



**Bedford Board of Health and Bedford Health Department**

**Bedford, Massachusetts**

**COVID-19 Pandemic Response Evaluation**

**November 2023**

**Table of Contents**

**Introduction .....3**

**Evaluation Process Framework Development.....4**

**Review Process and Evaluation .....7**

**Action Items .....14**

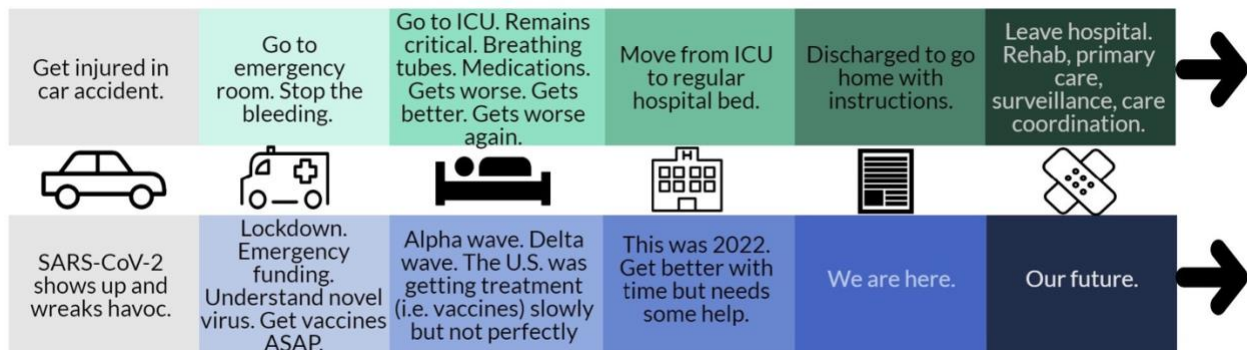
**References .....15**

**Bibliography .....15**

## Introduction

This evaluation examines the Bedford Board of Health’s (BOH) and the Bedford Health Department’s (HD) implementation of applicable public health functional capabilities during the COVID-19 pandemic, with a goal of strengthening our preparation for future needs. Using Dr. Katelyn Jetelina’s *Arc of a Public Health Emergency* (Figure 1), BOH members and HD staff determined that 2023 was an appropriate time frame to conduct an after-action review of our efforts during the COVID-19 pandemic.

**Figure 1: An Analogy: Where Are We Now?**



Arc of a Public Health Emergency. Figure by Dr. Katelyn Jetelina/YLE

To frame our evaluation process, we considered some of the challenges to providing public health services during this pandemic. A 2021 publication of the National Academy of Medicine stated the following regarding state and local public health response to COVID-19:

*While health departments provided key functions (e.g., data reporting, testing clinics, contract tracing) during the pandemic, the challenges they encountered (e.g., barriers to exchanging information, operational silos, lack of disaggregated data, and insufficient capacity and training) are indicative of fundamental design flaws and a lack of investment in America’s public health system. Additionally, the sector’s overall response to COVID-19 has been uneven due to inconsistencies in national guidance, the staggered spread of the virus across the country, and differences in state and local health department capacity and authority. (1)*

The following working assumptions regarding a public health response were also considered:

1. SARS-CoV-2 was a novel coronavirus, i.e., a new strain that had not been identified previously in humans.
2. Throughout the SARS-CoV-2 pandemic, there were gaps in available evidence-based research.
3. Readily available scientific information, research evidence, and recommended responses changed due to evolving knowledge and virus mutation.
4. The adjustment of public health measures was challenging during the COVID-19 pandemic, and jurisdictions had to make decisions in the context of ongoing uncertainties due to:

- Gaps in available evidence and readily evolving scientific information;
- Emergence of more transmissible variants of concern (VOCs) that cause surges in cases globally;
- Potential for immune escape, particularly associated with VOCs;
- Segments of the population that remain unvaccinated because they are either not eligible (e.g., medical contraindications, age limits) or choose not to be vaccinated; and
- The proliferation of misinformation and disinformation which impacts individual acceptance of various public health measures. (3)

## Evaluation Framework Development

A response evaluation framework (Figure 2) was developed that took into account established public health essential services, public health functional capabilities, and aspects of the World Health Organization’s COVID-19 evaluation framework.

### Essential Public Health Services (Revised, 2020) (4)

The 10 Essential Public Health Services provide a framework for public health to protect and promote the health of *all people in all communities*. To achieve equity, the Essential Public Health Services actively promote policies, systems, and overall community conditions that enable optimal health for all and seek to remove systemic and structural barriers that have resulted in health inequities. Such barriers include poverty, racism, gender discrimination, ableism, and other forms of oppression. Everyone should have a fair and just opportunity to achieve optimal health and well-being.

1. Assess and monitor population health status, factors that influence health, and community needs and assets.
2. Investigate, diagnose, and address health problems and hazards affecting the population.
3. Communicate effectively to inform and educate people about health, factors that influence it, and how to improve it.
4. Strengthen, support, and mobilize communities and partnerships to improve health.
5. Create, champion, and implement policies, plans, and laws that impact health.
6. Utilize legal and regulatory actions designed to improve and protect the public’s health.
7. Assure an effective system that enables equitable access to the individual services and care needed to be healthy.
8. Build and support a diverse and skilled public health workforce.
9. Improve and innovate public health functions through ongoing evaluation, research, and continuous quality improvement.
10. Build and maintain a strong organizational structure for public health.

## **Health Department Functions (1)**

“Foundational” capabilities supporting the public health response to COVID-19 included the following domains:

1. Emergency preparedness and response (e.g., activate emergency protocols; data collection and reporting);
2. Assessment and surveillance (e.g., organize testing and contact tracing capacity);
3. Communications (e.g., educating the public and community leaders; combat misinformation while updating the community on evolving trends and disseminating the latest data);
4. Policy development and support (e.g., clarify the scope of authority; develop strategies for implementing and enforcing infection control policies);
5. Community partnership development (e.g., coordinate across sectors and often perform out-of-scope functions (i.e., procurement)).

## **World Health Organization: COVID-19 Monitoring and Evaluation Framework (2)**

1. Coordination, Planning and Monitoring
2. Communication and Community Engagement
3. Surveillance and Case Investigation
4. Infection Prevention and Control
5. Case Management
6. Organizational Support and Logistics
7. Maintaining Essential Health Services and Systems

**Figure 2**

<b>Functional Capabilities</b>	<b>What did BOH/ HD do that worked well?</b>	<b>What challenges did BOH/HD encounter?</b>	<b>What was learned and what can BOH/HD do differently?</b>	<b>How do BOH &amp; HD prepare for future pandemics?</b>
<b>Emergency Preparedness and Response: Coordination, Planning, Monitoring</b> (activate emergency protocols; collect data; develop public-facing reporting mechanisms; support or advance capacity)				
<b>Communication &amp; Community Engagement</b> (educate and update the community on evolving trends and policies; disseminate latest information and data; combat misinformation)				
<b>Surveillance &amp; Case Investigation &amp; Management</b> (organize testing, contact tracing)				
<b>Infection Prevention &amp; Control</b> (clarify scope of authority; develop policies, mandates, and enforcement strategies)				
<b>Community Partnership Development</b> (coordinate across sectors; perform out-of-scope functions, i.e., procurements)				
<b>Maintaining Essential Health Services and Systems</b> (continue to operate and provide services essential to protect health of communities)				

## Review Process

The following process was used to complete the evaluation during regularly scheduled BOH meetings and included HD staff.

- BOH Chairperson announced the Functional Capability to be reviewed and the question at hand.
- BOH Chairperson called on each Board member and staff person in a round robin format.
- Each Board member and staff person stated one answer to the question at hand, or passed.
- A round robin format continued until all had voiced their answers or passed.
- An exception was for the final question regarding preparation for future pandemics. Suggestions for action items were based on the overall review.

## Evaluation

### 1. Emergency Preparedness and Response Coordination, Planning & Monitoring

What worked well:

- We were prepared to dispense vaccine with an existing EDS Plan that was exercised regularly including volunteer dispensing.
- Developed and regularly updated a COVID Dashboard on our website.
- Maintained ongoing monitoring of community communicable diseases.
- Partnered with volunteers, first responders and CERT for testing and vaccine clinics.
- Supported the organization of a community food bank to address food insecurity.
- Relied on existing strong relationships with HHS colleagues, town and school staff.
- Continued following applicable state guidance.
- Formed and joined a regional public health collaborative to enhance capabilities.
- Built on existing communication avenues.

The challenges encountered:

- Lack of scientific knowledge regarding prevention and treatment of Sars-CoV-2 virus.
- Constantly changing national and state public health.
- Delayed Federal and State government response (i.e., funding, PPE, vaccines).
- Authority challenges from residents relative to school COVID policies.
- State established vaccine distribution did not utilize local public health departments.
- Lack of clarification of national/state/local boundaries in regard to public health emergency.
- Ration of number of COVID cases requiring case contact to limited number of nurses.
- Nomenclature distinction in regard to a town "COVID Task Force" vs Town Manager 's Staff meetings.

What was learned:

- The value of local and regional partnerships.
- The State has the authority to dictate vaccine distribution locations and resources.
- Local HD and BOH need strong direction from state and knowledge of a clear chain of command.
- Need for clear communication among town boards and BOH liaisons with Select Board and School Board.

What to do differently:

- Clarify for residents the roles and responsibilities of BOH vs. Health Department.
- Clarify for residents the BOH authority regarding school department decisions and policies.
- Request information regarding MADPH plans.
- Advocate for local vaccine distribution.
- Offer public forums early during a crisis.
- Establish BOH liaisons with appropriate town boards.

## 2. Communication and Community Engagement

What worked well:

- Established the COVID Dashboard early in the pandemic.
- Website served as a mode of distribution for information and local advisories.
- Messaging specific to the community was promulgated regularly by Health Department staff.
- Existing contact lists allowed for announcements and guidance to be distributed to local permitted entities.
- A public forum in conjunction with town and school officials.
- Communications to residents utilizing sign boards on major town road and existing technology/outlets.
- Residents had ongoing access to Health Department staff for questions and information.
- Adjusted public comment opportunity for residents at BOH meetings.
- Deployed CERT effectively to engage with community as needed.
- Leveraged good relationships between existing permitted entities and staff to promulgate important information.

Challenges that were encountered:

- Continuous misinformation and disinformation in the media.
- Frequently changing pandemic information from federal and state officials leading to misinterpretation.
- Town's website's search engine that needed updating.
- No single source or access point for communication in town.
- Remote work for staff followed by the move to Town Hall.
- Mandates led to polarization and politicization among community members.

- Lack of disaggregated data from the state.
- Lack of readily available and accurate information to answer residents' questions.
- Lack of knowledge regarding main sources of residents' information.
- Expectation of immediate response to communications and community needs at all times of the day was physically and emotionally taxing for employees and first responders.

What was learned:

- The need for a Community Task Force with medical expertise representation.
- Effective communication requires financial resources and needs to be in place prior to a crisis.
- Challenges incumbent with mixed and unclear messaging from federal and state entities.
- Increasing discounting (gaslighting) of expert advice by a segment of residents.
- Trust built can be easily lost.
- Science is iterative and convincing residents of this is difficult.
- Demands on staff during a longer work hours is unhealthy.
- Constant updating of communications was challenging and tiring for staff.
- The impact that negative public response to BOH actions poses for members and staff.

What to do differently:

- Hold community forums early and more often.
- Advocate for a representative Community Task Force that includes medical and scientific experts.
- Use social media more effectively by understanding its use among various town demographics.
- Develop skills in conflict resolution for Health Department staff and Board members.

### 3. Surveillance, Case Investigation and Management

What worked well:

- Purchased and distributed test kits as soon as possible.
- Utilized HD PHN, contracted nurses, school nurses, volunteer nurses and 2019 interns for case investigations.
- The HHS umbrella was in place to connect residents in isolation who were identified by contact tracing with social services.
- Evolved COVID Dashboard as new data became available, including vaccination rates, school cases once self-reported, and hospital data.
- Already well-versed in use of MAVEN.
- Supported the early PCR testing with Fire Department.
- Collaboration between Health Department and the Bedford Public Schools.
- Health Director's updates regarding periodic MDPH calls.

Challenges that were encountered:

- Inaccurate town data on MAVEN due to State definitions of “Residents” which included residents of VA, Hanscom AFB and Carlton-Willard Village.
- Calculated state-provided population data for Bedford Skewed (Using UMASS metrics).
- Changes in definition of a “positive” case.
- Difficulties reaching residents and language barriers for contact tracing
- Asymptomatic virus transmission.
- Ascertaining testing early in the pandemic.
- Dealing with the demand for testing and the lack of funding for town-wide testing.
- Changing isolation and quarantine protocols.
- Lack of isolation and quarantine protocol compliance by some residents
- Recommendations re: treatment and accessing antiviral treatments.

What was learned:

- Challenges with enforcing isolation and quarantine requirements.
- Challenges with testing availability, cost, who procures it, and where to obtain it.
- Resources and funding sources were not clear or easily accessible.

What to do differently:

- Advocate for improved national response for testing access.
- Stronger BOH/Health Department role in town decisions regarding testing programs.
- Follow 2017 CDC guidelines for respiratory disease, where applicable.

#### 4. Infection Prevention and Control

What worked well:

- Continual update and renewal of recommended mitigation strategies via website.
- Provision of signage packets and documentation for businesses and impacted entities.
- One-on-one guidance and assessment of social needs during contact tracing.
- Town-initiated early testing program.
- PPE availability for staff and residents.
- Planning for and execution of vaccine clinics.
- Reach out to businesses by sector.
- Procurement and distribution of COVID test kits.
- Concerted effort to procure large supplies of vaccine (vendors in place; bulk purchase with regional partners).
- Town-wide mask mandate.
- Health Director and School Superintendent collaboration.
- Health Department staff collaboration with school nursing staff.
- Regionalized Health Department pandemic response through grant funding.
- Departmental functioning despite remote work imposed on staff.

Challenges that were encountered:

- Lack of guidance on enforcement of lockdown restrictions.
- Communication with businesses that were not already known or over which we had no purview.
- Lack of testing resources statewide.
- Access to funding for testing.
- Access to vaccines.
- Asymptomatic disease spread.
- Ongoing inconsistencies and lack of evidence to support decision making.
- Lack of compliance with isolation and quarantine protocols and enforcement.
- Implementation of mask mandate.
- Politicization of public health guidance.
- Identification of and targeting messaging for vulnerable populations.
- Correcting disinformation and misinformation.
- Increased Health Department/BOH scope without additional resources (funding and personnel)
- Differing opinions regarding efficacy and value of some mitigation strategies among Board members.

What was learned:

- Execution of plans can be limited even with adequate preparation.
- Better understanding of different resident groupings and how to provide communication and care.
- The value of maintaining a trained, skilled and cohesive staff.
- The power and effectiveness of a well-maintained Dashboard.

What to do differently:

- Create regular channels for specialized medical consultation and advice.
- Misinformation fueled controversy so need to consider opposing mindsets.
- Training regarding conflict resolution and decision-making for staff and Board members.
- Improved messaging around efficacy of mitigation strategies.
- Target vulnerable populations with specific messaging.
- Leverage other organizations' distribution lists.
- Consider doing direct mailings to households.

## 5. Community Partnership Development

What worked well:

- Regionalization of efforts and resources.
- Staff perspectives that reflected good working relationships and emergency preparedness.
- Initial staff efforts to get Food Bank off the ground.

- Acquiring test kits and distribution of test kits and messaging.
- An up-to-date Dashboard which assisted town organizations in their decision-making.
- Preparation by Health Department staff of messaging to be included in the School Superintendent's newsletters and Town Manager's updates to residents.
- CERT partnership.

Challenges that were encountered:

- Access to testing materials.
- Road blocks to regional testing and vaccine clinics.
- Lack of state epidemiology and other guidance resulting in each community responding on their own.
- No clear chain of authority in town, at times resulting in BOH being expected to assume responsibility for town-wide decisions.
- Lack of a regional group of experts to champion decisions and efforts.
- No centralized conduit for knowing decisions made by other towns and their BOHs.

What was learned:

- Value of community and regional partnerships.
- Limits of regional partners when in the midst of crisis.
- Need for increased connectivity with other boards in town.
- Negative effects of enforcing COVID restrictions on prior good relationships with permit holders.

What to do differently:

- Examine all regional partnerships to assess for gaps or redundancies.
- Develop a potential list of key players and medical and scientific experts for consultation during a public health crisis.
- Establish liaisons with Select Board and School Board.
- Provide feedback to MDPH regarding local needs that were not met and gaps in communication.

## 6. Maintaining Essential Health Services and Systems

What worked well:

- Provided a drive-through vaccine clinic when office was remote.
- Increased BOH meetings to twice monthly.
- Maintained all usual and mandated Health Department programs, permitting and inspections.
- Town supplied remote work supports.
- Expanded work related to communicable disease outreach.
- Recognized residents' food insecurity and initiated a Food Bank program.
- Expanded ongoing prevention messaging on non-COVID programs.

- Staff appropriately addressed concerns from worried residents.

What challenges were encountered:

- Addressing increase in residents' needs especially in regard to food insecurity and mental health.
- Initially having difficulty publicizing staff availability to address concerns and needs to businesses and residents.
- Work demands that couldn't be addressed remotely.
- Staff burnout and COVID fatigue.
- Personal handling of residents' negative response to BOH/HD actions.
- Expectation of 24/7 staff availability.

What was learned:

- Stress effect on work performance of staff worried about their personal health while having to respond to public needs.
- The need to always be prepared for an expanded scope of service.
- The necessity of prioritizing and triaging in a crisis.
- Challenge of setting community expectations.
- Adaptions necessary to continue to provide essential services.
- Funds must be available to respond to emergency needs.
- Internal supports add value.

What to do differently:

- Advocate for adequate funding for emergency needs.

## Action Items

Based on this review, the Bedford BOH and the Bedford HD agreed on the following action items to prepare for a next pandemic:

1. \* Compile a list of potential experts/advisors for participation on a potential Community Task Force.
  - a. Review community task force models, e.g., the School District of Northborough and Southborough COVID-19 Community Task Force.
  - b. Include Emerson Hospital as appropriate.
2. Clarify roles and responsibilities within town government including the chain of command and enforcement capabilities.
3. Compile a list of local and regional existing and potential partners and explore possible collaboration.
4. Identify and address the Health Department's operational gaps when staff are working remotely.
5. Review the CDC's *Community Mitigation Guidelines to Prevent Pandemic Influenza-United States 2017*.
6. Inform MDPH in writing on challenges encountered during the pandemic and stressing the need for a regional coordinated response.
7. \* Establish a comprehensive Communications Plan including, but not limited to: Social media used by the Town, by residents of different ages, and the larger community.
8. Facilitate Conflict Management Training targeting handling difficult situations for Health Department and other Town staff, Board of Health members, and the larger community.
9. Identify resources for relieving staff stress.
10. \* Maintain a full HD staff including filling the position of Public Health Nurse.

NOTE: Action items marked with an asterisk were determined to be top priorities by all BOH members.

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