confusion about what resources may be available and how to access them.

11. HCCs need consistency in expectations backed by sufficient staffing, authority, and funding to maximize their potential.

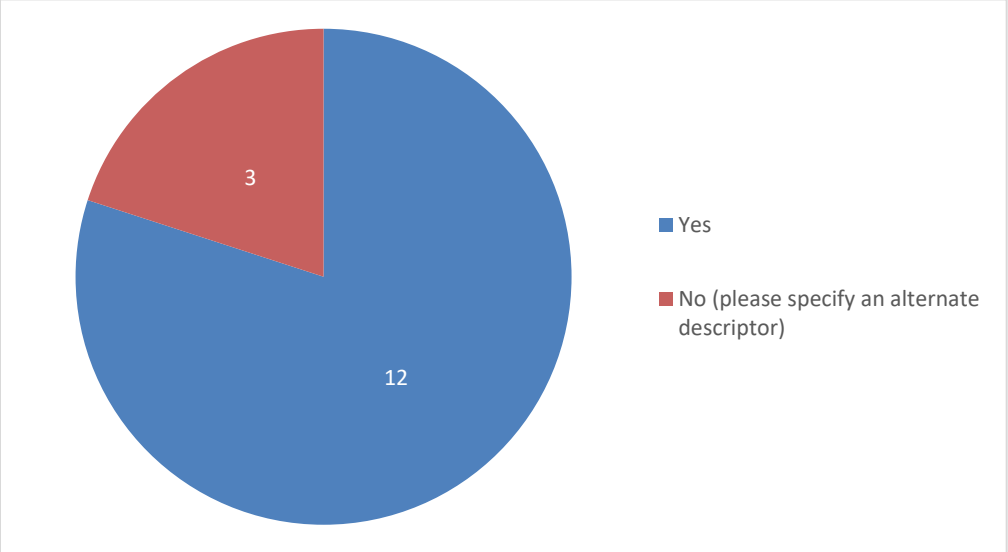
While flexibility is necessary to account for different HCC structures, healthcare capabilities, and populations served, HCCs also need consistency in what roles and responsibilities they are expected to meet. These expectations must be reasonable to achieve and sustain. Additional staffing is critical to manage the engagement of increasing numbers of HCC members, expanded response activities, increased administrative burdens, and continued training needs. HCCs are an essential building block in a systems approach to healthcare readiness. They need authorities – whether direct, delegated, or in partnership with others – to accomplish their expected mission. They also require funding to support increases in staffing and expanded roles and responsibilities. Ideally, HCCs would have multi-year funding and deliverables to enable flexibility in how they meet priorities and adjust to unmet needs.

Appendix F.1: Virtual Key Informant Work Session Participant Survey Results

1. Which entity should lead healthcare preparedness and response coordination? (N=15)[1]



2. Is "healthcare coalition" the descriptor that should be used going forward? (N=15)



Alternate descriptors (copied and pasted directly from surveys):

Healthcare Operations Coalition

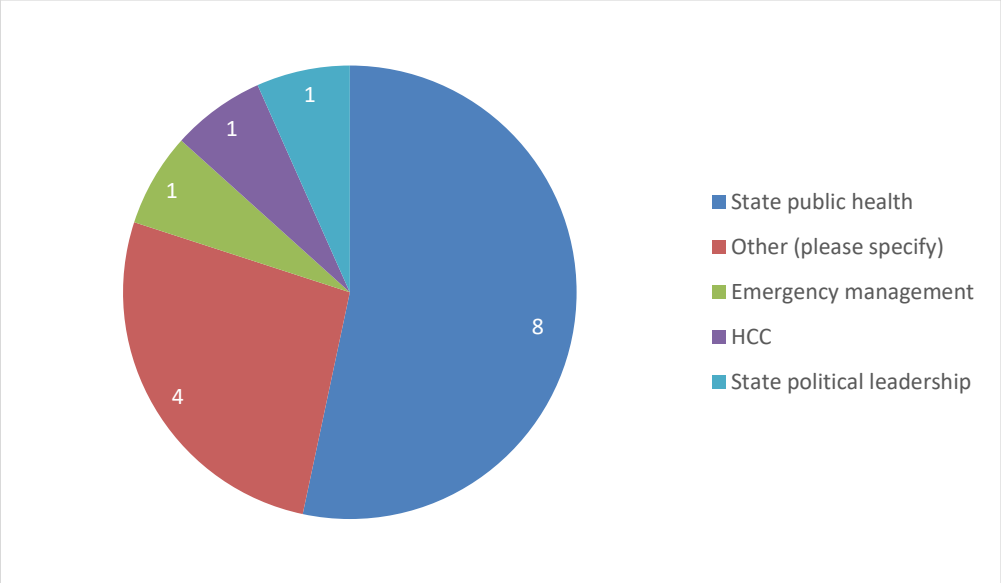
[1] While 16 individuals participated in the virtual key informant work session, two of them represented a single healthcare coalition and submitted a joint response to the pre-session survey.

possibly look at integrating emergency preparedness and response into the descriptor - healthcare is such a broad term and can cause confusion on what our focus/mission is without that specification
potentially add response to the title

3. What are examples of authorities HCCs have for functions they have been asked to manage and how are they derived? (N=15)

Daily reporting. At the HCC level there is no authority to enforce any policies or procedures. This is enforceable at the state level through license restrictions.
ED Syndromic Surveillance HICS Communications Healthcare Capacity and Capabilities HCC Disaster Equipment Inventory Frontline infectious Disease Identification and Response Hospital Decontamination Capability Healthcare Emergency Evacuation
HCCs in [our state] have no authority at all, but are asked to coordinate the entire response. Everything is derived from the ASPR grant deliverables.
Health Dept as lead has regulatory leverage to bring to issues and financial control of ASPR dollars
In our case coalitions have a lot of responsibilities but statutorily defined authority. Some of our responsibilities are outlined in contract with DOH. Some nonprofit coalitions may include specific responsibilities in their charter (like providing shared services, managing inventory of particular resources) States may more clearly designate (legislatively or by tying a coalition to an existing entity that has preexisting authorities) a healthcare response coordination role, managing EMS assets role, directing patient destination, etc.
Information Sharing Resource Management Patient Coordination/Movement All of the authority is voluntary and derived from our Partnership Agreement/MOU, there is no enforcement mechanism or statutory authority.
Information Sharing, Resource Management, Purchasing, Coordination in conjunction with ESF8 Partners and State Public Health Preparedness Office of Emergency Management.
Our HCC does not have any official authority, but we do have entities that support core functions and have authority within the HCC structure: -Regional Governance Board -State Healthcare Coalition Council
Response Plans; Unified Command; Stockpiles; Planning and Mitigation Response; Support FCC's
Situational Awareness, Patient Tracking, Liaison to the State, pharmaceutical allocations
They only have delegated authorities from their members
This is an area that is lacking. Our coalition has little direction from the state level and has been finding our own place in response coordination.
Very few HCCs have true authorities.
We have no authority, only voluntary commitment and decisions as a region to work through the HCC.
Within our HCC and state, we have no authority, everything is voluntary compliance and participation. This obviously leads to challenges for those who don't participate.

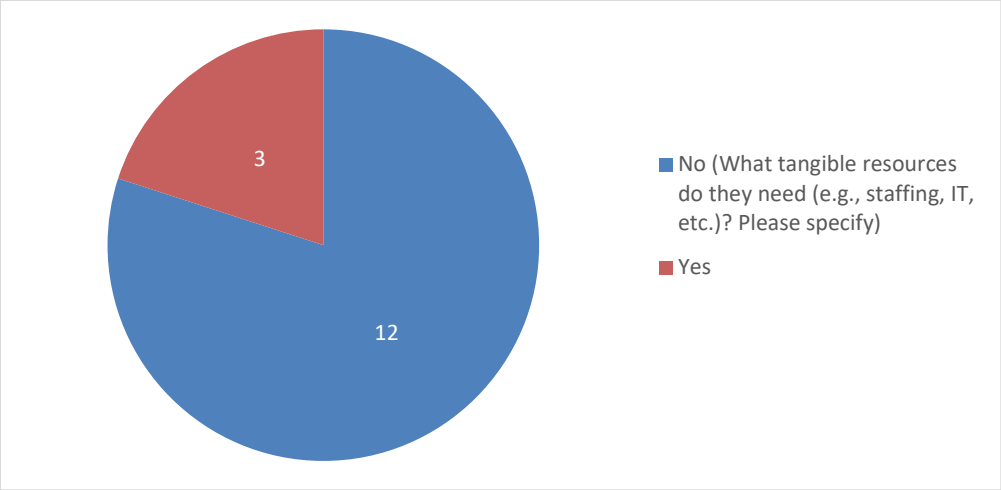
4. What entity has the authorities/levers to require response functions at the regional level? (N=15)



Other:

all of the above, minus HCC
For the private healthcare sector, no one has this authority. [Our state] is a home rule state so any public health authority lies within local jurisdictions
Our Local Health Department Regional Administrative Director has the statutory authority, but HCO Leadership operates under their own Incident Command.
RDHRS

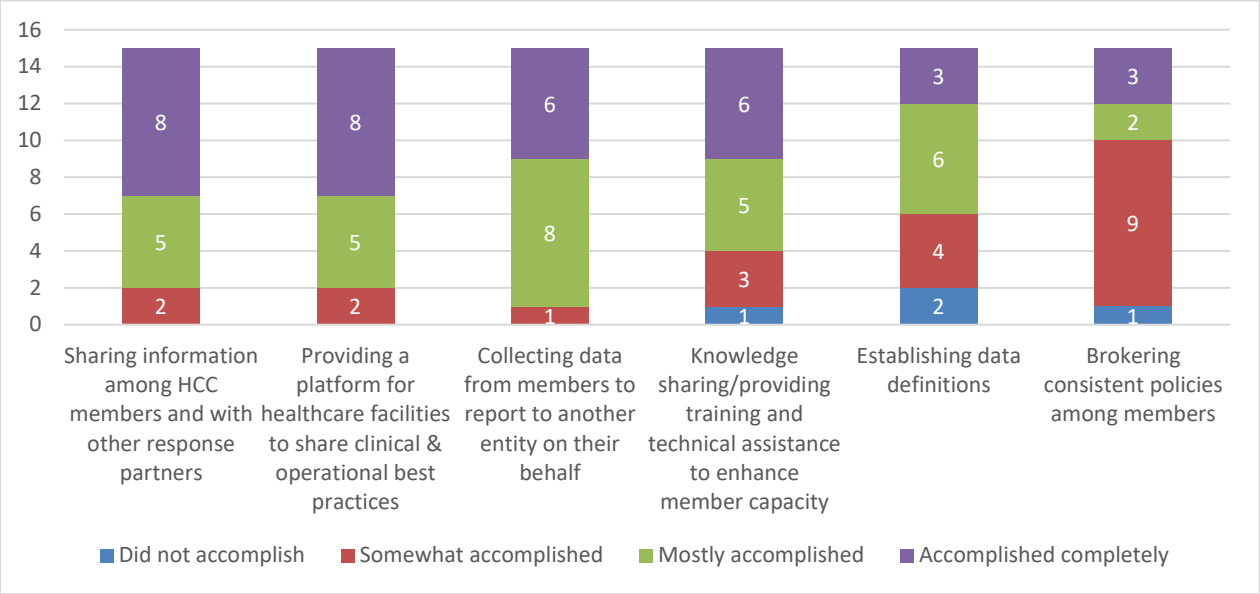
5. Do HCCs have the resources they need to do the work expected of them? (N=15)



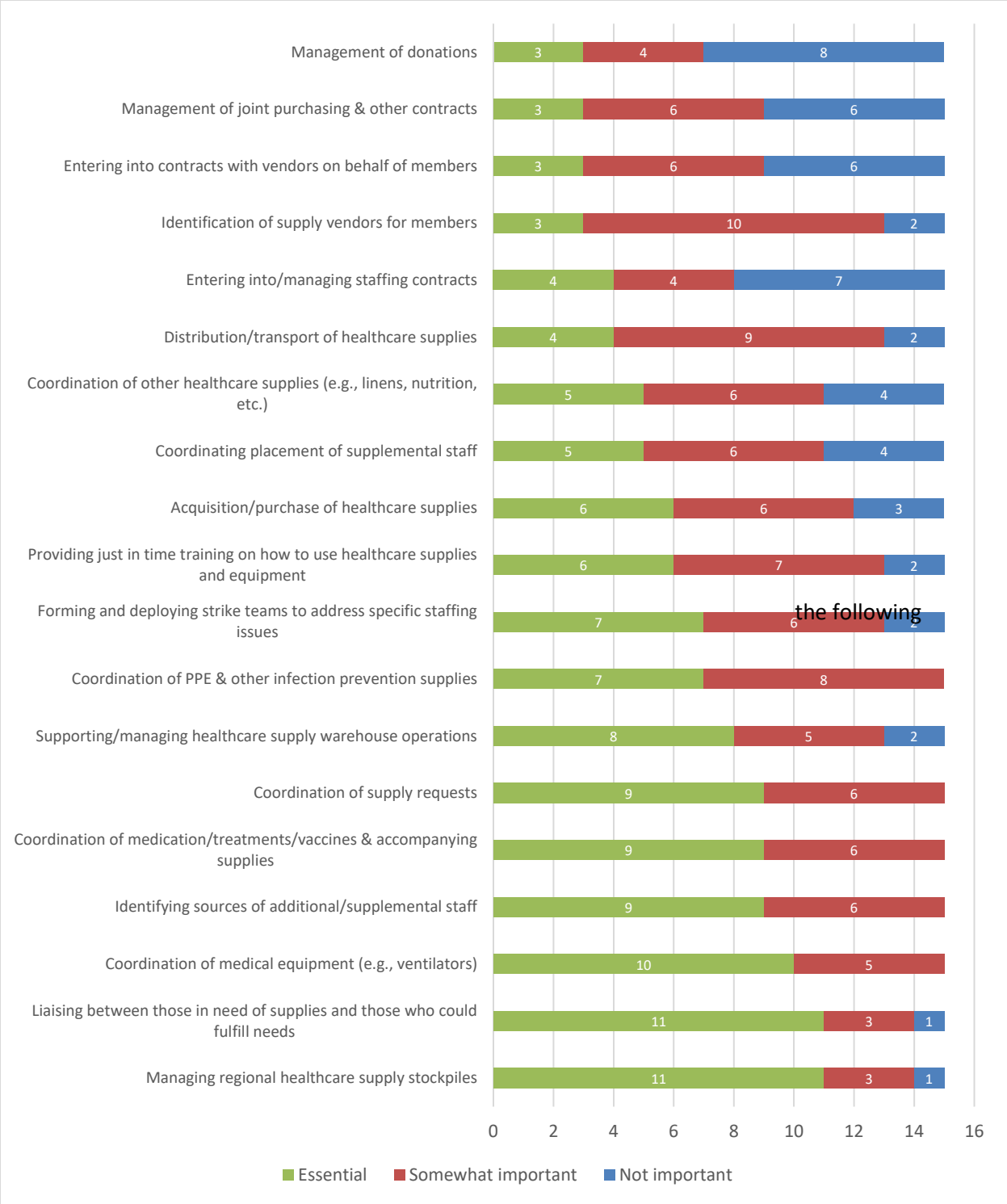
Tangible resources needed:

Additional Funding for Staffing
Additional staff always has the ability to expand capacity and capabilities. Our coalition prioritizes staff over "stuff" due to sustainability and investment in individuals. We have the IT resources necessary - no concerns there.
Additional staff. If there will be an expected preparedness and response function, there should be at least 2.0 FTE for each HCC.
funding for staffing and response coordinators
Funding is limited and based upon risk and population. It's a flawed strategy. Better staffing and more authority to lead, plan, mitigate, respond, and recover from all hazards events
More staffing and need a better IT infrastructure
Our funding allows us to meet the deliverables assigned, but leaves nothing extra for response activities. Our whole statewide staff is only 5 people.
Staff, Additional Funding, State and Federal level support and authorization. Integration into the rest of the response system. HCCs should have an ability to represent and advocate at the Response table as with other first response agencies integrated into the planning and response processes. Too often we are lost in the Public Health venue. Our systems have to have the ability to support operations, this means Administrative and Information Technology staff dedicated to the coalitions need. Access to vetted and affordable staffing agencies for rural coalitions.
Staffing
staffing with appropriate expertise, some IT or other equipment
staffing, IT, education to political and state planners.
They require operational authority, larger and more expert staff in healthcare operations, and IT supports, especially for capacity management

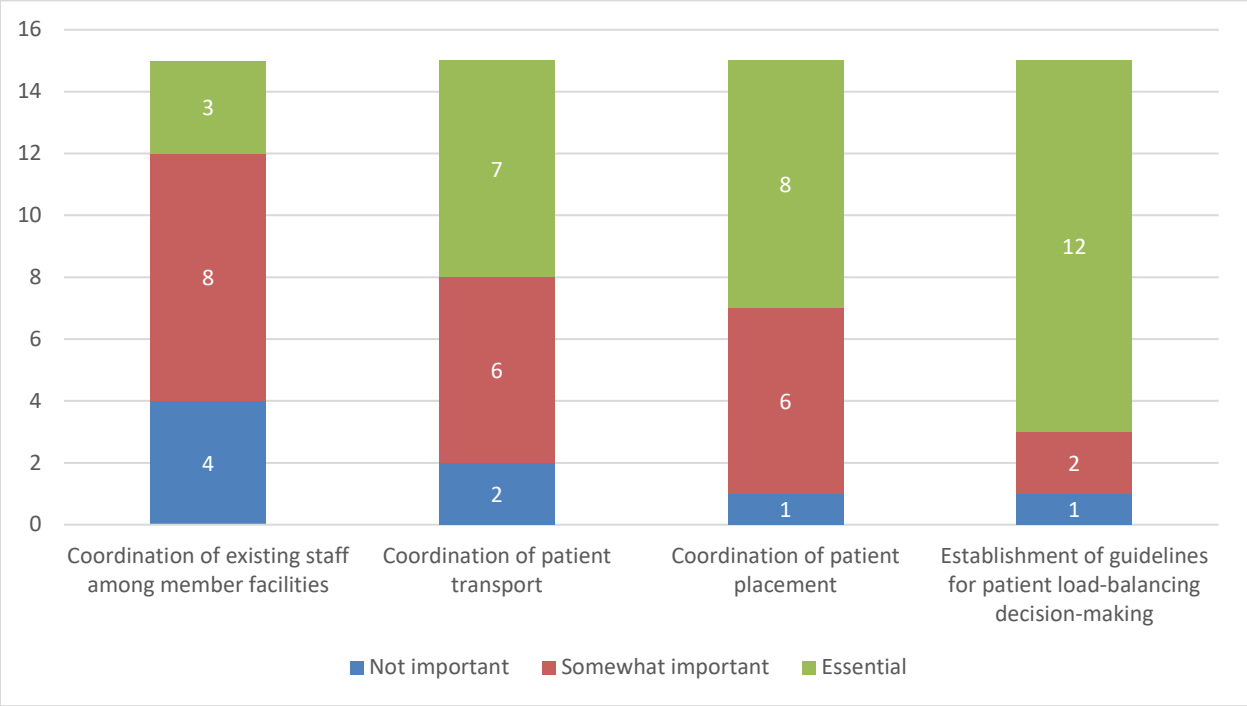
6. Do you think HCCs accomplished what you expected them to in these functional areas during the COVID-19 response? (N=15)



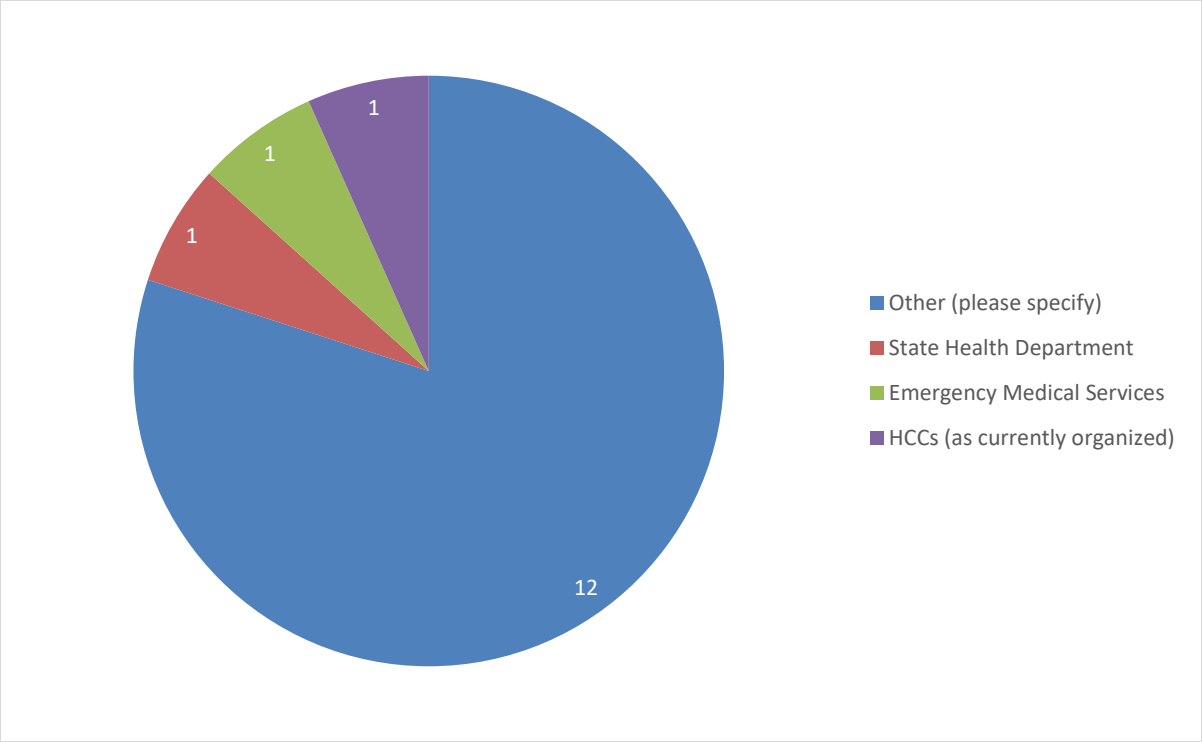
7. Based on your HCC response experience, how important is a regional entity to functions? (N=15)



8. How important is a regional entity to the following functions during a patient surge? (N=15)



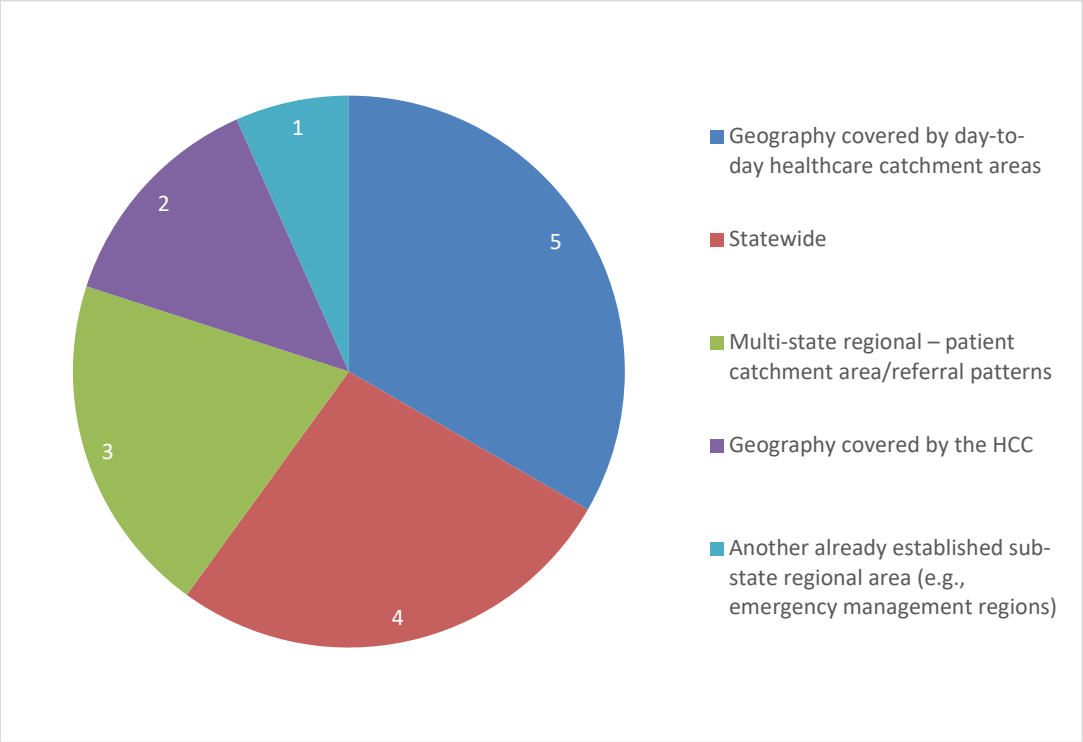
9. What entity is best suited to coordinate patient load balancing, including triage, transfer/transportation, and overall patient transfer regulation? (N=15)



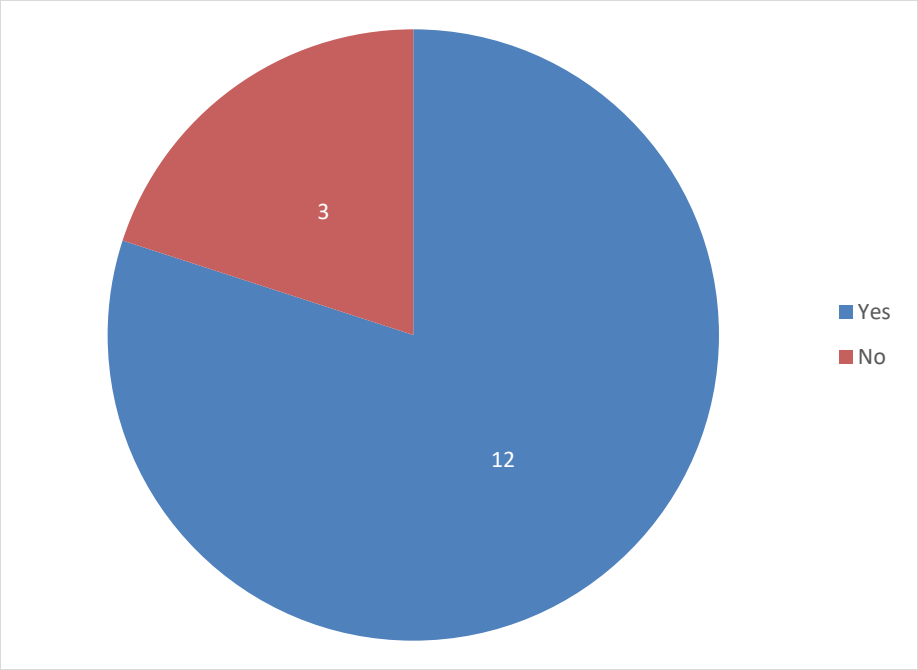
Other:

A well-defined Medical Emergency Operations Center (Healthcare Centric)
combination of state health w/ support of coalitions
HCCs should manage this for events that have an impact that is limited to regional partners, but should be state health department or their designee for an event like COVID that has an impact across all healthcare providers.
Healthcare systems primarily and then HCC
Hospital Association
Hospital Transfer Centers along with EMS Liaisons.
New, better resourced regional entities with healthcare operational expertise
Our six Critical Access Hospitals in our four county HCC manage this just fine without over-reach from state or federal entities.
Surge Operations Call Center staffed by large health systems in the region
The coalition did this, but there has to be a better way
The HCC could play a role, but with modifications
This really depends on the type of event and the size/scope. EMS on the triage and transport. HCC can and has assisted with load balancing (later in the incident) and overall patient transfer regulation has fallen to hospitals with support from HCC.

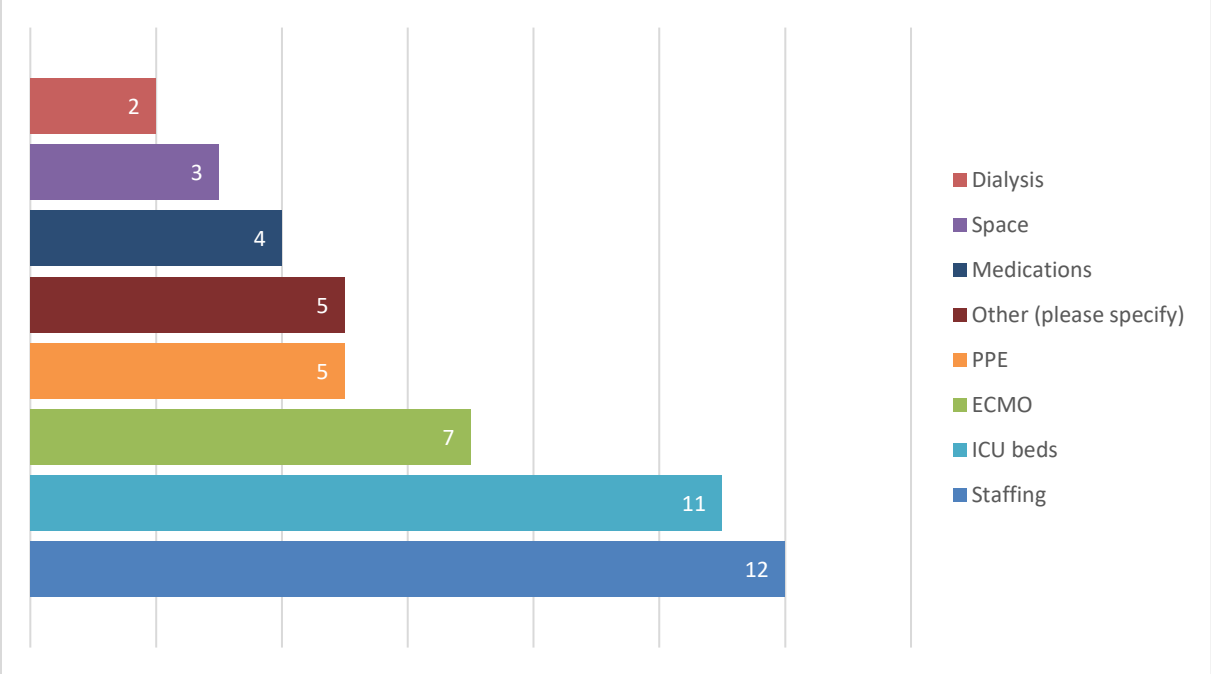
10. What geographic areas should be covered by patient load balancing systems (e.g., medical operations coordination cell)? (N=15)



11. Do you believe crisis conditions existed that placed patients at substantial risk? (N=15)



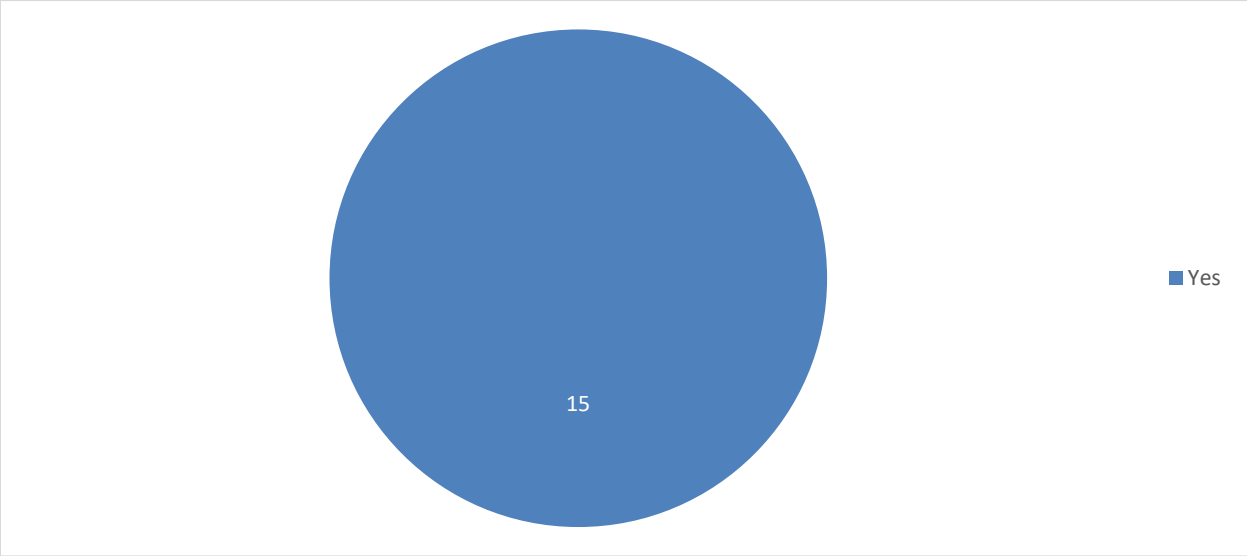
In what domains? (N=12)



Other:

COVID Has now impacted the entire supply chain in many ways (supplies, equipment)
lack of ability to transfer critical/specialty patients to a higher level of care due to referral facilities being too full. Patients are being boarded in the ED and their conditions are being managed the best way medical and nursing staff can given their skill set.
Oxygen Sources/Saline
Specialty Services, IRT, Acute In-patient dialysis, Neuro, GI, Equipment necessary to sustain ventilated patients i.e., Ventilators, and supplies to support
Surge line was covid specific patients resulting in other urgent patients waiting hours and days in ED's while staff tried to find a bed.

12. Do HCCs have a role in prioritizing resource requests/allocating resources in scarce resource situations? (N=15)



13. In what ways can HCCs ensure consistency of care during crisis conditions (e.g., convening experts to develop best practices, system capacity monitoring)? (N=12)

best practices and regional decision making as well as overall capacity monitoring
Clinical leadership providing best practice webinars to the HCC were very beneficial. Our HCC is both urban and rural, with many small critical access hospitals that were tasked to admit and care for very critical patients that they normally would not care for. The HCC assisted with load balancing when we were able to do so, by conducting daily surge calls on which hospitals would agree to accept lateral transfers from within a multi-region Zone.
conduct regular situational awareness meetings with healthcare partners to monitor items that enhanced surveillance is not capturing. Providing "one stop" shopping for needed supplies/staffing

Conference calls/Zoom meetings Sharing of data dashboards
Convening appropriate SMEs to guide decision making and operations, capacity monitoring, communications
Convening Experts; engaging with Medical Emergency Operations Centers, taking ownership of coordination within their coalition region and reporting up through the MEOC, the MEOC reporting up to region, etc. Need a fluid system of systems to work at coalition level, state level, regional level, to do load balancing of patients and supplies, equipment, etc. Information Sharing is key to transparency and action on data. Workforce issues are significant and impacting now day to day patient care, crisis standards, regardless of COVID. No resolution seen yet for workforce issues.
convening stakeholders and SMEs to identify and develop best practices; situational awareness; monitoring impacts, convening stakeholders to resolve issues and coordinate
CSOC committee, having a document for guidance
Establishing base guidance and standards, providing updates from a central panel of clinicians, providing equal access for consultations to clinicians. Many of these would not be accepted without a vested interest of the hospital clinical staff, there lies the difficulty. Due to the disparity in rural hospitals, this can be a challenge for even the best HCC's.
Having solid statewide messaging of expectations
Provision of evidence-based uniform guidance.
situational awareness across state
State Crisis Standards of Care Plans.
system capacity monitoring/data management, information sharing and situational awareness, facilitation of SME workgroups/coordination and liaising with facilities, liaising and advocating for facilities up to state, supporting regional coordination efforts, providing vetted information/guidance
This is called "Crisis Standards of Care" and is developed at the state level. Our five HCC Coordinators share the information with our coalition members. Facilities determine their own need to implement Crisis Standards of Care and notify the state.