Foundation *for* Healthy Communities

# 2019 Novel Coronavirus: Extended Response

## After Action Report

Granite State Health Care Coalition

October 27, 2021

# Forward

Many months after the first case of a novel coronavirus, now known as SARS-CoV-2, health care, public health, emergency medical services, and emergency management partners continue to battle increasing community transmission and hospitalizations. Meanwhile, the world continues to race towards the development of vaccines to contain and end the COVID-19 pandemic.

In September 2020, the Centers for Disease Control and Prevention (CDC) notified public health officials in all 50 states and several large cities to prepare to distribute coronavirus vaccines to health care workers and other high-risk individuals starting as early as October or early November 2020. The two vaccines presumed to become available are the mRNA vaccines developed by Pfizer BioNTech and Moderna. The first allocation of 12,675 doses of Pfizer vaccine arrives in New Hampshire, and on December 16, 2020, the first doses are administered to frontline health care workers at hospitals across the state in the midst of the largest wave of COVID-19 cases NH has seen to date.

## Report Scope

This Report does not evaluate response capabilities or functions in sectors outside of healthcare and public health, except for when response activities directly impacted Granite State Health Care Coalition (GSHCC) members and partners. The After Action Report addresses the activities and key decisions made throughout the extended response phase of the COVID-19 pandemic response in the State of New Hampshire from October 2020 through June 30, 2021. Broadly, this time period accounts for the beginning of mass vaccination planning through the end of the NH Declared State of Emergency. This Report serves as a continuance of the prior evaluation effort documented in the 2019 Novel Coronavirus Response Mid-Event After Action Report (AAR) that analyzed initial response through September 2020.

GSHCC membership and partners represent a broad spectrum of agencies and facilities across the healthcare continuum. At a minimum, the GSHCC membership includes representation from four core disciplines: hospitals, public health, emergency medical services (EMS), and emergency management. Other members and partners represent a wide variety of healthcare and public health organizations.

## Understanding and Use of Report Findings

Each GSHCC member or partner differs in size, capabilities, and responsibilities. Therefore, not all findings or recommendations contained within the Report will or should apply universally. Instead, members and partners are encouraged to use the information and recommendations described in this Report to inform or assist with individualized improvement planning efforts. This Report also calls out systemwide strengths and areas for improvement.

The after-action analysis and review of response focuses on identifying and evaluating response plans, policies, procedures, and systems. This After Action Report seeks to assess multiple, diverse agencies' collective response activities to a single, long-term, complex incident. This Report uses observations from multiple members and partners to inform high-level, systemwide, or strategic findings that represent and respect the diversity of member and partner capabilities. Observations identified throughout the analysis component of the Report represent the response experiences of numerous members and partners. Identified strengths and areas for improvement reflect a collective understanding or impression of response capabilities.

This Report does not offer specific evaluations of any single agency or organization's performance. Instead, relevant information contained within this Report should inform ongoing internal assessments and evaluations that address specific capabilities and capability targets. Agency or organizational plans, policies, procedures, and systems that impact other stakeholders may be appropriate for consideration.

Any recommendations offered in response to areas for improvement are not prescriptive but offer individual agencies and organizations options to take steps tailored to their organization to achieve systemic changes. Some recommendations may be short-term in nature, addressing ongoing COVID-19 response challenges in extended response and forward through recovery. In contrast, others may address long-term initiatives to better prepare New Hampshire's healthcare system to prepare for and respond to future pandemics and other emergencies as members and partners can rededicate time to preparedness and comprehensive systemic changes.

An Improvement Plan is included within the Report to capture recommended corrective actions that address areas for improvement. Some areas for improvement may require multiple corrective actions, agencies, and coordination to implement. Some corrective actions may also address multiple areas for improvement. The corrective actions included in the Improvement Plan are intended as recommendations for continued improvement at a system level, incorporating the knowledge, experience, and capabilities of partners and members from across the healthcare and public health sectors. Identified corrective actions should be considered as suggestions for enhancing future planning, response, and recovery efforts.

This After Action Report is a reference that attempts to provide a body of knowledge pertaining to the extended response summarized as Findings and Observations from GSHCC members and partners developed through surveys and interviews. The purpose of this Report is to assist members and partners in assessing their response activities and impacts of critical decisions to make appropriate modifications to plans, policies, procedures, or systems for continued and future responses.

Continued evaluation and assessment of the healthcare response to the COVID-19 pandemic in New Hampshire will continue through the event's Recovery Phase. However, this Report contributes to the Granite State Health Care Coalition's effort to support members and partners in improving emergency preparedness and response capabilities statewide.

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# Executive Summary

## Event Prologue

Throughout 2020 and 2021, health care, public health, emergency medical services, and emergency management agencies have continued to develop and implement strategies to control and mitigate the impacts of COVID-19. While some partners began to see a much needed reprieve, planning for subsequent surges of COVID-19 infections and the administration of vaccines became the focus of partners statewide. At the writing of this Report, partners and members are still fighting to protect the public's health, more than 18 months into the pandemic.

The purpose of the 2019 Novel Coronavirus: Extended Response After Action Report is to:

1. capture and share the response experiences of GSHCC members and partners;
2. offer an updated analysis of response from October 2020 through June 2021; and
3. provide recommendations to enhance current and future planning efforts.

It is important to note that there are variances in every GSHCC member and partner organization's capabilities and resources. Not all recommendations contained within this Report will apply to every organization. The GSHCC will make the Report and Executive Summary available to members and partners.

To provide context to the response, the Event Overview illustrates several major decisions and key events that shaped response in New Hampshire. It is presented as a summary to provide context for the Report findings and is not meant to be a comprehensive list of all event activities. Appendix C- Detailed Event Timeline outlines a more comprehensive timeline with additional detail and context.

## Background

The scope and challenges of the COVID-19 response continue to require the opportunity to pause and reflect in an effort to understand further why and how response activities were successful or require improvement. The goal of this interim report is to identify opportunities to enhance subsequent COVID-19 response activities and inform future preparedness and response efforts. This Report is an artifact of response that observes the successes and barriers experienced throughout the past year of response. This Report serves as a tool for members and partners to benefit from shared experiences and lessons learned along the way.

An initiative of the Foundation for Healthy Communities, the Granite State Health Care Coalition has led the development of this Report. The State of New Hampshire Department of Health and Human Services (NH DHHS), under contract by the United States Department of Health and Human Services (HHS), financed this Report's development. The After Action Review has been conducted in partnership with and support from the New Hampshire Department of Health and Human Services, Division of Public Health Services, Bureau of Emergency Preparedness, Response, and Recovery in accordance with guidance provided by the United States Department of Health and Human Services (HHS), Assistant Secretary for Preparedness and Response (ASPR), Hospital Preparedness Program (HPP) and the United States Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), Homeland Security Exercise and Evaluation Program (HSEEP) standards.

This Report provides a qualitative and quantitative account of response perceptions and experiences and offers an analysis of response capabilities. By design, the Report identifies strengths and areas for improvement, provides an analysis of member and partner experiences, and proposes recommendations for continued improvement, focusing on GSHCC members and partners' collective response. This Report should complement subsequent After Action Reports for COVID-19 response in the State of New Hampshire.

## Methodology

The GSHCC team lead the review process and composition of this Report. The GSHCC team collected data and feedback from various sources using multiple methods. Each subsequent activity aimed to gather additional detail on emerging themes and shared experiences while considering strengths and areas for improvement identified through the last year of response.

### GSHCC COVID-19 AAR Online Questionnaire
The questionnaire included nearly 100 questions organized by HPP-PHEP Preparedness Domain that characterized the participant's direct involvement in the COVID-19 response, including specific questions regarding vaccination operations and vulnerable populations. The questionnaire included open-ended responses, rating scales, and multiple-choice questions.

### Key Informant or Stakeholder Interviews
Members of the GSHCC team conducted one-on-one interviews with select individuals that played a vital role in the COVID-19 response. Interviewees represented hospitals, public health, EMS, emergency management, and other healthcare and public health stakeholders and also included perspectives from state, regional, and local jurisdictions. The one-hour interviews conducted in a conversational format included specific talking points and inquiries used to focus the discussion. These talking points were informed by themes identified in the GSHCC COVID-19 AAR Online Questionnaire. The review team assured participants their response would not be subject to attribution to support a candid dialogue.

The GSHCC team also reviewed open-source information to develop a common picture of response throughout New Hampshire. These sources include:

- NH DHHS Press Releases,
- NH DHHS Health Alert Network (HAN) Messages,
- NH Governor-directed Emergency Orders,
- NH State Emergency Operations Center (SEOC) Situation Reports, and
- Other Open-Source Reports and References.

On October 13, 2021, the GSHCC team facilitated an After Action Meeting with partners and stakeholders to review and validate the Report's observations. Additionally, the participants discussed noted areas for improvement and developed strategies to improve response efforts moving forward.

## Organization of Report

The findings in the Report address the "Six Domains of Preparedness" adopted and modified by the GSHCC. Domains include Community Resilience, Incident Management, Information Management, Surge

Management, and Countermeasures and Mitigation.[1] Vaccination Operations is highlighted outside of these domains to capture the multiple intricacies involved in planning for, conducting, and demobilizing mass vaccination efforts. Strengths and areas for improvement are presented by Public Health Emergency Preparedness (PHEP) capability, covering Medical Materiel Management and Distribution, Vaccine Administration, and Volunteer Management. The Biosurveillance domain is not included in the scope of this evaluation.

Successes and areas for improvement may not be universally experienced across every sector. For some, a listed success was experienced as an area for improvement. Key findings are associated with a domain based on a root-cause analysis of participant observations and experiences. Additional analysis of identified strengths and areas for improvement with accompanying observation statements and narrative provides a further context within each key finding statement.

The Report also contains several appendices to provide additional references and supporting data.

Appendix A - Abbreviations and Acronyms
Appendix B - Participant Snapshot
Appendix C - Detailed Event Timeline
Appendix D - Participant Feedback Summary
Appendix E - References
Appendix F - After Action Meeting Input

## Event Update

Throughout **August** and **September 2020**, NH DHHS and healthcare partners across the state began the process of transitioning from community-based testing sites operated by the New Hampshire Army & Air National Guard to testing sites at hospitals, pharmacies, and urgent care centers.

In September 2020, planning for fixed vaccination sites statewide was underway with state partners and the New Hampshire Army & Air National Guard leading the charge. State testing sites continued to perform testing for the public. In **December 2020**, vaccinations were authorized in New Hampshire for persons over age 65, first responders, healthcare workers, and eventually other essential workers. By late winter 2021, mass vaccinations began for the general public in a phased approach by age. By **February 2022**, COVID-19 variants began to appear in NH.

In early spring, vaccination allocations continued to slowly increase, allowing the state to move to subsequent tiers of eligibility. Multiple mass vaccination sites (fixed sites) were mobilized to vaccinate thousands of NH residents. Regional Public Health Networks (RPHNs), hospitals, and other providers began to administer vaccine to some of those most vulnerable within the state. In **early April 2021**, state distribution of Personal Protective Equipment (PPE) to healthcare partners had ceased with stabilizing supply chains and the temporary respite or quarantine housing program for healthcare and first responders was terminated. New Hampshire opened vaccine eligibility to anyone aged 16 and above  by **April 2, 2021.**

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[1]Centers for Disease Control and Prevention. (2020). HPP-PHEP Preparedness Domains.
https://www.cdc.gov/cpr/whatwedo/phep.htm

By **late April**, the CDC updated guidance that relaxed recommendations for mask wearing, permitting anyone who is fully vaccinated to remove masks outside, other than in certain crowd settings. On **April 16th**, Governor Sununu allowed the NH Mask Mandate to expire.

By **Memorial Day 2021**, all individuals over the age of 12 interested in receiving vaccine were able to do so. State fixed sites were in the process of planning for demobilization, and programs supporting various population groups were asked to think about demobilization or how to sustain efforts.

On **June 7, 2021**, the NH State of Emergency concluded. The State Emergency Operations Center (SEOC) began demobilizing, and staff began to transition programs or initiatives into normal workflows. Over 500 equity clinics were completed from **February 4**th through June 19th. The homebound vaccination program ended by **June 30th**. As of **June 30, 2021**, the NH SEOC and Joint Information Center (JIC) were closed, leaving the NH COVID Call Center operated by 2-1-1 to remain open.

## Summary of Notable Successes and Areas for Improvement

### Notable Successes

The COVID-19 pandemic resulted in an unprecedented response effort by hospitals, healthcare, public health, EMS, and emergency management. In general, inter-agency collaboration contributed to an integrated healthcare system response. This collaboration must continue to sustain mitigation efforts and preserve partners' and members' ability to maintain essential healthcare services.

The review team identified the following examples that represent notable successes throughout the healthcare system:

- Locally forged relationships have been successfully leveraged to fill gaps in healthcare and public health infrastructures.
- The use of professional associations and other industry leaders has proven to be an effective and necessary mechanism for information sharing and operational coordination.
- Partners and members exhibited creative problem solving and out-of-the-box thinking to stabilize healthcare delivery in conjunction with shifting resources and regulations.

### Areas for Improvement

Initial response to the COVID-19 pandemic also required GSHCC members and partners to implement plans and supporting procedures during a demanding and resource-intensive event. There are several key opportunities for improvement (not all-inclusive) that may improve future response if addressed.

- The ineffective implementation of core principles outlined within the National Incident Management System (NIMS), including concepts of chain of command, Joint Information Systems (JIS), and unity of command challenged the ability of partners to coordinate a timely and efficient response.
- A general lack of inclusion of appropriate stakeholders in strategy and operational planning efforts created significant challenges for partners between jurisdictions.
- Local public health infrastructure lacks systems, staffing, resources, and funding that could support ongoing COVID-19 response activities that include, but are not limited to, vaccination operations.

- Partners have struggled to implement systems to monitor responder safety and health, identify needs, and provide services to support responder mental and behavioral health.

# Key Findings

Findings presented in this section are organized by "Six HPP-PHEP Domains of Preparedness" adopted and modified by the GSHCC (Community Resilience "Preparedness," Incident Management, Information Management, Surge Management, and Countermeasures and Mitigation). Within each domain are key findings with strengths, areas for improvement, and recommended activities to strengthen additional healthcare response. Aggregate data from survey responses, additional narrative from survey responses, and stakeholder interviews support the identified strengths and areas for improvement.

## Community Resilience

"Community resilience" is the ability of a community, through public health agencies and health care coalitions (HCCs), to develop, maintain, and use collaborative relationships among government, private health care organizations, and community organizations to develop and use shared plans for responding to and recovering from disasters and emergencies. Capturing preparedness efforts prior to an emergency or disaster response, community resilience recognizes the benefits of ongoing preparedness planning and developing the relationships, planning, training, exercising, and systems that enable a whole-of-community response.

### Strengths

1.  **Pre-existing community partnerships contributed to a more efficient and collaborative response effort at the local level**.

    The GSHCC COVID-19 After Action Review Survey: Phase 2 indicated that the vast majority of partners (83.9%) successfully engaged internal and external partners throughout the duration of response. Community partners stepped up to provide essential supplies and PPE needed to maintain essential operations. Deeply rooted relationships with professional associations, affiliated agencies, and public safety were essential to communications and information sharing as well as implementing various operations in the field.

    Partnering agencies were able to work together collaboratively to ensure the residents and visitors of New Hampshire have access to essential health care and public health services. This has contributed to ongoing response success throughout COVID-19 in terms of sharing resources and working with a true unity of effort towards a shared operational goal. Rural areas have noted having fewer resources has positively encouraged collaboration and coordination in pre-disaster preparedness efforts. More urban areas have noted having an established infrastructure, such as a local health department or long-standing healthcare emergency preparedness peer group has provided a solid platform for ongoing response planning and implementing response strategies.

2.  **Prior collaboration with state public health, ESF-8, professional associations, the GSHCC, and emergency management contributed to a smoother exchange of information and decision making.**

    Relationships and connections formed between state and local agencies in steady-state provided utility to agencies reaching out for additional assistance during response. Participants in this review process indicated that despite not always getting the exact point of contact needed, they were able to establish connections with operational personnel to access needed information or

assets. "Entry points" into more complicated organizational structures via professional associations, the health care coalition, and prior contacts eliminated guess work on behalf of inquiring agencies.

## Areas for Improvement

The following areas for improvement were identified through multiple survey responses and stakeholder interviews. Not all areas for improvement will apply to every organization, and individual experiences may differ. Collectively, the identified areas for improvement will provide a high-level overview of where additional effort may lead to more well-developed response capabilities.

1. **The duration of this response has far surpassed assumptions made in existing emergency plans.**

   The COVID-19 pandemic response has challenged members and partners in new or different ways. The duration of this event has challenged assumptions related to staffing, supply chain, how to manage an incident within the context of multiple periods or "waves." The extended duration of response has complicated response strategy or contributed to existing barriers.

   *Recommendations:*
   - Continue to encourage members and partners to revise plans to include considerations for long-term response.
   - Encourage members to include planning assumptions of reduced or unavailable mutual-aid assistance.
   - Provide resources to members and partners to assist with continuity planning.
   - Support the development of new relationships that enhance response capabilities.
   - Support and provide assistance as appropriate to members and partners in updating plans in a collaborative effort.
   - Develop or disseminate templates for relevant plans, policies, or procedures that have been created throughout COVID-19 response.
   - Continue to provide opportunities for collaboration with Regional Public Health Networks to build and sustain relationships forged through response.
   - Encourage collaboration with higher education to support and promote clinical workforce pathways.

2. **Partners lacked sufficient equipment and supplies to address the needs specific to a pandemic response.**

   Over time, many agencies have adopted "just-in-time" or "on-demand" ordering in an effort to reduce needed space to store and stage supplies and equipment and risk loss, damage, or expiry of assets. Less than half of survey respondents (48.4%) indicated their agency had sufficient equipment and supplies to support response. Considerable vulnerabilities in the supply chain have been identified, but these vulnerabilities continue to impact partners. Partners have implemented conservation and reuse strategies that vary widely from "normal use" and have pivoted to use of alternative materials as opposed to procuring what is considered ideal.

The quantity and quality of durable medical equipment, such as ventilators and Controlled Air Purifying Respirator (CAPR)/Powered Air Purifying Respirator (PAPR) systems continued to be a challenge throughout the fall and winter of 2020. However, disposable supplies required for vaccinations, such as safety needles, syringes with low dead space, and gloves proved challenging to procure at both the state and local level. This may have been related to federal programs put in place to augment vaccines shipped to jurisdictions with "ancillary kits" containing these materials, leaving few options in the open market to acquire these items.

The process to request assets from partners, such as reallocation of vaccines to other agencies or supplies from the State Emergency Operations Center (SEOC) eventually were established and worked well, but these processes were not necessarily included in pre-existing plans, protocols, or systems.

**Promising Practices and Opportunities**
Partners continue to be resourceful, and 87.1% of survey respondents indicated that they identified and entered into new agreements with agencies that could address emerging response priorities, such as agencies for staffing or supplies and equipment. Partners identified the resource vendor list, compiled by the SEOC, and distributed by the GSHCC, as a helpful tool for sourcing needed supplies. Although, pricing was not necessarily sustainable through these vendors to enter into long-term contracts.

*Recommendations*:
- Complete a supply chain integrity assessment to identify vulnerabilities in essential healthcare supply chains.
- Promote and support as appropriate promising practices for inventory management and rotation.
- Develop greater awareness of processes or resources available statewide to fill urgent or critical supply needs.
- If able, consider implementing stockpile rotation policies.

3. **Prior training and exercises did not adequately address the competencies or capabilities required for a pandemic response and identified corrective actions to improve gaps in capabilities were not consistently implemented.**

More than one third (38%) of survey respondents indicated that they did not conduct exercises prior to COVID-19 response that tested or validated capabilities. For the majority of stakeholders included within the scope of this report, exercises are at a minimum, an annual requirement. Of those who completed exercises prior to COVID-19 response, 40.9% indicated they had partially implemented corrective actions (34.1%) or have not implemented corrective actions from exercises or real-world events that improved response to the COVID-19 pandemic.

Prior exercises and training may have also underestimated or fail to recognize the current capabilities of response agencies, such as the Regional Public Health Networks or the number of

volunteers required to maintain operations. Added burdens on internal subject matter experts (SMEs), such as Infection Preventionists, were not always fully recognized within these contexts.

*Recommendations*:
- Design and implement comprehensive education and training in basic emergency response principles.
- Encourage and support the design, conduct, and evaluation of exercises that include response within the context of a pandemic.
- Implement exercises to occur over multiple operational periods or extended over the course of one or more weeks (even if exercise play only occurs for 1-2 hours per day).
- Encourage exercise play with multiple agencies, jurisdictions, and organizations to promote authenticity.
- Provide additional opportunities for partners to participate in scenario-based training.

4. **Strategy and operational directives that addressed the current response environment were often in conflict with or contradictory to pre-existing plans developed at the agency or community level.**

Plans to respond to a pandemic did not exist for some partners. Those who did have more robust plans often lacked additional detail that outlined long-term continuity of operations (COOP) considerations, did not clearly delineate roles and responsibilities across jurisdictions, or did not address the legal considerations of a public health incident. Many public health and health care partners indicated that existing plans for mass vaccinations and alternate care/surge plans were not followed or required significant modifications. Directives challenged or changed the planning assumptions on which these plans were created, forcing ad hoc planning that may not have included all relevant stakeholders or accounted for legal considerations, agency capacities, partner capabilities, or secondary impacts. For many partners, this was referred to as "Building the plane while flying it." The uncertainty and unfamiliarity with ad hoc plans or strategies created confusion, more opportunities for error or missed-steps, and sometimes damaged pre-existing relationships. Furthermore, the rapid planning efforts often did not include the right stakeholders. As one partner explained, "the right questions were being asked to the wrong people."

*Recommendations*:
- Continue to advocate for and support members and partners in efforts to update plans, policies, and procedures with additional administrative details that were put into effect throughout COVID-19 response.
- Revise and update Infectious Disease Surge Plans to include lessons learned identified through COVID-19 AAR processes.
- Encourage collaboration, cooperation, and coordination between responding agencies to identify appropriate operational strategies and pre-identify roles, responsibilities, and expectations of partners.
- Provide or support opportunities to share plans and evaluate strategies for alignment.

## Incident Management

"Incident management" is the ability to establish and maintain a scalable operational response structure with processes that appropriately engage all critical stakeholders and support the execution of core public health and health care capabilities and incident objectives.

### Strengths

The following strengths were noted as contributing to the performance of capabilities associated with incident management:

1. **The value of the National Incident Management System (NIMS) and implementation of the Incident Command System (ICS) has been reaffirmed or is now understood by many partner agencies.**

   Local and internal agency leadership have been operating within the principles of the National Incident Management System for months at the time of this Report. Establishing an ICS structure and following the core principles outlined in the National Response Framework has been established as a proven approach to long-term incident management.

   Early in the incident, public health recommendations and recommendations from subject matter experts were implemented promptly. These professional recommendations drove policy and strategy at a time when there was very little science available, and decisions were based on the best information, recognizing it was often incomplete or would need to be modified with emerging science.

   Local collaboration through weekly briefings and operational coordination calls continues across many of New Hampshire's towns and cities and between sectors.

### Areas for Improvement

The following areas for improvement were identified through multiple survey responses and stakeholder interviews. Not all areas for improvement will apply to every organization and individual experiences may differ. Collectively, the identified areas for improvement will provide a high-level overview of where additional effort may lead to more well-developed response capabilities.

1. **Significant confusion surrounding chain of command and incident leadership statewide persists across community sectors and jurisdictions.**

   The previously published *GSHCC Mid-Event After Action Report* identified uncertainty or a lack of clarity of the overall command structure within the State of New Hampshire, and this area for improvement has grown as response efforts continue. The lack of general understanding of the statewide incident command structure has created additional challenges for local jurisdictions and agencies to identify clear points of contact for multiple operational or strategy questions. Instead of a single entry point through ESF-8, agencies attempted to make contact with multiple representatives to find solutions to challenges or answers to process questions.

An unclear chain of command hindered communications, requiring partners to reach out to multiple people within the NH SEOC or DHHS Incident Management Team (IMT) prior to getting the appropriate point of contact. Feedback on requests for information, guidance, or general questions was delayed and often distilled down to a basic message that did not contain all the details or context necessary for decision-making and to inform operational tactics. This sometimes led to the dissemination of conflicting information, which caused added delay in getting necessary details required for an effective response.

Unclear chain of command has also created confusion surrounding the roles and responsibilities of multiple state agencies and what role that agency or representative would have within the Operations Section. As the command structure expanded or contracted, there was little communication to external partners.

Those filling positions did not always feel comfortable with their designated response role. The skills, knowledge, and abilities to perform response roles did not always align with those of the staff filling positions. Just-in-time training did not always occur. This mismatch between required skills, knowledge, and abilities for the role and the responder at times resulted in communications delays, misinformation or misdirection, loss of confidence in responder abilities to perform assigned tasks, and concerns for patient safety.

*Recommendations*:
- Continue to offer education and training in National Incident Management System for all levels of responders, including senior leadership.
- Identify and communicate additional considerations for maintaining and sustaining response long-term.
- Provide education on the role of the Joint Information Center and its role within a Joint Information System with Emergency Operations Centers.
- Conduct exercise opportunities where ICS roles and assumptions are examined.
- Share more broadly organizational charts for statewide response (planned and actual).
- Support discussions around refining the role of the Regional Public Health Networks (RPHNs) in coordinating the implementation of plans, public health direction, and policy.

2. **Strategy decisions did not always incorporate appropriate stakeholder input, appeared disjointed, and lacked transparency**.

Unity of effort and transparency are essential for any incident response. It is critical for all stakeholders and responding agencies to work towards a shared vision and communicate strategies to achieve incident objectives clearly. Partners have indicated policy decisions and operational objectives would be shared, but quickly afterwards, decisions would be made public that did not align with previous guidance or a mutually-agreed upon path forward. Partners across jurisdictions and between sectors often reported feeling blindsided by public announcements or new policies or directives that worked against established goals and objectives. Sometimes new instructions or directives would be counter to work underway at the direction of operational group leaders. In some cases, the reasoning behind shifts in operational direction could not be

explained. This reinforced a narrative that public health and healthcare subject matter experts were not respected or valued in the decision-making process.

Strategic decisions did not always get passed along to those focused on operations. As a result, agencies would guess and choose many different approaches or strategies to fill an information gap. Multiple agencies taking different approaches to address different issues created additional frustration as efforts were duplicated, essential steps were missed, or operations needed to shift significantly, marginalizing the principle of unity of effort.

*Recommendations*:
- Update plans, policies, and procedures that include mechanisms that facilitate sharing of information to inform operational strategy and tactics.
- Train and exercise information sharing practices across multiple communication platforms.
- Create additional transparency surrounding how decisions are made, including impacts on strategy, tactics, and evaluation of response efforts.
- Support efforts to disseminate consistent information, including changes to incident objectives, tactics, and resources in a timely manner to stakeholders with revised and updated information highlighted as such.
- Consider a stakeholder steering committee or workgroup that includes those responsible for executing strategies to advise and assist in policy decisions prior to implementation.

3. **Changes in leadership and structure of ESF-8 changed the response dynamic that was expected by healthcare and public health partners.**

As planning efforts for vaccination operations took focus in the Fall of 2020, ESF-8 experienced a significant change in organization and leadership, eventually folding in the Emergency Services Unit personnel (ESF-8 lead agency) into a new Bureau of Emergency Preparedness, Response, and Recovery under the NH DHHS Division of Public Health Services (DPHS). The Director of the Bureau remained vacant until March 2021. Additional Bureau staff were scattered throughout state divisions to assist with COVID-19 response through multiple Branches, Offices, and Sections that partners found difficult to navigate without a clear organizational structure with delineated roles and responsibilities.

Partners were accustomed to direct interfacing with ESF-8 for logistical support, including distribution of equipment and supplies. However, needs that arose beyond logistical coordination were no longer necessarily pushed towards ESF-8. Instead, partners relied on professional associations, appointed liaisons, and at times the GHSCC to fill the historical role of ESF-8 as a response entity. Partners found working though associations and other groups was a way to access needed state assets or support.

**Promising Practices and Opportunities**
Stakeholders have identified PPE and supply distribution as an area of success throughout COVID-19 operations. Stakeholders have indicated that processes to request needed supplies, communication regarding supply availability, and the ability of the state as a whole to procure

needed materials when "no one else can seem to get anything" as a contributing factor to the ability of health care and public health to sustain operations. Additionally, the ordering and shipping functions of vaccines and ancillary supplies has been viewed similarly (See: Vaccine Operations for additional evaluation).

*Recommendations*:
- Familiarize or refresh partners on the role of ESF-8 in New Hampshire, including expected roles and responsibilities during an emergency response and for day-to-day resources.
- Ensure ESF-8 contact information is widely distributed to healthcare system partners.
- Promote the use of the GHSCC as a supporting entity to NH ESF-8 with partners, including promoting system coordination information such as the *Initial Notification of Incident from Health Care Agency to State/Local Support Agencies*.
- Memorialize strengths of material distribution practices and systems by including them in state and local plans.
- Support the implementation of systems or processes to facilitate communications between ESF-8 Points of Contact and agencies.
- Identify additional capabilities of the GSHCC and its ability to support ESF-8 operations.

## Information Management

"Information management" is the ability to develop systems and procedures that facilitate the communication of timely, accurate, accessible information, alerts and warnings and exchange health information and situational awareness with federal, state, and local levels of government, healthcare coalitions, and individual agencies or facilities.

### Strengths

The following strengths were noted as contributing to the performance of capabilities associated with information management:

1. **Partner agencies leveraged professional associations and affiliations to consolidate and streamline strategy discussions and operational guidance.**

   Partners, specifically in long-term care, hospitals, and public health felt that weekly partner calls hosted by NH DHHS and/or their professional association were effective at efficiently disseminating mission critical information. These forums were also viewed as opportunities to get answers directly from state agencies. The most effective calls were identified as those with multiple agency staff present from the Immunization Section, Health Care Facilities Licensing, the Healthcare-Associated Infections program staff, DPHS leadership, and others with key response roles. These calls provided an on-the-ground perspective of what was working well, challenges, and solutions for moving forward. Regular briefings provided a forum for real-time answers to urgent questions that could inform rapid decision-making. Professional associations also leveraged internal listservs and email lists to facilitate information sharing among peers.

2. **The NH DHHS Health Alert Network (HAN) was leveraged successfully as a tool to disseminate critical information directly to those who need it.**

HAN messages often contained key updates to the latest guidance from CDC and state public health leadership. It also was used to broadly disseminate guidance updates and clinical guidelines as science became more complete. Additionally, included guidance for specific entities, such as schools, long-term care, etc., were viewed as particularly helpful, though some outpatient facilities expressed difficulty in identifying the proper guidance to follow based on facility type.

3. **Leveraging Juvare as an information management system, though with challenges, proved to be a useful tool for maintaining situational awareness and fulfilling federal reporting requirements.**

   Juvare EMResource was implemented in January 2020, and since its inception it has been viewed as a tool for near-real-time situational awareness for hospitals, public health, EMS, and other partner agencies. However, this system was leveraged as a data collection tool to inform resource requests to FEMA and to inform decision-making statewide. Juvare systems allowed partner agencies to see active and current information for resources across the state to drive local decision making processes.

## Areas for Improvement

The following areas for improvement were identified through multiple survey responses and stakeholder interviews. Not all areas for improvement will apply to every organization, and individual experiences may differ. Collectively, the identified areas for improvement will provide a high-level overview of where additional effort may lead to more well-developed response capabilities.

1. **A Joint Information System was not effectively implemented to integrate incident information to provide consistent, coordinated, accurate, accessible, timely, and complete information across activated Emergency Operations Centers, within the established incident command structures, and senior leadership or public officials.**

   Clear lines of communication were not developed between responding agencies. As a result, the dissemination of information was sometimes inconsistent and received in duplicate multiple times. Multiple messages with the same content, but some inconsistencies, added confusion to communications that were intended to be clarifying. Multiple emails and messages also added to the overall volume of materials to address, creating opportunities for important messages to be lost in the "noise."

   Agencies that interfaced with multiple emergency support functions or branches could identify inconsistencies in messaging around a common topic. This led partners to believe that there was not enough collaboration or cross-communications between agencies, such as between HSEM and DHHS or DHHS with local agencies.  As a result, inaccurate information was released broadly to partners that required additional follow-up and added to confusion.

   Designated spokespersons reported difficulty in communicating essential public health information as a result of processes put in place for message approvals. These processes did not exist prior to COVID-19 response. Added administrative barriers have made it difficult for public health practitioners to "do" public health work. With each layer of required approvals,

information seemed to get filtered out prior to sharing with response partners. Some partners have indicated that this has, to some extent, limited the ability of professionals to educate stakeholders on proven community mitigation measures, infection control guidance, and other public health interventions that are associated with protecting the public's health beyond COVID-19. These delays often lead to information not being shared in a timely manner, creating the need for partners to pursue other, non-traditional avenues to get the answers they needed. NH DHHS approval processes for external communications were not well-documented or understood and would change without notice.

*Recommendations***:**
- Establish and communicate roles and responsibilities for information sharing and communications across jurisdictions.
- Provide additional education or training in Joint Information Center (JIC) operations, including supporting agencies responsible for communications locally.
- Exercise JIC functions.
- Document and disseminate processes required for approving communications.

2. **Public information and communications resource needs were not always addressed, experienced delays, and were not always answered with content in accessible formats.**

As science quickly emerged and updates regarding vaccination eligibility and availability evolved, so did needs for talking points, public communications, and updated guidance. Partners quickly transitioned to using the NH COVID-19 website as a portal to access all documents, guidance, regulations, executive orders, epidemiological data, and vaccination information. However, as the event continued, this website became too large, and finding guidance, talking points, and other materials became difficult. This was especially true with the HAN messages, as searching for older materials became a chore. Over time, the website materials became outdated quickly, and processes to update materials could not be updated at the speed of the incident.

Public facing dashboards became a popular tool for pertinent COVID-19 statistics. However, the release of vaccination administration and coverage through a dashboard suffered substantial delays that interfered with decision-making and public communications.

The 2-1-1 call center was leveraged to assist with public inquiries, vaccination scheduling, testing, requesting public health guidance, and other referral needs. However, over time, 2-1-1 call takers would have inaccurate guidance, outdated information, or simply lacked the clinical knowledge to appropriately address caller needs. These factors contributed to delayed responses to time-sensitive issues. In some cases, agencies instituted their own hotlines in an effort to be more responsive to partner information needs.

Some partners identified barriers with implementing guidance or recommendations due to not fully understanding how their agency should be categorized. Information and guidance was disseminated specific to different provider types, but it was sometimes difficult to implement specific guidance at similarly operating agencies.

*Recommendations:*
- Identify best practices for locally-managed public information and communications and opportunities to replicate in other sectors.
- Consider modifying naming conventions for Health Alert Network (HAN) messages to enhance searchability and highlighting notable changes within guidance.
- Convene partners to determine anticipated information needs, including information for public consumption.
- Engage partners to make conscious efforts to include necessary stakeholders in decision-making processes.
- Advocate for the sharing of processes required for releasing information or communications, and support improvements that make these processes more efficient.
- Support efforts to integrate Public Information Officers (PIOs) from supporting and affiliate agencies into a state-managed Joint Information Center.
- Provide additional Public Information Officer (PIO) training.
- Exercise internal PIO functions.

3. **Governor press events incited frustration for partners when content presented did not align with known operational objectives and tactics.**

The content presented at Governor press briefings were a source of frustration for many partners participating in this evaluation effort. The content or messages provided during the press events often were contradictory to decisions or directives communicated to responding agencies as recent as the same day. Agencies responsible for implementing the guidance were often surprised by announcements made during these briefings and found they had very little time to respond to inquiries and reset expectations of what those directives would mean for staff, partners, and clients, patients, or residents. Backtracking created added strain to long-standing relationships and damaged reputations built over years of effort. Requests for a "heads up" or advanced notice from partners seemed to go unnoticed.

Some partners added that the optics of the Governor leading response could at times undermine the message that public health practice and data were driving decision-making. Public health guidance and data would be presented earlier in the week to multiple agencies, but decisions made by "leadership" often greatly varied or worked against public health recommendations or evidence-based interventions. This created the impression that response was no longer being guided by the most current science, established public health practice, or medically-driven needs, but instead was influenced by other factors. Many respondents felt administrative processes and political pressures dictated some decisions more than science or public health policy. Partners indicated that these events may have been more effective at developing public trust if lead by respected public health practitioners as opposed to government officials.

*Recommendations*:
- Advocate for the inclusion of all appropriate stakeholders in incident planning and support the sharing of outcomes with response partners.

- Share with partners updated Incident Action Plans that reflect key decisions, anticipated outcomes, and resources available to support implementation of operational objectives prior to public press conferences or press releases.
- Support efforts of responding agencies to document and evaluate response capabilities, comparing pre-incident planning assumptions with real world activities.

4. **Essential Elements of Information (EEIs) were not established for pandemic response across healthcare agencies.**

Prior to COVID-19, there were no established metrics or EEIs that were identified and agreed upon as critical for decision-making processes. As a result, data reporting and requests for information became more complex, asked for detail that was not always available, and could not be quickly obtained through existing information tools. Juvare EMResource was an effective tool for hospitals reporting required metrics to HHS, but this system also contained a multitude of other metrics at the request of the State. The information requested increased drastically as additional nuances appeared and pandemic response evolved. Requests for information were often presented with little or no context as to why the information was required or its intended purpose. The quantity and specificity of metrics caused additional concerns regarding the validity of the data provided.

Ad hoc additions to metrics, without proper consults with healthcare providers, contributed to a significant increase in time required by staff to comply with requests. Compliance with reporting requirements has also incurred substantial costs for health care entities. Some hospitals have reported that changes to metrics and mandatory reporting have negatively impacted patient care, forcing clinical staff to take added time to report on required metrics to state and federal entities when their time is needed for patient care.

Multiple stakeholders were asked during interviews which information was most important for their organization to inform decision-making and planning. While each varied slightly, there is an opportunity to look critically at what is most essential or influential in decision-making. The majority of information did not pertain to partner metrics. Instead, partners identified internal status and community transmission indicators as most influential in determining operational changes.

*Recommendations*:
- Convene stakeholders to identify Essential Elements of Information required for situational awareness in an emergency, including EEIs for specialty surge response and intended purpose of the information.
- Implement processes for coordinating and responding to information requests.
- Facilitate efforts to automate data reporting and sharing.
- Continue to support the implementation and sustainment of Healthcare Information Management Systems across healthcare and public health.

## Surge Management

"Surge management" is the ability to coordinate health care, medical and support staff volunteers; share resources, staff, and patients, as necessary and appropriate, across a health care coalition so that each member health care organization can effectively manage surge incidents by creating additional direct patient care capacity across a community; use and coordinate the expertise of the public health, health care, and emergency management disciplines to ensure the public has access to high-quality direct patient care and mass care during emergencies; and prevent and manage injuries and fatalities during and after a response to an emergency or incident of health significance.

### Strengths

The following strengths were noted as contributing to the performance of capabilities associated with medical surge management:

1. **Overall, partners felt that there were appropriate partnerships, relationships, or agreements in place at the community level to be able to effectively and efficiently manage ongoing medical surge. If needed these resources were or could have been called upon.**

   Throughout this response, partners have cited strong community partnerships as a major contributor to success. This remained until the full demobilization of all alternate care sites across New Hampshire. If needed today, respondents and interviewees indicated that community partners would be ready to deploy alternate care sites, with the exception of staffing.

### Areas for Improvement

The following areas for improvement were identified through multiple survey responses and stakeholder interviews. Not all areas for improvement will apply to every organization, and individual experiences may differ. Collectively, the identified areas for improvement will provide a high-level overview of where additional effort may lead to more well-developed response capabilities.

1. **Pre-existing strategies, assumptions, and plans for alternate care sites (ACSs) are largely viewed as implausible to implement without significant modifications and augmentation of available resources**.

   Many communities had existing plans for alternate care sites to manage a cohort of ill patients requiring lower levels of care. The assumptions of these plans included the use of hospital staff and volunteers to manage care for patients at these external sites. However, volunteers were found hesitant to be used in clinical roles providing direct patient care. Additionally, the legal, financial, and regulatory barriers for transporting patients to these facilities, making active decisions to divert EMS traffic to these sites instead of hospitals, and providing ongoing patient care forced regions throughout the state to rethink how alternate care sites would be used. Instead of providing care to patients entering healthcare, many regions noted that a model for temporarily holding patients awaiting discharge or awaiting placement at long-term care or with home care services may be more appropriate and would require less staff, space, and supplies to manage. Partners have indicated that opening even one alternate care site today would be far more difficult than at the start of the pandemic.

*Recommendations:*

- Facilitate conversations between healthcare, public health, state entities, and supporting organizations to gain consensus on how surge could be managed within communities and within existing healthcare systems.
- Convene stakeholders to discuss the purpose, scope, roles, responsibilities, staff, supplies, equipment, space, financial considerations, patient movement, transport, administrative requirements, triggers for activation, and medical direction of alternate care sites.

2. **Roles and responsibilities of alternate care site (ACS) functions are not well known by all those who would support or manage alternate surge facilities**.

There is still significant confusion regarding which entity is responsible for the activation and medical oversight at alternate care sites. Hospitals maintained individual surge plans that did not necessarily reflect the assumptions made in plans held by regional public health networks. Additionally, plans did not accommodate the operation of an ACS that was shared with other responding agencies or hospitals. Significant questions remain regarding community-based alternate care sites, the "new" roles of community agencies, and the jurisdictional, legal, and regulatory mechanisms that would facilitate their use.

Additionally, the regionalized nature of alternate care sites created additional confusion regarding the roles of ESF-8, the National Guard, hospitals, public health networks, volunteers, and municipalities. Written commitments for staffing and support at these sites are still missing from several regions.

*Recommendations:*

- Convene stakeholders to discuss the purpose, scope, roles, responsibilities, staff, supplies, equipment, space, financial considerations, patient movement, transport, administrative requirements, triggers for activation, and medical direction of alternate care sites (i.e., could these sites be used to treat non-acute patients?).
- Provide education on the statewide approach to managing patient surge arising from both short- and long-term events.
- Support efforts to revise and educate partners on the statewide medical surge response plans.

3. **Staffing requirements for managing medical surge internally and at external sites remains a major barrier to implementation of internal surge plans and external surge facilities**.

Survey respondents were split as to whether their agency had the staff required to support another surge or wave of COVID-19 hospitalizations internally (52.1% indicated they would be able to staff or support another internal surge), and the majority of respondents indicated that their facility would not be able to support and/or staff external ACS operations (69.8%).

*Recommendations*:

- Discuss strategies for patient movement, transfers, and load leveling as modulators of surge management.

- Encourage collaboration through higher education, professional institutions, retail pharmacy, volunteer organizations, and other sources of workforce to augment staffing needs.
- Share best practices for recruiting and retaining clinical and non-clinical staff.

4. **While a draft plan to outline a concept of operations for Crisis Standards of Care (CSC) was developed towards the beginning of response, it did not appear to be operationally useful.**

Ongoing use of the State Disaster Medical Advisory Committee (SDMAC) became questionable. It appeared as if representatives appointed to SDMAC were appointed to provide professional opinions, but the group or representatives seldom offered or came to actionable decisions. Interviewees indicated that there was a sense of fear in making difficult decisions. There is considerable doubt that the processes outlined within this draft plan would be timely enough to address urgent matters and whether difficult decisions could be made today if needed. Partners indicated that SDMAC did not have the power, influence, or authority to institute decisions.

*Recommendations*:
- Support efforts to revise the NH Crisis Standards of Care Plan and promote alignment of Crisis Standards of Care assumptions across healthcare.
- Exercise the NH Crisis Standards of Care Plan, promoting the participation of healthcare and public health organizations.
- Educate partners and validate assumptions and processes delineated in the NH Crisis Standards of Care Plan.

## Countermeasures and Mitigation

The "countermeasures and mitigation" domain includes the ability to store and deploy medical and pharmaceutical products that prevent and treat the effects of hazardous substances and infectious diseases, including pharmaceutical and non-pharmaceutical equipment such as vaccines, prescription drugs, masks, gloves, and medical equipment. It also includes the resources to guide an all-hazards approach to contain the spread of injury and exposure using mitigation strategies such as isolation, closures, social distancing, and quarantines.

During large-scale emergencies, all partners in the jurisdiction must be aware of their roles, from whom they will receive information and directives, and to whom they should report. This section will cover response operations associated with non-pharmaceutical interventions, vaccination distribution, and vaccine administration.

### Non-Pharmaceutical Interventions/Community Mitigation Measures

Non-pharmaceutical interventions (NPIs) can also be referred to as community mitigation measures. Common NPIs implemented in the COVID-19 pandemic response may include screening for symptoms of COVID-19, surveillance testing of staff, use of masks or face coverings, physical environmental modifications, remote learning, social distancing, and self-isolation or quarantine.

Strengths

The following strengths were noted as contributing to the performance of tasks associated with implementing non-pharmaceutical interventions:

1. **State (NH DHHS) support with testing and responsiveness to outbreaks in congregate living facilities was instrumental to ongoing containment and mitigation efforts among vulnerable populations**.

    Assigned liaisons from DPHS were "exemplary" to work with. Staff were able to provide useful resources and good information in a timely manner to address outbreaks within the facility. Contacts and relationships were built between facilities and points of contact for each major service coordinated through DHHS, such as testing and infection control. Partners felt as if they could quickly identify who to contact and receive a response in a timely manner, whenever needed.

Areas for Improvement

The following areas for improvement were identified through multiple survey responses and stakeholder interviews. Not all areas for improvement will apply to every organization, and individual experiences may differ. Collectively, the identified areas for improvement will provide a high-level overview of where additional effort may lead to more well-developed response capabilities.

1. **Non-pharmaceutical interventions were not implemented effectively or properly enforced among partner agencies and local jurisdictions.**

    A lack of operational guidance, such as the shift to "Universal Best Practices" created division and added to risk locally. Some agencies attempted to enforce guidance and requirements but encountered significant resistance from businesses and individuals. Legal enforcement was shifted to local law enforcement or to the Attorney General's office. Delegation of this responsibility to local Health Officers complicated matters and was largely perceived as untenable. When needed, localities did not feel supported by the AG's office when enforcing community mitigation measures, and the "refunding" of fines issued for non-compliance negated ongoing efforts in communities to control transmission.

    Additionally, support for surveillance testing programs (such as staff) were offered to some settings, but not those agencies that performed similar functions but held a different license. This created a perceived inequity in testing access among congregate living facilities.

    *Recommendations*:
    - Support efforts to educate senior leadership on evidence-based public health interventions prior to shifts in policy.
    - Evaluate existing legislation and executive powers to implement and enforce community mitigation measures on a non-partisan level.
    - Document and memorialize processes for surveillance testing programs.

## Responder Safety and Health

The "responder safety and health" capability refers to the ability to protect those responding to an incident and the ability to support the health and safety needs of response personnel. Importantly, this area covers not only physical health and safety but also the mental and behavioral health needs of responders during and after an incident.

### Strengths

The following strengths were noted as contributing to the performance of tasks associated with supporting responder safety and health:

1. **Agencies that addressed the physical, social, and emotional needs of staff proactively have seen better outcomes in staff retention and morale.**

   Programs that assisted frontline staff with temporary housing for respite or quarantine has been identified as an essential program that facilitated the continuity of health care service delivery at the height of the pandemic. Programs such as the temporary housing program for responders provided a sense of ease and allowed staff to continue working when it was much easier to walk away.

   Agencies that went "above and beyond" to assist staff with needs outside of the workplace have mitigated to a certain extent the drain in morale and burnout many agencies see today. Providing assistance with meals, changing shift hours to accommodate home life needs, creating added flexibilities in duties and schedules, and taking advantage of opportunities to listen to staff have made a positive impact long-term with regard to turnover and retention.

### Areas for Improvement

The following areas for improvement were identified through multiple survey responses and stakeholder interviews. Not all areas for improvement will apply to every organization, and individual experiences may differ. Collectively, the identified areas for improvement will provide a high-level overview of where additional effort may lead to more well-developed response capabilities.

1. **Many agencies lacked systems to monitor staff for physical, mental, and behavioral health needs or failed to anticipate or provide accessible mental and behavioral health services to staff.**

   While the majority of partners were able to accommodate the physical needs of staff with personal protective equipment, modifying work environments for infection control, implementing screening protocols, and providing fit testing, many partners did not proactively develop or implement systems to monitor the ongoing mental and behavioral health needs of staff.

   When asked what supports or services were provided to staff to address emerging or possible mental and behavioral health needs, many cited Employee Assistance Programs (EAPs) as the primary strategy to accommodate staff needs. However, recent studies have indicated that the

mental and behavioral health of frontline health care workers, first responders, and public health practitioners has emerged as a national crisis.

Some partners admitted they did not properly realize how heavy the emotional turmoil of the pandemic was for staff until they were deep into response. A substantial amount of effort was put in to keep staff physically safe, but it wasn't until much later that the emotional impacts were visible or addressed. Many agencies now recognize the signs of stress and burnout in staff or themselves, but they are unaware of how to provide needed services or what services may be available.

Stress from pre-existing workforce shortages, a lack of competitive compensation, inability to provide adequate rotation of job functions, added work hours, and a lack of depth or redundancy to "do the job" have all been identified as possible factors contributing to the extensive burnout seen across sectors. Shared workloads (picking up additional shifts, performing functions typically designated to ancillary services) and unwavering expectations of service delivery have added to the stress of response staff.

Complicating matters, many partners indicated experienced staff are choosing to leave healthcare or the workforce all together, leaving an incredible gap in institutional knowledge and expertise. New or recent graduates entering the health care and public health fields may be given a position that would normally be given to a more experienced provider with a few years of experience. However, the added responsibilities and lack of ongoing job training has pushed newer staff out of the health care field after feeling overwhelmed or that the job did not meet expectations.

*Recommendations*:
- Convene stakeholders to identify strategies that interrupt the cycle of burnout and staffing shortages.
- Identify best practices for creating or implementing organizational programs that support staff physical and mental wellness, such as group counseling, schedule flexibilities, and other supports.
- Leverage state and federal programs where available such as the FEMA Crisis Counseling Assistance and Training Program (CCP) Grant or the NH DHHS Disaster Behavioral Health Response Team (DBHRT).
- Identify systems or processes that can be leveraged to screen and monitor staff and volunteers (aside from traditional EAP services).
- Support efforts to procure, rotate, and maintain a cache of personal protective equipment at either the facility, local, regional, or state level.

## Vaccine Operations

Vaccinations were introduced as a tool to help combat the COVID-19 pandemic in the winter of 2020. On December 23, 2020, the first message that permitted the registration of high risk frontline healthcare workers to receive the first vaccines. Between December 2020 and June 30, 2021, more than 791,000 doses of COVID-19 vaccines were administered in New Hampshire, according to NH DHHS data.

## Vulnerable Populations

Ensuring equitable access to vaccine among the most vulnerable populations was a concern for partners that was considered early on in planning for vaccination distribution. Of note, state leadership allocated 10% of all doses to be directed to identified equity groups in an effort to ensure vulnerable populations could access a vaccine if they wanted one. The majority of equity vaccines were delivered through the efforts of Regional Public Health Networks and mobile clinics that targeted hard-to-reach or underserved populations.

### Strengths

The following strengths were noted as contributing to the performance of critical tasks associated with successful administration of vaccines to vulnerable populations, in collaboration with those who provide services to these individuals.

1. **The Federal Pharmacy Partnership Program (PPP) was successfully leveraged to administer vaccines to skilled nursing facility residents and staff.**

   Working with commercial pharmacies, such as Walgreens and CVS Pharmacy, skilled nursing facilities were able to collaborate to schedule and receive vaccines allocated from the CDC directly though the PPP to pharmacies serving these facilities. Receiving vaccines from these partners provided opportunities for some agencies to focus vaccination efforts on other vulnerable populations. However, there are members and partners who feel as if they should have been eligible to participate in this partnership but could not, or that services should have been extended to others within their organization. These agencies and organizations did not always feel as if enough resources outside of the PPP were available to support the vulnerable population they serviced.

2. **Contracting with external medical providers, such as urgent care providers, amplified efforts of homebound vaccinations and equity clinics.**

   Through collaboration with regional public health, state public health, area agencies, and the 2-1-1 call center, those without access to a primary care provider, transportation, or who could not leave their home due to medical issues were serviced through the assistance from contracted providers.

   If there was any period in time where reaching vulnerable populations or pockets of communities wasn't successful, partners were able to identify why and developed new strategies to ensure they could access a vaccine.

### Areas for Improvement

The following areas for improvement, if addressed, may build upon capabilities necessary for administering vaccine to vulnerable populations.

1. **Identifying individuals who needed assistance, such as the homebound population, was often difficult, and systems used to identify and track these individuals was at times frustrating.**

Participants in this evaluation process noted that some strategies or "rules" implemented at the start of the vaccination campaign complicated or hindered the ability to provide vaccines to vulnerable populations. Equity, when first defined, was narrowly focused and later was expanded to be more inclusive of the many various populations who were considered vulnerable. Partners noted it was easy to miss an individual seeking care who may have been eligible for vaccine within the parameters of the equity allocation or homebound population. Without a system in place to monitor identified individuals, it was difficult to understand who was still in need of a vaccine and who had already accessed services at another agency.

*Recommendations*:
- Provide a forum for agencies that provide services to vulnerable populations to develop relationships with public health and emergency management.
- Identify existing systems or services within NH that could be utilized to communicate or identify individuals within a vulnerable population, including home health care providers.

2. **Existing plans did not go far enough to define vulnerable populations or anticipate the needs of individuals within those populations.**

Partners noted gaps or opportunities to advance efforts in ensuring the needs of the most vulnerable populations were addressed:
- Which individuals were included within the equity allocation changed rapidly and was difficult to monitor. Initially, this allocation focused on race, but some partners noted that almost anyone that they encountered could have been considered eligible for vaccines under the equity allocation due to some socioeconomic or demographic factors.
- Finding and scheduling an appointment for a vaccine was challenging for individuals who are not comfortable with technology or did not have reliable access to the internet.
- Vaccines were made available, but they were not always geographically accessible.

*Recommendations*:
- Support collaborative efforts to develop strategies and solutions that can be adapted to the needs of various regions throughout the state.
- Develop or revise plans to reflect the lessons learned through response, highlighting challenges and strategies to overcome barriers to serving those considered most vulnerable.
- Engage more intentionally agencies that serve vulnerable populations in pre-incident preparedness efforts.

## Presentation of Overarching Strengths

The COVID-19 vaccination strategy was challenged by an incredibly limited supply of vaccines that were initially allocated to the state. The Vaccine Allocation Strategy Branch worked diligently to provide a thoughtful, well-researched strategy that reflected the most recent science and recommendations to allocate vaccine equitably, prioritizing those most at-risk for becoming infected with the virus that causes

COVID-19, transmitting it to others, or were at greater risk for negative health outcomes as a result of infection. On May 12th, those 12 years and older became eligible to receive a COVID-19 vaccine.

The following overarching strengths contributed to the success of the implementation of the New Hampshire vaccination strategy:

- Partnerships with outpatient health care providers, such as retail pharmacies and urgent care providers significantly augmented vaccination efforts.
- Operational communications between NH DHHS and response partners were most effective through the use of professional associations or sector leaders.
- NH DHHS successfully anticipated, sourced, procured, and distributed supplies and equipment required to support and sustain vaccination campaigns statewide.

## Analysis of Select Public Health Emergency Preparedness Capabilities

Vaccination efforts were confronted by challenges that should be addressed to improve future responses involving mass vaccinations. These areas for improvement are addressed within the context of the 2018 Public Health Emergency Preparedness and Response Capabilities.

### Medical Materiel Management and Distribution

Medical materiel management and distribution is the ability to acquire, maintain (e.g., cold chain storage or other storage protocol), transport, distribute, and track medical materiel (e.g., pharmaceuticals, gloves, masks, and ventilators) during an incident and to recover and account for unused medical materiel, as necessary, after an incident.

#### Strengths

The following strengths were noted as contributing to the performance of critical tasks associated with successful medical materiel management and distribution:

1. **NH ESF-8 and the NH Immunization Program successfully acquired equipment, supplies, and pharmaceuticals necessary for vaccination operations at fixed sites, through mobile clinics, vaccine providers, and public health networks.**

   While there were national shortages of certain supplies and equipment, state personnel worked diligently to anticipate and procure the equipment and supplies that would later be needed for a successful vaccination campaign. The state warehouse expedited processes to track resource requests and to manage supply deliveries statewide consistently. Some partners commented that this capability was one of the most successful components of response.

   Vaccine ordering, though initially complicated by minimum quantity limitations for direct shipments, was viewed as reasonably straightforward. If issues arose, staff were able to efficiently convey instructions to ensure the integrity of vaccine was maintained.

#### Areas for Improvement

The following areas for improvement were identified through multiple survey responses and stakeholder interviews. Not all areas for improvement will apply to every organization, and individual experiences may differ. Collectively, the identified areas for improvement will provide

a high-level overview of where additional effort may lead to more well-developed response capabilities.

1. **The global supply chain continues to have significant vulnerabilities and exhibit inconsistencies in both quality and quantity.**
   The quality of supplies provided through ancillary vaccination kits that accompanied vaccine varied considerably. Issues were noted with needles and safety mechanisms, personal protective equipment was sometimes questionable, and fairly priced items were difficult to procure from the open market. Ongoing pricing issues have forced partners to seek alternative materials or supplies to maintain operations that may not be sustainable. Additionally, intermittent shortages or being placed on "allocation" has created stress on local distributors and the agencies under contract with them.

   *Recommendations*:
   - Support the identification and sharing of materials management best practices.
   - Develop or enhance systems that monitor inventories.
   - Encourage the development or revision of minimum quality and performance standards for acceptability of alternative or replacement items of scarce resources.
   - Support entities in revising estimated burn rates of equipment for considerations of reuse, extended use, or use of alternative materials.

2. **Protocols to request vaccines and materials were not established in pre-existing plans.**
   More than half of survey respondents (57.1%) indicated that the processes used to request vaccine and ancillary materials were not included in pre-existing plans. There is some variation between partners as to why this was the case. Some agencies had delineated processes for working with the State, but systems may have been altered based on minimum quantity allowances for shipping. Some partners also indicated that distribution of materials did not follow existing planning assumptions. Instead, some partners found themselves repacking and redistributing materials to satellite locations or to external partners, which was not always fully understood or described in existing local plans.

   *Recommendations*:
   - Leverage real world response to develop or enhance systems with capabilities required for vaccine ordering and inventory management.
   - Educate partners on contingency plans or redundant systems for supply management.

## Vaccine Administration

"Medical countermeasure dispensing and administration" is the ability to provide medical countermeasures to targeted population(s) to prevent, mitigate, or treat the adverse health effects of a public health incident, according to public health guidelines. This capability focuses on dispensing and administering medical countermeasures, such as vaccines, antiviral drugs, antibiotics, and antitoxins.

Strengths

The following strengths were noted as contributing to the performance of critical tasks associated with successful vaccine administration:

1. **The flexibilities provided to leverage EMS personnel significantly augmented the number of personnel within the workforce who were authorized to administer vaccinations.**

   Many stakeholders have indicated that the use of staff from local emergency medical services agencies greatly augmented the workforce capable of administering vaccines to the populations served. The ability to leverage these assets was facilitated by contracts through municipalities, which allowed local agencies to recuperate added labor costs.

   Contracts with local agencies to reimburse labor costs was also effective at recruiting workers to support vaccination campaigns. Once funding was in place to support staffing, workforce issues became less of a barrier.

2. **State-managed fixed sites and supersites were effective mechanisms to administer a large number of vaccinations to a high volume of patients over a short period of time.**

   Part of the success of the early fixed vaccination sites and the pop-up supersites was the ability to bring leadership from across jurisdictions and sectors together for focused and intensive planning. Decisions were made after the consideration of multiple perspectives and stakeholders were able to bring assets forward that may not have originally been considered. The convening of leadership from multiple disciplines created a more dynamic planning process and established a common operating picture that contributed to success.

Areas for Improvement

The following areas for improvement were identified through multiple survey responses and stakeholder interviews. Not all areas for improvement will apply to every organization, and individual experiences may differ. Collectively, the identified areas for improvement will provide a high-level overview of where additional effort may lead to more well-developed response capabilities.

1. **The operationalized vaccination plans differed significantly from existing plans that partners had developed and trained partners to implement.**

   Existing closed points of dispensing and open public points of dispensing or clinics were not leveraged. Many partners noted that they were unaware of what statewide plans existed to support mass vaccinations or felt as if pre-established plans were not utilized.

   Foregoing existing plans may not have been without reason, but it did create significant barriers to operationalizing vaccination operations locally. Pre-established roles and responsibilities were challenged, creating the need for additional time and effort to re-establish each partner's role in response.

Respondents also noted that vaccination documentation systems were not included in pre-existing plans (57%) and required staff to learn several new systems and adapt to changing processes throughout the height of vaccination operations.

*Recommendations*:
- Convene partners to identify components of vaccination plans, such as closed Points of Dispensing or community vaccination clinics to inform vaccination strategies.
- Identify strengths and support corrective actions for areas for improvement associated with mass vaccination clinics relative to infectious disease events.
- Update training to reflect changes in modalities for administering vaccinations to a large population.

2. **Vaccination documentation systems were not adequate to meet the needs of responding agencies "in the field" administering vaccines.**

Prior to COVID-19 response, New Hampshire was the only US state without an Immunization Information System (IIS). As a result, many vaccination campaigns were documented either through electronic medical records or on paper. When vaccinations arrived in New Hampshire, the IIS had not been established. Instead of a centralized system, partners leveraged the Vaccine Administration Management System (VAMS) from the CDC in addition to placing orders through the existing state-managed Vaccine Ordering Management System (VOMS). The limited capabilities of both systems required additional documentation, or duplicate documentation processes to reconcile which patients received which vaccine, and when.

Over time the NH Vaccine and Immunization Network Interface (VINI) was established to assist with the scheduling of vaccine appointments and documentation of required patient and vaccine data. This system was used until the NH IIS was released, allowing for the marriage of patient data with vaccine inventory data and vaccine record retrieval.

However, with each transition, update, or change in process, agencies noted significant confusion, frustration, and diminishing faith in the systems provided. Partners were required to respond to last-minute requests for information, changing documentation guidance, and reporting procedures. Some agencies chose to exclusively document patient and vaccine information on paper at clinic sites and retaining information for reporting at a later time.

Additionally, these systems relied heavily on internet connectivity. Access to the internet was not always dependable or available at clinic locations, requiring agencies to keep redundant copies of documentation and to develop "down time" procedures in the event systems were not functioning.

Receiving answers to questions about these systems and troubleshooting was best accomplished through weekly calls with specific partners or one-on-one calls with NH

Immunization Program staff, as available training was not always reported as being easy to follow or accessible.

*Recommendations*:
- Support the implementation of the NH Immunization Information System to manage and track vaccinations.
- Work collaboratively with public health and health care partners to develop backup systems for documentation.
- Support the implementation of training on systems designated to support vaccination data collection.
- Ensure sustained funding streams exist to support NH IIS systems and staff.

## Volunteer Management

Volunteer management is the ability to coordinate with emergency management and partner agencies to identify, recruit, register, verify, train, and engage volunteers to support the jurisdictional public health agency's preparedness, response, and recovery activities during pre-deployment, deployment, and post deployment.

### Strengths

The following strengths were noted as contributing to the performance of critical tasks associated with successful volunteer management:

1. **Some agencies noted a significant number of volunteers who wanted to contribute in some way to this event.**

   Partners noted that they were able to build upon existing relationships with volunteer agencies. These relationships and connections within communities resulted in effective recruitment campaigns to support operations.

### Areas for Improvement

The following areas for improvement were identified through multiple survey responses and stakeholder interviews. Not all areas for improvement will apply to every organization, and individual experiences may differ. Collectively, the identified areas for improvement will provide a high-level overview of where additional effort may lead to more well-developed response capabilities.

1. **Not all volunteers were properly vetted to ensure they possessed the basic competencies required for the tasks assigned at vaccination clinics.**

   Volunteers arriving to fixed sites or open clinics were not passed through an intake process that would identify skills, knowledge, and abilities of those volunteering at the clinic. This led to some volunteers and staff not being utilized to the greatest potential or utilizing unqualified personnel at certain stations. Just in time training was provided and education was provided to both EMS agencies and public health networks for volunteers; however, there was no way to validate whether a worker completed the training.

Local control, for example utilizing a long-retired clinician to administer vaccines as opposed to a credentialed and educated member of a fire department, sometimes interfered with operations and contradicted state guidance. As a result, throughputs were not as efficient as they could have been, and highly qualified professionals were assigned tasks that did not require any medical training.

*Recommendations*:
- Update training for volunteers and public health partners on the statewide approach to vaccination clinic operations.
- Develop or refine basic competencies required for positions at vaccination clinics.
- Identify and make modifications as needed to systems that support workforce / volunteer management, including potential roles at an ACS.

2. **The existing volunteer management systems were not conducive to managing a large number of spontaneous volunteers.**

NH Responds was leveraged as the volunteer management system for public health. Volunteers hoping to contribute to response were directed to this system. However, once in the system, agencies noted the process of managing those volunteers, such as researching qualifications, conducting follow up for incomplete information, and reaching out for training and scheduling, were often very manual processes. Some agencies noted that this burden was enough of a barrier to forego the use of spontaneous volunteers and utilize exclusively staff or pre-existing volunteers.

*Recommendations*:
- Review and update plans associated with managing spontaneous volunteers and applicable roles for unskilled or unverified volunteers.
- Identify volunteer management best practices that facilitate the efficient use of volunteers based on need and skill.
- Consider modifications to how volunteers are managed at the state, regional, and local level and how they can be absorbed in the healthcare system.

3. **The legalities and process around extending workers compensation or liability coverage to volunteers through ESF-14 was unclear and often presented significant delays, reducing the ability of agencies to leverage these volunteers as workforce.**

The legalities of who was considered a volunteer in the eyes of the State created significant confusion to those requesting the extension of liability coverage for volunteers for state-sponsored operations. The time required to receive authorization for volunteers for each mission did not always move at the speed of the incident, limiting the ability of responding agencies to adapt to changing operational needs. According to an interviewee, the State was unable to cover workers compensation or liability for Emergency Management Assistance Compact (EMAC) staff if that person was not a state employee. This limited the portability of non-state employees and the ability to assist cross-border operations.

The legalities associated with a Declared Public Health Incident, or a State of Emergency were largely unknown by members and partners. A lack of prior knowledge of allowances under a State of Emergency or a Declared Public Health Incident created added confusion regarding which professionals were able to administer vaccine, the requirements for licensure, waivers, and reimbursement.

*Recommendations*:
- Identify and document processes used to legally extend benefits and protections to volunteers through the pandemic response.
- Facilitate discussions, advocacy, or changes to legislation to expedite volunteer or workforce credentialling.
- Clarify roles, responsibilities, processes, and limitations of the use of volunteers as workforce during a Declared Public Health Incident or State of Emergency.

## Conclusions and Next Steps

Sustained response to the COVID-19 pandemic has continued to demand a conscious focus and effort from partners and members from across the health care and public health continuum. The toll of extended response, approaching 18 months of being in a response posture, has not gone unnoticed and is felt by all. The perseverance, grit, and dedication of health care workers, public health practitioners, EMS, first responders, and emergency managers to serve the residents and visitors of the State of New Hampshire is commendable.

Through this evaluation effort, the GSHCC team has gained insight into what has contributed to success and strength in sustained response. The team also identified areas for improvement that should be addressed to continuously enhance healthcare and public health response capabilities, both as a system and within communities. The overarching themes that characterize this phase of response include:

- Success in vaccination operations can be largely attributable to the "boots on the ground" effort to establish and build partnerships within communities that provide services to vulnerable populations.
- A breakdown in transparency of incident organization contributed to confusion regarding chain of command, incident leadership, and both operational and public communications.
- Prior planning strategies and education were based on assumptions that are no longer valid, creating a need for ad hoc planning and coordination that did not always include appropriate stakeholders.

The strengths and areas for improvement identified within the Report contribute to a body of knowledge surrounding the COVID-19 pandemic response in New Hampshire. It also supports the ongoing efforts of the Granite State Health Care Coalition, the NH DHHS, DPHS, Bureau of Emergency Preparedness, Response, and Recovery, and the healthcare and public health systems to improve response capabilities to all hazards.

## Next Steps

The *2019 Novel Coronavirus Response: Extended Response After Action Report* is intended as a reference for a complete and comprehensive after action review process. GSHCC members and partners are encouraged to develop internal after action reports and improvement plans that summarize and evaluate response capabilities specific to their organization's response as well as begin the process of identifying and implementing corrective actions to build and sustain response capabilities.

At the time of writing for this report, the COVID-19 pandemic response is still active as communities addresses additional waves of cases and hospitalizations driven by the delta variant. Health care and public health partners are actively engaged in mass vaccination clinics to ensure all who would like to receive a vaccine have the opportunity to do so.
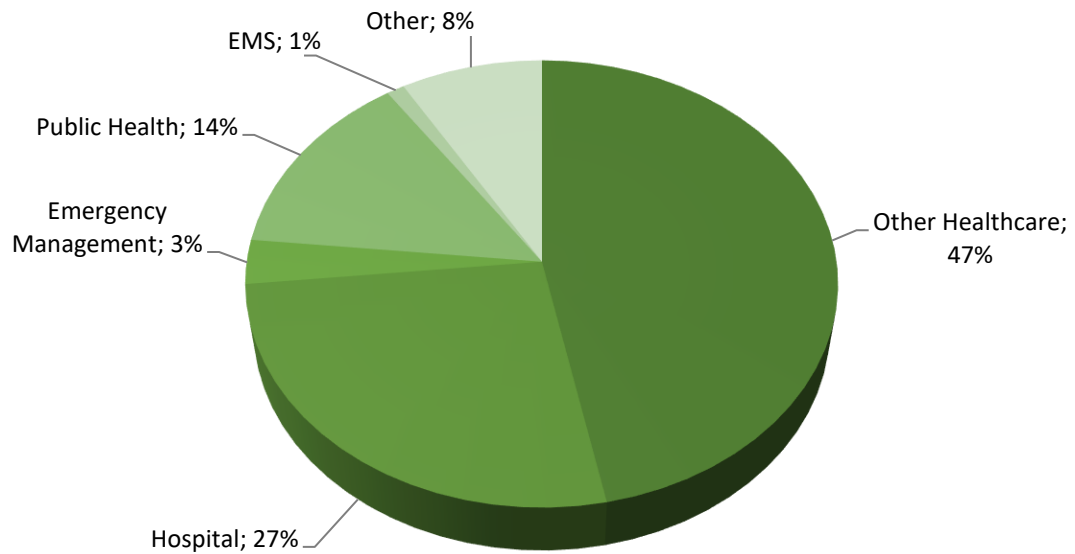
## Appendix A          Abbreviations and Acronyms

| | |
|---|---|
| **AAR** | After-Action Report |
| **ACIP** | Advisory Committee on Immunization Practices |
| **ACS** | Alternate Care Site |
| **AG** | Attorney General |
| **ASPR** | Assistant Secretary for Preparedness and Response |
| **CAPR** | Controlled Air Purifying Respirator |
| **CDC** | Centers for Disease Control and Prevention |
| **COOP** | Continuity of Operations |
| **COVID-19** | Novel Coronavirus Disease 2019 |
| **CSC** | Crisis Standards of Care |
| **DHS** | United States Department of Homeland Security |
| **EAP** | Employee Assistance Program |
| **EEI** | Essential Elements of Information |
| **EMAC** | Emergency Management Assistance Compact |
| **ESF** | Emergency Support Function |
| **EMS** | Emergency Medical Services |
| **FEMA** | Federal Emergency Management Agency |
| **FDA** | United States Food and Drug Administration |
| **GSHCC** | Granite State Health Care Coalition |
| **IIS** | Immunization Information System |
| **HAN** | Health Alert Network |
| **HCC** | Health Care Coalition |
| **HHS** | United States Department of Health and Human Services |
| **HPP** | Hospital Preparedness Program |
| **HSEEP** | Homeland Security Exercise and Evaluation Program |
| **ICS** | Incident Command System |
| **IMT** | Incident Management Team |
| **JIC** | Joint Information Center |
| **JIS** | Joint Information System |
| **NIMS** | National Incident Management System |
| **NH DHHS** | New Hampshire Department of Health and Human Services |
| **NH DPHS** | New Hampshire Division of Public Health Services |
| **NH HSEM** | New Hampshire Homeland Security and Emergency Management |
| **NH IIS** | New Hampshire Immunization Information System |
| **NPI** | Non-Pharmaceutical Interventions |
| **PAPR** | Powered Air Purifying Respirator |
| **PHEP** | Public Health Emergency Preparedness |
| **PHN** | Public Health Network |
| **PIO** | Public Information Officer |
| **PPE** | Personal Protective Equipment |
| **PPP** | Federal Pharmacy Partnership Program |

| | |
|---|---|
| **SDMAC** | State Disaster Medical Advisory Committee |
| **SEOC** | State Emergency Operations Center |
| **SME** | Subject Matter Expert |
| **VAMS** | Vaccine Administration Management System |
| **VINI** | NH Vaccine and Immunization Network Interface |
| **VOMS** | Vaccine Ordering Management System |

## Appendix B          Participant Snapshot

## Survey Participants

Other; 8%

EMS; 1%

Public Health; 14%

Emergency Management; 3%

Other Healthcare; 47%

Hospital; 27%

## Interview Participants

EMS, 6%

Other, 6%

Emergency Management, 6%

Other Healthcare, 6%

Hospital, 44%

Public Health, 32%
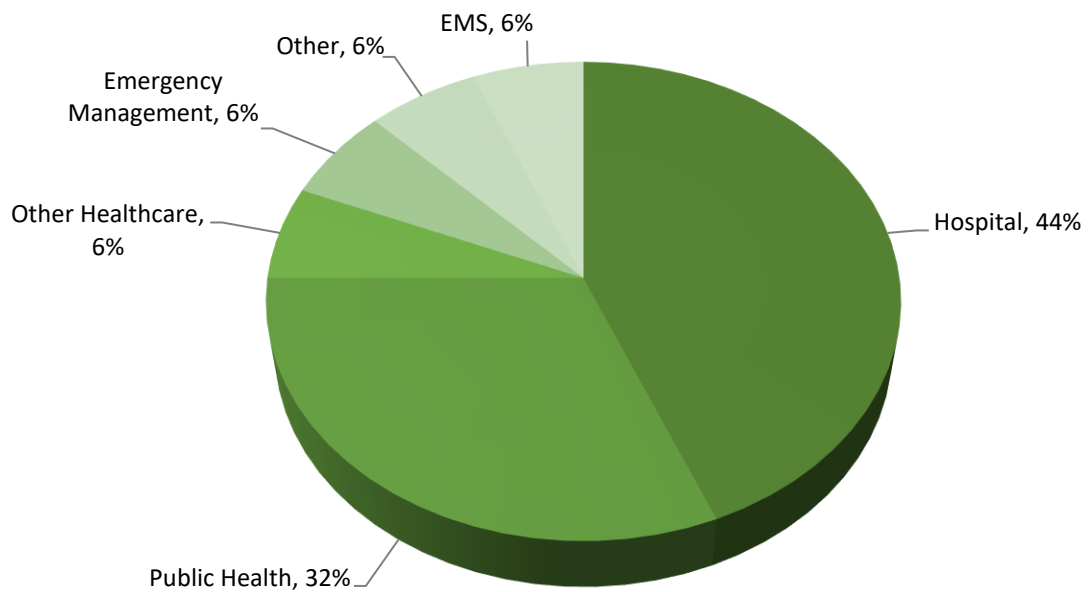
## Appendix C          Detailed Event Timeline

The following timeline is intended to provide context for the findings presented in the Granite State Health Care Coalition 2019 Novel Coronavirus: Extended Response After Action Report. This timeline is a continuation of the summary events outlined in the GHSCC Mid-Event After Action Report, outlining key decisions beginning October 2020 through June 30, 2021. This is not meant to serve as a comprehensive listing of all events.

| Date | Event Details |
|---|---|
| 9/30/2020 | Governor Chris Sununu extends **Emergency Order #52** that proposes public health guidance for business operations and advising Granite Staters that they are safer at home. |
| 10/14/2020 | NH DHHS issues a Health Alert Network (HAN) message cautioning of increasing rates of community transmission of COVID-19. |
| 11/13/2020 | NH DHHS issues a HAN announcing the FDA has issued an EUA for the use of bamlanivimab to treat mild to moderate COVID-19. |
| 11/20/2020 | Governor Chris Sununu announces **Executive Order # 74,** implementing a mask mandate for all persons over the age of 5 when in public spaces. |
| 11/25/2020 | The U.S. Food and Drug Administration (FDA) has issued an Emergency Use Authorization (EUA) for casirivimab and imdevimab to be administered together for treatment of mild to moderate COVID-19. |
| 12/3/2020 | NH DHHS DPHS announces via **HAN #27** changes to quarantine periods for those potentially exposed to COVID-19 from 14 to 10 days. |
| 12/8/2020 | A pandemic high of **963** daily COVID-19 cases are reported in NH. The 7-day average of new cases is **868**. |
| 12/11/2020 | NH DHHS DPHS releases **HAN #28**, outlining Frequently Asked Questions regarding the vaccine allocation and administration guidelines for those in Phase 1a. |
| 12/13/2020 | The Pfizer-BioNTech COVID-19 vaccine receives **FDA Emergency Use Authorization** and CDC and ACIP issue recommendations for use. |
| 12/14/2020 | The first shipment of Pfizer/ BioNTech COVID-19 vaccine arrives in New Hampshire. |
| 12/15/2020 | The **first doses** of COVID-19 vaccine are administered in New Hampshire. |
| 12/18/2020 | The FDA authorizes the use of Moderna's mRNA-1273 vaccine for those 18 years and older under **Emergency Use Authorization**. |
| 12/23/2020 | **Emergency Order #77** reinstates Emergency Order #37, temporarily freezing hiring for state positions, with exceptions for those related to COVID-19 response. |
| 12/30/2020 | **Emergency Order #78** is issued, allowing for EMT-Basic, Advanced EMT, any Paramedic, as well as current and former military services members to apply for and receive a temporary license as a licensed nursing assistant through the Office of Professional Licensure and Certification. |
| 1/1/2021 | Hospitals report **334** patients are hospitalized with COVID-19 statewide. This is the highest number of hospitalizations to date. |
| 1/4/2021 | **Emergency Order #79** authorizes registered and certified pharmacy technicians to administer COVID-19 vaccines under certain conditions. |

| Date | Event Details |
|------|---------------|
| 1/11/2021 | NH DHHS DPHS updates the **COVID-19 Vaccination Allocation Plan** and quarantine guidance, adopting CDC quarantine guidance for persons who are fully vaccinated or who have been previously infected with SARS-CoV-2. |
| 1/17/2021 | NH DHHS DPHS announce through **HAN #34b** that those in Phase 1b will be eligible for vaccination starting on January 22, 2021. NH 2-1-1, medical providers, and VAMS are used to register and schedule those in Phase 1b. |
| Week of 2/1/2021 | Governor announces NH residents under Phase 1b of the vaccine allocation strategy will be automatically scheduled for second doses. |
| | Planning occurs to move drive-thru fixed sites to indoor super-sites. Staff would be a combination of National Guard and PHN staff/volunteers. PHNs are given 1 day to propose possible locations within regions that could be used long-term (June 2021), as public vaccination clinic sites. |
| | NH DHHS launches an effort with the New Hampshire Hospital Association to publish hospital data on interactive dashboards. |
| | Johnson & Johnson submit vaccine candidate to FDA for Emergency Use Authorization. The application will be reviewed February 26, 2021. |
| Week of 2/8/2021 | NH staff are manually reaching out to thousands of individuals who may experience difficulty with second dose scheduling at fixed sites due to errors in initial registration or incomplete second dose appointment cards. |
| | Th first person with **Delta** variant strain of COVID-19 (sequenced by CDC) is identified in NH and is said to be related to high risk travel. |
| | State leadership begins to work through planning for Phase 2a and Phase 2b vaccine roll out in March/ April 2021. |
| | NH DHHS **resumes contact tracing** for all COVID-19 cases. |
| | NH enters into contracts with local pharmacy services to support ongoing vaccination efforts in Long Term Care facilities. |
| 2/19/2021 | **Executive Order #85** requires schools to offer in-person instruction to all students at least two days a week starting March 8, 2021. |
| Week of 3/1/2021 | **Executive Order #86** authorizes certain retired health care workers to administer COVID-19 vaccines |
| | **J&J** vaccine candidate receives **Emergency Use Authorization** on March 4, 2021. |
| | NH prepares for Mass Vaccination "**Super Site**" operations between March 6th and March 8th at Loudon Racetrack using the J&J vaccine. |
| | A homebound vaccination strategy is released. |
| | Governor Sununu announces **Phase 2a** vaccinations will begin on March 12, 2021. |
| | Governor Sununu announces **Phase 2b** vaccination will begin on March 22, 2021. |
| Week of 3/8/2021 | Governor Sununu announces a new vaccine registration system, **VINI** to manage scheduling of public vaccination appointments. |
| | President Biden signs American Rescue Plan Act of 2021. |
| Week of 3/22/2021 | Governor Sununu announces vaccination eligibility will be open for **the general population**, in phases based on age (3/29/2021- ages 40 to 49, 3/31/2021- ages 30 to 39, 4/2/2021- ages 16 and up). |

| Date | Event Details |
|------|---------------|
| 4/16/2021 | The **mask mandate** in effect from November 20, 2020, **expires**. |
| 5/10/2021 | The FDA expands the EUA for the Pfizer/BioNTech COVID-19 vaccine to include adolescents 12 to 15 years of age. Regional Public Health Networks begin school-based clinics to complete 2-dose vaccination series for students and staff prior to summer break. |
| 5/13/2021 | The first 12-year old receives a vaccine in New Hampshire. |
| 5/22/2021 | A vaccination clinic is held for the deaf/hard of hearing population as a collaboration between Elliot Health System and NH DHHS. |
| 6/30/2021 | The State Emergency Operations Center and Joint Information Center close. |

# Appendix D          Participant Feedback Summary

The following data represents the opinions and perspectives of the GSHCC's process for evaluating COVID-19 response. This information was presented to all stakeholders who participated via completing a survey response, engaged with the process through an interview, or attended the After Action Meeting. Participant feedback was submitted anonymously, and the results will be used to inform future real-world evaluation efforts.

## Survey Feedback

Did you participate in the *GSHCC COVID-19: Extended Response* Partner Survey?

No, 8%

Yes, 92%
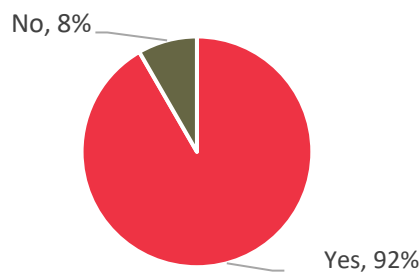
**100%**
All respondents indicated the structure of the survey was easy to follow.

**100%**
All respondents indicated the topics covered by the survey were relevant to the COVID-19 response.

Please provide any additional feedback regarding the GSHCC COVID-19 Partner Survey.

*It was a good exercise to trigger our organization's reflections about the event.*
*Well done.*
*The value of the survey will be verified by the actions taken from it*
*very thorough. helped us think about what we did as an agency*
*Liked the domain skips.*

## Interview Feedback

Did you participate in an interview with the GSHCC team?

No, 50%          Yes, 50%
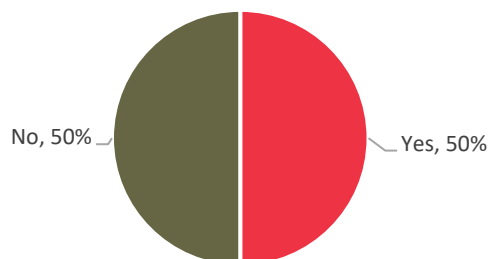
Do you feel your participation in an interview provided value?

No, 17%

Yes, 83%

Please provide any additional feedback regarding the interview process.

*It was a good process. However, I didn't feel I had much in suggestions. The opportunities for improvement that I see are in vaccine system and Juvare reporting. However, I'm not sure the VAMS system and Juvare state system improvements that are needed are within the GSHCC leadership team's control.*

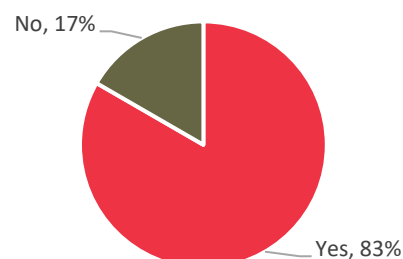*I did not get value out of the interview, so I hope the value was proven on your side as the data gatherers*

## After Action Meeting

Please evaluate the COVID-19 After Action Meeting.



Please provide any additional feedback on the After Action Meeting.

*I was not fond of the tool used for feedback during the meeting, but with more use, I'm sure I'll take to it*
*Taped/video version for those who can't join to watch*
*thank you*
*Wished there was more participation from the state.*

## After Action Report

Are there any topics not addressed in the GSHCC COVID-19 Extended Response After Action Report?



No, 100%
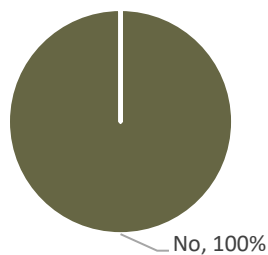
Please provide any recommendations on how we could improve this process moving forward.

*I'm finding it difficult to join the scheduled dates due to conflicting schedules.*

*Do it again. Make it available to everyone and share it with leaders.*

# Appendix E        References


Centers for Disease Control and Prevention. (2020). *HPP-PHEP Preparedness Domains*.
https://www.cdc.gov/cpr/whatwedo/phep.htm

NH Department of Health and Human Services. *Press Releases for 2021.*
https://www.dhhs.nh.gov/media/pr/2021/index.htm

Office of the Governor. *Emergency Orders-2020*. https://www.governor.nh.gov/news-and-media/emergency-orders-2020

Office of the Governor. *Press Releases*. https://www.governor.nh.gov/news-and-media/state-emergency-operations-center-and-joint-information-center-close

State of New Hampshire. *COVID-19 Interactive Dashboards.* https://www.covid19.nh.gov/

# Appendix F     After Action Meeting Input

The following comments reflect the stakeholder input gathered through the October 13, 2021 After Action Meeting convened and facilitated by the Granite State Health Care Coalition. When possible, recommendations were included in the After Action Report and held for consideration by both the Granite State Health Care Coalition and NH DHHS, DPHS Bureau of Emergency Preparedness, Response, and Recovery as recipients of both HPP and PHEP funding.

**Community Resilience**

| Engage partners in additional collaborative spaces to exchange ideas and develop strategies to solve cross-sector issues. | Holding more pod training, volunteers are tired and on burn out | Coordinate state response better with local plans | Workforce development so we can sustain a long response | Enhance local communication. |
| --- | --- | --- | --- | --- |
| — | — | — | — | — |
| Continue to build on the relationships built during this response. Don't let them stagnate so we have to re-form them during the next event. | Include more scenario based training | Sharing of plans, polices and procedures. | Recognizing staff burnout | Establish single points of contact. |
| — | — | — | | — |
| Work with colleges and educational institutions to support and promote clinical careers to assist in the aftermath of staffing shortages. | Provide more training classes regarding NIMS | Be sure partner, state, and other plans are in conjunction. | | Streamline communication flow so there is one point of information, in that we all get the same information and on the same page. |
| — | | — | | — |
| Important to continue to provide collaborative opportunities for PHN's to engage with regions partners to enhance and strengthen relationships that have critical in this response. | | Revise current plans to reflect how the response actually played out. | | Routine (weekly) local partner meetings |
| | | — | | |
| | | Use real time response as basis for new / revised plan development | | |
| 👍 5  💬 0 | 👍 3  💬 1 | 👍 10  💬 0 | 👍 1  💬 0 | 👍 0  💬 0 |

| Provide templates in regards to plans, polices and procedures | Work with state to have back up supplies for such an event. | Consider adding a modified Altered Standard of Care emergency order to allow the waivers that permit modification in staffing ratio and level of care needed to perform certain acts. |
| --- | --- | --- |
| 👍 9  💬 0 | 👍 1  💬 0 | 👍 0  💬 0 |

## Incident Management

+

---

Continue to familiarize/refresh partners on ICS concepts. Conduct training and exercises to practice.
—
On going incident command training. Most people don't use on a regular basis
—
Guidance in HICS vs ICS. CNOs, CMOs struggled performing dual roles (one as a planning chief, one as CNO etc.)

👍 7 💬 2

---

State level command charts were not readily available
—
The state structure needs to be defined and communicated.
—
IMT structure often led to lack of communication with those actually doing the work.

👍 6 💬 1

---

Plans should include checklists or other easy to follow/implement tools.

👍 3 💬 0

---

Actually use chain of command and utilize a JIC like plans delineated

👍 0 💬 0

---

Internal senior leaders had difficulty leaving corporate title / role behind to focus on ICS position - may require NHHA involvement to educate senior leaders
—
some people were put in positions based on rank instead of knowledge which led to confusion

👍 4 💬 1

---

Document the need your agency was called upon to meet. Know your own capabilities as an agency. Use these capabilities to guide your plan and base your decision making. Use partnerships to have discussions on options.

👍 0 💬 0

---

many people who do incident/emergency management in their organizations are essentially learning this as they go. Training in this function is always needed

👍 2 💬 0

## Information Management

+

ways to address misinformation that has made everyone's job so much harder
—
Misinformation or information being released early caused confusion to the public as well as phn's.

👍1 💬0

too many entities making recommendations.
—
When an outbreak occurred we were to contact our local health department, seems that there were considerable differences in what we were being told compared to other localities throughout the state. They soul all be on the same page.
—
Professional Associations also created many problems. Their PPE and Safety recommendations frequently were in conflict with CDC, State and institutional recommendations.

👍1 💬2

Reporting demands were so great they took staff away from performing other critical activities.

👍2 💬1

Regular local/community briefings for real time information sharing.
—
Informing partners of policy change before the media.

👍1 💬0

It would be helpful if the entity establishing policy and workflow (i.e. DHHS, HSEM, DPHS) also provided public-facing messages that are easy to consume and disseminate (Short, in plain language, etc.) We spend a lot of unnecessary time waiting for messaging that had been promised but didn't materialize in a timely manner due to the need for chain of command review at the State level. This resulted in many agencies creating messaging, which lead to confusion at the consumer level.

👍6 💬0

Due to staff turnover, a lot of people need training and familiarity with Juvare and other systems

👍0 💬0

I haven't used juvare. I will check it out.

👍0 💬0

The HANs were really well done. Our only issue, as an Area Agency, was not understanding how we were defined. Are we health care, mental health, home care? It made it very difficult to plan.

👍1 💬0

## Surge Management

This was definitely a learning experience, but a statewide plan for ACS's and "surge" to assist the local municipalities would be beneficial moving forward.

---

Local plans were in place for ACS but State came in with other ideas.

---

Having clear outline of roles and responsibilities for an ACS.

---

Develop a list of resources (staff/equipment/supplies) that would be needed to properly operate the ACS's across the State.

---

Consider that surge means something different in rural spaces ... what might be a minor bump in census at large hospitals could be overwhelming at a CAH.

👍 6  💬 0

Doing a TTX of setting up, staffing, running 'including how to license beds, credential providers etc. So we then HAVE a built up SOP

👍 0  💬 0

Need to build in an extra layer of planning pre-vaccine. Drills were based on vaccinating large populations, not the impact prior to.

👍 1  💬 0

We definitely learned that this event has been a wake up call. Challenge now is to use that to prepare for the next pandemic or some other large scale event. Preserving expertise, funding, staffing will be challenging. Humans are good at dealing with their immediate needs, not so good at planning for unexpected needs

👍 2  💬 0

The State was very unresponsive to critical questions related to the set-up and function of ACSs

---

We heard that the state was telling hospitals to d/c pts to Long Term care facilities w/o asking what our issues were at the time. This caused conflict between both entities.

👍 4  💬 0

## Non Pharm Interventions

Consider that per-capita allocation of resources without consideration for geography and lack of infrastructure disproportionately impacts the rural areas of our state. For example, a single testing fixed site in the North Country made sense in terms of volume, but not in terms of how difficult it was for residents to reach the site from all corners of the region. If resource amounts are adequate, be sure to also provide the support necessary to get them to residents that are sparsely populating rural corners.

👍 1  💬 0

NPIs became a dividing point and requiring implementation without overseeing or funding agency agreement meant losing staff

---

consistent policy and a unified front. State Public health and state policy makers did not always seem to align

---

Our legislators don't support NPI or Countermeasures…when they refunded the fines administered, that was the biggest insult until today's vote by the Executive Council

👍 4  💬 1

## Responder Safety and Health

+

---

incentives for longevity, competitive wages

👍 1 💬 0

---

We had much discussion and angst early on about feedback to EMS/fire/police about covid statuses. They need to be accepted as part of the care team and need to be allowed notification of such to keep them and the public safe.

—

Public health staff did not receive stipends where as any first responder, regardless of call volume did. This was insulting.

👍 3 💬 0

---

Monitoring of staffs physical, mental and behavioral health needs to be of the plan during an event.

—

SBIRT-style training for highest levels of ICS teams ... help them identify needs early and refer for supports.

👍 3 💬 0

---

As a non-profit it was very difficult to incentivize staff. They were asked to do more and more. Lots of cash that was provided to those who were unable to work could have been shared with those who were working double.

—

we cannot always do what we have always done, we need to look at different ways of incentivizing people and retaining staff

👍 3 💬 0

---

We just found out that DHHS was co-locating behavioral health staff at their COVID center...that would have been good to know so we could coordinate and learn from them

👍 3 💬 0

---

Mental health support to help staff who sometimes are openly harrassed or challenged just for doing their duty, and for staff who are burning out due to frustration over public behavior leading to surges in cases/deaths.

👍 0 💬 0

---

workplace seemed to rely on EAP which does not adequately address this issue

👍 1 💬 0

---

Surprised that there is nothing in the AoIs regarding PPE, stockpiles, fit testing, training etc....

👍 0 💬 0

---

Our outpatient BH treatment options that were essentially shut down shifted their services to staff working and booked appts in house for help

👍 0 💬 0

## Vulnerable Populations

+

possibly closer collaboration with entities such as the NH Home care & Hospice Alliance. They are the professional group working with home health agencies and could have helped with outreach to agencies and been a liaison between the state and individual agencies
—
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—
VNA's that entered into closed POD agreements with their PHN was able to vaccinate healthcare workers and homebound patients as we advocated for that population.

👍 3 💬 0

Convene stakeholders to identify promising/best practices for engaging agencies that provide services to vulnerable populations in emergency planning.

👍 1 💬 0

Messaging was difficult for vulnerable populations. When we pulled J & J, a lot of trust in vaccine went down. Hard to make a comeback after that.

👍 0 💬 0

the original definition was very narrow and needed to open up to allow for the best use of resources.

👍 0 💬 0

Maybe incentivize agencies that already reach these populations to participate in the response. Some area agencies declined vaccinating their own vulnerable populations, putting more responsibility on the PHNs who weren't as well positioned to reach some, like home bound.

👍 2 💬 0

Our agency houses impaired disabled and senior residence, fortunately through the public health agency in our region we were successful in getting a clinic setup for them and a community by donating our space. Was successful an much appreciated - however we worked to build this relationship and had to find the path to success.

👍 0 💬 0

Our agency services folks with disabilities, elders and veterans, many of whom are very vulnerable and homebound and have multiple people in their homes each day. Vaccines were not allowed for home care workers and staff as they were not considered "first responders". Our agencies are lifelines for these people, and we should have been allowed to vaccinate in the 1st wave.

👍 2 💬 0

travel in the North Country to vaccine clinics often a barrier to some.

👍 0 💬 0

## Materiel Management and Distribution

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We need to have a singular, vaccine tracking and reporting and inventory system- which we do now. I had high hopes for JUvare but for whatever reason, we didn't use it...will we use it going forward...
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Additional support for managing state systems such as Juvare and other systems.

👍 2  💬 0

Getting detailed specifications to keep on file for resourcing or procuring supply needs.

Developing Tiers based on supply chain (Good, better, best) availability. For example if 1860 masks are unavailable, what are some alternatives that can be made acceptable.

👍 0  💬 0

better training on how to extend use of PPE for Infection Control people. This sometimes was not in conjunction with certifying agencies which would not be familiar with state vs federal PPE usage guidance.

👍 2  💬 0

PPE supplies was a concern to start with and a scramble but once the state had supplies and we had access relief was felt for carrying for residence and safety of staff.
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DHHS (ESU) did a great job supporting the hospitals with PPE, and GSHCC was very helpful as well getting the communications out for the ESU Team.
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We were lucky to have excellent partners supporting us in this area.

👍 3  💬 0

Concerned about supply shortages re-developing as we see slowdowns in various parts of the global supply chain now

👍 3  💬 0

## Vaccine Administration

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It would be great to have a "train the trainer" option to get more staff prepared.

👍 0  💬 0

needs to be a level of consistency across the sites as they varied by location. When working one site, staff would be used one way but not the same at a different site. This caused people to get upset as their skillset was not being properly used. If vetted and approved then their usage should be universal.

👍 1  💬 0

An additional strength was how Healthcare and other supported the state sites, often at the expense of their own operations. These site would not have been effective without this support.

👍 6  💬 0

## Volunteer Management

NH Responds was touted as an easy fix to volunteer management, while in reality it wasn't. PHNs potentially has to sort through and work to vet hundreds of spontaneous volunteers through this system, which was unmanageable. The spontaneous volunteers should be managed at the state level and when needed they can be requested through the appropriate ESF like any other resource.

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DHHS should have clear processes and a designated person(s) overseeing this work. We can't just contract everything out and expect the system to work, in an emergency

👍 1 💬 0

Where to start...the process for vetting non MRC volunteers was not at all helpful. Volunteer tracking, vetting for background checks was not timely. There were no competency documents... we could not just accept people because they 'worked' at a fixed site...our activation, our liability. We built this in the fly. We need to be clear about roles and responsibly.
The use of volunteers in the LTCF environment was not effect, nor was it safe. There was no oversight for them in this role, and we are not equipped to do so.

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State background check process is manual. DOS does not have an automated capability causing many of these delays.

👍 1 💬 0

A tip of the hat to the Feds as they supplied staff augmentation for some TLCs.

👍 0 💬 0

CMS wouldn't let volunteers in LTC facilities, we could have used them.

👍 0 💬 0