**Western Region Homeland Security Advisory Council
March 2020 – October 2021**

DRAFT
After Action Report /
Improvement Plan

August 5, 2022

Report developed with support from Day Health Strategies

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EXECUTIVE SUMMARY

The Western Region Homeland Security Advisory Council (WRHSAC) After Action Report and Improvement Plan (AAR/IP) was developed to evaluate the response to the COVID-19 emergency by emergency management and public health personnel in Berkshire, Franklin, Hampden, and Hampshire counties by examining the following capabilities: 1) Community Preparedness, 2) Emergency Operations Coordination, 3) Emergency Public Information and Warning, 4) Information Sharing, and 5) Medical Materiel Management and Distribution. The response evaluation planning team was composed of numerous and diverse representatives, including the disciplines of Public Health, Hospitals, Municipal Government, Emergency Management, Fire, Emergency Medical Services, Law Enforcement, Regional Transportation, Public Works, Public Safety Communications, K-12 Education, and Higher Education. The Franklin Regional Council of Governments acts as the WRHSAC Program Manager.

Quantitative and qualitative data were collected to inform this AAR/IP, using surveys, interviews, and focus groups and forums. Ninety-seven people completed the survey and approximately 60 people participated in an interview or a focus group. Forums were held in each county to review the AAR/IP and provide feedback.

Based on the response planning team's deliberations, the following objectives were developed for WRHSAC COVID-19 Response Evaluation:

> **Objective 1: Command and Control Coordination** – Ensure effective and efficient emergency response by establishing incident command structures to coordinate the response throughout Berkshire, Franklin, Hampden, and Hampshire counties
> **Objective 2: Public Information Coordination –** Ensure the timely and accurate coordination and dissemination of public health and safety information to the public
> **Objective 3: Information-Sharing Coordination –** Develop and execute effective and efficient information-sharing coordination channels among responders
> **Objective 4: Medical Materiel Coordination –** Coordinate the provision of medical services, vaccines, and supplies to mitigate the adverse health effects of COVID-19

The purpose of this report is to analyze response actions and results, identify strengths to be maintained and built upon, identify potential areas for further improvement, and support development of corrective actions.

MAJOR STRENGTHS

The major strengths identified during this response are as follows:
1. Participants reported creatively engaging with local community partners to identify and address the needs of at-risk individuals. Note: This strength matched closely to a strength identified in the MAPHCO AAR/IP: *"EDS teams understood the specific needs and characteristics of their communities and responded effectively."*

2. Even though most emergency plans did not include enough specific information to adequately address the COVID-19 pandemic, participants were able to pivot and improvise to create more specific operational plans that enabled them to respond to the best of their abilities with the available resources.

3. Most participants reported that they had the infrastructure and the financial resources they needed to adequately implement their emergency response plans. Note: This finding matched closely to a strength identified in the BCBOHA AAR/IP: *"The Berkshire Public Health Alliance, Berkshire Regional Planning Commission and Tri-Town Health were able to get emergency funding quickly from the state that allowed the Alliance to ramp up their public health nursing capability."*

4. Emergency management personnel reported strong working relationships with the Massachusetts Emergency Management Agency.

5. In Franklin and Hampshire counties, the Medical Reserve Corps (MRC) was efficient and effective at mobilizing volunteers for specific tasks. Note: This strength matched closely to a strength identified in the MAPHCO AAR/IP: *"Strong relationships with MRC made covid vaccination clinics possible and cos-effective."*

6. Most participants described adapting or developing new plans to reach the public with critical information, which they believed were generally successful.

7. Some participants described utilizing creative strategies to reach the public with critical information. Note: This strength matched closely to a strength identified in the MAPHCO AAR/IP: *"All sites identified area-specific methods for reaching residents,"* as well as a strength identified in the BCBOHA AAR/IP: *"Local communities leveraged the use of formal and informal information sharing."*

8. Some small towns were able to employ relatively simple methods to get information out to the public effectively. Note: This strength matched closely to a strength identified in the MAPHCO AAR/IP: *"All sites reported reaching residents with covid-19 communications."*

9. Participants described creative methods to improve communication with limited English speakers.

10. Many town and city officials were able to tap available expertise and rely on pre-existing relationships to establish channels for effective communications between key agencies and departments. Note: This strength matched closely to a strength identified in the MAPHCO AAR/IP: *"Emergency dispensing sites attributed their success to the relationships they developed over past 15 years…"*

11. Some LEPCs and other local agencies were agile and efficient in developing lists of needed masks and vaccines (as they became available) so they could acquire them from various sources.

12. Most participants described coordinating their needs for medical materiel efficiently and effectively with MEMA West (Regions 3 and 4) to acquire needed medical materiel.

13. Emergency plans, where they existed, had some useful elements for obtaining medical materiel, in particular contact lists, which enabled communication between key stakeholders.

14. Emergency committees in many towns and cities were able to rely on established relationships in their immediate areas, which was critical to their ability to procure medical materiel, monitor materiel inventories, share information about items, and distribute them. Note: This strength matched closely to a strength identified in the MAPHCO AAR/IP: *"Many longtime EDS*

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leaders were intimately involved in planning, executing, and publicizing the regional vaccine collaborative's clinics, using and adding to the lessons they had learned from previous drills."

15. Some towns used an effective system to distribute needed materiel, such as masks, to the public (e.g., contacting residents using an automated/call-out system).

PRIMARY AREAS FOR IMPROVEMENT

Throughout the response, several opportunities for improvement in the ability for Western Massachusetts communities to respond to the incident were identified. The primary areas for improvement, including recommendations, are as follows:

1. Participants reported that they had limited ability to provide critical information in languages other than English to their community members.
    Recommendation: Enhance language capacity and capabilities among all public health and emergency management personnel and platforms.
2. Participants reported that they did not have the ability to provide PPE and/or vaccines to homebound residents or residents who were not able to physically travel to vaccine distribution sites. Note: This finding matched closely to an area for improvement identified in the MAPHCO AAR/IP: *"Nearest state mass vaccination site being situated 1.5 hours' driving distance from the most western town and many seniors do not feel safe driving long distances and may not have the support to do so."*
    Recommendation: Strengthen relationships with agencies who provide services to at-risk groups who may need additional resources and services, with strategies to address each group, and ensure it is updated regularly.
3. Participants reported that they had limited ability to provide critical information to community members who had limited/no access to technology.
    Recommendation: Develop a town/community-wide tracking system of all at-risk groups who may need additional resources and services, with strategies to address each group, and ensure it is updated regularly.
4. Emergency management plans were outdated and lacked realistic and specific guidance for responding adequately to a prolonged COVID-19-type pandemic. Note: This finding matched closely to an area for improvement identified in the BCBOHA AAR/IP: *"Many Berkshire communities consulted their existing Emergency Plans and Pandemic Plans. However, they were very out of date and weren't very useful to this response, especially as DPH was not clear about the role of local Boards of Health (BOH),"* and the MAPCHO AAR/IP: *"Most EDS plans were filled with difficult to understand language, they were not read by EDS teams, and most sites did not reference them,"* and the FRCOG AAR/IP: *"FRCOG has operated under a charter and a Memorandum of understanding since 1997 and Covid-19 demonstrated the need for more significant response roles during a country wide emergency."* Consequently, recommendations in each of these referenced AAR/IPs were similar to the recommendations below.
    Recommendation: Emergency Management Plans should be updated and drilled regularly and collaboratively by multiple stakeholders. These plans should include:
    ▪ Clearly defined roles and responsibilities of emergency management and public

health personnel
- Strategies for effective and efficient communication and information-sharing between stakeholders and partners, including clear lines of authority on critical decision-making
- Clear instructions and pathways for supply chain management
- Functional annexes on managing pandemics and other contagious diseases

5. Emergency Dispensing Site plans were not utilized initially, and when they were utilized, they did not account for realistic constraints imposed by the nature of the COVID-19 disease and the storage requirements for the COVID-19 vaccine. Note: This finding matched closely to an area for improvement identified in the MAPHCO AAR/IP: *"When testing and vaccines became available, the state did not involve EDSes in distribution efforts, despite years of planning and exercising led by the state indicating that would be the case."* Therefore, the recommendation below is similar to MAPHCO's recommendation.
    Recommendation: Emergency Dispensing Site Plans should be designed for a county or regional area (and not just the local level) and should include strategies for sharing and mobilizing resources and distributing medical countermeasures effectively across the county or region so that all individuals are served and protected.

6. Participants reported having little to no standardization or training when it came to effectively building and maintaining an ongoing incident command structure. Note: This finding matched closely to an area for improvement identified in the BCBOHA AAR/IP: *"Incident Command Systems were not often established or used effectively to manage and coordinate large-scale emergencies."* Similarly, this finding matched an area of improvement in the FRCOG AAR/IP: *"need to reorganize FRCOG staff,"* and the issue of *"not having a central point of coordination,"* Consequently, both AAR/IP's recommendation to *"Put Emergency Planning functions into an independent department and name it Emergency Management,"* aligns with our recommendation.
    Recommendation: Incident command system training and exercises should be provided annually, centralized at a county level, standardized, and regularly drilled to ensure consistent resource-sharing and public messaging, streamlined communications, and coordination of efforts.

7. Emergency Management and Public Health personnel lacked a clear, cohesive, and unified response when addressing community needs. Note: This finding matched closely to an area for improvement identified in the BCBOHA AAR/IP: *"Lack of an existing plan or general agreement on who oversees a public health response and lack of structure or plan to regionally coordinate a public health emergency response."*
    Recommendation: Design and implement creative methods and plans for communication, collaboration, and relationship-building between emergency management and public health personnel and exercise these plans annually.

8. Local boards of health seemed to lack core knowledge, capacity, and capabilities to provide a cohesive and collaborative response to the public.
    Recommendation: Strengthen the core knowledge, capabilities, and competencies of local boards of health representatives and their regional response partnerships.

9. Most participants were unaware of the functions and capabilities of Local and Regional Emergency Planning Committees and the Western Massachusetts Health and Medical Coordinating Coalition.

      Recommendation: Clearly define and socialize the roles, responsibilities, and functions of Local and Regional Emergency Planning Committees and the Western Massachusetts Health and Medical Coordinating Coalition; design and implement creative methods and plans for improving communication, collaboration, and integration with emergency management personnel and local boards of health. Exercise these plans annually.

10. Most hospitals and health centers in regions and towns only interacted with host communities, limiting the interaction and collaboration they had with local emergency management personnel and local boards of health.

      Recommendation: Develop and maintain regional communication and collaboration strategies between emergency management personnel, public health personnel, and hospitals and health clinic personnel.

11. Several participants portrayed challenges providing clear and consistent messaging to the public, specifically at-risk residents.

      Recommendation: Establish regionally coordinated public messaging protocols and channels to reach limited English-speakers and at-risk populations such as the elderly, homebound, and homeless in a timely, appropriate, and clear manner. Integrate these protocols into daily operations or exercise them at least annually during flu clinic season.

12. Some towns and cities were unable to establish an effective way to define information sharing needs between emergency agencies and departments.

      Recommendation: Ensure that local emergency plans incorporate clear procedures for 1) defining information sharing needs across all emergency agencies and departments and 2) prioritizing and disseminating accurate information from CDC, DPH, local emergency management and public health personnel.

13. Some participants described struggling to develop effective systems for information exchange between key regional and local agencies and departments. Note: This finding matched closely to an area for improvement identified in the BCBOHA AAR/IP: *"There is a need to improve and formalize regional info sharing partnerships and connections among response partners and to determine how a formal, regional info-sharing network would be vetted and managed, and information disseminated in a consistent, effective manner."*

      Recommendation: At the regional level, improve messaging to local emergency agencies and departments so that information-sharing is timely, clear, and consistent.

14. Participants described lacking clear and simple systems for ordering and distributing critical medical materiel. Note: This finding matched closely to an area for improvement identified in the FRCOG AAR/IP: *"Identified confusing and separate systems for requesting PPE and other supplies."*

      Recommendation: Clarify and simplify systems for ordering and distributing medical materiel and ensure this information is described clearly in emergency plans to ensure fair and equitable distribution.

15. Many participants reported that their committees and agencies lacked sufficient staff to acquire, manage, and distribute needed medical materiel. Note: This finding matched closely to an area for improvement identified in US Fire listening sessions: *"...the lack of personnel to fully staff*

911 dispatch and response," as well as *"the ability to recruit, train and retain new first responders due to pulling those who did these jobs into the response roles."*

> **Recommendation:** Provide adequate staffing on relevant emergency committees such as LEPCs to ensure there are personnel to order needed supplies, follow up on purchases, and deliver them where they are needed.

16. Most participants stated that they did not have the ability to distribute needed materiel such as masks and vaccines to non-English speaking residents and other at-risk populations (e.g., elderly, homeless).

> **Recommendation:** Develop and maintain lists with contact information on groups and agencies that serve limited English-speaking residents and at-risk individuals in communities to facilitate efficient distribution/delivery of vaccines, PPE, and other needed supplies.

17. Several participants described receiving faulty masks, which hindered their medical materiel management and distribution.

> **Recommendation:** Create a system to test equipment and supplies regularly to ensure quality and fit are appropriate.

18. Several participants described inadequate supply chain management of medical materiel, such as PPE, resulting in excessive quantities in some places and inadequate supplies in others. Note: This finding matched closely to an area for improvement identified in US Fire listening sessions: *"Infection control became a problem due to initial lack of sufficient and approved PPE."*

> **Recommendation**: Allow greater control for local areas and agencies to organize their own medical materiel distribution and management processes to improve efficiency and flexibility at the local level.

Overall, there were several strengths identified in this response, all of which can be built upon to successfully execute recommendations to improve future emergency response efforts.

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SECTION 1: RESPONSE OVERVIEW

Response Details

Response Name	**WRHSAC COVID-19 Response Evaluation**
Response Dates	March 2020 – October 2021
Location	Western Massachusetts
Sponsor	Western Region Homeland Security Advisory Council
Mission	Response
Capabilities	Capability 1: Community Preparedness Capability 3: Emergency Operations and Coordination Capability 4: Emergency Public Information and Warning Capability 6: Information Sharing Capability 9: Medical Materiel Management and Distribution
Scenario	COVID-19, an infectious disease caused by SARS-CoV-2, was initially documented China in December 2019. Massachusetts confirmed its first case of COVID-19 on February 2, 2020. On March 15, 2020, Massachusetts Governor Charlie Baker issued a state-wide lockdown to prevent the spread of COVID-19. Between March 2020 and May 2022, the counties of Berkshire, Franklin, Hampden, and Hampshire in the Western Region of Massachusetts engaged in several emergency response efforts which are being evaluated in this report.
Response Evaluation Planning Team	The response planning team was composed of numerous and diverse representatives, including the disciplines of Public Health, Hospitals, Municipal Government, Emergency Management, and Fire.
Participating Organizations	Representatives from Emergency Management, Local and Regional Planning Committees, Boards of Health/Health Departments, Police, Fire, Emergency Medical Services, Massachusetts Emergency Management Agency, Schools, Community Organizations Active in Disaster, and Health and Medical Coordinating Coalitions in Berkshire, Franklin, Hampden, and Hampshire counties.

SECTION 2: RESPONSE DESIGN SUMMARY

Response Purpose and Design

Response Objectives, Capabilities, and Activities

Capabilities-based planning allows for response evaluation planning teams to develop response evaluation objectives and observe response outcomes through a framework of specific action items that were derived from the Target Capabilities List (TCL). The capabilities listed below form the foundation for the organization of all objectives and observations in this response. Additionally, each capability is linked to several corresponding activities and tasks to provide additional detail.
Based upon the identified response evaluation objectives below, the response evaluation planning team has decided to demonstrate the following capabilities during this response:

Objective 1: Objective 1: *Command and Control Coordination* – Ensure effective and efficient emergency response by establishing incident command structures to coordinate the response throughout Berkshire, Franklin, Hampden, and Hampshire counties
Capability 1: Community Preparedness
Activity 1: Determine risks to the health of the jurisdiction
Activity 2: Strengthen community partnerships to support public health preparedness
Activity 3: Coordinate with partners and share information through community social networks
Activity 4: Coordinate training and provide guidance to support community involvement with preparedness activities

Capability 3: Emergency Operations Coordination
Activity 1: Conduct preliminary assessment to determine the need for activation of public health operations
Activity 2: Activate public health emergency operations
Activity 3: Develop and maintain an incident response strategy
Activity 4: Manage and sustain the public health response
Activity 5: Demobilize and evaluate public health emergency operations

Objective 2: *Public Information Coordination* – Ensure the timely and accurate coordination and dissemination of public health and safety information to the public

Capability 4: Emergency Public Information and Warning
Activity 1: Activate the emergency public information system
Activity 2: Determine the need for a joint information system
Activity 3: Establish and participate in information system operations
Activity 4: Establish avenues for public interaction and information exchange
Activity 5: Issue public information, alerts, warnings, and notifications

Objective 3: *Information-Sharing Coordination* – Develop and execute effective and efficient information sharing coordination channels among responders
Capability 6: Information Sharing

Activity 1: Identify stakeholders that should be incorporated into information flow and define information sharing needs
Activity 2: Identify and develop guidance, standards, and systems for information exchange
Activity 3: Exchange information to determine a common operating picture

Objective 4: *Medical Materiel Coordination* **–** Coordinate the provision of medical services, vaccines, and supplies to mitigate the adverse health effects of COVID-19
Capability 9: Medical Materiel Management and Distribution
Activity 1: Direct and activate medical materiel management and distribution
Activity 2: Acquire medical materiel from national stockpiles and other supply sources
Activity 3: Distribute medical materiel
Activity 4: Monitor medical materiel inventories and medical materiel distribution operations
Activity 5: Recover medical materiel and demobilize distribution operations

Scenario Summary and Evaluation Methods

COVID-19, an infectious disease caused by SARS-CoV-2, was initially documented China in December 2019. Massachusetts confirmed its first case of COVID-19 on February 2, 2020. On March 15, 2020, Massachusetts Governor Charlie Baker issued a state-wide lockdown to prevent the spread of COVID-19. Between March 2020 and May 2022, the counties of Berkshire, Franklin, Hampden, and Hampshire in the Western Region of Massachusetts engaged in several emergency response efforts which are being evaluated in this report.

The Western Region Homeland Security Advisory Council (WRHSAC) focused this evaluation on the following factors:
- Command and Control Coordination
- Public Information Coordination
- Information Sharing Coordination
- Medical Materiel Coordination

The methods of this evaluation included collecting quantitative data (in the form of surveys) and qualitative data (in the form of interviews, focus groups, and forums). Surveys used a closed-ended format and interviews/focus groups used a semi-structured interview guide with open-ended questions.

Representatives from the following agencies/organizations in Berkshire, Franklin, Hampden, and Hampshire counties were invited to participate in either a survey and/or an interview/focus group between May and July 2022:
- Emergency Management
- Local and Regional Planning Committees
- Boards of Health/Health Departments
- Police and Fire Departments
- Emergency Medical Services
- Massachusetts Emergency Management Agency
- Schools

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- Community Organizations Active in Disaster
- Health and Medical Coordinating Coalitions
- Boards of Select People
- Town Managers
- Hospitals and Health Centers

Of these groups, 97 representatives completed a survey and 60 representatives participated in an interview or focus group (see Figure 1 for counties represented by survey respondents). Two groups did not have any representatives participate in either a survey or an interview/focus group: Boards of Select People and Town Managers. Three outreach attempts were made to invite representation from these groups to participate, but no responses were received.

Figure 1: Counties represented by respondents

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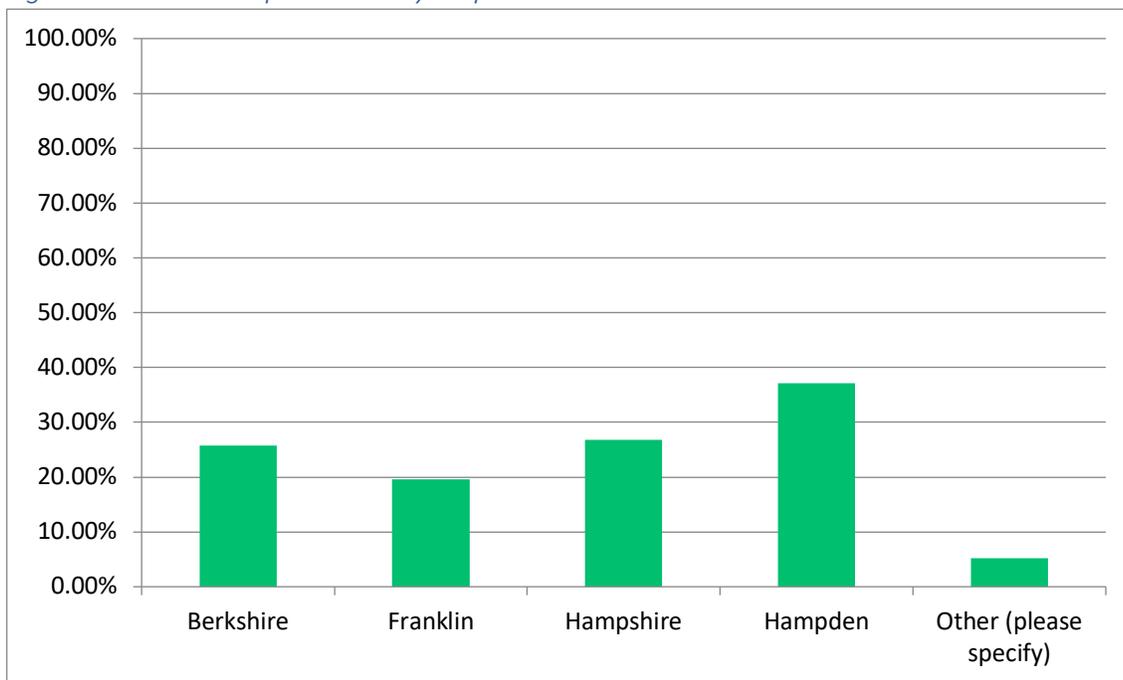
SECTION 3: ANALYSIS OF CAPABILITIES

Table 1: Analysis of core capabilities

Objective	Core Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
Ensure effective and efficient emergency response by establishing incident command structures to coordinate the response throughout Berkshire, Franklin, Hampden, and Hampshire counties	#1 Community Preparedness		X		
	#3 Emergency Operations Coordination		X		
Ensure the timely and accurate coordination and dissemination of public health and safety information to the public	#4 Emergency Public Information and Warning		X		
Develop and execute effective and efficient information sharing	#6 Information Sharing		X		

coordination channels among responders					
Coordinate the provision of medical services, vaccines, and supplies to mitigate the adverse health effects of COVID-19	#9 Medical Materiel Management and Distribution			X	

Table 1 Summary of Core Capability Performance
Ratings Definitions:

- Performed without Challenges (P): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws.
- Performed with Some Challenges (S): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws. However, opportunities to enhance effectiveness and/or efficiency were identified.
- Performed with Major Challenges (M): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s), but some or all of the following were observed: demonstrated performance had a negative impact on the performance of other activities; contributed to additional health and/or safety risks for the public or for emergency workers; and/or was not conducted in accordance with applicable plans, policies, procedures, regulations, and laws.
- Unable to be Performed (U): The targets and critical tasks associated with the core capability were not performed in a manner that achieved the objective(s).

Capability 1: Community Preparedness

Capability Summary

Community preparedness is the ability of communities to prepare for, withstand, and recover from public health incidents in both the short and long term. Through engagement and coordination with a cross-section of state, local, tribal, and territorial partners and stakeholders, the public health role in community preparedness is to:

- Support the development of public health, health care, human services, mental/behavioral health, and environmental health systems that support community preparedness
- Participate in awareness training on how to prevent, respond to, and recover from incidents that adversely affect public health
- Identify at-risk individuals with access and functional needs that may be disproportionately impacted by an incident or event
- Promote awareness of and access to public health, health care, human services, mental/behavioral health, and environmental health resources that help protect the community's health and address the access and functional needs of at-risk individuals
- Engage in preparedness activities that address the access and functional needs of the whole community as well as cultural, socioeconomic, and demographic factors
- Convene or participate with community partners to identify and implement additional ways to strengthen community resilience
- Plan to address the health needs of populations that have been displaced because of incidents that have occurred in their own or distant communities, such as after a radiological or nuclear incident or natural disaster

Cross-Cutting Observation: The majority of participants reported that their existing emergency response plans did not explicitly include identifying and/or addressing the needs of at-risk individuals; however, these participants stated they began working immediately with community partners to identify and address at-risk individuals' needs.

Activity 1.1

Determine risks to the health of the jurisdiction
Strengthen community partnerships to support public health preparedness
Coordinate with partners and share information through community social networks

Observation 1.1

Strength: Participants reported creatively engaging with local community partners to identify and address the needs of at-risk individuals.
Area for improvement 1: Participants reported that they had limited ability to provide critical information in languages other than English to their community members.
Area for improvement 2: Participants reported that they did not have the ability to provide PPE and/or vaccines to homebound residents or residents who were not able to physically travel to vaccine distribution sites.
Area for improvement 3: Participants reported that they had limited ability to provide critical information to community members who had limited/no access to technology.

References

Comprehensive Emergency Management Plans, Emergency Dispensing Site Plans

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Analysis

Quantitative and qualitative data demonstrated that participants quickly reached out to community partners (both existing and new) to ensure they could adequately identify and meet the needs of at-risk individuals within their towns and cities. These creative engagement methods included partnering with faith-based organizations, councils on aging, libraries, schools, and restaurants to distribute public health information (including vaccine information), as well as specific resources (e.g., food distribution, PPE). For example, a few participants described partnering with their library to ensure that hot spots were set up around the city to ensure individuals who had previously relied on library WI-FI still had access to the web. These behaviors and strategies enabled participants to reach some of the hard-to-reach individuals in their communities to ensure their health and safety.

Even though many participants were able to quickly engage community partners, they mentioned that they would like their Comprehensive Emergency Management Plan (CEMP) to include best practices and guidance for building and maintaining effective relationships with community partners to enable them to identify and address the needs of at-risk individuals within their communities more adequately. While most participants agreed that their organization's response strategies allowed them to address the needs of the most vulnerable in their communities, 35% of Franklin County participants disagreed or somewhat disagreed., compared to 18% in Hampshire County, 6% in Hampden County, and 0% in Berkshire County.

Additionally, participants mentioned several structural and resource barriers that prevented them from meeting the needs of at-risk individuals such as:

- Vaccination sites that were located far away from residents who did not have access to transportation or who were homebound
- Lack of a mobile strategy to transport vaccine to those with access challenges
- Lack of long-term options for safely sheltering individuals experiencing homelessness
- Non-digital methods of providing public health and safety information

Figure 2: Respondent views on how effectively their organization addressed the needs of vulnerable groups (by county)
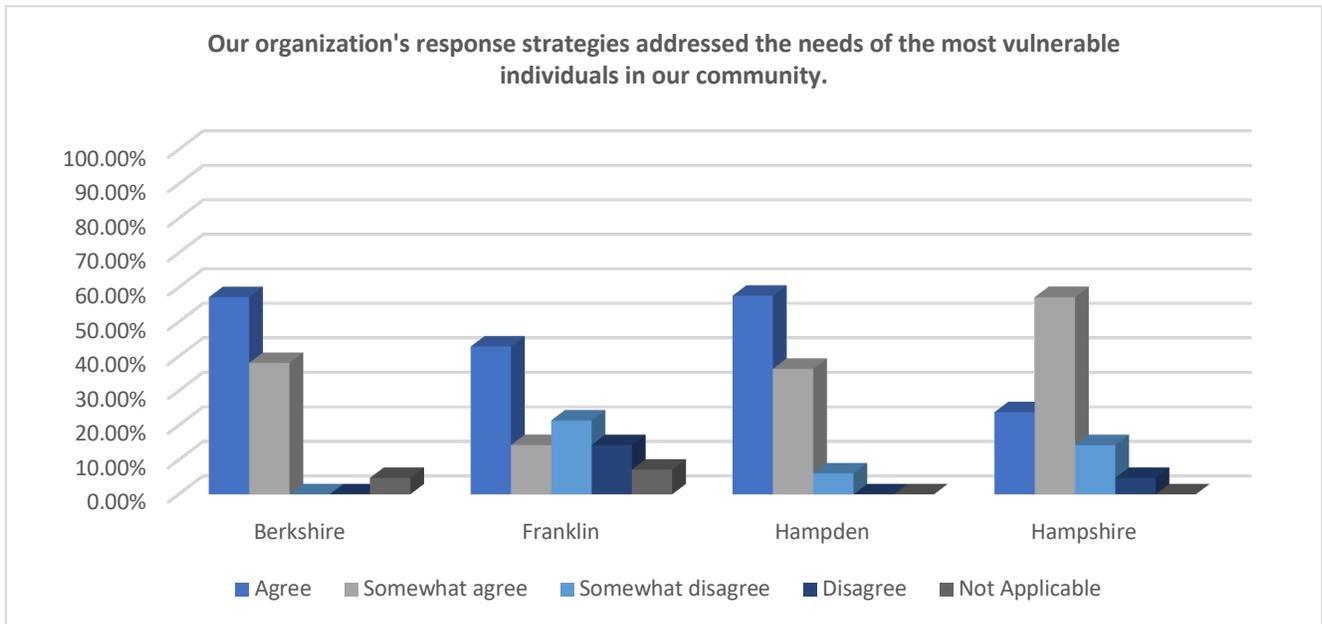
Quantitative data evaluated participants' abilities to address more specific needs within communities. While 40% of respondents felt they addressed food insecurity effectively, nearly 25% did not. A little over 30% of participants felt they effectively addressed internet access among their residents, nearly 30% did not. Lastly, around 50% of respondents felt they did not effectively address childcare or employment needs within their communities.

Section 3: Analysis of Capabilities   DRAFT

Figure 3: Respondent views on how effectively their organization addressed specific community needs
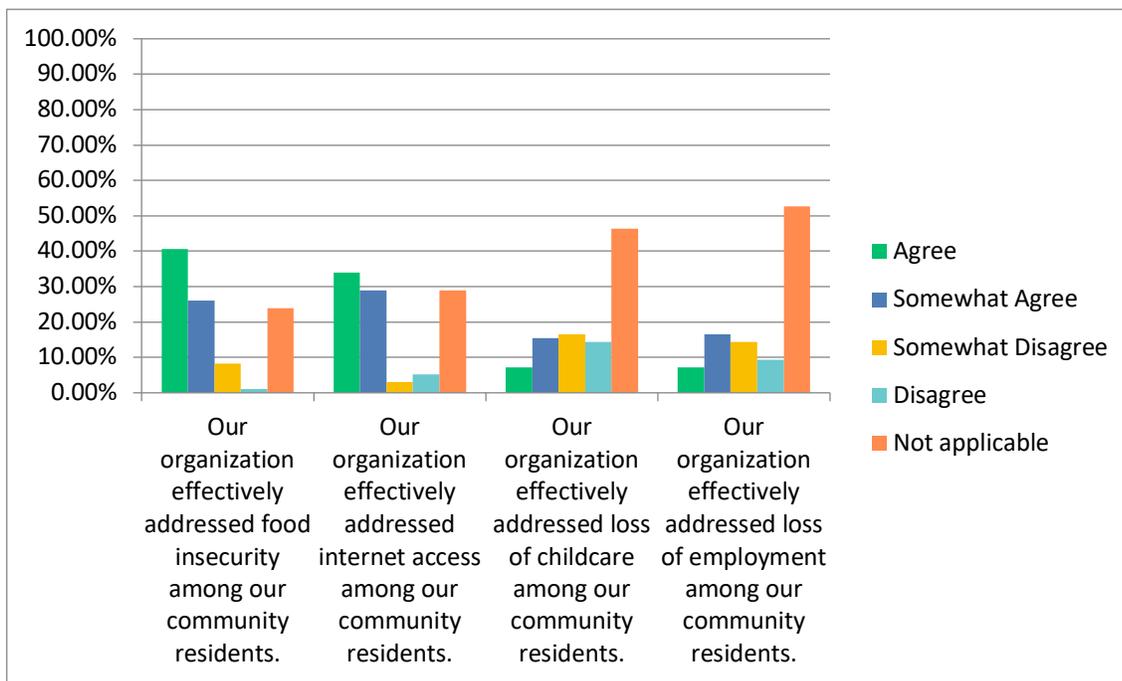
Additionally, quantitative data revealed that respondents did not feel that their organization effectively addressed the needs of specific at-risk individuals within their communities, specifically, those who were experiencing homelessness, those with substance use disorders, those who were elderly.

While organizations in all four counties tended to agree that they effectively addressed both food insecurity and internet access among their communities, there were regional-level differences in how organizations felt they addressed loss of childcare and loss of employment. In Berkshire County, 80% of respondents agreed or somewhat agreed that they effectively addressed loss of childcare in their communities, compared with 42% in Franklin County, 35% in Hampden County, and only 20% in Hampshire County. Similarly, 89% of respondents from Berkshire County felt their organizations effectively addressed loss of employment, while agreement in other counties ranged from 27% to 50%. Qualitative findings did not provide additional detail as to what strategies employed by Berkshire County may have led to this discrepancy.

Figure 4: Respondent views on whether their organization addressed specific individuals' needs
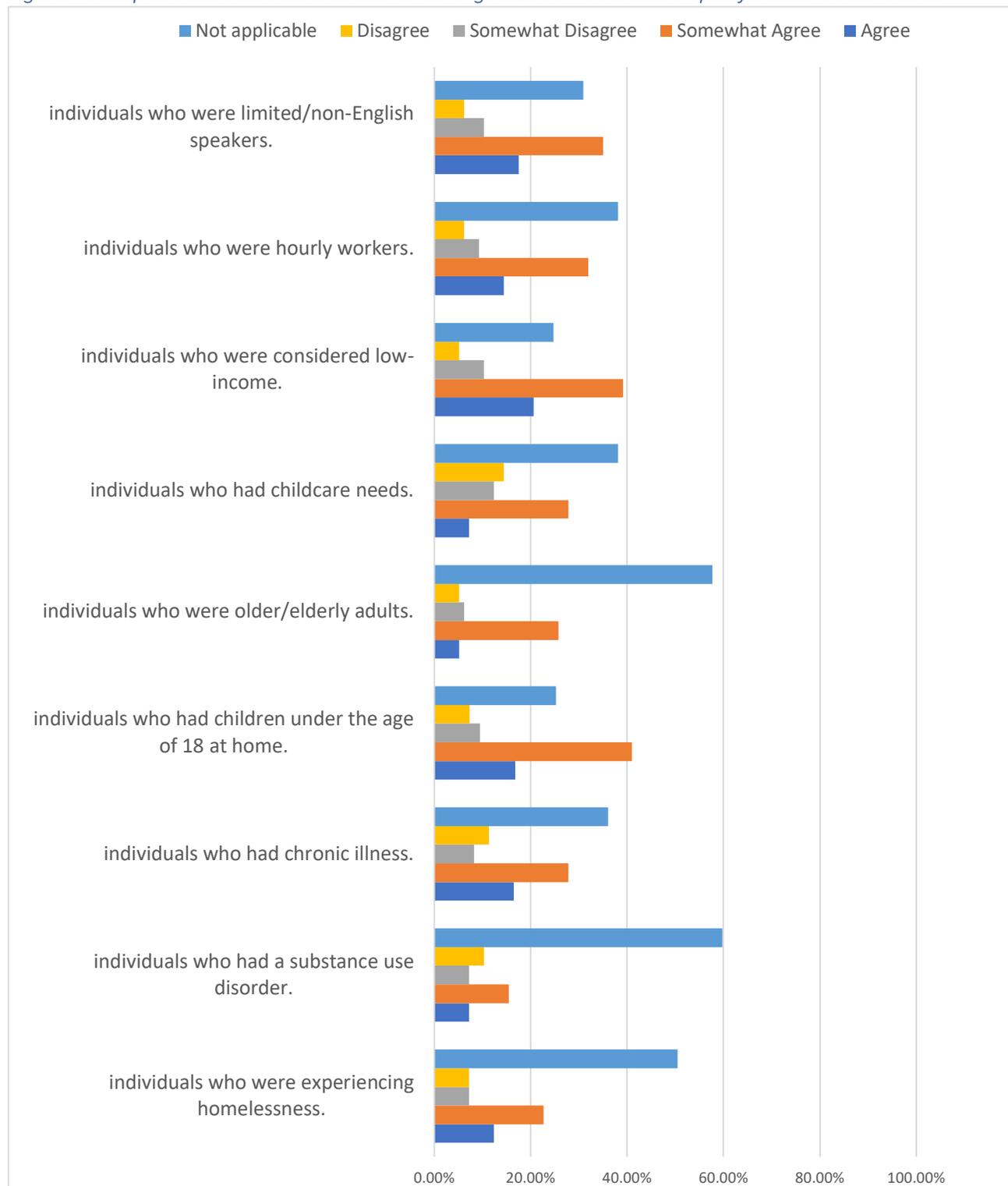
The consequence of these actions (or lack thereof) was that certain individuals, specifically limited-

English speakers, elderly, and low-income individuals were most disproportionately impacted by COVID-19.

Recommendations

Recommendation 1: Enhance language capacity and capabilities among all public health and emergency management personnel and platforms.
Recommendation 2: Develop a clear strategy for addressing at-risk individuals with realistic implementation guidelines. Ensure this strategy is specifically described in CEMP and EDS plans and includes best practices and strategies for building and maintaining community partnerships. Ensure these partnerships represent and include all at-risk individuals.
Recommendation 2: Develop a town/community-wide tracking system of all at-risk groups who may need additional resources and services, with strategies to address each group, and ensure it is updated regularly.

Capability 3: Emergency Operations Coordination

Capability Summary

Emergency operations coordination is the ability to coordinate with emergency management and to direct and support an incident or event with public health or health care implications by establishing a standardized, scalable system of oversight, organization, and supervision that is consistent with jurisdictional standards and practices and the National Incident Management System (NIMS).

Cross-Cutting Observations

- Emergency Dispensing Site plans and Comprehensive Emergency Management Plans did not have specific enough guidance to address the severity, longevity, scale, and/or the epidemiological nature of the COVID-19 pandemic and its impact on communities.
- There is an overall lack of trust, clarity on roles and responsibilities, and clear lines of authority among emergency management personnel and public health personnel at the local, regional, and state levels.
- Incident command center standardization and training is needed at the local and regional levels.
- Decentralization of emergency management and public health responses to the local level results in duplication of efforts, gaps in service and resource provision, and poor coordination among key players.
- Emergency management and public health personnel had little to no interaction with hospitals and health centers in their regions and towns.
- Volunteer coordination and management varied by region and town.

Activity 3.1

Activate public health emergency operations
Develop and maintain an incident response strategy
Manage and sustain the public health response
Demobilize and evaluate public health emergency operations

Observation 3.1

Strength 1: Even though most emergency plans did not include enough specific information to adequately address the COVID-19 pandemic, participants were able to pivot and improvise to create more specific operational plans that enabled them to respond to the best of their abilities with the available resources.
Strength 2: Most participants reported that they had the infrastructure and the financial resources they needed to adequately implement their emergency response plans.
Strength 3: Emergency management personnel reported strong working relationships with the Massachusetts Emergency Management Agency.
Strength 4: The Medical Reserve Corps was efficient and effective at mobilizing volunteers for specific areas.
Area for Improvement 1: Emergency management plans were outdated and lacked realistic and specific guidance for responding adequately to a prolonged COVID-19-type pandemic.
Area for Improvement 2: Emergency Dispensing Site plans were not utilized initially, and when they were utilized, they did not account for realistic constraints imposed by the nature of the COVID-19 disease and the storage requirements for the COVID-19 vaccine.
Area for Improvement 3: Participants reported having little to no standardization or training when it came to effectively building and maintaining an ongoing incident command structure.
Area for Improvement 4: Emergency Management and Public Health personnel lacked a clear, cohesive, and unified response when addressing community needs.
Area of Improvement 5: Local boards of health seemed to lack core knowledge, capacity, and capabilities to provide a cohesive and collaborative response to the public
Area for Improvement 6: Most participants were unaware of the functions and capabilities of Local and Regional Emergency Planning Committees and the Western Massachusetts Health and Medical Coordinating Coalition.
Area for Improvement 7: Most hospitals and health centers in regions and towns only interacted with host communities, limiting the interaction and collaboration they had with local emergency management personnel and local boards of health.

References

Comprehensive Emergency Management Plans, Emergency Dispensing Site Plans

Analysis

Emergency Management Plans and Emergency Dispensing Site Plans

Qualitative results revealed that while participants had existing emergency management plans in place, they were not specific enough information to adequately address the COVID-19 pandemic. Participants stated that these plans provided a helpful structure for various considerations, but they lacked updated and accurate details, and were designed for a much smaller scale. A few people mentioned that their prior experience dealing with H1N1 provided a helpful foundation for knowing what to do during the COVID-19 response. Even though participants did not have adequate emergency management plans in place, they were able to pivot and improvise to create more specific operational plans that enabled them to respond to the best of their ability.

Quantitative findings revealed disagreement among participants about the existence and effectiveness of emergency management plans, particularly at the county level. More than four in five respondents in Berkshire and Hampden Counties (84% and 88%, respectively) agreed or somewhat agreed that they had emergency management plans in place that made them feel prepared to address the pandemic. No respondents in either county indicated they were not sure if they had a plan. In Franklin and Hampshire Counties, 38% and 48%, respectively, agreed that they had plans in place that made them feel prepared to address COVID-19. In Franklin County, 8% of respondents were not sure if they had a plan in place, along with 5% of respondents in Hampshire County.

Figure 5: Respondents who felt their organization had existing emergency management plans that made them feel prepared to address the COVID-19 emergency
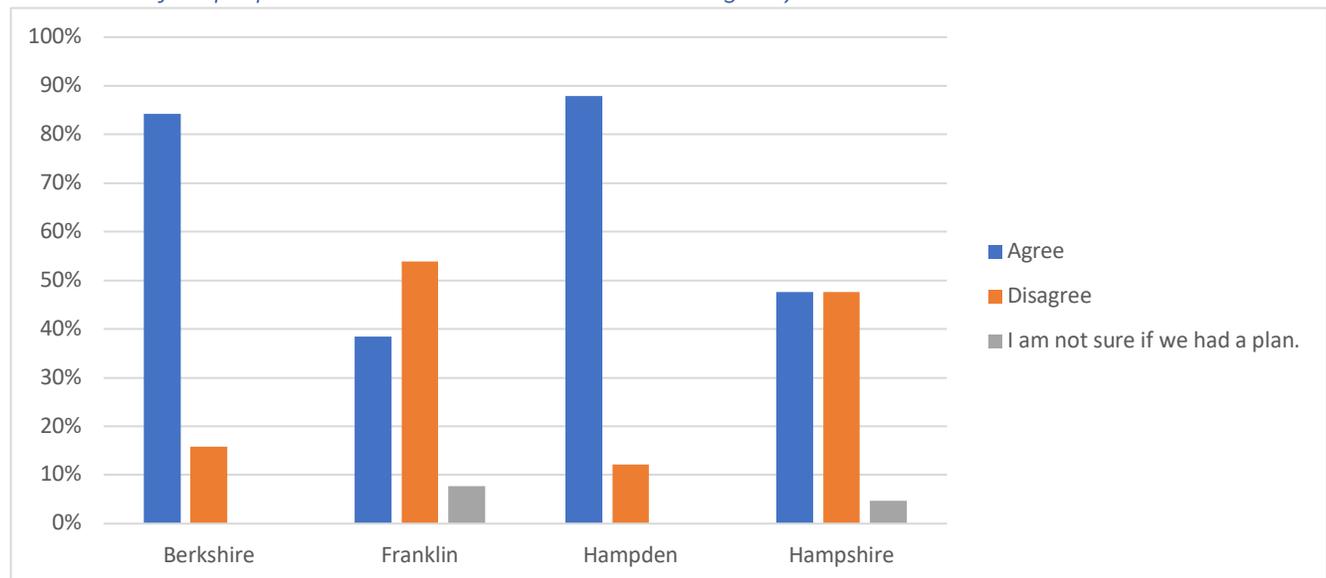

Emergency Dispensing Site (EDS) plans were not utilized initially, and when they were utilized, they did not account for realistic constraints imposed by the nature of the COVID-19 disease. Both

factors caused extreme frustration to participants. Participants cited that their main sources of frustration came from the fact that they had spent a significant amount of time developing and training on these plans, which were required by the State, and then the State did not allow them to use them. Furthermore, the mass vaccination sites were located over an hour away from many cities and towns, making it extremely challenging for folks to travel there, especially those who were most at-risk, such as the elderly and those with transportation challenges. When EDS plans were executed several months later, these plans were written with dispensing sites in mind that would no longer work – such as schools or other indoor locations that were not spacious enough to accommodate social distancing. Furthermore, EDS plans only included instructions for vaccines and not for dispensing PPE, and participants reported having unclear directions on supply chain management overall.

Incident Command Systems

Quantitative and qualitative data indicated that participants' experience with incident command systems and Emergency Operations Centers varied by town and region. A few described having a very useful and effective local incident command structure with a variety of roles present where they were able to talk openly, solve problems, and move to safe and efficient action. These groups stated that they met regularly, provided written and verbal updates, and worked cohesively together. However, many participants described having little to no standardization or training when it came to building and maintaining an effective regional or state incident command center, including clear roles and responsibilities between all players, clear communication and resource-sharing strategies, and clear lines of authority when it came to decision-making. Even participants who reported doing this well seemed to be creating and maintaining this structure organically and spontaneously versus relying on a clear plan for how incident command should be operated.

Figure 6: Respondent views on whether they agreed that their incident command structures were helpful
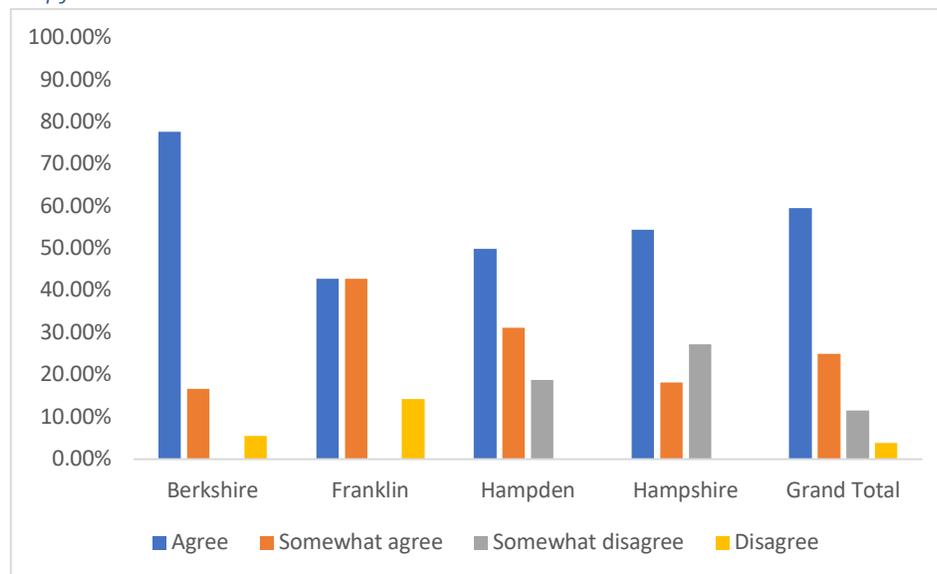
Emergency Management and Public Health Relations

At the state level, participants reported strong and effective working relationships with Massachusetts Emergency Management Agency (MEMA). Participants described MEMA as being trustworthy, responsive, communicative, collaborative, and accessible. However, most participants were extremely frustrated with the Massachusetts Department of Public Health (DPH) and stated that DPH lacked coordination, communication, and strong and clear leadership. Even though the Massachusetts governor was ultimately in charge of the COVID-19 response, participants felt that DPH had the strongest say in how they were to respond to the COVID-19 emergency. Furthermore, participants frequently reported they were not able to rely on the governor's office or DPH for clear or consistent messaging or oversight. Instead, they had to "figure things out on their own." There was an overarching theme that DPH struggled with understanding the realities of coordinating and implementing logistics effectively and they subsequently created guidelines that were fraught with implementation challenges. Participants also described challenges with conveying this feedback to DPH and felt there were no clear lines of communication between state and local emergency management or public health personnel.

At the regional and local level, relationships between emergency management and public health personnel varied. While some reported that their relationships got better over time, many emergency management personnel reported high levels of frustration with their local boards of health. There was a general sentiment that the boards of health folks did not have the right knowledge, experience, or time to effectively address the communities' needs, and that these folks did not have clear roles and responsibilities. Additionally, people reported high levels of turnover among boards of health or the fact that many of the staff were not full-time and/or had competing priorities, leading to poor and ineffective coordination and communication. These factors, along with the fact that historically, public health personnel were not seen as first responders, contributed to a lack of overall trust and confidence in Boards of Health abilities to effectively respond and manage the COVID-19 emergency.

Local and Regional Emergency Management Committees and Coalitions

Most participants were unaware of the functions and capabilities of local and regional emergency planning committees and the Western Massachusetts Health and Medical Coordinating Coalition. For participants who knew what the roles and responsibilities of REPCs/LEPCs/HMCC, they reported that they would like to see more effective communication and coordination between the regional/local level and the State, as well as that they would like to see the committees made up of more people with deeper levels of public health expertise.

Lastly, some organizations had a CDC-funded Public Health Emergency Preparedness Planner who was required by the Office of Planning and Emergency Management (OPEM) and DPH to abstain from implementing the developed plans; those organizations found this restriction extremely frustrating and desired for their Planner to play a larger role in their organization's COVID-19 response. Qualitative and quantitative data both supported this theme in all counties.

Figure 7: Respondent views on if it would have been more helpful if their PHEP Planner could have played a larger role
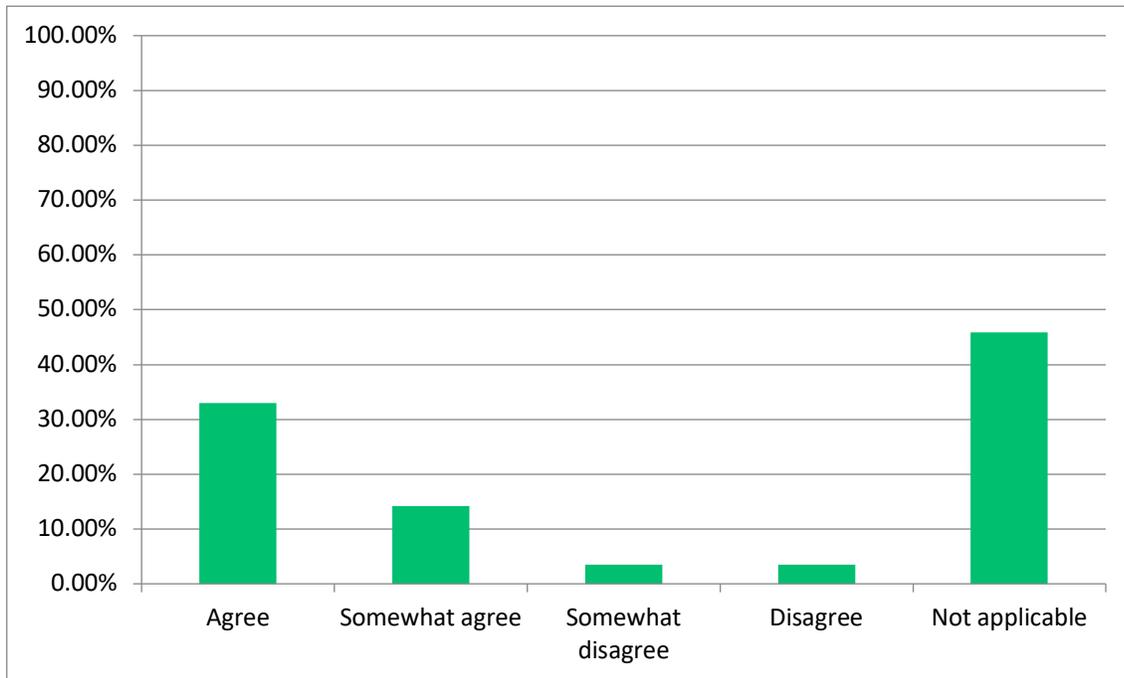
Volunteer Management

Participants did not have many comments on volunteer management. Many organizations did not use volunteers (as depicted in Figure 8), but those who did stated that the Medical Reserve Corps was efficient and effective at coordinating volunteers. A few participants stated they would like to see even more specific training and onboarding of volunteers for addressing an infectious disease pandemic.

Section 3: Analysis of Capabilities   DRAFT

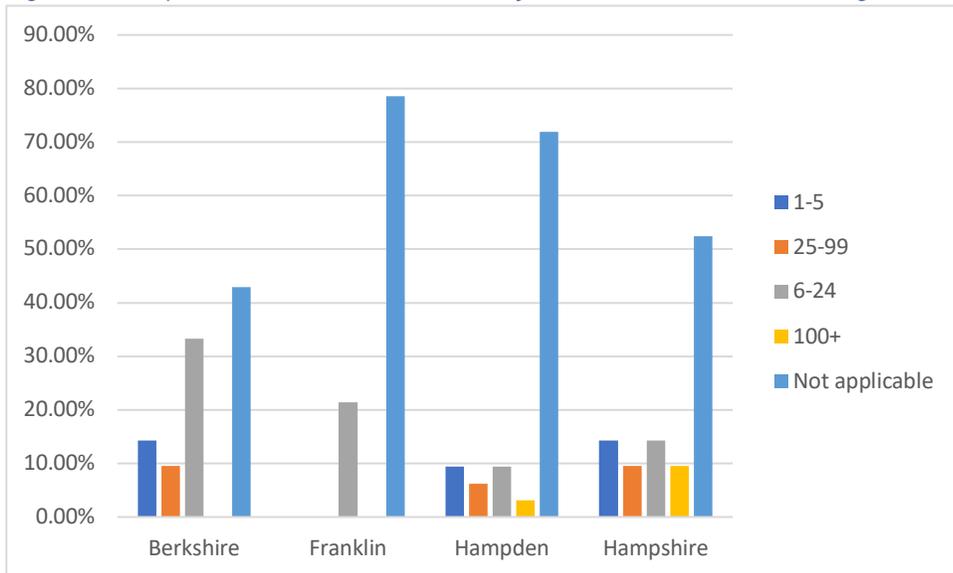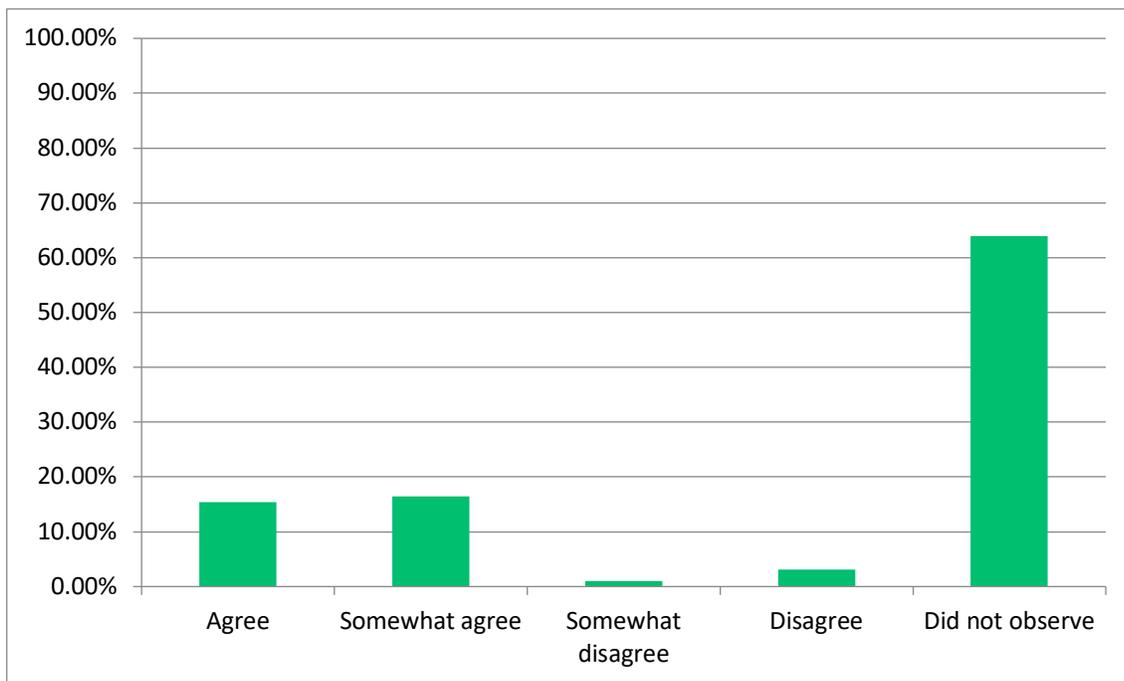*Figure 8: Respondent views on number of volunteers within their organization*

*Figure 9: Respondent views on whether they believed volunteers were managed effectively*

Coordination with EMS, Hospitals, Health Centers

Participants reported little to no interaction with EMS, hospitals, and/or health centers within their region or town. Quantitative data evaluated whether addressing the needs of hospitals, long-term

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care units, or other community health centers was included in their plans and most said this was not applicable to their organization (see Figure 10). Furthermore, no representatives from hospitals or health centers participated in the data collection phase, so we are unable to comment further on their capabilities.

Figure 10: Respondent views on whether their emergency plans included addressing the needs of health care facilities
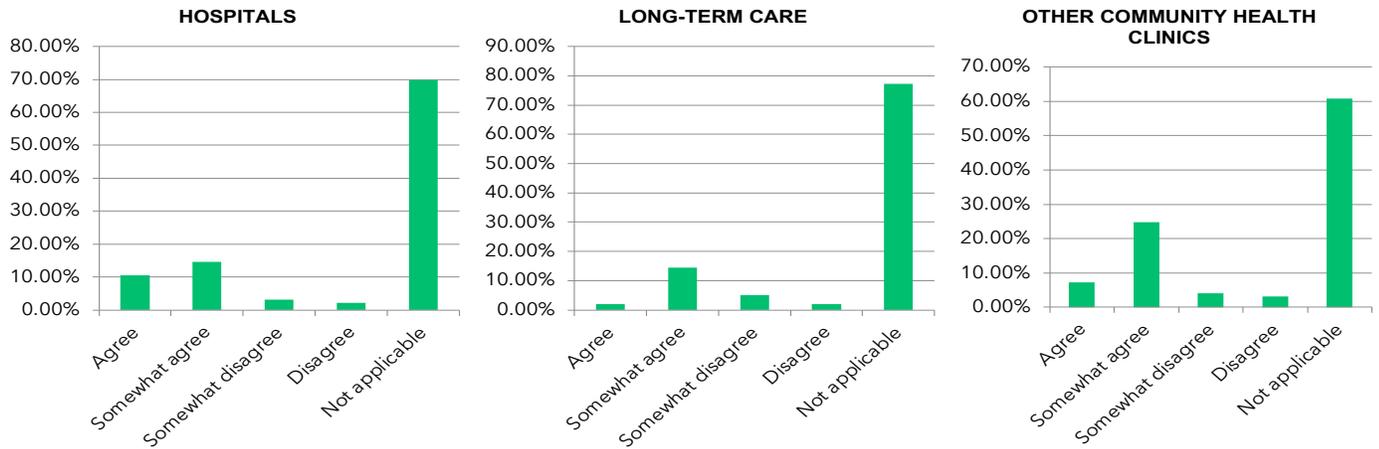
Participants described that they would like to have more contact and streamlined communications with Emergency Medical Services at a regional and local level including guidance for how to communicate more effectively, work more collaboratively, and standardized methods for dealing with infectious disease tracking and reporting within their communities. Participants described high levels of frustration with the fact that EMS lost funding, and therefore staffing, resulting in long wait times and adverse outcomes for patients who needed transport.

Recommendations

Recommendation 1: Emergency Management Plans should be updated and drilled regularly and collaboratively by multiple stakeholders. These plans should include:
- Clearly defined roles and responsibilities of emergency management and public health personnel
- Strategies for effective and efficient communication and information-sharing between stakeholders and partners, including clear lines of authority on critical decision-making
- Clear instructions and pathways for supply chain management
- Functional annexes on managing pandemics and other contagious diseases

Recommendation 2: Emergency Dispensing Site Plans should be designed for a county or regional area (and not just the local level) and should include strategies for sharing and mobilizing resources

and distributing medical countermeasures effectively across the county or region so that all individuals are served and protected.

Recommendation 3: Incident command system training and exercises should be provided annually, centralized at a county level, standardized, and regularly drilled to ensure consistent resource-sharing and public messaging, streamlined communications, and coordination of efforts.

Recommendation 4: Design and implement creative methods and plans for communication, collaboration, and relationship-building between emergency management and public health personnel and exercise these plans annually.

Recommendation 5: Strengthen the core knowledge, capabilities, and competencies of local boards of health representatives and their regional response partnerships.

Recommendation 6: Clearly define and socialize the roles, responsibilities, and functions of Local and Regional Emergency Planning Committees and the Western Massachusetts Health and Medical Coordinating Coalition; design and implement creative methods for improving communication, collaboration, and integration with emergency management personnel and local boards of health. Exercise these plans and relationships at least annually.

Recommendation 7: Develop and maintain regional communication and collaboration strategies between emergency management personnel, public health personnel, and hospitals and health clinic personnel. Exercise these strategies and plans at least annually.

Capability 4: Emergency Public Information and Warning

Capability Summary

Emergency public information and warning is the ability to develop, coordinate, and disseminate information, alerts, warnings, and notifications to the public and incident management personnel.

Cross-Cutting Observations

Cross-cutting Observation 1: The enormous amount of information, sometimes inconsistent, received by local agencies and departments presented challenges to their ability to share and distribute to the public clear, accurate, and consistent messages about the most effective behaviors to observe during the pandemic.

Cross-cutting Observation 2: As with other elements of leading and managing during the pandemic, key stakeholders in most towns and cities adapted existing plans and developed new processes to exchange and share with the public the best guidance possible in a generally effective manner.

Activity 4.1

Activate the emergency public information system
Determine the need for a joint information system
Establish and participate in information system operations
Establish avenues for public interaction and information exchange
Issue public information, alerts, warnings, and notifications

Observations 4.1

Strength 1: Most participants described adapting or developing new plans to reach the public with critical information, which they believed were generally successful.
Strength 2: Some participants described utilizing creative strategies to reach the public with critical information.
Strength 3: Some small towns were able to employ relatively simple methods to get information out to the public effectively.
Strength 4: Participants described creative methods to improve communication with limited English speakers.
Area for improvement 1: Several participants portrayed challenges providing clear and consistent messaging to the public, specifically at-risk residents.

References
Not Applicable

Analysis

Overall, participants also believed they devised successful ways of providing critical information to the public. Quantitative data demonstrated that over 75% of participants believed that their organization's messaging to the public about COVID-19 was helpful to residents, while 78% reported feeling confident that the amount of information their organization shared with the public was the right amount. Use of existing plans and developing new plans as needed played an important role in this process. The survey data showed that 76% of participants agreed or somewhat agreed with the statement: "Our organization had a clear plan for communicating with the public about the COVID-19 emergency" while only 5% disagreed.

Participants described utilizing different tools to disseminate critical COVID-19 information to the public and prioritized disseminating accurate and consistent messages. Some departments tapped experts, such as one mayor's office, who had a communications director on the staff. One participant claimed that this communications leader worked closely with other managers "to make sure that accurate information was going to the public." Nearly all participants described utilizing a broad array of methods to reach the public, including town websites, town meetings, and all available forms of news outreach (press, local access TV, and radio) and social media, such as Facebook.

In their efforts to share information with the public, many participants acknowledged the challenges they faced reaching limited English-speaking individuals and other populations who lacked access to the most commonly used news outlets or social media. One participant described working with translators for the community's Spanish-speaking population, but explained that issues of trust between locals and officials was still challenging. Some participants said they would have liked to have cell phones to distribute to extend their reverse 911 calls to more residents who may not have landlines or cell phones in the home. Despite these challenges, some participants described employing creative strategies to reach these individuals, including setting up a phone line in multiple languages and multi-language information-sharing websites.

Participants from smaller communities acknowledged they lacked the resources and personnel to employ some strategies requiring expertise and manpower. However, some described making use of simple methods they believed achieved their goal of disseminating information out to the public quickly and effectively, such as a reverse 911 call system to residents, which the participant believed covered 70-80% of residents. Some of these communities also prioritized simplifying complex messages from the CDC and the state, striving to make their communications "more colloquial and friendly" to the public.

Recommendations

Recommendation 1: Establish regionally coordinated public messaging protocols and channels to reach limited English-speakers and at-risk populations such as the elderly, homebound, and homeless in a timely, appropriate, and clear manner. Integrate these protocols into daily operations or exercise them at least annually during flu clinic season.

Capability 6: Information Sharing

Capability Summary

Information sharing is the ability to conduct multijurisdictional and multidisciplinary exchange of health-related information and situational awareness data among federal, state, local, tribal, and territorial levels of government and the private sector. This capability includes the routine sharing of information as well as issuing of public health alerts to all levels of government and the private sector in preparation for and in response to events or incidents of public health significance.

Cross-Cutting Observations

Cross-cutting Observation 1: Existing relationships, whether weak or strong, impacted the effectiveness of information-sharing between all stakeholders responding to the public health emergency.

Activity 6.1

Identify stakeholders that should be incorporated into information flow and define information sharing needs
Identify and develop guidance, standards, and systems for information exchange
Exchange information to determine a common operating picture
Observation 6.1:
Strength: Many town and city officials were able to tap available expertise and rely on pre-existing relationships to establish channels for effective communications between key agencies and departments.

Area for improvement 1: Some towns and cities were unable to establish an effective way to define information sharing needs between emergency agencies and departments.
Area for Improvement 2: Some participants described struggling to develop effective systems for information exchange between key local agencies and departments.

References

Not Applicable

Analysis

Participants almost universally described working very hard and employing creative strategies to establish channels for effective communications between key agencies and departments during the pandemic. On balance, they reported that they believed these efforts were effective in exchanging information. Survey-based data revealed that 84% of participants agreed or somewhat agreed with the statement "I believe our organization shared information about COVID-19 in a timely way." It also showed that the majority believed that the information their organization received from other agencies regarding COVID-19 was "helpful," including 79% from the MA DPH and 80% from local boards of

health. For this specific question, there were no substantial differences among organizations between counties.

Some participants believed they achieved effective internal information-sharing because they put the right people in charge, whether trained experts in communications or individuals with the relevant experience and authority to coordinate communication. Additionally, participants described daily meetings with key crisis leaders where information was shared regularly. Some participants described using multiple methods simultaneously to ensure that all relevant information was shared, including emails, recorded phone messages, and website-based information.

Other participants described organizing regular and frequent meetings or methods of information sharing across specific types of organizations. For example, one participant described collating a daily report with information from other members of emergency departments regarding COVID-19 case numbers, PPE orders and expected delivery. In another community, all the fire chiefs in the region shared daily emails and met monthly via Zoom to share information on the latest policies and recommendations based on lessons learned in other areas.

Among the main challenges described by participants, one related to efforts to establish an effective method for defining the information-sharing needs across different organizations. Some participants stressed that coordinating messages to manage an immediate crisis was a particular problem. An example was coping with medical emergencies at nursing facilities. One participant, a town fire chief, explained that when information needed to be shared broadly about what was happening in nursing homes: "The goal to disseminate information was not always on the same page with facilities [Department of Public Works], who were concerned about public image." Other participants noted that at times, there was a lack of trust and honesty about a given situation, including who had COVID-19, so that meetings could take place effectively. Lastly, participants highlighted the enormous amount of information coming from various places, and how that made it hard to prioritize organizational needs and goals.

Even when the needs were clear, some participants explained that they struggled to establish effective information-sharing procedures across organizations. Most frequently, these participants stressed that they lacked regular, clear, and consistent information. Internally, this sometimes stemmed from a lack of procedures to meet regularly to share information. More commonly, participants stated that they received inconsistent or contradictory messages from the state DPH office. Others stated that even when the information was clear, the timeliness of information from the state made it challenging to respond locally.

Recommendations

Recommendation 1: Ensure that local emergency plans incorporate clear procedures for 1) defining information sharing needs across all emergency agencies and departments and 2) prioritizing and disseminating accurate information from CDC, DPH, local emergency management and public health personnel.

Recommendation 2: At the regional level, improve messaging to local emergency agencies and departments so that information-sharing is timely, clear, and consistent.

Capability 9: Medical Materiel Management and Distribution

Capability Summary

Medical materiel management and distribution is the ability to acquire, manage, transport, and track medical materiel during a public health incident or event and the ability to recover and account for unused medical materiel, such as pharmaceuticals, vaccines, gloves, masks, ventilators, or medical equipment after an incident.

Cross-Cutting Observation

Most participants stated that their existing emergency plans, if they had one, were not very helpful in guiding their acquisition and management of critical medical materiel (e.g., vaccines and masks). However, due to their ability to rely on pre-existing strong cross-agency relationships at the local level, they were able to adapt quickly and create new processes and systems to obtain and deliver these items.

Activity 9.1

Direct and activate medical materiel management and distribution
Acquire medical materiel from national stockpiles or other supply sources
Distribute medical materiel
Monitor medical materiel inventories and medical materiel distribution operation

Observation 9.1

Strengths
The capability level of "performed with some challenges" is attributed to the following strengths:
Strength 1: Some LEPCs and other local agencies were agile and efficient in developing lists of needed masks and vaccines so they could acquire them from various sources.
Strength 2: Most participants described coordinating their needs for medical materiel efficiently and effectively with MEMA West (Regions 3 and 4) to acquire needed medical materiel.
Strength 3: Emergency plans, where they existed, had some useful elements for obtaining medical materiel, in particular contact lists, which enabled communication between key stakeholders.
Strength 4: Emergency committees in many towns and cities were able to rely on established relationships in their immediate areas, which was critical to their ability to procure medical materiel, monitor materiel inventories, share information about items, and distribute them.
Strength 5: Some towns used an effective system to distribute needed materiel, such as masks, to the public (e.g., contacting residents using an automated/call-back system).

Area for Improvement 1: Participants described lacking clear and simple systems for ordering and distributing critical medical materiel.
Area for Improvement 2: Many participants reported that their committees and agencies lacked sufficient staff to acquire, manage, and distribute needed medical materiel.

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Area for Improvement 3: Most participants stated that they did not have the ability to distribute needed materiel such as masks and vaccines to non-English speaking residents and other at-risk populations (e.g., elderly, homeless).
Area for Improvement 4: Several participants described receiving faulty masks, which hindered their medical materiel management and distribution.
Area for Improvement 5: Several participants described inadequate supply chain management of medical materiel, such as PPE, resulting in excessive quantities in some places and inadequate supplies in others.

References

N/A

Analysis

Participants described using a variety of means to create new processes and modes of communication in order to ensure they could obtain needed medical materiel to adequately respond to the emergency. Participants described working very well with MEMA to obtain masks and other needed items. MEMA generally received very high praise for clear communication and effective coordination with local agencies for obtaining needed supplies. Quantitative data revealed that 66% of participants reported that they agreed or somewhat agreed with the statement: "The process by which we had to procure PPE supplies was efficient." However, as the pandemic continued, the process to obtain PPE became extremely inefficient and confusing to most participants as the procurement process shifted in some places.

The biggest challenge participants described was the lack of a clear and relatively simple plan for ordering and distributing critical materiel such as PPE and vaccines. While 68% of respondents agreed or somewhat agreed that the PPE procurement process was efficient, there were challenges with understanding the process, and some counties had more difficulty than others. The most frequent complaint was that the messaging from the state on how to obtain and deliver items such as masks and vaccines was confusing and ineffective. In Franklin County, only 38% of respondents felt that the PPE procurement process was efficient, compared to 71-78% of participants in other counties.

Many noted that this contrasted with MEMA, which proved more successful at helping towns and cities obtain needed items. Participants claimed that their CEMPs and other emergency plans did not contain a point of contact for ordering items in case of problems. Many described chaotic and confusing situations in which there were delays, duplication, red tape, and a tendency to hoard items by some departments while others were searching for items frantically. Some also described lacking an accurate vendor list for needed materiel. Others described rigid rules for vaccine delivery that created major barriers to effective delivery. The end result was a strong sense of a lack of effective leadership from the top, poor lines of communication, and inadequate flexibility to adapt to local realities, which led to enormous frustration, wasted time, and inefficiencies.

Figure 11: Respondent views of whether the PPE procurement process was efficient (by county)
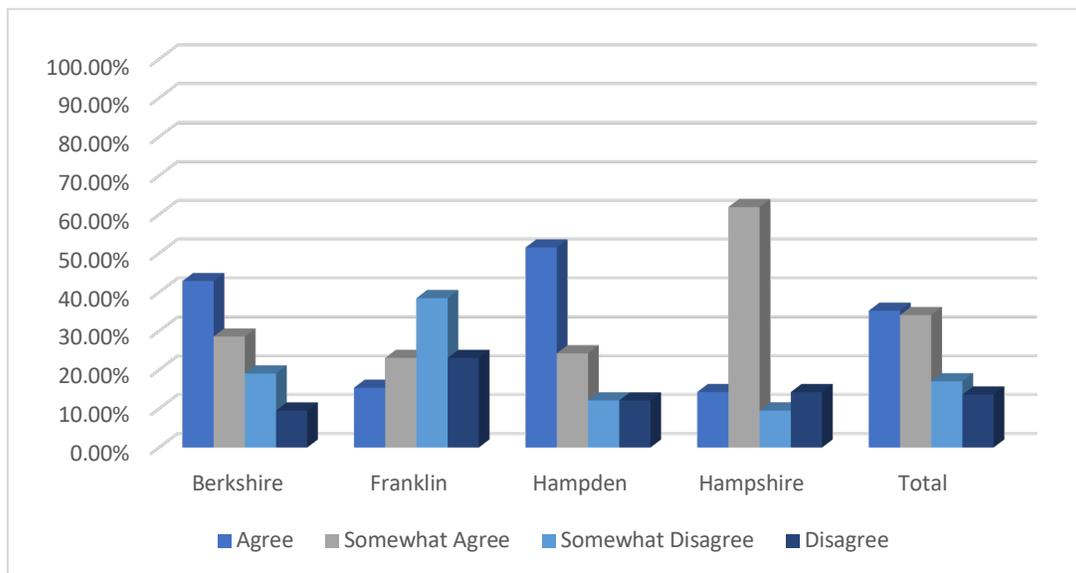
Ultimately, most participants reported that through various efforts, they were able to obtain the medical items they needed. Between 77-93% of participants stated that they agreed or somewhat agreed that they had critical PPE (masks, gloves, hand sanitizer, face shields, and gowns) to implement their emergency response.

Although most participants said they either had no plans for obtaining items or could not use the ones they had developed (primarily because they had to observe new state-level systems), some elements in their plans proved to be useful. Participants noted that the contact lists that were included in some plans were particularly helpful for enabling communication between key stakeholders related to procuring materiel. Furthermore, some towns had an effective system for contacting residents regarding critical PPE such as masks.

One of the most notable strengths observed was the ability of officials and other emergency personnel to rely on established relationships in their immediate areas to procure supplies, share information about supplies, and distribute them as broadly as possible. This strength appears to have played a critical role in the ability of organizations to manage medical supplies successfully. Nearly 80% of participants reported that they agreed or somewhat agreed with the statement: "Our organization managed our PPE supplies effectively."

Pre-existing relationships between respondents were critical in facilitating effective coordination of vaccine and PPE management and distribution. Relatedly, when elements of plans were unusable, such as the inability to make use of libraries or schools for distribution and/or delivery of medical items (e.g., masks, vaccines), these pre-existing relationships facilitated coordinated efforts to create new systems that would work.

Participants described inadequate staffing on relevant emergency planning committees such as LEPCs to ensure the ability to order supplies, follow up on purchases, and deliver them where they are needed. The qualitative data collected on this issue was supported by data collected via a survey, on which less than 20% of participants said they agreed with the statement "Our organization had the staffing we needed to implement our emergency response plans" while 44% either disagreed or somewhat disagreed. In Franklin County, understaffing was felt more acutely – 77% of participants serving Franklin County disagreed or somewhat disagreed that they had adequate staffing. Some acknowledged they would have been able to contact at-risk individuals to deliver PPE or to explain how to access vaccines, but they simply were hamstrung due to lack of personnel. Others described lacking the staff needed to establish vaccine clinics per guidance by the state and having to adapt the best way possible to create an alternative system that would work locally.

Figure 12: Respondent views of whether their organization had sufficient staffing to implement their emergency response plans (by county)
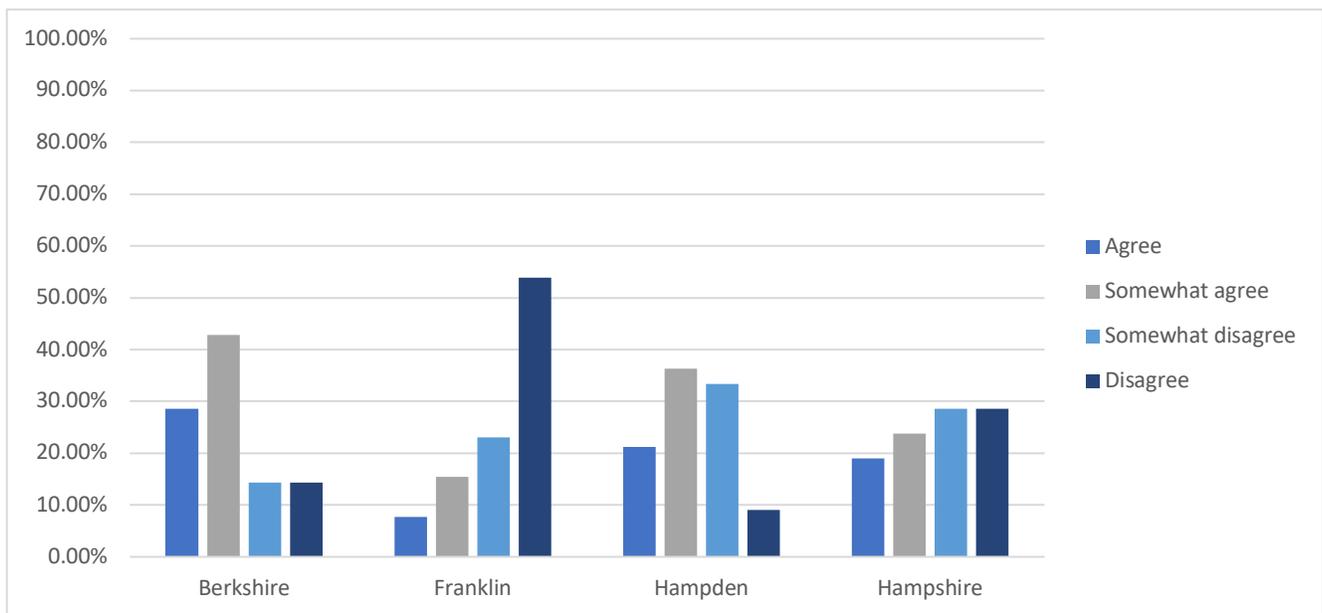
A major problem identified by participants was their inability to reach limited English-speakers and at-risk individuals in a timely and effective manner to help them access needed PPE, COVID-19 tests, and vaccines. They recognized this as a critical equity issue. They noted that they lacked lists with contact information for such individuals, as well as the personnel to contact them (noted above). In one county, officials struggled to provide vaccinations to the homebound because the guidance from the state precluded them from using ambulances to deliver individuals to the vaccine site. Participants in other counties described utilizing creative strategies such as going to Chinese restaurants and Williams College and using reverse 911 procedures to find people (or making use of lists of individuals active in a senior center, as described above). One local health director described using multiple strategies to stay connected with at-risk populations (e.g., social media, newspaper notices, emails, announcements

in the mayor's office, a reverse 911 system, the local senior center, and the Salvation Army). More commonly, reaching vulnerable groups with vaccines and PPE was recognized as an area of failure. Several participants were frustrated by the poor quality of some of their PPE (i.e.., masks), which caused delays in their distribution of critical materiel. They also complained about poor supply management, such that smaller departments (fire departments in particular) were swamped with PPE that they could not use while large communities lacked supplies. Some towns ran out of syringes due to inadequate rationing and supply chain management. These problems led many participants to urge greater control for local areas and agencies to organize their own management and distribution processes. Some towns specifically complained that local agencies struggled to comply with processes of higher-level organizations, which caused confusion and inefficiencies (as well as poor results).

Recommendations

Recommendation 1: Clarify and simplify systems for ordering and distributing medical materiel and ensure this information is described clearly in emergency plans to ensure fair and equitable distribution.

Recommendation 2: Provide adequate staffing on relevant emergency committees such as LEPCs to ensure there are personnel to order needed supplies, follow up on purchases, and deliver them where they are needed.

Recommendation 3: Develop and maintain lists with contact information on groups and agencies that serve limited English-speaking residents and at-risk individuals in communities to facilitate efficient distribution/delivery of vaccines, PPE, and other needed supplies.

Recommendation 4: Create a system to test equipment and supplies regularly to ensure quality and fit are appropriate.

Recommendation 5: Allow greater control for local areas and agencies to organize their own medical materiel distribution and management processes to improve efficiency and flexibility at the local level.

SECTION 4: CONCLUSION

Overall, WRHSAC's COVID-19 emergency response demonstrated the following capabilities: 1) Community Preparedness, 2) Emergency Operations Coordination, 3) Emergency Public Information and Warning, 4) Information Sharing, and 5) Medical Materiel Management and Distribution. Several key strengths were identified, which will provide a helpful foundation for which to improve future emergency responses. A summary of the recommendations include:

- Standardizing all incident command system operations and chains of coordination throughout Western Massachusetts
- Strengthening and expanding communication strategies and channel to ensure the timely and accurate dissemination of timely and accurate public health and safety information to the public
- Developing and executing strategies for promoting efficient and effective information-sharing among responders
- Strengthening and coordinating the provision of medical services, vaccines, and supplies to mitigate the adverse health effects of COVID-19

All recommendations and corrective actions should be implemented as described in the attached improvement plan to ensure that concluding results will help further refine WHRSAC's ability to provide an effective and efficient emergency response in the future.

APPENDIX A: IMPROVEMENT PLAN

Table A.1 Improvement Plan Matrix

Capability	Recommendation	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Community Preparedness	Enhance language capacity and capabilities among all public health and emergency management personnel and platforms.						
	Develop a clear strategy for addressing at-risk individuals with realistic implementation guidelines. Ensure this strategy is specifically described in CEMP and EDS plans and includes best practices and strategies for building and maintaining community partnerships. Ensure these partnerships represent and include all at-risk individuals.						

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	Strengthen relationships with agencies who provide services to at-risk groups who may need additional resources and services, with strategies to address each group, and ensure it is updated regularly.						
Emergency Operations Coordination	Emergency Management Plans should be updated and drilled regularly and collaboratively by multiple stakeholders. These plans should include: • Clearly defined roles and responsibilities of emergency management and public health personnel • Strategies for effective and efficient communication and information-sharing between stakeholders and partners, including clear lines of authority on critical decision-making • Clear instructions and pathways for supply chain management • Functional annexes on managing pandemics and other contagious diseases						
	Emergency Dispensing Site Plans should be designed for a county or regional area (and						

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	not just the local level) and should include strategies for sharing and mobilizing resources and distributing medical countermeasures effectively across the county or region so that all individuals are served and protected.						
	Incident command system training and exercises should be provided annually, centralized at a county level, standardized, and regularly drilled to ensure consistent resource-sharing and public messaging, streamlined communications, and coordination of efforts.						
	Design and implement creative methods and plans for communication, collaboration, and relationship-building between emergency management and public health personnel, and exercise these plans annually.						
	Strengthen the core knowledge, capabilities, and competencies of local boards of health representatives and their regional response partnerships.						

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Appendix A: Improvement Plan

	Clearly define and socialize the roles, responsibilities, and functions of Local and Regional Emergency Planning Committees and the Western Massachusetts Health and Medical Coordinating Coalition; design and implement creative methods and plans for improving communication, collaboration, and integration with emergency management personnel and local boards of health; exercise these plans annually.						
	Develop and maintain regional communication and collaboration strategies between emergency management personnel, public health personnel, and hospitals and health clinic personnel.						
Emergency Public Information and Warning	Establish regionally-coordinated public messaging protocols and channels to reach limited English-speakers and at-risk populations such as the elderly, homebound, and homeless in a timely,						

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	appropriate, and clear manner. Integrate these protocols into daily operations or exercise them at least annually during flu clinic season.						
Information Sharing	Ensure that local emergency plans incorporate clear procedures for 1) defining information sharing needs across all emergency agencies and departments and 2) prioritizing and disseminating accurate information from CDC, DPH, local emergency management and public health personnel.						
	At the regional level, improve messaging to local emergency agencies and departments so that information-sharing is timely, clear, and consistent.						
Medical Materiel Management and Distribution	Clarify and simplify systems for ordering and distributing medical materiel and ensure this information is described clearly in emergency plans to ensure fair and equitable distribution.						
	Provide adequate staffing on relevant emergency committees such as LEPCs to ensure there are personnel to						

Appendix A: Improvement Plan

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	order needed supplies, follow up on purchases, and deliver them where they are needed.					
	Develop and maintain lists with contact information on groups and agencies that serve limited English-speaking residents and at-risk individuals in communities to facilitate efficient distribution/delivery of vaccines, PPE, and other needed supplies.					
	Create a system to test equipment and supplies regularly to ensure quality and fit are appropriate.					
	Allow greater control for local areas and agencies to organize their own medical materiel distribution and management processes to improve efficiency and flexibility at the local level.					

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APPENDIX E: PERFORMANCE RATING

The performance rating categories refer to how well each activity was performed during the response and are detailed in the table below.

Table E.1: Performance Ratings

Rating	Description
Performed without Challenges	The performance measures and tasks associated with the activity were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws.
Performed with Some Challenges, but Adequately	The performance measures and tasks associated with the activity were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws. However, opportunities to enhance effectiveness and/or efficiency were identified.
Performed with Major Challenges	The performance measures and tasks associated with the activity were completed in a manner that achieved the objective(s), but some or all of the following were observed: demonstrated performance had a negative impact on the performance of other activities; contributed to additional health and/or safety risks for the public or for emergency workers; and/or, was not conducted in accordance with applicable plans, policies, procedures, regulations, and laws.
Unable to be Performed	The performance measures and tasks associated with the activity were not performed in a manner that achieved the objective(s).

APPENDIX F: ACRONYMS

Table F.1: Acronyms

Acronym	Meaning
AMR	American Medical Response
BOH	Board of Health
CEMP	Comprehensive Emergency Management Plan
COA	Council on Aging
COAD	Community Organizations Active in Disasters
COOP	Continuity of Operations Plan
DESE	Department of Elementary and Secondary Education
DPH	Massachusetts Department of Public Health
EDS	Emergency Dispensing Site
EMS	Emergency Management System
EOC	Emergency Operations Center
ESL	English as a Second Language
HMCC	Health and Medical Coordinating Coalition
LEPC	Local Emergency Planning Committee
MEMA	Massachusetts Emergency Management Association
MRC	Medical Reserve Corps
OPEM	Office of Preparedness and Emergency Management
PHA	Public Health Alliance
PPE	Personal Protective Equipment
REPC	Regional Emergency Planning Committee