Black Hawk County Public Health

COVID-19 After-Action Report and Improvement Plan

March 2023

This After-Action Report/Improvement Plan (AAR/IP) aligns real world response objectives and activities with preparedness doctrine and related guidance, including the National Preparedness Goal and the Centers for Disease Control and Prevention (CDC) Public Health Preparedness and Response Capabilities.

An AAR/IP assesses the ability to meet objectives and capabilities by documenting strengths, areas for improvement, capability performance, and recommendations. Through subsequent improvement planning, Black Hawk County Health Department will utilize identified corrective actions to improve plans, build and sustain capabilities, and maintain readiness.

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Executive Summary

Event Name	Black Hawk County Health Department (BHCHD) After-Action Report and Improvement Plan: 2019 Novel Coronavirus Pandemic
Evaluation Timeframe	3/1/2020 – 3/31/2022
Scope	This document provides a narrative description of the activities performed by BHCHD in response to the emerging 2019 Novel Coronavirus (SARS-CoV-2) and the global pandemic caused by the coronavirus disease 2019 (referred to as COVID-19). Major roles and functions are evaluated in this report, organized by Federal Emergency Management (FEMA) Core Capabilities and CDC Public Health Emergency Preparedness and Response Capabilities.
Mission Area	Response
Core Capabilities	Operational Coordination Operational Communication Public Information and Warning Public Health, Healthcare, and Emergency Medical Services Environmental Response/Health and Safety Community Resilience
Objectives	Throughout the course of the activation and response, various incident objectives were established. Public Health Incident Objectives are listed in full in the following section.
Threat or Hazard	SARS-CoV-2 Pandemic and Coronavirus Disease 2019
Point of Contact	Any questions or comments related to this report may be directed to the Black Hawk County Health Department: publichealth@blackhawkcounty.iowa.gov

Event Overview

The 2019 novel coronavirus, which was later designated as SARS-CoV-2, emerged in December 2019. On December 31, 2019, the Wuhan Municipal Health Commission in China first reported a cluster of cases of viral pneumonia in Wuhan to the World Health Organization (WHO). SARS-CoV-2, the virus that causes the coronavirus disease 2019, subsequently spread throughout the world causing a global pandemic.

On January 21, 2020, the Centers for Disease Control and Prevention (CDC) confirmed the first reported case of COVID-19 in the United States in the state of Washington. The WHO declared COVID-19 to be a Public Health Event of International Concern on January 30, 2020, and on the following day, January 31, 2020, the U.S. Department of Health, and Human Services declared a Public Health Emergency for the United States. As COVID-19 cases and fatalities increased, the WHO declared COVID-19 a global pandemic on March 11, 2020, and shortly after, the President of the United States proclaimed a nationwide emergency pursuant to Section 501(b) of the Stafford Act on March 13, 2020.

The Black Hawk County Health Department, in collaboration with the Black Hawk County Emergency Management Agency and Black Hawk County Sheriff's Office, monitored the unfolding situation. Black Hawk County activated the Emergency Operations Center (EOC) to coordinate response actions for the pandemic on March 17, 2020. Response activities quickly escalated and are captured here in this report, detailing the timeframe between March 2020 through March 2022.
Refer to Appendix A for a full timeline of key actions and events.

COVID-19 Pandemic Response Objectives

Formal documentation varied throughout the response. Black Hawk County Health Department established the following objectives, which were modified based on the needs of the current situation.

Phase 1: January 2020 – May 2020

- Conduct surveillance and investigation of reported cases and outbreaks.
- Provide timely and accurate information to the public.
- Coordinate with media partners to provide information to the public.
- Coordinate with local partners to respond to the COVID-19 pandemic.
- Coordinate with state partners to respond to the COVID-19 pandemic.
- Coordinate the health department's response to the COVID-19 pandemic.

- Transition to modified operations between anticipated COVID-19 response waves.

Phase 2: June 2020 – December 2020

- Build investigation capacity and resume investigations.
- Conduct surveillance and investigation of reported cases and outbreaks.
- Manage surge in case reports to complete investigations to the extent possible.
- Provide timely and accurate information to the public.
- Coordinate with K-12 School and higher education partners to respond to the COVID-19 pandemic.
- Coordinate with state and local partners on reopening guidelines.

Phase 3: January 2021 – April 2021

- Regularly and effectively coordinate with local health partners to plan each phase of the vaccine response.
- Timely and effective communication with the community.
- Culturally and linguistically sensitive vaccine education.
- Collaborate for timely, equitable, and ethical administration of the vaccine.
- Adapt to changing state and national guidelines.

Phase 4: May 2021 – November 2021

- Provide education and promote vaccination to address vaccine hesitancy.
- Timely and effective communication with the community.
- Regularly and effectively coordinate with local health partners to plan each phase of the vaccine response.
- Collaborate for timely, equitable, and ethical administration of the vaccine.
- Adapt to changing state and national guidelines.
- Conduct surveillance and investigation of reported cases and outbreaks.
- Manage surge in case reports to complete investigations to the extent possible.

Phase 5: December 2021 – January 2022

- Timely and effective communication with the community.
- Adapt to changing state and national guidelines.
- Conduct surveillance and investigation of reported cases and outbreaks.
- Manage surge in case reports to complete investigations to the extent possible.
- Provide guidance to local K-12 School partners.

Phase 6: February 2022

- Demobilize case investigation efforts.
- Manage case investigation records.
- Demobilize data reporting.
- Adapt to changing state and national guidelines.
- Timely and effective communication with the community.

Capabilities Driven Response and Evaluation

For the purposes of this report, the capability analyses are framed around the FEMA Core Capabilities and linked to the CDC PHEP Capabilities[1], considered national standards for State, Local, Tribal, and Territorial Public Health to advance the emergency preparedness and response capacity of state and local public health systems. These public health capability standards are a vital framework for public health agencies to organize and evaluate emergency responses and exercises, ensure the public health consequences of jurisdictional emergencies are a response priority, and promote collaboration by establishing a common language among preparedness professionals.

The following FEMA Core Capabilities and cross-walked CDC Public Health Emergency Preparedness and Response Capabilities (PHEP) provided high level guidance to the response capabilities.

1. Operational Coordination
    - PHEP Capability 3: Emergency Operations Coordination
    - PHEP Capability 5: Fatality Management
    - PHEP Capability 7: Mass Care
    - PHEP Capability 15: Volunteer Management
2. Operational Communication
    - PHEP Capability 6: Information Sharing
3. Public Information and Warning
    - PHEP Capability 4: Emergency Public Information and Warning
4. Public Health, Healthcare, and Emergency Medical Services
    - PHEP Capability 8: Medical Countermeasure Dispensing and Administration
    - PHEP Capability 9: Medical Materiel Management and Distribution

[1] https://www.cdc.gov/cpr/readiness/00_docs/CDC_PreparednesResponseCapabilities_October2018_Final_508.pdf

- PHEP Capability 10: Medical Surge
- PHEP Capability 11: Nonpharmaceutical Interventions
- PHEP Capability 12: Public Health Laboratory Testing
- PHEP Capability 13: Public Health Surveillance and Epidemiological Investigation

5. Environmental Response/Health and Safety
   - PHEP Capability 14: Responder Safety and Health
6. Community Resilience
   - PHEP Capability 1: Community Preparedness
   - PHEP Capability 2: Community Recovery

Evaluation Methodology

BHCHD employed a multi-tiered approach to develop this AAR.

- Information was collected through a comprehensive review of incident documentation, websites, plans, and other relevant planning and response materials.
- A series of 17 individual and small group virtual debriefing sessions were conducted with County staff and external response partners with over 70 unique participants.
- Focus groups were conducted with target population groups in the community, including:
  - Black/African American
  - People of Burma
  - Congolese
  - Hispanic/Latinx
  - Rural residents
- A series of surveys were conducted with internal and external stakeholders:
  - Local Business Community: 16 responses
  - Elected Officials: 5 responses
  - Childcare Providers: 14 responses
  - BHCHD Staff: 26 responses
  - Funeral Home and Mortuary System Partners: 0 responses

Participants in the debriefing process were advised that their comments would remain anonymous. Where possible, direct quotes were captured, although in some instances responses were excerpted and/or edited for clarity.

The Analysis Section utilized these sources to synthesize response actions and stakeholder experiences, and to identify essential findings and recommendations.

Key Findings

Through the Analysis of Activities, some overarching priority areas emerged.

Strengths

- BHCHD staff demonstrated incredible dedication throughout the pandemic, with commitment and subject matter expertise to perform key public health functions in response to COVID-19.
- Throughout the pandemic, BHCHD's existing relationships with community leaders informed and supported the communication to those most impacted. This two-way sharing deepened community trust and shaped the response actions.
- COVID-19 response data was collected by BHCHD and displayed daily on the public-facing agency website and social media platforms. This level of transparency and information sharing increased BHCHD's digital presence and ability to disseminate public health guidance with a wider audience.
- Both the County Sheriff and Health Director were known trusted voices which increased the legitimacy and reach of the public health guidance shared with the community, especially in the early phases of the pandemic response.
- BHCHD made every effort to provide information, guidance, and data in different languages and modalities. BHCHD also engaged partners from community-based organizations to serve as trusted voices and influencers in several communities, which helped reinforce messages and provided an added layer of trust.

***Areas for Improvement with Recommendations*:**

- There was lack of familiarity operating under response for a public health emergency and subsequent gaps in formal organization and documentation. Evaluate command structures for all hazards events in the County and identify staff to fill roles. Ensure training and exercises for pre-identified staff to maintain competencies and preparedness posture.

- Existing emergency plans were not effective for many aspects of the response. Review and update mass vaccination plans/strategy in collaboration with health system partners.
- Differing information from CDC and State of Iowa was challenging to navigate for BHCHD. Many stakeholder disciplines that work across multiple counties also commented that it was hard to communicate effectively or make decisions on which guidance to observe when counties followed guidance differently. Continue to share lessons learned with IDPH and advocate for clear, consistent messaging and unified response.
- Community members struggled with misinformation and distrust. Maintain health education and public information campaigns with support from trusted community voices.
- There is a need for increased ongoing coordination and communication with hospitals and healthcare system. Assess national models for healthcare coalitions. Consider hiring a dedicated BHCHD position for PHEP.
- The County experienced logistics and warehousing challenges. Evaluate physical space that can accommodate warehousing and distribution. Assess the resource request process and support that can be provided from EMA to internal and external stakeholders.

Next Steps

This report documents the BHCHD preparedness, response, and recovery activities during the COVID-19 pandemic. Strengths, challenges, lessons learned, and recommendations are based on feedback received during debriefing sessions. The AAR doesn't single out any individuals or assign fault; it is intended to recognize the historic experience of BHCHD teams and support process improvement to resolve identified gaps or issues.

This response has been driven by the tireless efforts of the public health and medical workforce. BHCHD recognizes the need to support staff and rebuild public health infrastructure after this exhausting, long duration event. BHCHD will use this report to improve public health capability and capacity, by working with staff and leadership to implement recommendations from the Improvement Plan. Through growth and change, BHCHD will continue the mission to protect people in the community from health hazards, promote healthy behaviors, and prevent disease.

Analysis of Activities by Capability

Core Capability: Operational Communication

FEMA Definition: Ensure the capacity for timely communications in support of security, situational awareness, and operations by any and all means available, among and between affected communities in the impact area and all response forces.

Related Capabilities:

- PHEP Capability 6: Information Sharing.

Activity 1: Communications and Information Sharing

Throughout the COVID-19 pandemic, Black Hawk County strived to communicate in a timely manner with internal staff and external partners. Primary mechanisms to share information included phone, email, meetings, EOC briefings, press conferences, written press releases, the County COVID-19 website, and County social media accounts.

Because COVID-19 was caused by a novel (or new) virus, much was unknown or unconfirmed about transmission, high risk groups, and symptoms early on. As cases increased and more was learned, information and public health guidance changed frequently. At times, the State of Iowa's guidance was not consistent with guidance from the CDC. BHCHD typically stayed consistent with the CDC but followed enforcement guidelines established by the State. Nearly every stakeholder group surveyed or debriefed reported the challenges and confusion created by differing guidance from local, state, and federal jurisdictions.

BHCHD developed or shared guidance for a range of audiences including internal staff (field work, case investigations, contact tracing, use of systems like Domo, continuity of operations (COOP) guidance, etc.) to partners (guidance and restrictions for businesses, schools, childcare, long term care facilities, etc.) and the public (hygiene, isolation, quarantine, etc.).

The County engaged "trusted voices" as spokespeople throughout the pandemic, ranging from the Health Director and Health Department staff, medical professionals, the Sheriff, Mayors, and faith and cultural leaders in the community. One staff

member commented that "partners came to us as a trusted support and were generally receptive to education."

Strengths:

- BHCHD utilized many mechanisms to share information with internal and external stakeholders.
- While the EOC was activated, a Daily Flash Report was disseminated to everyone in the EOC, local Elected Officials (who shared with municipal employees), County department heads (who shared with employees), and the State. State officials provided positive feedback on the effectiveness of the report in information sharing for situational awareness.
- BHCHD implemented version control on guidance documents with date and version number.
- BHCHD had strong local partnerships which enabled flow of information.
- BHCHD had a clear communication pathway to IDPH. State staff were helpful in answering questions and in providing already released guidance.
- 50% of activated EOC staff (n=8/16) responding to the AAR survey reported that incident-related communications and information sharing to activated staff throughout the COVID-19 pandemic was timely and effective. 73% of responding staff (n=19/26) agreed or strongly agreed that their program manager kept them informed of the evolving COVID-19 pandemic and health department response. Additional comments were received that expressed different opinions and are captured below in challenges.
- 92% of businesses (n=12/13) responding to the AAR Survey reported that they knew who to contact within Black Hawk County with questions or needs related to COVID-19 and recognized clear communication of information as a strength of the response. Responders also reported in the following ways (see chart) that their business had sufficient information and guidance about COVID-19 and COVID-19 control measures.

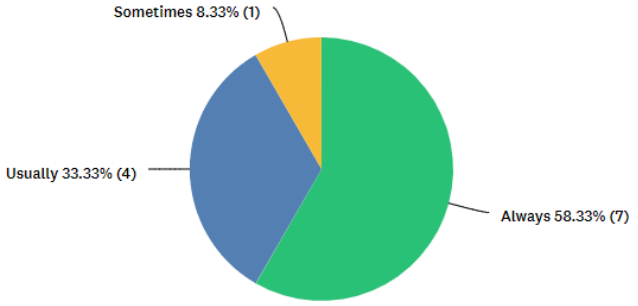


Chart 1. Businesses had sufficient information and guidance about COVID-19 and COVID-19 control measures.

- Of the 14 childcare providers that responded to the AAR survey, 86% knew who to contact within Black Hawk County with questions or needs related to COVID-19. 93% reported receiving current guidance/information about COVID-19 from Black Hawk County in a timely manner. Responders also reported the following ways (see chart) that their business had sufficient information and guidance about COVID-19 and COVID-19 control measures.

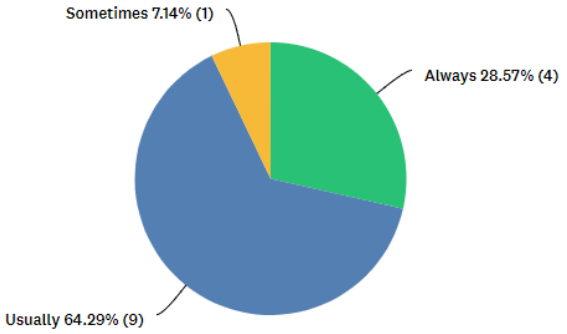


Chart 2. Childcare Providers had sufficient information and guidance about COVID-19 and COVID-19 control measures.

- 100% of Elected Officials (n=4) reported that they knew who to contact within Black Hawk County with questions or needs related to COVID-19, and 100% responded that their community/constituents "usually" had sufficient information and guidance about COVID-19 and COVID-19 control measures. Survey respondents rated communication and information sharing from Black Hawk County to local governments related to COVID-19 as 4.3/5 stars (with 5 stars being the most successful).

Challenges and Lessons Learned:

- During debriefings, BHCHD reflected that the primary focus and recipient of incident communications was generally the public and that external communication needs overshadowed internal communication. Staff were often not directly informed of the evolving response efforts, which caused frustration and led to situations where staff felt they were not able to properly answer questions from the public. One staff survey respondent commented that *"I felt as an employee I learned more from watching the conferences and the news than I did from internal management."*
- When significant statewide changes occurred, information was often not shared directly with local health departments prior to the release. BHCHD typically learned about changes during press conferences and would have to pivot quickly. To mitigate, the County shifted their press briefings to occur after

the Governor's press conferences to allow time to digest and interpret any necessary. This aspect of learning information during the Governor's press conferences was out of BHCHD span of control but a source of frustration for all.

- IDPH did not provide Counties with sufficient lead time on guidance changes; they often just sent an email that a press release would be going out. BHCHD expressed frustration with this process multiple times, but the information flow did not improve.
- Maintaining up to date information on the county website was difficult due to limited staff time devoted to website management. While main pages that contained information were updated regularly, less visited parts of the website (e.g., frequently asked questions (FAQs) about COVID-19) were not updated as frequently.

Recommendations:

1. Review communication plans to include process to share incident information with all staff to ensure situational awareness.
2. Share feedback with IDPH where appropriate about communications and flow of information during the COVID-19 pandemic.
3. Increase capacity of the communications team by adding more full time equivalents (FTEs) devoted to communications and identify staff that are able to surge to support communications during public health response.

Activity 2: Data Sharing for Situational Awareness

BHCHD began early review and tracking of data using external sources such as CDC, the Johns Hopkins COVID-19 map, and other publicly available dashboards. Primary data collection methods were through case investigations and laboratory reporting, and later included vaccination data once available. The majority of data analysis and sharing was the responsibility of BHCHD staff.

Fortunately, BHCHD had a contract in place prior to COVID-19 for website redesign. The contract was able to be modified to develop a dedicated COVID-19 website, which was used as the main data sharing tool and primary source of truth for press releases, guidance, and other information. The contractor was also key in supporting communication strategies, tools, and workflows. Over time, BHCHD was able to hire for a new position, a Health Communications Strategist.

Main data consumers were the general public through the website, dashboards, and social media. The team also developed weekly reports for the Board of Supervisors (BOS) and monthly reports for the Board of Health (BOH), as well as regular reports for healthcare and vaccine partners (typically weekly, but frequency changed to meet need). The public-facing dashboard greatly reduced the number of media requests.

Strengths:

- BHCHD teams had the knowledge, skills, and ability to perform data collection and analysis imperative to meet incident demands. Data was essential in driving decision-making and guidance for the health and safety of the community.
- Staff demonstrated consistency in approach and flexibility to meet each challenge. *"We didn't have the easiest way to pull data in the beginning, but we still did it every day at exactly the same time."* When new tools or resources became available, BHCHD implemented them.
- The dedicated COVID-19 website was a key success in the response, specifically in the ability to serve as a trusted community source for data and information.
- When IDPH took over case investigations in April 2020, this gave the Disease Control team more time to do data analysis and increased confidence in the numbers reported.

Challenges and Lessons Learned:

- BHCHD established levels early on to quantify COVID-19 in the community. The team updated definitions multiple times, but each time was slightly different than the CDC. Ultimately the decision was made to align with the CDC to reduce confusion.
- At first, BHCHD did not have the data analysis tools needed. The State was able to run reports on request. Over time, the State created a more detailed report that met the County's needs.
- Initially, staff did not have necessary geographic information system (GIS) skills but worked with the County Engineer's Office to train and ultimately got their own GIS license.

- The Iowa Disease Surveillance System (IDSS) system routinely crashed making data sharing difficult. The shift to Domo in November 2020 helped but had its own limitations. See additional discussion in Capability 4, Activity 1.
- During the COVID-19 response, one of the Epidemiologists took on sentiment analysis. Sentiment analysis is the process of collecting comments on social media platforms and analyzing it to determine if the user approved or disapproved of certain posts, topics, or campaigns. This gives the communication team direction on future content, while also giving the opportunity to connect with the user based on their comment. Tasking an Epidemiologist with sentiment analysis took away from their ability to concentrate on case management and reviewing COVID data. Sentiment analysis was originally done by the Epidemiologist and an Environmental Health Officer but was reduced to the Epidemiologist based on time and staffing constraints. This process could be done by other staff members if they had training or an easier system to conduct the analysis. It is recommended that BHCHD purchase a program (e.g., Dedoose, Hootesuite Insights, or Sprout Social) to break down the barrier of data analysis and expand user access and ability to conduct sentiment analysis.
- Consistency in data was an ongoing struggle. There wasn't a standardized playbook or statewide guidance for data definitions and reporting. Due to different definitions (particularly in case classifications and COVID-19 deaths), BHCHD data regularly didn't match IDPH data. The public was watching numbers so closely that the differences created mistrust. In most instances, IDPH did not communicate reconciliation of data; BHCHD would see the change in numbers, and it was "up to us to communicate to the public and the impact it had on our data." BHCHD eventually just used IDPH data to reduce inconsistencies and time spent reconciling.
- Data was regularly gathered from 3-4 different sources, all updated at different times, and required time intensive manual data analysis. Systems did not all interface with each other, and many data analysis tasks were manual (pulling numbers, updating website, posting on social media, etc.). Assess how to better automate data analysis and sharing.
- Health systems reported data to IDPH through a daily survey, which was reviewed by the Regional Medical Coordination Center (RMCC) for situational awareness and accuracy, then uploaded to HHS. Once this was no longer

required by IDPH, hospitals reported directly to HHS. BHCHD found that once the reporting shifted to HHS, hospital data became more difficult to receive at the county level.

- Many demographic data elements (e.g., race, ethnicity, risk factors) were dependent on the case investigation. In many instances, data was missing because the case was deemed "lost to follow up" or the information wasn't included in laboratory reporting.
- The State systems didn't allow locals to perform the necessary level of data analysis and BHCHD was unable to effectively use application programming interfaces (API) to exchange data. The State did not work with locals or offer support in data analysis.
- The public and media were regularly waiting for data discrepancies for a "gotcha moment" that distracted from the core mission and occasionally delayed original and responsive external communication. If there had been more support from the state level for a single source of data earlier in the process, this would have taken significant burden off local health departments.
- The demand for data was overwhelming and BHCHD struggled to set expectations and boundaries that would have helped staff workloads. There was little ability to change reporting frequency (e.g., weekend posts and updates). Future emergency response efforts should recognize the expectation of data reporting before adding additional data to reports, as maintaining additional data increases workload exponentially.

Recommendations:

1. Increase data capacity in the health department (e.g., staff, training, and systems).
2. Identify opportunities to automate processes to reduce manual burden on staff.
3. Purchase recommended programs for sentiment analysis (i.e., Dedoose and Hootesuite Insights).
4. Share lessons learned with IDPH and suggest a working group to identify how to improve consistency in data definition and reporting at the county and state levels.

Core Capability: Operational Coordination

FEMA Definition: Establish and maintain a unified and coordinated operational structure and process that appropriately integrates all critical stakeholders and supports the execution of core capabilities.

Related Capabilities:

- PHEP Capability 3: Emergency Operations Coordination
- PHEP Capability 5: Fatality Management
- PHEP Capability 9: Medical Materiel Management and Distribution
- PHEP Capability 15: Volunteer Management

Activity 1: EOC Activation and Use of ICS

The National Incident Management System (NIMS) outlines a consistent, flexible framework for incident management. The NIMS Command and Coordination component details the Incident Command System (ICS), which is a system for incident management within a common operating structure, and the use of an Emergency Operations Center (EOC). An EOC is a physical location or virtual space from which internal and external disasters are managed. It is where personnel assemble to coordinate operational information and resources, and strategically manage the event or emergency. Prior to COVID-19, there had been some training and exercise in ICS and use of an EOC, but there was not a strong, integrated preparedness culture across Black Hawk County. While traditional responders use the NIMS framework on a regular basis to manage incidents, the experience of others, including the health department, was limited to ICS training courses and periodic exercises.

The structure and operation of county emergency management commissions is set forth in Iowa Code §29C.9 (Emergency Management and Security). The Black Hawk County Emergency Management Commission is comprised of elected leaders from each of the municipalities which make up the county. Per Iowa Code §29C.10, the commission appoints an emergency management coordinator who shall serve at the pleasure of the commission, shall be responsible for the development of the comprehensive emergency plan, shall coordinate emergency planning activities, and shall provide technical assistance to political subdivisions comprising the commission. When an emergency or disaster occurs, the emergency management

coordinator shall provide coordination and assistance to the governing officials of the political subdivisions comprising the commission.

Nationwide, the first few weeks of March 2020 were focused on COVID-19 as events were cancelled and early non-pharmaceutical interventions were implemented. In Black Hawk County, the County EMA and County Sheriff discussed the need for an EOC. At first, Public Health partially activated with EOC support for the incident, and then the EMA developed a plan and presented to the Board of Supervisors. While there was some early pushback on the perceived need, the EOC was activated on March 17, 2020, to coordinate the County's response to COVID-19. Initially, the Sheriff's Office and EMA were the primary agencies staffing the EOC. The Health Director was originally designated as the Incident Commander, and BHCHD rotated three staff as Agency Representatives in the EOC. Some positions were staffed, but the EOC was not organized with standard ICS positions and there was not standard incident documentation (e.g., Incident Action Plan) developed.

The EOC did serve as a central place for briefings and allowed the heads from the Sheriff's Office, EMA, and Health Department to communicate and coordinate response actions, and to bring partners to the table for strategy and information sharing. The EOC was deactivated on June 5, 2020, although response activities continued into February 2022.

Strengths:

- Black Hawk County had strong local partnerships and working relationships prior to COVID-19.
- The Sheriff and the Health Director conducted early in-person sessions with municipalities to build relationships and determine the best method of communication to ensure clear information sharing and connectivity throughout the pandemic. As a result, BHCHD created a robust Facebook approach.
- The EOC brought organizations together to make sure there weren't unmet needs in the community. Black Hawk County partnered with the Northeast Iowa Food Bank (NEIFB), Peoples Community Health Clinic (a Federally Qualified Health Center), Ethnic Minorities of Burma Advocacy and Resource Center (EMBARC), the National Association for the Advancement of Colored People (NAACP), and other agencies. A large focus was on food security and

access. Schools came to the table to establish drop off points for food boxes. Social workers from hospitals and the Peoples Community Health Clinic primarily worked to refer community members to other human services.

- Many partners stepped up to support vaccinations, share resources, and align efforts throughout the response.

Challenges and Lessons Learned:

- While most departments had NIMS/ICS training, there was a lack of countywide public health preparedness activities. As a result, staff were not familiar with working in a response environment for a public health emergency. Plans had been developed but remained "on the shelf" and were not used to guide response operations. Prior work was not recognized, and instead the County was continually reacting as the Governor and IDPH changed guidance and tactics.
- There was missed opportunity for greater organization and coordination of response efforts through ICS and unified command. Standard ICS forms and documentation were not developed. A command structure was established early in the response but was not executed effectively to meet the scope of the response. There were missed opportunities to use the structure to activate additional staff from the County. This was attributed to the department's general unfamiliarity with ICS, that ICS was not well integrated or practiced, and in part due to turnover of staff and reassignment of ICS positions.
- The response was hindered by lack of communication from the State. The health department was often learning of new proclamations, guidelines, and closures, at the same time or sometimes after the information was released to the public, with the written information not being available for several hours.
- Guidance and proclamations were often vague with few guidelines for interpretation or enforcement at the local level, and there was a lack of follow through on promises for additional guidance.
- County staff were not uniformly involved in the response, which caused some to be overworked, while others were underutilized. Closures issued through the Governor's emergency proclamations significantly impacted the work of department programs, as staff were unable to conduct field work if the

organizations the programs worked with were ordered to be closed. These closures occurred concurrently with peak incidence of cases; however, staff were not uniformly brought into response efforts. Some staff worked full time on the response, including weekend or unpaid overtime hours, while others were unable to complete their program work due to the closures and would have been available to contribute in some form, but were not utilized.

> *"One of the things we would have done differently is to step back and consider the pace and impact on activated teams."*
> -Incident Commander

- Planning and decision-making in the EOC turned political, particularly when local legislators were involved.
- There were tensions between the state and local level, in terms of what measures should be implemented and who had the power to implement control measures.
- Inconsistent protective measures (e.g., closures, masking, orders) between the local, county, state, and national levels caused confusion, and further contributed to the overall political discourse regarding the COVID-19 response.
- The incident management team did not always feel supported by elected officials impacting their ability to perform responsibilities for the public and response partners. Input from Elected Officials was at times unproductive, and some didn't see their role in the response, particularly related to decision-making and advocacy. This resulted in missed opportunities for elected officials to advocate for the county's response needs, such as resource allocation from the State, or shielding County staff from the politics of the response.
- Deactivating the EOC resulted in loss of cohesion with some partners. Some resources and ability to refer people to resources were also lost.

Recommendations:

1. Identify an incident management organization and staffing model for the County to effectively respond to emergency events, including multiple persons deep in key positions allowing for adequate rest and rotation for long-term events.
2. Train BHCHD staff on NIMS, ICS, and assigned EOC roles.
3. Consider hiring a dedicated Public Health Emergency Preparedness position in BHCHD to support plans, trainings, and exercises.

4. Engage the Board of Supervisors in NIMS, ICS, and EOC trainings to better understand roles and responsibilities, and identify opportunities to better advocate for the County's response to the State.
5. Review plans and include lessons learned on how to effectively engage partners and key leaders of vulnerable population groups. Continue to engage community partners and organizations for shared responsibility and vision.

Activity 2: BHCHD Response to COVID-19

After the EOC deactivated on June 5, 2020, Black Hawk County Health Department continued to shoulder the response to COVID-19, fulfilling key public health functions and response actions. Most of these activities are detailed in Capability 4: Public Health, Healthcare, and Emergency Medical Services. Refer to Table 1 below for the evolution of Public Health Incident Objectives.

Staff were greatly impacted by this increased response workload, on top of daily responsibilities to sustain the essential functions of the Health Department. Refer to Community Resilience Capability, Activity 5 for additional analysis of BHCHD Continuity of Operations. In July 2020, the Public Health Director provided the Board of Health with staffing thresholds based on projected daily COVID-19 case reports. The memorandum outlined additional temporary and permanent staff needed to complete disease investigation, contact tracing, and coordination activities. The Disease Surveillance and Investigation Leadership Team also developed a set of strategies to implement a scalable system to efficiently mitigate the spread of COVID-19, for use with the BHCHD Health Equity Policy and COVID-19 Investigation Workflow. These forward leaning documents demonstrated the efforts of BHCHD to plan for surges in response activities.

BHCHD staff activated to fill response roles were surveyed as part of the AAR process. Respondents (n=16) were surveyed on the following topics:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I had the appropriate subject matter knowledge, training, and guidance to fulfill my assigned role	25% (4)	**38% (6)**	25% (4)	6% (1)	6% (1)
I had the appropriate resources needed to fulfill my assigned role	19% (3)	**44% (7)**	19% (3)	12% (2)	6% (1)
Incident-related communications and information sharing to activated staff	0% (0)	**50% (8)**	13% (2)	31% (5)	6% (1)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
throughout the COVID-19 pandemic was timely and effective					
The health department planned for the health and physical safety of activated staff	13% (2)	**44% (7)**	31% (5)	6% (1)	6% (1)
The health department planned for mental health and emotional support of activated staff	7% (1)	7% (1)	27% (4)	**46% (7)**	13% (2)
Activated staff were provided with adequate rest and rotation	0% (0)	19% (3)	31% (5)	**38% (6)**	12% (2)

Strengths:

- BHCHD staff demonstrated incredible knowledge, skills, ability, and dedication in the execution of essential public health functions. COVID-19 was an emergency based in numbers – of cases, contacts, deaths, testing resources, vaccines, etc. Committed teams performed contact tracing and case investigations to track and slow the spread of the virus and supported outbreak response in the most vulnerable populations in the community. When vaccines became available, staff supported efficient and equitable dispensing, while adhering to state guidance and regulations. All of these efforts were documented, analyzed, and reported through complex data visualizations and dashboards.
- BHCHD had existing Community Health Workers that were critical to addressing equity considerations in the response and meeting the needs of diverse community members.
- In July 2020, BHCHD began advance planning with partners (including health systems, K-12 schools, universities, et al.) regarding reopening and considerations for Fall.

Challenges and Lessons Learned:

- BHCHD staff disproportionately shouldered the COVID-19 response for Black Hawk County without sufficient support from other departments and agencies.
- BHCHD experienced a workforce capacity issue – there was no one to backfill essential response and daily positions to enable staff to take time off. As a result, there was poor rest and rotation and staff experienced burn out and fatigue.

- Responder health and safety, specifically mental and physical health of public health staff, was not consistently and robustly addressed due to the Safety Officer not being identified.

Recommendations:

1. Work with leadership from BHCHD, EMA, and the Sheriff's Office to define incident management organization and staffing model for a Public Health response, including unified command with support from other County agencies.
2. Train staff on NIMS, ICS, and assigned EOC roles.
3. Consider hiring a dedicated Public Health Emergency Preparedness position in BHCHD to support plans, trainings, and exercises.
4. Evaluate current BHCHD staffing levels and build infrastructure to both execute public health functions and maintain preparedness for future public health emergencies.
5. Provide an opportunity for newly elected Supervisors to meet with Public Health leadership and discuss the importance and responsibilities of the Department.

Activity 3: Logistics and Resource Management

During COVID-19, the Iowa Governor designated the Iowa Department of Homeland Security and Emergency Management (HSEMD) in charge of personal protective equipment and resource coordination for the response.

At first, the Iowa National Guard picked up allocated resources from State warehouses and delivered to Counties. Over time, the Governor tasked Iowa Department of Transportation staff to deliver PPE. Once received in the County, the Black Hawk EMA would review the order and reconcile the bill of laden and enter information into the HSEMD WebEOC platform. WebEOC was used for tracking and ordering from the State, and then a spreadsheet was used for local resource tracking and allocation.

Black Hawk County did not have a warehouse that could support COVID-19 logistical operations but was able to surge into a garage owned by Waterloo Fire, Sheriff's Office storage, and even a MercyOne warehouse in Cedar Falls. The piecemeal approach to resource storage added to the labor intensive logistics operations.

On March 30, 2020, IDPH created a Regional Medical Coordination Center (RMCC) for a 14 county service area. The RMCC was established to support multi-agency coordination of medical resources and critical information sharing. RMCC staff provided situational awareness, information sharing, and medical resources availability/status within the service area. Black Hawk County is in Service Area/Region 6.

Strengths:

- Partners provided use of storage facilities to support the incident logistical needs.
- The State consistently followed through on resource requests.

Challenges and Lessons Learned:

- Black Hawk County did not have sufficient warehousing facilities.
- The spreadsheet used for local resource tracking and allocation was cumbersome.

Recommendations:

1. Determine an effective location for County storage and warehousing needs.
2. Evaluate inventory management systems and/or other tools to effectively track and allocate resources locally.

Activity 4: Financial Oversight of COVID-19 Response

Black Hawk County did not formally activate a Finance Section in an ICS response organization but fulfilled event-related financial activities through regular program staff. Major activities related to Finance during the COVID-19 response included:

- Grant management of incoming funding from the Coronavirus Aid, Relief, and Economic Security (CARES) Act, FEMA, and IDPH.
- Tracking purchasing and reimbursements based on grant eligibility.
- Establishing employee coding for COVID-19 response.
- Identification of new vendors for critical needs (i.e., PPE).

Strengths:

- The County received a significant amount of funding from Federal grants (including CARES Act) and FEMA reimbursements. This funding was used to help establish mobile vaccination resources and heath equity initiatives, and to procure technology resources/platforms.

- Staff were able to establish new project accounting codes quickly and effectively for the COVID-19 response within existing systems. There was a pandemic public health response code specifically for staff working the emergency.
- Finance staff had a team mentality and spent funds appropriately with no reimbursement issues.
- Relationships with hospital partners were helpful in the identification of new vendors for PPE needs.
- The interaction with State partners in regard to funding/finance was excellent, including timely communication and the pre-approval of funds.

Challenges and Lessons Learned:

- Staff capacity was impacted significantly due to the time consuming and tedious nature of understanding the eligibility of grants funds (e.g., what can be purchased and what cannot). The requirements of the funding were very prescriptive, which made it difficult to understand and interpret allowable uses.
- State project officers varied depending on the response funds, which caused additional logistical coordination for fiscal staff.
- Additional attention to recording hours and costs related to the response was needed. Improved ICS documentation and response tracking would ensure accountability of hours charged towards emergency response and reduce burden on fiscal staff in submitting claims for reimbursement. Documentation of the number of hours charged towards response, and activities completed during those hours would add clarity to where costs can be charged and help prevent reimbursement from being denied due to lack of documentation.
- Some Federal/State funding came in too late to be helpful, specifically vaccine-related funds.
- The Board of Supervisors had the authority to determine allocations for CARES Act and ARPA funds; the perception existed that the needs of public health responders were not always prioritized.

Recommendations:

1. Encourage Federal/State partners to broaden use of emergency funds to be less prescriptive and identify way to easily navigate eligibility requirements. If possible, give local governments more lead-time to understand funding coming so they can pre-identify potential projects and purchases.

2. Identify ways for Public Health leadership to educate elected officials on the importance of emergency response and public health's role/activities, including ICS training for Elected Officials and a "pandemic snapshot" of the financial costs incurred by the Health Department, reimbursed costs, and ongoing unfunded financial burdens.
3. Develop clear protocols for tracking costs related to emergency events/activations.

Activity 5: Use of Volunteers

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

Internally, there was not a formal mechanism (such as California's Government Code 3100-3109: Disaster Service Worker Program[2]) to activate county staff to support EOC or other response operations. The Sheriff's Office assisted with enforcement of the Governor's proclamations and community control measures and logistics. The Emergency Management Agency assisted with logistics, particularly in support of health care and long term care facilities. Otherwise, the COVID-19 response received limited involvement from other County departments in support of public health operations.

Black Hawk County does not have a Medical Reserve Corps or other formalized volunteer program. The EOC discussed opportunities for volunteers but did not use as a strategy to support COVID-19 operations.

Health systems discussed some use of/requests for volunteers through the State's Iowa Statewide Emergency Registry of Volunteers[3] (i-SERV), which is part of a national interoperable network of state based volunteer registration systems for managing volunteers at all tiers of response. Each system verifies the identity, credentials, certifications, licenses, and hospital privileges of health professionals who volunteer to provide health services during a public health emergency. Long term care facilities were in dire need of staff during the peak of the pandemic, and at

[2] Disaster Service Worker Volunteer Program | California Governor's Office of Emergency Services
[3] https://iaserv.org/

times were unable to spare time to call personnel on the i-SERV list. After spending hours of contacting individuals on the i-SERV list, facilities reported that no one on the provided i-SERV lists were available or willing to volunteer unpaid.

Recommendations:

1. Assess opportunities to expand local volunteer networks.
2. Work with IDPH and local healthcare facilities to build awareness and capacity for the i-SERV network.
3. Work with EMA to identify opportunities to deploy County staff in support of emergency response and/or recovery operations.

Activity 6: Fatality Management

Fatality management is the ability to coordinate with partner organizations and agencies to provide fatality management services. The public health agency role in fatality management as outlined by the CDC may include a range of supporting activities. In Black Hawk County, the Black Hawk County Medical Examiner has jurisdiction over any death that is violent, suspicious, or sudden and unexpected, or any death that is not attended by a physician. Most COVID-19 deaths occurred under physician care at hospitals or healthcare facilities and did not fall under Medical Examiner jurisdiction.

During the pandemic, BHCHD engaged with mortuary partners and funeral homes as part of vaccination efforts in the identification of priority eligibility. When these partners were sent an After-Action survey, no responses were received. This highlights the need for additional communication and coordination between BHCHD and the mortuary system in planning, response, and recovery activities.

Recommendations:

1. BHCHD should coordinate with EMA to review any Mass Fatality plans and define the roles and responsibilities for Public Health.
2. Identify how BHCHD and/or EMA communicates with mortuary system partners and maintain current contact lists.

Core Capability: Public Information and Warning

FEMA Definition: Deliver coordinated, prompt, reliable, and actionable information to the whole community through the use of clear, consistent, accessible, and culturally and linguistically appropriate methods to effectively relay information regarding any threat or hazard and, as appropriate, the actions being taken, and the assistance being made available.

Related Capabilities:

- PHEP Capability 4: Emergency Public Information and Warning

Activity 1: Public Information during COVID-19

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. Throughout the pandemic, public information was critical for updates on closures and clear, current guidance such as what to do if someone was suspected or confirmed to have COVID-19.

BHCHD identified three staff to handle public information, coordinate media requests and logistics, and work closely with local Public Information Officers (PIOs) from hospital systems and response entities to develop consistent messages. The team created talking points and tracked incoming calls to maintain awareness of common concerns. The early communications efforts led to identifying the need for a Health Communications position that could support messaging, including use of social media, and coordinate the logistics of media events. The County hosted regular press briefings with the Public Health Director and County Sheriff as primary spokespersons, along with medical leadership from MercyOne, UnityPoint Health, and Peoples Community Health Clinic. Press briefings were held daily at the start of the pandemic and changed frequency as needed. Over time, Black Hawk County began live streaming press briefings on Facebook, which required additional coordination and staff time to respond to comments. BHCHD had a contract in place with a consultant and was able to quickly develop and launch a dedicated COVID-19 website. The team also helped provide templates and resources to help establish press release "framework." Information was also shared through social media platforms and other sources.

Within the Black Hawk County community, there is vast diversity in language and culture. BHCHD arranged for messaging to be translated and culturally adapted

using Community Health Workers on staff along with trained community members. Most messages were made available in French, Spanish, Bosnian Marshallese, multiple Burmese languages (i.e., Karen, Karenni), Hakha Chin, and Swahili. Public Health made every effort to provide information, guidance, and data in different languages. BHCHD also engaged partners from community-based organizations to serve as trusted voices and influencers in several communities, which helped reinforce messages and provided an added layer of trust.

The PIO team worked well together and performed public information activities with success, but there is still opportunity to build capability and capacity in this discipline.

Strengths:

- BHCHD hosted regular press briefings to share information and included the same key individuals throughout the response including the Health Director, County Sheriff, and healthcare system leadership from UnityPoint Health, MercyOne, and Peoples Community Health Clinic. These briefings were collaborative and established trust and transparency to response efforts. Additional community partners (EMBARC, NAACP) also participated in press conferences to customize targeted messaging.
- The County established a task force to ensure communication was pushed out to the public as quickly and efficiently as possible, striving to make BHCHD the primary source of truth for the community.
- Public information personnel were able to identify and partner up with trusted voices and influencers in several communities, which helped reinforce messages and provided an added layer of trust.
- BHCHD developed a new Communications Plan (April 2021) and redesigned the website. The website was able to be utilized for COVID-19 information and vaccine eligibility.
- The Health Department's Facebook page was increasingly used for information sharing during the pandemic response. Many new followers were added from the community as a result.
- The PIO team worked closely with the health equity workgroup to ensure messages were reaching all community groups and populations. Community Health Workers and community leaders helped with the translation of public health messages, which were translated into 6-7 different locally used

languages. The "Stay Safe at Home" campaign was translated into multiple languages that reflect the diverse communities in the County. A mask "selfie" campaign was also utilized that targeted younger populations. Press conferences had an American Sign Language interpreter.

- Additional bilingual staff increased translation capabilities and message strength.
- After recognizing that Test Iowa instructions were only available in English, BHCHD translated the instructions into Spanish, French, Bosnian, Marshallese, Karenni, Burmese, and Hakha Chin. Translated audio recordings were provided to the State Hygienic Lab to share statewide. Hospital systems utilized multiple modalities including updates to internal systems (intranet), newsletters, memos to providers, daily staff huddles, and emails to staff and patients. MercyOne established a corporate-wide campaign for regional "influencers" to spread the word about the importance of getting vaccinated via social media and other means.
- BHCHD shared press releases with staff to ensure they felt included and informed in the information being provided to the larger community. One participant noted, "We wanted them to know we value our staff."
- The County established a call center for the public to ask questions and even sign-up for vaccination. The call center was staffed by Health Department personnel, primarily contact tracers via a dedicated phone line that was consistently staffed and dedicated to the COVID-19 response. This strategy utilized staff that were typically up-to-speed on the most recent guidance and information.

Challenges and Lessons Learned:

- There was not a dedicated Public Information Officer at the onset of COVID-19 to manage the flow of information to the public, and oversee the communication needs for the department. While the department was able to meet the communication needs for the response, a dedicated PIO and more organized communication plan would have removed considerable burden from staff and allowed them more time to focus on other aspects of the response. Since that time, the Health Communication Strategist position and plan have been developed.
- Current PIOs lack formal training in PIO Crisis Communications, NIMS/ICS, and Social Media messaging courses.

- The pandemic created a new set of terminology and linguistics that was challenging for the public and required significant education in the messaging.
- Social media posts required a lot of monitoring and response to comments. At first there was lack of clarity in how to handle misinformation, but the newly developed social media plan established clear policy.
- Staff discussed the difficulty in maintaining the frequency of posts. Initial daily Facebook posts, including on weekend days, created an expectation from the community and staff felt unable to drop weekend posts which required communication staff to work over the weekends.
- Press conferences could have benefited from more organization during the question and answer portion, with limited speaking times. Review plans and add recommendations for determining which inquiries require a response, and for declining comment.
- PIOs had to manually enter COVID-19 case numbers daily to update websites and online communication platforms. This data entry was time consuming and could be performed by electronic tools like Tableau and Power BI that could be linked to website (not having to duplicate data entry).
- There is a need to update the Communications Plan to include updates and best practices because of the pandemic response. This includes identification of translation services of health related materials. The translation of materials lagged due to the time it took to identify and coordinate with partners, trusted voices and establishing parameters (e.g., costs).
- In some instances, calls were referred back and forth between agencies, typically with 211 and BHCHD, causing frustration for the caller.
- The County lacks plans for a formal Joint Information Center/Joint Information System (JIC/JIS). While many related activities were conducted, there were missed opportunities to engage additional PIOs for information sharing and message development. These PIOs could include representation from other County Department, community organizations, large employers/business, etc. The same way the health system representatives were part of the meetings during this response, it could be replicated to include a wider reach and more inclusive approach. The JIC structure also allows better sharing of resources like templates developed in Canva or other graphic design platforms, translation services, and also establishes working relationships prior to emergency events.

- Debriefing participants commented that mental health considerations were not properly represented in public information efforts.
- The COVID-19 response became a significant political issue, which translated to increased media coverage and politicization of response updates, messages, and preventive measures. The County received national level attention as a result of the outbreak at the Tyson plant and received media requests from all sides of the political spectrum as a result. This put the department in the difficult role of remaining impartial, particularly when responding to questions during press briefings.

Recommendations:

1. Maintain and consider increasing the FTEs dedicated to Health Communications and continue to build competencies and depth in staff.
2. Provide additional training opportunities for staff filling PIO roles, including County departments, healthcare partners and community organizations. This should include training primary and backup positions.
3. Identify electronic data collection and visualization tools, like Power BI or Tableau, that can collect case rate or health data but also be linked to public facing sites (website etc.)
4. Update the current Communications Plan to include the identification of County and/or Health Department resources for translation capability that be leveraged in a timely manner.
5. Consider establishing a formal Countywide JIC structure.
6. Work with County and PIO leaders to identify additional personnel resources (either County employees and/or possibly community partners) that could help surge and fill call center positions.

Core Capability: Public Health, Healthcare, and Emergency Medical Services

FEMA Definition: Provide lifesaving medical treatment via Emergency Medical Services and related operations and avoid additional disease and injury by providing targeted public health, medical, and behavioral health support, and products to all affected populations.

Related Capabilities:

- PHEP Capability 8: Medical Countermeasure Dispensing and Administration
- PHEP Capability 10: Medical Surge
- PHEP Capability 11: Nonpharmaceutical Interventions
- PHEP Capability 12: Public Health Laboratory Testing
- PHEP Capability 13: Public Health Surveillance and Epidemiological Investigation

Activity 1: Public Health Surveillance and Epidemiological Investigation

Public health surveillance and epidemiological investigation is the ability to create, maintain, support, and strengthen routine surveillance and detection systems and epidemiological investigation processes. It also includes the ability to expand these systems and processes in response to incidents of public health significance. Early in the pandemic, the existing BHCHD Disease Control team began to track and surveil COVID-19. A full investigation team was established 4/9/2020 with additional staffing and expanded to weekend investigations. The team initially used Iowa Disease Surveillance System[4] (IDSS), the electronic disease reporting system implemented by the IDPH Center for Acute Disease Epidemiology (CADE) prior to COVID-19. Staff printed investigation sheets for confirmed cases and tried to equitably assign the number of calls for case investigations and contact tracing. As cases increased, a Coordinator was activated to assign out cases. There were limited people who had access to enter investigation information into IDSS, so a separate workflow was established for follow-up and for release from isolation/quarantine.

IDPH provided counties with the option to turn over case investigations to the State. On 4/28/2020, BHCHD turned over all new cases with the exception of long term care

[4] https://idph.iowa.gov/cade/idss

facility related cases. Staff also continued to monitor and track cases initiated prior to turning over to IDPH. While IDPH was managing cases, this gave the team bandwidth to focus on data and advance planning (e.g., fall return to schools, technical assistance). BHCHD resumed investigations from IDPH on 10/5/2020 but had occasional support through December 2020.

The team strived to maintain current information and guidance from IDPH, CDC, and other partners, and to share and coordinate with the healthcare system (e.g., initial screening criteria, travel history). BHCHD worked very closely with long term care facilities. Personnel called facilities every day, reviewed details of COVID-positive staff and residents, and identified any needs. The line of communication was open throughout the pandemic, so as systems and methods changed, all were able to adapt. This close coordination supported facilities experiencing outbreaks and enabled provision of technical assistance.

A similar model was followed for schools, businesses, childcare facilities, and other settings with outbreaks. BHCHD had a dedicated childcare nurse consultant that would get a list of positive cases and work with the facility on guidance while the investigation team followed up with cases.

BHCHD continued to flex and surge investigation and contact tracing teams to meet the needs of the pandemic through February 2022, when COVID-19 investigations were ended based on the expiration of the state's Public Health Disaster Emergency Proclamation (at 11:59 p.m. on Tuesday, February 15, 2022) and the joint recommendation from the Association of State and Territorial Health Officials (ASTHO), Council of State and Territorial Epidemiologists (CSTE) National Association of County and City Health Officials (NACCHO), Big Cities Health Coalition (BCHC), and Association of Public Health Laboratories (APHL) to transition away from universal COVID case investigation and contact tracing (January 24, 2022).

Strengths:

- The Disease Control team reported having excellent guidance and leadership, worked well together, and had patience with one another.
- Contact tracers reflected on the success in being able to make connections over the calls, and to provide information, answer questions, and give

reassurance. In many instances, contact tracers referred individuals to community resources or helped in scheduling services.

- Case investigation and contact tracing teams had bilingual staff as well as access to language lines for interpretation services.
- The team identified and implemented some process improvement activities, such as increasing staffing and establishing a dedicated contact tracing team. Over time, they strategized options to expand reach, such as offering ability for cases to complete interviews through online survey.
- In November 2020, IDPH rolled out a new app through Domo to use in COVID-19 case investigations and contact tracing. BHCHD staff demonstrated continued flexibility to pivot across systems (IDSS, REDCAP, Domo) as IDPH implemented process improvements.

Challenges:

- The Domo system had limitations, particularly while caseloads were shared between BHCHD and IDPH. If one person was working a case, other parties were unable to access the case in the system. For example: if IDPH initiated a call, and the case returned the call to BHCHD, local staff couldn't access the case to enter information. BHCHD was also unable to view completed investigations. This created issues when the State supported investigations, because once the case was completed, BHCHD could not review the information or identify if the individual was linked to a high risk setting. BHCHD had to establish a separate internal tracking document for individuals in high risk settings.
- While the case investigation support from IDPH was helpful to manage the volume, staff felt the quality of the calls did not match the customer service provided by BHCHD. State calls were quick and scripted, and state callers did not understand the local aspects of the community or implications when cases were linked to high risk settings (e.g., Tyson).
- The BHCHD contact tracing team was on the front line interacting with cases and community members. The team fielded a range of sentiment from thanks to fear, illness, and anger. As information changed rapidly, it was hard to keep up with guidance despite regular training and support. While there were basic supports in place, such as taking breaks or the County Employee Assistance Program (EAP), there were not enough resources to match the need, particularly related to personal care and mental health.

- Team members had differing perspectives on whether case investigations and contact tracing could have been accomplished virtually versus in person. While some felt it was helpful to be in a team setting, sharing the same experience and with readily available supervisory support, others felt they should have been allowed to work virtually. There was no "premium pay" offered or overtime allowed for salaried employees, despite working additional or altered work schedules, which reportedly affected morale. Many staff also had to balance home program jobs in addition to COVID-19 responsibilities.
- When State legal mandates ended, BHCHD lost ability in the enforcement of guidance and practices.
- Staff considered that, during slower times, they could have been more proactive to ramp up operations and onboard additional staff. The team was exhausted and often didn't have bandwidth for advance planning. Look for leadership support in how to lean forward and/or release teams as needed.
- There was not a formal process to refer cases to community services, nor was this done very often. Some information was provided about resources, but in general, most of the information given to cases was about monitoring their health, and how to prevent transmission within their household. This may have been a missed opportunity to refer to isolation or quarantine resources, food, and other basic living necessities.
- Clearer case investigation forms and additional guidance from leadership would have helped to ensure consistent levels of information collected during interviews. While case investigations forms are developed and provided by IDPH, these forms could have been altered to meet the needs of investigators to ensure all necessary information was collected. Additional guidance or oversight for investigators also would have helped ensure the necessary information for each case was collected during the initial interview rather than needing to go back to re-interview to collect missing information.
- Language and cultural barriers impaired case investigations and made it difficult for some populations to implement public health guidelines to mitigate the spread of disease. Language barriers were a significant challenge to completing interviews during the first phase of the response, as interpretation would double or triple the average length of interview, and cause delays in initial contact both by public health and notification of results from health care providers. Additionally, the level of detail required for the

COVID-19 information made communication and translation a significant barrier to keeping non-English speaking populations informed of current guidance.

- Some populations also experienced other barriers such as unreliable access to technology, health care, transportation, childcare, and other essential services that disproportionately affected their ability to receive, understand, and/or adhere to follow public health guidance.
- Staffing capacity was unable to support the number of case investigations at the peak incidence. At the highest levels of case incidence, the number of investigations that needed to be complete far outweighed the department's investigation capacity, despite having already pulled in all available staff from other program areas. Coordination with IDPH was initially used to balance case load, however in late April 2020, IDPH made the determination that counties would either need to complete all investigations or turn investigations over to the state. As this occurred during peak incidence, Black Hawk County could not manage the number of reported cases without support from IDPH.
- At peak incidence, all staff were dedicated to completing investigations, responding to public concerns, or coordinating with response partners. This left little to no time for reviewing closed investigations for completeness of information or identifying additional trends among cased.
- Additional coordination is required with health care providers to ensure prompt notification of cases of positive results, and to avoid duplication of efforts. Once case incidence began to rise, the exchange of information became a challenge when coordinating with health care partners. Obtaining initial case information was a time consuming process, particularly with the volume of cases being reported, which would result in delays in returning information to the health department and the start of investigations. Additionally, the case reports were often received prior to the results being received by the health care provider which would delay notification to the case, and further delay the start of investigation. Cases would often report having already answered questions from their provider's office similar to the interview form when contacted by public health, which caused frustration for the case.

- The intended use of IDSS is to collect surveillance information for review and analysis at the state level. As such, local data reporting tools are limited in scope, and not user friendly. Changes to how cases were reported and classified in IDSS created significant challenges in maintaining an accurate count of local cases, and discrepancies continue to be found months after issues were reportedly resolved. Issues remain that cannot be easily resolved and require a complex work around to maintain data.
- When a case reported living in a different county (i.e., not Black Hawk County), there was not a consistent process for how that case should be managed or transferred to the health department of the case's county of residence. This was further complicated by the state absorbing the investigations for some counties. It was unclear whether the case should be sent to the state or the county of residence.

Recommendations:

1. Staff were challenged to fulfill daily home program duties and COVID-19 assignments especially when the workload for home programs increased due to schools reopening, etc. Review COOP plans to identify essential functions. Consider assigning half-days to response assignments to allow for half-days on continuity work. Ensure home program supervisors have leadership guidance on how to prioritize essential and daily work.
2. Ensure shifts and assignments are manageable and achievable for long duration events. Provide staff with sufficient rest, rotation, and resources for physical and mental health.
3. Share epidemiological investigation experiences with IDPH to improve coordination and identify potential corrective actions.

Activity 2: COVID-19 Testing

During the early months of the pandemic, access to COVID-19 testing was extremely limited as processes, systems, and supply lines were being established. At first, few laboratories were authorized to perform COVID-19 testing and soon traditional large clinical commercial labs were overwhelmed by testing demand. Much of the essential laboratory materials for polymerase chain reaction (PCR) testing were in marked shortage due to supply chain issues and clinical laboratories were not able to obtain essential materials manufactured outside the U.S.

BHCHD worked with IDPH to receive test kits for health systems and provided guidance on who should be prioritized for testing. Initially, the State Hygienic Laboratory (SHL) at the University of Iowa and other private or commercial labs processed collected specimens. Based on supply scarcity, early testing criteria was stringent and the SHL only analyzed specimens in accordance with one of the following criteria:

- All hospitalized patients with fever and respiratory failure and no alternate diagnosis
- Older adults (>60 years of age) with fever and respiratory symptoms (cough, difficulty breathing) and chronic medical conditions (e.g., diabetes, heart disease, immunosuppressive medications, chronic lung disease, or chronic kidney disease).
- Persons with fever or respiratory illness who lived in congregate setting (i.e., long term care facilities, dormitories, residential facilities, correctional facilities, treatment facilities)
- Essential services personnel with fever or respiratory illness (i.e., healthcare providers, fire and EMS, law enforcement, residential facility staff)

On April 21, 2020, the Governor launched the Test Iowa initiative to expand testing capacity to limit the spread of COVID-19 in Iowa. Test Iowa was a partnership between the Iowa Department of Public Health and the State Hygienic Lab using a drive-through testing model. Black Hawk County helped to identify a site, but the subsequent management and operations were entirely State run. Local health systems provided temporary staffing as program was established, and then the State resumed full staffing and oversight of the program.

On May 21, 2020, Test Iowa expanded access to all individuals, without requiring any specific criteria. The program continued to evolve to meet the changing environment. In November 2020, the Waterloo Test Iowa site was relocated[5] to an enclosed location to allow for drive-through testing to continue throughout the winter months.

In July 2021, the Test Iowa program switched to a take-home test kit model, where Iowans collected their own saliva and mailed it to the State Hygienic Lab for analysis.

[5] https://www.bhcpublichealth.org/news/11-4-2020-test-iowa-announces-black-hawk-county-site-moves-holiday-hours-for-veterans-day

BHCHD was a test distribution site and also promoted other local distribution and pick-up sites, coordinated orders, and ensured availability around the County.

In January 2022, the federal roll out of free, at-home rapid testing reduced the testing burden on sites but also had the unintended consequence of reducing reporting of positive cases.

Strengths:

- Although BHCHD did not provide testing, staff created and shared information about who was eligible, circumstances to get tested, and where to find a testing site.
- Test Iowa made COVID-19 testing readily available to the community and identified positive cases.
- BHCHD worked to ensure equity in testing by translating informational resources and providing interpretation services as requested. BHCHD translated Test Iowa signs, testing video instructions and recorded video audio that was then shared with SHL to sync with video and post on state website. BHCHD also worked with local refugee assistance agencies to increase access to interpreters and support scheduling of testing appointments.
- IDPH requested support from BHCHD to vaccinate workers at the Test Iowa site, which was completed.
- During the Tyson outbreak (April-May 2020), BHCHD supported mass testing events at Tyson that were run by IDPH.
- The availability of Peoples Community Health Clinic as a Test Iowa pick-up and drop-off site expedited the process for community members to obtain results as did the many distribution locations for Test Iowa kits.

Challenges and Lessons Learned:

- Early testing scarcity and eligibility criteria impacted early surveillance and detection of COVID-19. As testing became more available, there continued to be accessibility issues.
- Test Iowa was successful in taking the burden off of healthcare facilities to test, but local partners needed to be included in process and information flow earlier. Better communication needs to occur between state and local jurisdictions when these initiatives are coming out.
- The SHL could only ship take-home test kits in large quantities. It was up to BHCHD to coordinate with the test distribution sites to gather and maintain a

list of orders before the threshold was reached to place an order with the State Hygienic Lab. This coordination took up staff time and could have been automated with an ordering system or survey software such as Qualtrics.

Recommendations:

1. While funding was available from IDPH for translation of vaccine and prevention messaging, it could not be used for testing messaging. Consider less prescribed funding in order to meet the needs of the community and utilize testing as a prevention tool.
2. Change is needed at the national level to implement plans for testing during a public health response.
3. Consider the local public health office location as a pick-up and drop-off site for test kits in the future.

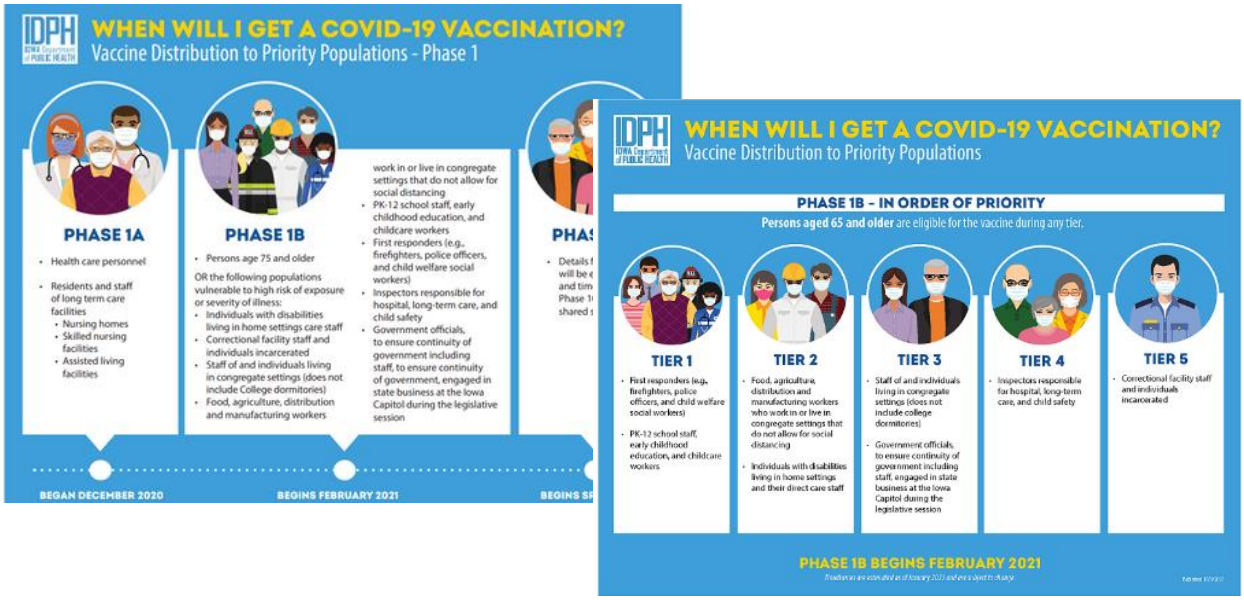
Activity 3: Vaccine Planning and Coordination

Upon its emergence as a new virus, SARS-CoV-2 did not have an available, existing vaccine to prevent COVID-19. The United States White House initiated Operation Warp Speed, a public–private partnership to facilitate and accelerate the development, manufacturing, and distribution of COVID-19 vaccines, therapeutics, and diagnostics.

IDPH initiated statewide planning efforts in September 2020 in anticipation of the Federal Drug Administration (FDA) approval and subsequent production of safe and effective vaccines. The BHCHD maintained an Emergency Operations Plan, including an Annex on Medical Countermeasure Distribution and Dispensing and Points of Dispensing (updated in May 2019). However, plans differed from the State's approach to mass vaccination including the phased rollout and were not easily adapted for the needs of COVID-19. Existing plans focused on the Strategic National Stockpile (SNS) and centralized distribution in coordination with the State, with some open (to the public) Points of Dispensing sites (PODs). BHCHD previously hosted County employee influenza vaccination clinics, but nothing of the magnitude required for COVID-19.

BHCHD starting vaccine planning in November-December 2020 and conducting meetings with health systems, and later pharmacies and other providers. Early focus was on completing provider agreements, confirming vaccinators, and providing information on eligibility and on storage and handling requirements. IDPH released the "COVID-19 Vaccination Strategy" document December 4, 2020, designed to assist

local, state and federal partners in understanding how Iowa would operationalize vaccine distribution. The State also provided guidance for the prioritized allocation of vaccine based on higher risk/exposure occupations and populations. The following graphics were released to the public for awareness and understanding.



The FDA gave emergency use authorization to the Pfizer-BioNTech COVID-19 vaccine (later named Comirnaty) on December 11, 2020, and to the Moderna COVID-19 vaccine (later named Spikevax) on December 18, 2020.

The first doses of COVID-19 vaccines were received in Black Hawk County on December 15, 2020, by MercyOne and UnityPoint Health. Black Hawk County primarily received Moderna vaccine. When Pfizer allocations were received, they went directly to large healthcare systems due to larger allocations and ultra-cold storage requirements. Vaccine manufacturers shipped directly to vaccinators. BHCHD relied heavily on hospitals and pharmacies to accomplish vaccinations in the County. County staff supported some first responder and business clinics and facilitated some reallocation of vaccine doses for providers that couldn't use a full shipment. All Long Term Care Facilities in the county enrolled in the Federal Retail Pharmacy Partnership[6], as did the majority of group homes and assisted living facilities.

Due to staffing and logistical constraints, BHCHD shifted large scale mass vaccination sites or PODs to the larger healthcare systems and continued to work with partners on education, provider agreements, and other planning efforts related

[6] https://www.cdc.gov/vaccines/covid-19/retail-pharmacy-program/index.html

to vaccine response. For the first six months of vaccine response, the County focused on allocation decisions. BHCHD would get allocation numbers from the State and then had to decide how to allocate doses to which providers and figure out the math and logistics on a weekly basis. Later, as vaccine supplies increased, BHCHD shifted into addressing vaccine promotion, mobile vaccinations, and continued messaging.

Strengths

- Vaccine ordering and allocation was all done through the Iowa Immunization Registry Information System (IRIS); system was in place and processes were in place but the forms for ordering and allocation were newly developed for the pandemic response.
- BHCHD was able to pull all information needed for reports directly from IRIS.
- IDPH set up a dedicated COVID-19 vaccine question line. In general, this went well and gave singular point of contact.
- Hospitals and pharmacies came to the table to lead mass vaccination efforts in the community. Each developed their own internal online appointment scheduling system and also supported scheduling and questions by phone.
- BHCHD established a new system to track essential workers and priority populations. There were some existing lists, but found they were not comprehensive to meet needs of the response, so BHCHD worked with managed care organizations to develop lists of individuals with access and/or functional needs.
- BHCHD, in partnership with UnityPoint at Home and the Visiting Nurses Association, vaccinated homebound individuals that had requested appointments.
- BHCHD translated guidance and information into multiple languages and disseminated to providers, and also used Community Health Workers as interpreters during vaccine events. Community Health Workers were able to break down language barriers and assist with questions, scheduling, and other needs in the community. Peoples Community Health Clinic also supported interpretation and provided scheduling assistance.
- BHCHD hosted small vaccine clinics to reduce transportation barriers within known and trusted community spaces.
- BHCHD established a planning group to address vaccine equity and provide input on the use of vaccine equity funding. The group examined data

regarding vaccination rates for the County and used the information to identify gaps where existing efforts could be supplemented. A mobile vaccination unit, staffed by UnityPoint Health, with interpretation, translation, and messaging support by the BHCHD and Peoples Community Health Clinic was run during the summer of 2021 bringing vaccines to businesses and neighborhoods serving communities with lower vaccination rates. In addition, using a spreadsheet tracked by the BHCHD, staff from multiple entities provided vaccines at farmers markets, public events, cultural, and neighborhood festivals and rural areas. The "NotifyMe" electronic newsletter was used to convey current vaccine information to the community. This system was owned by the County previously, but not used for this purpose before. At the peak, there were 1000-1300 individuals receiving the newsletters.

- BHCHD spent a lot of time addressing hesitancy. The Department conducted an early "vaccine intent" survey, hosted speaking events, social media messaging, and sponsored community influencer videos which included voices from different communities represented in the county to speak on the importance of getting vaccinated.
- BHCHD met regularly with PIOs to coordinate messaging. Although each system typically worked on their own campaigns, the team would share or cross promote.
- Health systems had ultra-cold storage freezers and established an effective process to route all vaccines through the inpatient pharmacy.
- BHCHD Vaccine Provider calls were crucial to sharing information. Vaccinators also reported using the calls for information on vaccination rates and case rates to identify target areas for vaccine outreach.
- Vaccinators in the community (hospitals, clinics, providers, and pharmacies) demonstrated thoughtful innovation in vaccine equity and outreach efforts.

Challenges and Lessons Learned:

- Existing point of dispensing plans were not written to address all of the challenges in a national mass vaccination campaign. Joint vaccination sites and clinics were considered by MercyOne, UnityPoint Health, Peoples Community Health Clinic, and BHCHD, but due to scheduling and billing issues, the decision was made for each organization to manage their own clinics with MercyOne and UnityPoint Health holding the bulk of the initial clinics. Plans

were shared during weekly planning calls to coordinate efforts and ensure that clinics were available throughout the county. While this approach worked best for each entity, it may have added to the confusion and perceived lack of cohesion by the public. There was no universal scheduling portal in Iowa. Each provider managed own scheduling process. This led to logistical barriers, duplicate appointments, billing issues, and prevented Black Hawk County from providing a clear, cohesive approach to scheduling.

- Pharmacies and pharmacists contributed immensely to vaccine administration during COVID-19 and were essential to the BHCHD mass vaccination strategy. These partners were not previously engaged in public health planning and should be included in future vaccination discussions.
- Individuals would call weekly or more trying to figure out if they were eligible, despite information shared on website. BHCHD tried to streamline eligibility by creating surveys for businesses to register essential workers and would notify when eligible.
- The allocation process by IDPH was not intuitive and often circumvented chain of command (e.g., direct call about extra doses available for allocation).
- A temperature excursion occurs when any temperature reading is outside the recommended range for vaccine as defined in the manufacturer's package insert. Initially, the guidance and process to report excursions to IDPH was not clear. Some of the guidance documents and how excursions were reported were not clear.

  In some instances of vaccine transfers, BHCHD identified incidents of excursion originating at other locations and worked to both educate the providers and properly report the excursion.
- Vaccine hesitancy seemed to happen overnight; there was a sudden large drop in interest. BHCHD implemented a Vaccine Incentive Program in July 2021 to increase vaccination rates, but it did not have the affect hoped for. Most contest winners did not realize they were entered into the program. This was impactful in showing that messaging just wasn't getting through to the community; most people weren't aware of the program. A Community Health Worker reported that the program created even more distrust by some communities.
- While the mobile vaccination unit reached community members that may not have otherwise been vaccinated, providing vaccinations during

public/community events was not successful as few took advantage of the opportunity.

- There was a lack of clear awareness of/common operating picture in the vaccine ordering and distribution for long term care facilities.
- IDPH implemented contracts with pharmacies and the CDC established the Federal Retail Pharmacy Program. These overlapping efforts created confusion between local, state, and federal coordination with pharmacies.
- Once pharmacies no longer needed to order through the County, many stopped participating in County calls and coordination.
- IDPH left significant ambiguity in priority population definitions and told the counties to use their best judgment. BHCHD had concerns in violating the vaccination agreement. BHCHD adhered to IDPH guidance on priority tiers, but different sized counties progressed through the tiers at different rates. This resulted in individuals going to other counties or created confusion and mistrust on why counties were vaccinating different tiers.
- Significant time was spent transporting vaccine between providers due to the initial allocation volumes. It would have been beneficial to have a system to coordinate this versus manual coordination and tracking.
- BHCHD stored some vaccines on site. There were a couple incidents of power outages, where the backup generator did not turn over and the building remained without power. As a result, vaccines went out of temperature range and had to be disposed. At the time of writing, this issue has reportedly been addressed.
- The health systems led the initial mass vaccination efforts. While this was beneficial for the County, this line of effort overtaxed facilities that were already experiencing staffing and resource shortages.
- Health systems and pharmacies described implementing “waitlists” for interested individuals; this just resulted in increased calls asking about waitlist status. Additionally, many individuals were desperate and made multiple appointments and signed up on multiple waitlists, which created a significant effort to reconcile. In many instances people made multiple appointments, went to the first one, and then never canceled. Doses had been thawed and this created extra work at the end of the day to ensure no wastage. A central waitlist would have been helpful with the ability to live update (e.g., a GoogleDoc).

- While hospital electronic medical records in EPIC were able to communicate directly with IRIS, IRIS did not communicate back to hospital system medical records. There were additional IRIS issues including delays in entered clients, duplicate profiles, etc.

Recommendations:

1. BHCHD could consider subcontracting for mobile vaccinations to work around staffing barriers.
2. Consider purchasing a public health owned mobile clinic.
3. Review mass vaccination plans with hospitals and update with lessons learned from the COVID-19 pandemic.
4. Identify opportunities for the County to support vaccination efforts, (e.g., maintaining waitlists, supporting registration/scheduling, resources, staffing).
5. Leverage existing community working groups or the health equity workgroup to discuss best practices and barriers in vaccination efforts. There is a need to better understand why some vaccination efforts were successfully while other were not and update vaccination plans accordingly.
6. Share feedback with IDPH about the need for a centralized vaccine scheduling system.
7. Engage pharmacies as key stakeholders in future vaccine planning discussions.
8. Continue to explore root causes of vaccine hesitancy and address through public health education and outreach.

Activity 4: Coordination with EMS Partners

During COVID-19, EMS providers continued their work in providing out-of-hospital medical care and transportation to definitive care. Most EMS agencies in Black Hawk County are small, volunteer services. Black Hawk County engaged EMS providers early in the Emergency Operations Center and continued to provide information and support as needed throughout COVID-19.

Strengths:

- Providers were invited to and participated in early EOC calls, which provided situational awareness and information, and had a direct line to BHCHD with questions. There wasn't EMS-specific guidance developed, but there was open, clear communication as needed or requested.

- EMS agencies maintained essential operations and supported the community's needs throughout the COVID-19 response.
- Debriefing participants described how EMS agencies tracked COVID-19 cases in staff and worked to curb outbreaks.
- Agencies tried to provide support to staff through peer support teams, outreach, promoting EAP, and union organized outings and gatherings.
- The Black Hawk County EMS Association was established prior to COVID-19 and facilitated strong partnership across EMS entities and Black Hawk County EMA. BHCHD has sporadically participated in these meetings.

Challenges and Lessons Learned:

- EMS partners experienced varying shortages in personal protective equipment and other supplies. Historically, agencies don't maintain large overhead stockpiles. Many had sufficient quantity of gloves but lacked gowns, face shields, goggles, PAPRs, and other PPE to meet early health and safety guidance. N95s were in short supply for much of the response. Agencies did not have ability to rapidly expand resources and the supply chain was not able to keep up with demand.
- EMS partners expressed the difficulty of the "unknowns" early in the pandemic and frequent changes to operations (e.g., how to approach patients, where to send them, whether to treat in place) and evolving guidance (e.g., PPE).
- Prior to COVID-19, ambulances were not routinely decontaminated after each patient. Agencies reported multiple iterations of cleaning protocols (UV, fogging, etc.) that often took 30-45 minutes following each trip. There is no standard in the industry to decontaminate ambulances.
- Ambulances have poor air exchange, which increased infection risk for responders.
- EMS personnel are exhausted from the stress of the pandemic, risks to personal safety, and the mental component of keeping on top of current guidelines. Conducting physical lifting and EMS response while in PPE was taxing for responders.

Recommendations:

1. Continue to develop and strengthen communication and coordination between BHCHD and EMS partners to maintain preparedness capabilities.

Identify whether the Black Hawk County EMS Association or other county-wide meeting is best to facilitate improved communication and coordination.

2. Evaluate if County EMA can increase coordination of PPE suppliers on behalf of the EMS agencies.

Activity 5: Coordination with Hospital Partners

BHCHD had good working relationships with the two health systems in the county, MercyOne and UnityPoint Health. Historically, information and coordination flowed directly from IDPH to hospitals. This pathway continued during COVID-19, in the sharing of guidance and in hospitals' data reporting.

While BHCHD staff were overloaded supporting other public health functions and stakeholders, there is opportunity to improve relationships and coordination with hospitals in the County.

Strengths:

- Hospitals had plans in place and staff trained on the Hospital Incident Command System and were able to shift into a response posture as the COVID-19 pandemic unfolded.
- The two health systems in the County, MercyOne and UnityPoint Health, had strong partnerships with each other prior to and during the COVID-19 pandemic. The Medical Directors along with administrative Leadership strived to be consistent in policies and communication.
- Facilities worked to improve processes, working from paper forms towards spreadsheets. MercyOne described a best practice of establishing a spreadsheet that was completed by House Supervisors and collected as a system before sending to HHS.
- During resource scarcity, hospitals used relationships within the community to get PPE. John Deere was able to provide some supplies, and hospitals worked with Powers Manufacturing to make gowns.
- Hospitals in Black Hawk County reported experiencing surges in cases/patients 4-6 weeks ahead of other areas in the state, which enabled systems to move staff and resources to facilities most in need.
- Hospitals stepped in to support testing at high priority sites, such as Tyson and even Test Iowa when they would run out of supplies.

- Hospitals described how COVID-19 contributed to great standardization of protocols and practices within the systems. There were established processes to review new guidance and develop policy. Sometimes this took more time as it passed through the chain of approval, but it ensured the best document and will be engrained in future policy development.

Challenges and Lessons Learned:

- Hospitals felt there was lack of guidance and involvement early on from the County. There was not a collective group or mechanism to discuss and decide collectively as a group. There is a need to review plans for healthcare coalition/county-wide preparedness.
- Previous preparedness conversations led hospitals to believe the County would assist with PPE and other resource requests, but they were not able to. *"As hospitals, we had to figure this out on our own."* Hospitals worked within systems and we able to share staff, supplies, and medical equipment. Review plans and procedures for medical resource requests.
- Data reporting put a large burden on staff time to complete daily. There had not been modifications to the data points or reporting frequency after over two years of pandemic response. There was missed opportunity to pause and reassess data collection requests to ensure it is matched with the evolving pandemic and current situational needs.
- The Delta variant (August-December 2021) impacted the state at the same time, so systems struggled to share across facilities. Debriefing participants discussed conducting internal meetings about crisis standards of care and scarce resource allocation (e.g., ventilators).
- The Omicron variant (January 2022-present) contributed to the "great retirement." Many staff quit or retired, left the profession for new fields or left to make more money as traveling nurses. It was very challenging to find staff. The Governor established a program to request nurses, but it was not effective.
- Debriefing participants referenced how IDPH uses the HAN for messaging and communications. BHCHD does not currently utilize a mass notification tool at the county-level to communicate. Partners lack current communication directory and tools to communicate between County and healthcare system partners.

- Partners recommended increasing infection control capacity at the County level including improved coordination between hospitals and BHCHD epidemiologists.
- Hospital debriefing participants expressed that the proportion of vaccine administration efforts did not align with pre-event planning expectations.
- Hospitals were already dealing with medical surge and staffing shortages and had to pivot and use staff to vaccinate in the community. Participants felt additional support was needed from BHCHD to achieve mass vaccination in the community.

Recommendations:

1. Identify the best structure or process for BHCHD to communicate and coordinate with health systems and other response partners in a proactive manner.
2. Review the resource request process for hospitals and develop consistent understanding and expectations between the County and healthcare system.
3. Review mass vaccination plans with hospitals and update with lessons learned from the COVID-19 pandemic.
4. BHCHD should work with County EMA to assess use of Alert Iowa and train staff on use.

Activity 6: Coordination with Long Term Care Facility Partners

BHCHD had familiarity with long term care facilities prior to COVID-19, and supported if needed or requested, particularly during influenza outbreaks. Black Hawk County EMA provided some coordination on preparedness activities to meet facility regulatory requirements (i.e., CMS Preparedness Rule). Over the pandemic response, BHCHD developed strong relationships with the facilities.

The RMCCs collected data from all long term care facilities on a daily basis and shared results with the State as well as local public health departments. In addition, BHCHD conducted a weekly call with long term care facilities to discuss numbers, guidance, and the current situation. When facilities were experiencing outbreaks, there was close coordination and communication via email and telephone with BHCHD. Initially, facilities used the State Hygienic Lab for testing and had to deliver samples twice per week. As testing methods expanded, IDPH provided Abbott test

cards for on-site. Most facilities discussed contracting with commercial labs to support the high level of testing required.

Facilities reported supply shortages including testing supplies, gowns, and N95s. Typical vendors did not have supplies available. One debriefing participant remarked that "*everything was backordered, and prices were inflated.*" Most facilities worked within their systems to acquire resources and/or requested through BHCHD if resources were available. In many instances, facilities relied on creative solutions and community partners for supplies.

Strengths:

- Facilities reported regular, clear communication from BHCHD and strong support for infection control and outbreak management.
- Each facility had an Infection Preventionist on staff to support infection control activities.
- Some facilities were able to establish separate COVID-19 units and utilized CMS waivers when necessary to cohort or move residents within facilities to prevent transmission of COVID-19.
- Facilities maintained communications with family members through calls, email distributions, and even monthly Zoom meetings with current information and status. This was a helpful way to convey information and answer questions or concerns. The Zoom meetings were also recorded and then emailed to patient families.

Challenges and Lessons Learned:

- Facilities reported information to the RMCC and in some cases, other reporting portals, daily entering census, positive cases, and other information. At times it wasn't clear which entities were requesting/requiring information. It was difficult for staff to keep up with reporting requirements.
- Like much of the healthcare system, long term care facilities experienced extreme staffing shortages. Many staff retired or left healthcare all together. Facilities tried to mitigate through cross training, and at times, even needed to use COVID-positive staff to care for COVID-positive patients. Debriefing participants remarked that nursing staffing agencies have taken advantage of staffing shortages and are paying (and charging) higher rates; some staff have left to go to agencies because they are paid more. Facilities have

struggled to afford paying higher rates to maintain staffing levels. There was little the County or State could do to assist with these shortages, but continued to provide education, training, and resources where possible.

- Every time a facility was in an outbreak, the Iowa Department of Inspection & Appeals (DIA) performed an inspection. Initially the visit was educational and supportive, but then returned to full surveys with punitive impacts.

Recommendations:

1. Increase preparedness activities between BHCHD and long term care facilities, including regular communication and coordination.
2. Facilities requested planning, training, and exercise support and topics such as supply chain management.

Activity 7: Tyson Plant Outbreak Investigation

In April 2020, the Tyson Foods Waterloo Fresh Meats Facility was greatly impacted by the emergence and spread of COVID-19. BHCHD began receiving public concerns/complaints related to the Tyson Foods facility. The front desk would receive and record the complaint and forward to the Investigation team, who would follow up directly with the Tyson Nurse Manager and/or Plant Manager. The complaint would be reviewed, and BHCHD provided current guidance and technical assistance to Tyson staff on control measures. The County had little authority other than in epidemiological investigation and outbreak response and worked closely with Tyson to ensure accountability in reporting.

BHCHD staff noted that IDPH was supposed to develop outbreak investigation forms, which is standard practice, but did not provide in a timely manner so BHCHD created their own forms to be able to initiate case investigations. Eventually IDPH established a Google form to submit requests for investigation support. After the first 50 cases were fielded by BHCHD each day, the remainder were sent to IDPH via Google form, but this in and of itself became a burdensome task.

BHCHD requested and received a testing strike team from the State, which helped to get an accurate number of positive cases at the plant and reduce disease transmission. The increase in testing results also greatly increased the number of case investigations. IDPH took over investigations for all testing that was conducted on-site at the plant. In general, BHCHD staff expressed concerns at the level of care and follow up performed by IDPH case investigators.

On 4/21/20, a special meeting of the Black Hawk County Board of Health was called to evaluate the data and action options relative to the outbreak and spread of COVID-19 in Black Hawk County and specifically as to Tyson located in Waterloo.

Tyson Foods announced the decision to suspend operations at the Waterloo plant on 4/22/20 but reopened after the President of the United States signed an executive order on 4/28/20 to use the Defense Production Act to compel the nation's meat processing plants to stay open as part of "critical infrastructure" in the United States. BHCHD was invited to tour the plant for the reopening and continued to work closely in public messaging and media press conferences.

BHCHD worked with Tyson Foods frequently over the course of the COVID-19 pandemic as a result of the initial outbreak. This resulting partnership has been important for equity outreach and other communicable disease programs.

Strengths:

- BHCHD worked closely with Tyson to provide business guidance and technical assistance on infection control measures, and to coordinate on positive cases where appropriate. Tyson implemented control measures including barriers, roll down plastic, marking 6 feet distance in hallways, removing seats in common spaces, and controlled badging until individuals were cleared to return to work. Enhanced sanitation, cleaning, and temperature monitoring were also employed. Personnel were provided with masks, and monitors were stationed throughout the facility.
- A line of questions was added to all BHCHD COVID-19 case investigations pertaining to relationship with Tyson Foods (work location, carpooling, household members, etc.).
- The Black Hawk County Attorney was very helpful throughout the response with Tyson and other issues. BHCHD talked with legal counsel about ordering closure of the plant. It appeared the Board of Health had the power to close the plant, but it needed to be done in conjunction with the State. “We needed to be able to better implement and to be more confident in the control measures in the plant.”
- The Iowa Department of Justice, Office of the Attorney General provided written guidance on 4/14/20 in response to the question on whether state and local public health staff are authorized to disclose the name of a COVID-

positive person to such person's employer for the purpose of conducting disease investigation and control.

- As a result of the outbreak, BHCHD and Tyson Foods established a strong partnership and initiated weekly calls, changing cadence as needed. Subsequently, there was not another significant outbreak in the plant.
- Once vaccines became available, Tyson implemented a company-wide vaccine mandate. BHCHD worked closely with the Nurse Manager to support clinics, assist with vaccine storage and handling, and provide information and translation support. BHCHD held informational sessions with different groups and provided interpretation and translated guidance materials.

Challenges and Lessons Learned:

- Early communication flow was slow between BHCHD and Tyson due to confidentiality concerns and delays in linking the cases to the site. Once BHCHD was able to share case information, coordination improved. Tyson established a COVID-19 office with dedicated staff and contracted with a testing provider to reduce burden on local providers. BHCHD continued to do case investigations, and Tyson supported on-site contact tracing within the plant team members.
- Case investigations were extremely difficult due to language barriers and the number of household members (close contacts). Interviews routinely took 30-60 minutes, with one taking two hours due to the number of people in the household and number of ill persons. The outbreak significantly taxed staffing resources and was emotional due to the level of illness and fear experienced by the cases that were contacted.
- Positive case numbers released by the Governor related to the Waterloo Tyson plant differed greatly from the number tracked by BHCHD because it did not include serology results or testing by other providers. While the numbers from BHCHD were accurate, the discrepancy created a media frenzy that impacted staff.
- There appeared to be communication gaps between those with COVID-19 mitigation guidelines and the floor supervisors managing staff, receiving sick calls, etc.

Recommendation:

1. Continue communication and coordination between BHCHD and Tyson Nurse Manager to provide health education and guidance for workers, support translation needs, and track reportable diseases.
2. Use the model established with Tyson during COVID-19 to increase education and outreach with large employers and critical infrastructure in the community.

Core Capability: Environmental Response/Health and Safety

FEMA Definition: Conduct appropriate measures to ensure the protection of the health and safety of the public and workers, as well as the environment, from all-hazards in support of responder operations and the affected communities.

Related Capabilities:

- PHEP Capability 9: Medical Materiel Management and Distribution
- PHEP Capability 14: Responder Safety and Health

Activity 1: Staff Health and Safety during the Response

Responder safety and health is the ability to protect public health and other emergency responders during pre-deployment, deployment, and post-deployment. During COVID-19, the Deputy Public Health Director oversaw public health guidance, pushed out information for staff exposures, identified which services would be provided, and set policy on masking, protocols, etc. Staff were provided with personal protective equipment to ensure safe working environments, and the County implemented enhanced cleaning protocols.

The Families First Coronavirus Response Act (FFCRA) required certain employers, including Black Hawk County, to provide employees with paid sick leave or expanded family and medical leave for specified reasons related to COVID-19. These provisions were applicable from April 1, 2020, through December 31, 2020. The FFCRA expanded the reasons an employee could take job-protected leave but did not provide an additional 12 weeks of job-protected leave on top of what is already provided under Family and Medical Leave Act (FMLA). Black Hawk County provided the following information to staff:

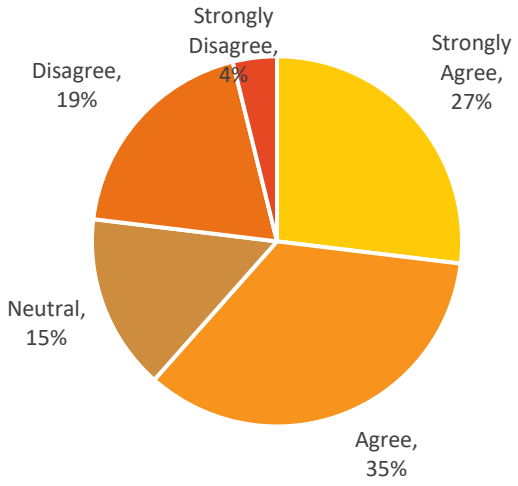
- All employees of covered employers were eligible for two weeks of paid sick leave for specified reasons related to COVID-19. Employees employed for at least 30 days were eligible for up to an additional 10 weeks of paid family leave to care for a child under certain circumstances related to COVID-19.
- Under this new law, employers of Health Care Providers or Emergency Responders could elect to exclude such employees from eligibility for the leave provided under the Act. Black Hawk County exempted employees of the Sheriff's Office, Consolidated Communications Center, Emergency Management Center, and the Public Health Department from the provisions of FFCRA COVID-19 leave in order to maintain minimum staffing levels required to maintain operations.

- Black Hawk County maintained staff in every department as needed to carry out essential services to the public and employees and abided by the Iowa Department of Public Health's guidance for all essential services personnel.

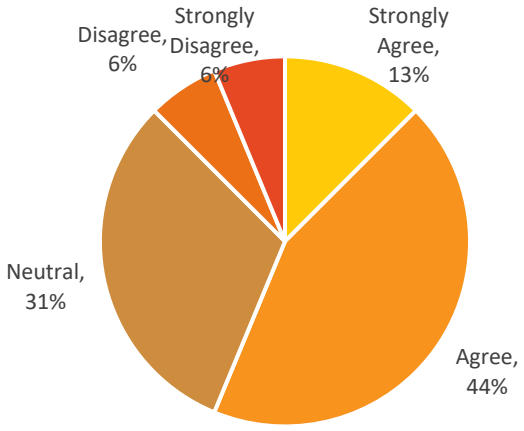
While BHCHD implemented policies and provided PPE to keep staff physically healthy and safe during the response, staff expressed gaps in resources or focus on supporting the mental health of staff activated to fill roles. As referenced earlier (Operational Coordination, Activity 2), the County's response to COVID-19 was largely shouldered by Public Health Department staff. BHCHD described providing mental health resources for all staff in November 2021, promoted EAP, and shared other available resources. The State of Iowa Department of Human Services, using federal funding from FEMA, established "*COVID Recovery Iowa*" to offer free virtual counseling and assistance to those affected, in any way, by COVID-19. COVID Recovery Iowa provided counseling, virtual activities, referrals and help finding resources to any Iowan seeking assistance or a listening ear.

When asked if the Health Department planned for health and physical safety,

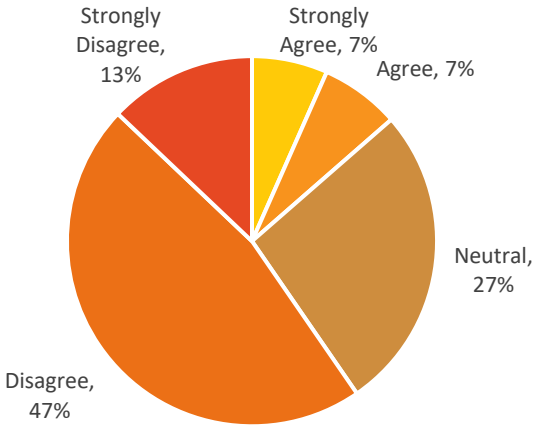
Of non-activated staff (n=26):



Of activated staff (n=16):



Activated staff were also asked if the health department planned for mental health and emotional support.



Recommendations:

1. Continue to evaluate evolving staff needs as the County recovers from COVID-19 response operations.
2. Incorporate rest, rotation, and mental health supports into the EOC Safety Officer position guidance. Document any known resources and/or partner organizations that can contribute during a response.
3. Establish plans for monitoring staff physical and mental wellbeing at the onset of an emergency incident, with check ins at regular intervals throughout the activation.
4. Evaluate remote work policies for BHCHD staff.

Core Capability: Community Resilience

FEMA Definition: Enable the recognition, understanding, communication of, and planning for risk and empower individuals and communities to make informed risk management decisions necessary to adapt to, withstand, and quickly recover from future incidents.

Related Capabilities:

- PHEP Capability 1: Community Preparedness
- PHEP Capability 2: Community Recovery
- PHEP Capability 7: Mass Care

Activity 1: Coordination with K-12 Schools

On March 15, 2020, the Iowa Governor recommended that schools across the state close for four weeks, although individual districts had authority to make decisions based on the recommendation. On April 2, 2020, the Governor ordered all schools closed through April 30, and then on April 17, 2020, extended the closure through the remainder of the academic year.

At the beginning of school year 2020-2021, schools varied with in-person, virtual, and hybrid learning options until the Governor required all schools to offer full-time in-person instruction by February 15, 2021. Throughout this time, BHCHD communicated guidance and current incident information to local school districts.

Once schools re-opened, staff were enlisted to support contact tracing and case investigation. While there was great information, training, and ongoing support from BHCHD, this was a significant burden on already understaffed schools.

Schools pivoted to build multiple learning modalities, such as online learning, virtual learning, and blended options to keep staff and students safe, while following current guidelines. As part of the After-Action review, a debriefing session was conducted with leadership from school districts in Black Hawk County.

Strengths:

- Schools reported having regular, clear, and timely communication from the County via meetings and emails. There were scheduled calls between the Health Director and Superintendents, initially weekly and shifting cadence as needed.

- Schools discussed using all communication tools at their disposal to share information and updates, including Blackboard Connect, social media, and word of mouth. "It wasn't a change; it was just more of what we normally do to make sure families got the information."
- Schools implemented health and safety measures such as air purifiers, UV lighting, disinfectant sprayers or "foggers," increased cleaning protocols and supplies, and hand sanitizer stations. These efforts were intended to give teachers confidence and tools to stay safe and reduce spread within the facilities.
- Schools served as strong partners of BHCHD throughout the response, supporting contact tracing, case investigation, and vaccination efforts.
- Schools implemented high risk symptom monitoring before testing was widely available, driven by guidance from IDPH and/or BHCHD. Once testing capacity expanded, schools utilized Test Iowa, providers, and home kits but noted it would have been beneficial to have testing on-site.
- Prior to COVID-19, Superintendents met monthly and had built longstanding relationships over time with mutual respect. This supported the ability of Districts to talk through tough decisions and work collaboratively, and reportedly strengthened the region "because of some of the hard conversations and realities we all faced." Schools strived to approach the pandemic holistically and provide consistent guidance where possible. This collaboration of Superintendents and schools created success in how the region came back to in person learning.
- Schools strived to stay open in support of their students. "I resigned myself to the fact that 65-70% of my constituency was going to be angry with me no matter what I did, so we just accepted that and pushed forward with the objective of keeping our building open."
- Schools worked closely with teachers to focus on personal health, promote resources like EAP, and even brought in speakers for personal health strategies and de-escalation. "Sometimes it was overwhelming with the emotions of the past few years, but we supported each other. We made it through knowing we were a sense of stability for our kids."

Challenges and Lessons Learned:

- Supporting COVID-19 case investigations and contact tracing with existing staff took away support from learning.
- Schools are critically short staffed. Some staff retired, staff stayed home to follow isolation and/or quarantine guidance, and most previously identified

substitute teachers were no longer available. The pandemic exposed the need for cross training across the school, and for increased funding and support for teachers and schools. Staffing remains an issue to this day.

- One school reported surveying staff mental health in 2020, with 30/150 respondents saying they were either "not well" or "really not well." This was alarming for the district, and they worked to provide supports where possible.
- The pandemic unveiled inequities in student populations, including connectivity to internet and food insecurity. Schools have tried to address where possible and continue to recognize these challenges.
- Desocialization during COVID-19 has exacerbated student, and at times staff, behaviors which have yet to dissipate.
- School districts that straddle different counties have, at times, had differing guidance or information. *"As a Superintendent, I had to choose which County Health Official I listened to."*
- From a statewide perspective, it was problematic to put decisions on districts (e.g., regarding in person learning). When protocols were different, this created challenges to manage parent and staff fears and led to miscommunication and a lack of trust.
- After the initial Iowa law prohibiting schools from requiring students or staff to wear face masks with subsequent injunctions, no Black Hawk County schools reinstated mask requirements. Waterloo and Cedar Falls did put in metrics to have masking in certain elementary schools based on community COVID-19 rates.

Recommendations:

1. For future public health events that request schools conduct epidemiological investigations, provide temporary or volunteer staffing support to augment school staff.
2. Schools have made significant investments in preparedness and health mitigation; identify how to help schools incentivize maintaining preventative tools so they do not need to be rebuilt in the future.
3. Continue to maintain ongoing relationships and current contact information with schools and districts.
4. Communicate challenges by local public health to maintain guidance and coordination with schools during COVID-19 and discuss potential support from IDPH.

Activity 2: Coordination with Colleges and Universities

Black Hawk County Health Department worked with local colleges and universities throughout the COVID-19 pandemic, including University of Northern Iowa, Hawkeye Community College, and Allen College. Higher education partners contributed towards the COVID-19 response by supporting students, staff, and faculty through education and guidance, contact tracing and case investigations, testing, and COVID-19 vaccinations. As required for reportable diseases, the schools reported positive COVID-19 cases directly to IDPH, which flowed down from State to County.

Strengths:

- During debriefings, schools discussed how they organized COVID-19 response teams and communicated with different audiences (e.g., all employees, faculty, students, and/or whole campus) through email, social media, and website(s).

- Schools completed significant work to ensure distancing on campus, such as reconfiguring classrooms and converting large non-traditional spaces into classrooms to keep students safe.
- Schools reported that the Higher Education Emergency Relief Fund, part of the CARES Act, was critical to help meet student needs during the pandemic. Schools surveyed students on anticipated needs (transportation, utilities, internet access, food), and used grant funds to provided needed resources and support.
- BHCHD maintained clear and open communication channels with schools. Debriefing participants reported having regular direct calls with public health nurses and disease control staff. The Health Department also conducted some informational calls and webinars that schools were invited to. Partners reported that there was always timely information flow and ability to contact with question or for more information. *"We had a longstanding relationship with BHCHD and this just strengthened our relationship."*
- BHCHD provided schools with resources, including gowns, gloves, Test Iowa supplies, and vaccine administration supplies to support operations.
- BHCHD worked directly with sites to plan for and run vaccination clinics. Health Department staff provided resources and forms and came for the first clinic at each school to help set up, administer, and break down vaccination sites. This

technical assistance ensured the schools were prepared to replicate and run vaccine clinics on their own.
- Weekly COVID-19 vaccine planning meetings were helpful; it was a strength to include higher education partners on these calls.

Challenges and Lessons Learned:
- Schools reported that students did not always read emails and at times enforcement was an issue, particularly with masking.
- Some students showed significant hesitancy or disinterest in vaccinations, sometimes due to disinformation (e.g., infertility), concerns about side effects, or just apathy and effort to register.
- Different information from CDC, State (Governor), and County created some confusion and/or difficulty to follow or implement. "Having different rules everywhere you went was confusing." There was some frustration expressed, but partners recognized that they were always able to contact BHCHD for clarification on guidance.
- BHCHD's contact tracing efforts weren't always quick enough to break the chain of transmission occurring at the universities. This prompted UNI to hire their own contact tracing team dedicated to their student population.

Recommendations:
1. Maintain current contact information for higher education partners, including in health services, public information, and emergency management.
2. Consider establishing regular coordination meetings between BHCHD and higher education partners to maintain preparedness for future public health emergency events.

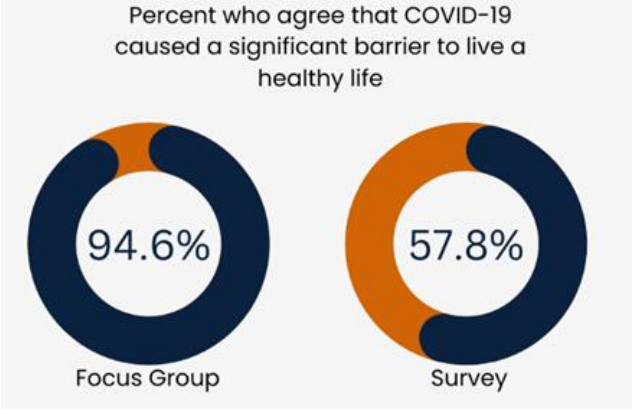
Activity 3: Coordination with Community Based Organizations

Black Hawk County developed working relationships with many community-based organizations (CBOs) prior to COVID-19. Upon activation of the EOC, partners such as the Northeast Iowa Food Bank participated in the EOC for information and coordination of activities to ensure the community had access to food and other basic needs. BHCHD strived to include equity in all conversations and ensure all populations were included in messaging and response strategies.

"The ability for us to be at the table helped us coordinate with other groups to serve the community."
-CBO working in the EOC

Strengths:

- Strong pre-existing relationships with partners and community leaders.
- Translation of materials to meet known language needs in the community.
- BHCHD held informational workshops with community-based organizations, faith-based organizations, and businesses to provide information and support practice changes to ensure the health and safety of staff, volunteers, and clients.
- Partners supported the COVID-19 response by sharing information, passing out test kits, and hosting vaccination events.
- HSEMD facilitated a request for Iowa National Guard to support food pantries.
- BHCHD conducted focus groups in September 2022 as part of the after-action process to capture feedback from identified populations in the community including Burmese, Congolese, Black/African American, Hispanic/Latinx, and rural residents. The focus groups were designed to enhance understanding of how the county's COVID-19 response met the needs of vulnerable populations and to document the health impacts of the pandemic on these communities. Results were compared with findings from the June 2022 COVID-19 Impact Survey. The data showed that all focus groups mentioned mental health or social activities as a significant barrier to living a healthy life caused by COVID-19, which is similar to the survey results. Also, that 94.6% of focus group attendees agreed that COVID-19 caused a significant barrier to live a healthy life compared to 57.8% of survey respondents. Finally, 82.9% of focus group attendees agreed that COVID-19 changed their perspective on priority health issues compared to 70.8% of survey respondents.



- The focus group results were used to determine priority issues for community health improvement and inform actions for the resulting plan. Complete focus group documentation and survey questions are shown in Appendix C.
- Community organizations recognized the support of the Health Department and the collaboration with other community partners that came together. "These partnerships were strengthened and have developed into more opportunities to critically think through how to effectively serve our community."

Challenges:

- Food insecurity and the community's need for food pantry services drastically increased during COVID-19. Demand has continued as COVID-19 related federal funding increases (e.g., SNAP benefits) and interventions have ceased.
- Misinformation has been a challenge observed by all partners. Rapidly changing guidance early in the pandemic was hard to follow, and confusing based on varied message from county, state, and federal entities. Populations had concerns about the vaccine and continue to express concern about the first booster and newer bivalent booster. *"The Health Department was doing their darndest but it seemed like it was always counteracted with a louder voice of misinformation."*
- Debriefing participants referenced the age group of 25-35 as a harder to reach population that needs targeted outreach in public health messaging. Consider social media (Facebook, Instagram) and non-traditional strategies to reach this age group.
- Cultural barriers added difficulty in crafting messages and communicating information. The level of detail required for the COVID-19 information made communication and translation a significant barrier to keeping non-English speaking populations informed of current guidance.
- Considerable efforts were made to reach the different communities represented within the county, particularly the non-English speaking and newcomer groups, however additional efforts can always be made.
- There needs to be a greater focus on equity in messaging, and interventions at the state level. In coordinating with state agencies to plan and implement interventions, plans were often made without or against recommendations by BHCHD for considerations of vulnerable populations and equitable access. This was particularly notable in planning for strike team testing, and during the establishment of the Test Iowa site. Additionally messaging developed by the

state did not always include representation of diverse populations, though minority populations have been disproportionately impacted by COVID-19.
- Some community organizations shared frustration in not being prioritized early in vaccination tiers, despite being client-facing and supporting immediate community-based need.

Recommendations:

1. BHCHD should continue to promote and coordinate preparedness activities for organizations, businesses, and individuals in the community. Include organizations that have direct contact with individuals in the community. Include organizations working with people experiencing homelessness.
2. Consider establishing a Vulnerable Population Network group to coordinate information and preparedness activities. Assess ability to create a coordinated referral system within the County to address basic needs.
3. Explore harder to reach populations (e.g., 25-35) and different methods (social media, events, etc.) to continue providing ongoing messaging about COVID-19 and other public health content.

Activity 4: Coordination with Mental Health Providers

BHCHD regularly meets and works with mental health professionals in the community, particularly in strategies contained in the Community Health Improvement Plan including stigma reduction, community awareness and education, navigation to services, addressing barriers, and advocacy for timely access to appropriate levels of mental health care. Although these partners were not specifically engaged by BHCHD in the response to COVID-19, a debriefing session was conducted with mental health partners to strategize on future coordination during public health emergencies.

Strengths:

- Insurance now reimburses for telehealth services. This has increased access for many to services, but also pointed out disparities in internet connectivity across communities. Insurance would not reimburse if there was no video connection. Providers reported that “no show” rates declined considerably for those that were able to connect easily but did recognize that in person meetings have great value. Telehealth visits are not optimal for everyone, and “a lot can be lost in translation.”

- Crisis services, including mobile crisis, have expanded. Debriefing participants did recognize that there remains a gap in services for those that need intermediate support – for individuals between fully functioning and crisis counseling.
- Providers discussed working with community centers, libraries, and a variety of places using federal funding to build up infrastructure. More work is needed to expand access. Build and identify community locations with secure, high speed internet to access telehealth.

Challenges and Lessons Learned:

- Access to health care, including mental health care, continues to be a need in the community. Shortages in psychiatrists and low reimbursement rates are contributing factors. There are also transportation issues, gaps in infrastructure and technology, and lack of diversity in providers to meet language and cultural needs.
- Early in the pandemic with business closures, some services were unclear whether they were able to stay open. Providers noted that the County was very supportive but unable to make determinations on essential services as this was a State level decision.
- As echoed by nearly all stakeholder groups, the differences in guidance combined with disinformation campaigns created confusion and mistrust in the community. *"The County did the best they could under extremely difficult circumstances. It was really difficult to navigate with the State and social media."*
- In schools, students have struggled with academics and individual mental health conditions. Families have been struggling financially. Schools would like to see a family support worker in every school from elementary to high school.
- Families have been greatly impacted by insufficient childcare options in the community. "We were a childcare desert before the pandemic and that has been amplified." Single parent households have struggled to maintain employment. Providers noted that their own staff have had difficulty maintaining schedules due to childcare.
- Smaller practices were greatly impacted by delays and/or long time frames for Medicaid reimbursements.
- Providers reported seeing a significant increase in demand for substance use disorder and mental health services.

Recommendations:

1. Participants recommended better integrating Community Health Workers in mental health services and in support of navigating services (e.g., groceries, prescriptions, how to get connected for a telehealth appointment).
2. Participants recommended better documentation and sharing of contact information for community services and the health department staff.

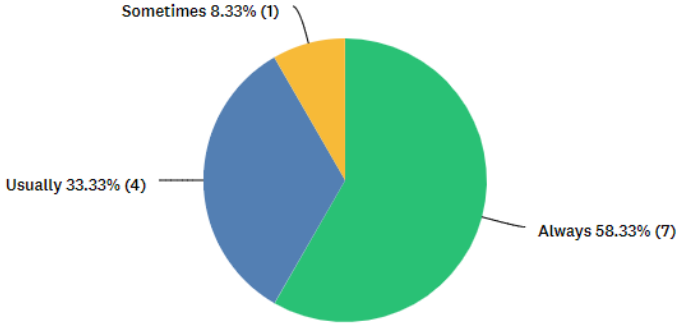
Activity 5: Coordination with the Business Community

Businesses were greatly impacted by COVID-19, related to mandatory closures, interpreting guidance and classifications of essential businesses, and implementing health and safety mitigation measures. BHCHD provided businesses with information and worked closely with many to expand outreach and modify operations to evolve with the pandemic.

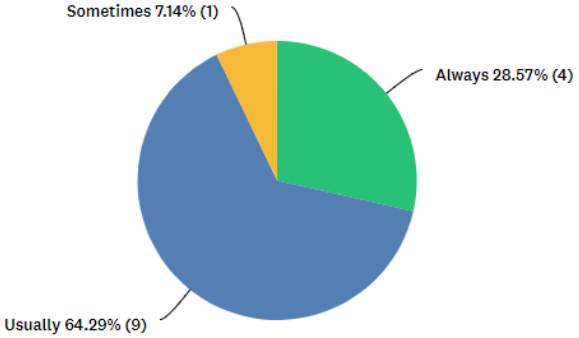
As part of the After-Action review, BHCHD surveyed the business community as well as childcare providers. A summary of key responses follows.

When asked if the organization had sufficient information and guidance about COVID-19 and COVID-19 control measures, the following survey responses were received.

Businesses responded:



Childcare Providers responded:



Businesses were surveyed "what challenges were experienced by your business during the COVID-19 pandemic?"

Answer Choice (select all that apply)	Response
Absence of existing staff due to illness or caregiving needs	69% (9)
Increased demand for services	62% (8)
Keeping up with health/safety precautions	62% (8)
Loss/turnover of existing staff	54% (7)
Resources (e.g., equipment, supplies)	46% (6)
Keeping up with current information/guidance	46% (6)
Unable to find qualified staff for unfilled positions	39% (5)
Decreased demand for services	31% (4)
Mandated closures	23% (3)
None of the above	0% (0)

Childcare providers were also asked "what were some of the biggest challenges for your organization during the COVID-19 pandemic?"

Answer Choice (select all that apply)	Response
Hiring new staff	77% (10)
Loss/absence/turnover of existing staff	69% (9)
Understanding guidance for facilities	69% (9)
Keeping up with health/safety precautions	38% (5)
Mandated closures	31% (4)
Receiving current information about COVID-19	23% (3)
Cleaning supplies	15% (2)
Personal protective equipment (masks)	15% (2)
None of the above	0% (0)

Childcare facilities were regulated by Iowa Department of Human Services, given guidance by Iowa Department of Public Health, and Iowa Department of Education (if also a preschool facility). Coordination between the three state departments were not always in alignment. 54% of childcare survey respondents also reported that differences between County, State, and Federal guidance impacted the organization's response.

Strengths:

- Of the business survey respondents, 81% offered COVID-related services during the pandemic, and 83% of those services were new for the organization (i.e., not offered before COVID-19). Examples of these services included emergency childcare and the establishment of a collaborative emergency childcare coalition, virtual fitness, COVID-19 testing, COVID-19 vaccination, meals, isolation and quarantine space, personal protective equipment, COVID education and training, resources for accurate information related to COVID-19, ability to work from home, etc.
    - *"We became a resource for Downtown Waterloo businesses and other businesses throughout the community. We provided information about the proclamations, shared educations from the BHCHD, created signage to help the businesses communicate to their customers, researched grant opportunities, held educational meetings, and more."*
    - *"The Northeast Iowa Food Bank's mission is to provide nutritious food and grocery product to organizations and individuals. During COVID-19 our response was to ensure that anyone who was in need of food received it. Whether that was through our local pantry, mobile pantries, or other community organizations. While our target population is anyone at or below 185% of poverty, anyone who demonstrated need was served."*
- 70% of businesses requested resources from Black Hawk County, and of those 100% understood the process to request resources
    - *"The team at BHCHD made it easy to receive resources and were very helpful to understand guidance that was being issued.*
    - *"We worked hand in hand with BHCHD and utilized resources available to us. They were informative helpful and timely."*
- 58% of businesses worked with BHCHD on case, contact, and/or outbreak investigations.
    - *"The Health Department staff was fabulous to work with when we had any questions related to illness or CDC guidance questions."*
- 62% worked with BHCHD on vaccination clinics for staff and/or populations served.
- Organizations celebrated how they quickly pivoted to meet demands of the situation and how many served in a capacity not considered before.

- Businesses recognized how quickly BHCHD responded to the needs of some of our largest companies and continuously updated data and guidance.
- Businesses rated Black Hawk County's response to the COVID-19 pandemic 4.3/5 stars (with 5 stars being the best).
    - *"The County is very fortunate to have such a dedicated, knowledgeable and hardworking staff working to ensure our public health needs are priority number one. I hope that the Black Hawk Board of Supervisors has a deeper understanding and appreciation for the staff and will show this in their support and with appropriate funding."*

Challenges and Lessons Learned:

- Some organizations expressed frustration with not being prioritized for vaccinations despite working on "front lines" with direct client facing interactions.
- Many organizations expressed needing additional volunteers to support response tasks and not having a clear mechanism to recruit or request.
- Childcare providers recommended keeping the same data tracking model throughout the pandemic and advised that the percent/color code model was the easiest to follow.
- Childcare providers rated Black Hawk County's response to the COVID-19 pandemic 3.6/5 stars (with 5 stars being the best), and attributed challenges to differences in the State of Iowa messaging and County's message.
- Large corporate businesses were not always engaged or listening to the guidance from Black Hawk County.

Recommendations:

1. Maintain relationships built with business community for future preparedness and outreach activities.
2. Communicate challenges by local public health to maintain guidance and coordination with childcare providers during COVID-19 and discuss potential support from IDPH and other State agencies.

Activity 5: BHCHD Continuity of Operations throughout COVID-19 pandemic

The purpose of continuity planning is to identify and prioritize an organization's essential functions and to ensure their continued provision under all conditions. Prior to COVID-19, BHCHD developed a Continuity of Operations (COOP) Plan and updated it in September 2020.

In June 2020, BHCHD assessed program operations and outlined detailed operations shifts from prior to COVID-19, during COVID-19, and COVID-19 Re-Opening Recommendations. Priority activities included:

- Use of PPE
- Customer Service and General Communications
- Clinical Encounters (e.g., Pinecrest, school-based, community and home visits)
- Communicable Disease Investigation (other than COVID-19)
- Food Safety Inspections
- Other Public Health Community-Based Activities
- Professional Engagement
- Community Engagement

As the pandemic continued, so did daily Health Department operations. BHCHD maintained grant deliverables and statutory requirements and oversaw the completion of essential functions. BHCHD also proceeded forward with accreditation through the Public Health Accreditation Board, which added significant workload for staff, including a January 2022 site visit.

When surveyed about continuity operations, staff (n=26) responded in the following ways:

	Strongly Agree	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
I was able to complete daily work duties throughout the COVID-19 pandemic	15% (4)	**40% (10)**	15% (4)	15% (4)	15% (4)
I received guidance on how to prioritize daily work/identify "essential tasks" throughout the COVID-19 pandemic	8% (2)	**35% (9)**	23% (6)	23% (6)	11% (3)
I had sufficient support from my program manager throughout the COVID-19 pandemic	12% (3)	**42% (11)**	27% (7)	15% (4)	4% (1)
My program manager kept me informed of the evolving COVID-19 pandemic and health department response	19% (5)	**53% (14)**	12% (3)	12% (3)	4% (1)
I have a good understanding of the purpose and activities of the health department response	**38% (10)**	35% (9)	15% (4)	8% (2)	4% (1)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The health department planned for the physical safety (e.g., enhanced cleaning, physical distancing) of staff working on-site	27% (7)	**35% (9)**	15% (4)	19% (5)	4% (1)
I felt valued as an employee throughout the COVID-19 pandemic	19% (5)	**27% (7)**	19% (5)	19% (5)	15% (4)

Recommendation:

1. Review and update the BHCHD COOP plan to reflect lessons learned during COVID-19, such as reflecting reallocation of department staff for emergency operations, clear prioritization of health department functions and services, and guidance for leadership to support program managers in prioritizing or delaying services based on the emergency situation.

Activity 6: Demobilization and Recovery Planning

The EOC was only activated briefly between 3/17/2020-6/7/2020, but BHCHD staff continued COVID-19 response roles until the Iowa Public Health Disaster Emergency Proclamation expired at 11:59 p.m. on Tuesday, February 15, 2022.

The Incident Command System calls for demobilization and recovery planning to occur within the EOC Planning Section during the response phase. Staff recognized that while IDPH managed case investigations, it gave BHCHD time to plan and prepare for future response efforts, but there was no formal demobilization or recovery planning conducted.

Staff remarked that reopening of closed establishments went smoothly, but challenges are focused on internal reopening. At the time that debriefing conversations occurred, there was uncertainty among staff of where the health department is in process of reopening, and what services could be offered. The resumption of program activities was not uniformly conducted across programs leaving some programs return to normal or near normal activities, while others were uncertain on which if any services can be resumed. As BHCHD reopened, fewer staff were available for response efforts. Discussions occurred among department leadership on how services might resume, and additional precautions, however these have not been communicated down to program staff, adding to the confusion.

Recommendations:

1. Develop clear demobilization and recovery plans or checklists and communicate to all staff.
2. Assess recovery needs for BHCHD staff to transition out of a response posture and into the new normal.
3. Increase preparedness planning, training, and exercise for response and recovery phases.

Appendix A: Timeline

The following timeline captures key activities during the COVID-19 pandemic. Many additional events occurred during this timeframe that may not be formally reflected below.

Date	Event
12/31/2019	First confirmed case of COVID-19 in Wuhan, China
1/21/2020	First confirmed case of COVID-19 in the United States (Washington State)
1/30/2020	WHO declares global health emergency
1/31/2020	US HHS declares Public Health Emergency
2/11/2020	WHO announced that the disease caused by the new coronavirus will be known by the official name "COVID-19"
3/9/2020	Iowa Governor's Proclamation of Disaster Emergency (2020-01) https://governor.iowa.gov/sites/default/files/documents/202003100818.pdf https://homelandsecurity.iowa.gov/disasters/
3/11/2020	WHO Pandemic Declaration
3/13/2020	The President of the United States declared COVID-19 a National Emergency
3/15/2020	Iowa Governor recommends K-12 schools close for 4 weeks
3/16/2020	First COVID-19 case in Black Hawk County (reported 3/17/20 and formally announced on 3/18/20)
3/17/2020	Iowa Governor continues the State of Public Health Disaster (2020-04), moving restaurants to drive-through, carry-out, and delivery-only and closures of certain entities such as bars and recreational facilities, and supporting the critical work of public health. Public Health Proclamation - 2020.03.19.pdf (iowa.gov)
3/17/2020	Black Hawk County EOC activated
3/22/2020	Iowa Governor continues the State of Public Health Disaster (2020-06), closing salons, medical spas, barbershops, tattoo establishments, tanning facilities, massage therapy establishments, and swimming pools.

Date	Event
	Public Health Proclamation - 2020.03.22.pdf (iowa.gov)
3/26/2020	Iowa Governor continues the State of Public Health Disaster (2020-07), suspending elective and nonessential medical and dental procedures, extending, and expanding retail business closures, ordering health care facilities and nursing homes to engage in advanced health care screenings, and removing additional legal barriers to ensure a continued strong response to this disaster. Public Health Proclamation - 2020.03.26.pdf (iowa.gov)
4/2/2020	Iowa Governor continues the State of Public Health Disaster (2020-09), orders the closure of schools, waiving time requirements as long as school districts put in place a continuous learning plan until April 30th, extends closures and limits placed on bars and restaurants previously identified retail stores, prohibits social gatherings of more than ten people, and continues to ban nonessential and elective surgeries until April 30th. Public Health Disaster Proclamation - 2020.04.02.pdf (iowa.gov)
4/17/2020	Iowa Governor extends the K-12 school closure for the remainder of the academic year with the stipulation that time for missed days and hours would not need to be made up if districts employed either voluntary or required continuous learning.
4/21/2020	Iowa Governor announces the "Test Iowa" initiative.
4/28/2020	BHCHD transitioned case investigations to IDPH
5/1/2020	FDA issues an EUA for emergency use of remdesivir for the treatment of hospitalized COVID-19 patients.
6/5/2020	Black Hawk County EOC deactivated
7/30/2020	Local Public Health Directors from ten Iowa counties including BHCHD issued a letter to Governor Kim Reynolds strongly urging her to consider mandating the use of cloth face covering in order to reduce and avoid the spread of COVID-19. The full letter can be found here.
8/23/2020	The FDA issued an emergency order authorizing the use of convalescent plasma to treat COVID-19
8/28/2020	The FDA announced that it had authorized the drug remdesivir to be used on all patients hospitalized with COVID-19

Date	Event
9/16/2020	HHS and DoD released the federal COVID-19 vaccine distribution strategy, which includes guidance for working with states, tribes, territories and local public health programs and a plan for distributing a vaccine as soon as one receives Emergency Use Authorization from the FDA
11/11/2020	Governor signed new proclamation continuing State Public Health Emergency Declaration. The proclamation imposes a number of additional public health measures to reduce the spread of COVID-19. These new measures will be effective at 12:01 a.m. on Wednesday, November 11 and will continue until 11:59 p.m. on November 30, 2020. To view a summary of enhanced mitigation measures, click **here**.
11/18/2020	Governor's Public Health Disaster proclamation signed modifies existing public health measures to provide clarity and simplify the measures applicable to recreational activities and fitness centers. The full proclamation is online
11/20/2020	BHCHD Released Thanksgiving and Holiday COVID-19 Guidance https://www.bhcpublichealth.org/news/covid-19-holiday-guidance
12/1/2020	Advisory Committee on Immunization Practices, independent panel of the CDC, recommend that healthcare workers and nursing home staff and residents be the first to receive a COVID-19 vaccine
12/2/2020	CDC issued guidance recommending that Americans forego traveling for Christmas/winter holiday season.
12/8/2020	The FDA released a report summarizing Pfizer and BioNTech's vaccines trials - report said data indicated the vaccine is safe and roughly 95% effective
12/9/2020	Governor's Public Health Disaster proclamation signed that modifies existing public health measures designed to reduce the spread of COVID-19. The proclamation continues to require that when people are in an indoor public space, and unable to social distance for 15 minutes or longer, masks are required to be worn. The proclamation also continues to limit indoor social, community, business, or leisure gatherings or events to no more than 15 people. The full proclamation can be found online **here**.
12/11/2020	The FDA issued an emergency use authorization for Pfizer and BioNTech coronavirus vaccine

Date	Event
12/15/2020	MercyOne Waterloo Medical Center and UnityPoint Health – Allen Hospital receive first Pfizer vaccine allocation. Each hospital received 975 doses of the Pfizer-BioNTech COVID-19 vaccine to offer to frontline healthcare workers as part of phase 1a of vaccine distribution.
12/17/2020	Governor's Public Health Disaster proclamation signed that modifies existing public health measures designed to reduce the spread of COVID-19. The proclamation requires social distancing and reasonable public health measures for many social, community, business, or leisure gatherings or events. The full proclamation can be found online here.
2/25/2021	IDPH launched the website: Vaccinate.Iowa.gov. The website was available in multiple languages and will: · Provide information about priority populations and vaccine eligibility · Resources available for residents age 65 and older · Answers to frequently asked questions Additionally, 211 implemented Vaccine Navigators to support those Iowa residents that have difficulties navigating the vaccination registration process.
4/13/2021	CDC & FDA recommended a pause in the use of the Johnson and Johnson vaccine
4/20/2021	Iowa Governor signs bill prohibiting mask mandates in schools, cities and counties.
4/23/2021	FDA and CDC lifts recommended pause on Johnson & Johnson (Janssen) COVID-19 Vaccine.
4/26/2021	BHCHD issued guidance, consistent with IDPH, CDC, and FDA to resume administration of the Johnson & Johnson (Jannsen) vaccine
5/20/2021	Iowa Governor imposes law (House File 847) prohibiting Iowa school districts from requiring students or staff to wear masks and prohibiting Iowa cities and counties from imposing mask mandates. https://www.legis.iowa.gov/legislation/BillBook?ga=89&ba=hf847
6/11/2021	BHCHD announced the COVID-19 Vaccine Incentive Program https://www.bhcpublichealth.org/news/061121-press-release-black-hawk-county-vaccine-incentive-program
6/18/2021	Delta Variant present in Black Hawk County

Date	Event
8/23/2021	Pfizer-BioNTech COVID-19 Vaccine Receives FDA Approval
9/13/2021	Federal judge issued a temporary restraining order stopping the enforcement of the State mask mandate ban (House File 847)
11/3/2021	The CDC approved the emergency use of Pfizer-BioNTech COVID-19 Vaccine for the prevention of COVID-19 to include children ages 5-11, following approval from the U.S Food and Drug Administration.
12/9/2021	The first case of the COVID-19 Omicron variant was reported in Black Hawk County.
1/7/2022	Pfizer COVID-19 Booster Approved for Ages 12-15
1/31/2022	Moderna receives full FDA approval for its COVID-19 vaccine.
2/1/2022	Pfizer asks the FDA to authorize its vaccine for children younger than 5 years old.
2/11/2022	Black Hawk County Public Health ends universal investigation and contact tracing following joint statement from The Association of State and Territorial Health Officials (ASTHO), Council of State and Territorial Epidemiologists (CSTE), National Association of County and City Health Officials (NACCHO), Big Cities Health Coalition (BCHC), and Association of Public Health Laboratories (APHL) which supported transitioning away from universal case investigation and contact tracing to focus on outbreak investigations and targeted case investigations.
2/15/22	The final extension of the state's Public Health Disaster Emergency Proclamation expired at 11:59 p.m. on Tuesday, February 15, 2022. The signed proclamation can be found here.
2/16/22	IDPH no longer required testing entities to report negative COVID-19 test results and no longer required Long Term Care facilities to report outbreaks https://www.bhcpublichealth.org/news/021622-idph-reviews-covid-19-reporting-transitions-on-idph-website
2/16/22	The state's two COVID-19 websites, coronavirus.iowa.gov and vaccinateiowa.gov, were decommissioned on February 16, 2022, but information will remain accessible online through other state and federal resources.
4/1/2022	BHCPH closed the COVID-19 call center

Appendix B: Acronyms

Acronym/ Abbreviation	Description
AAR/IP	After-Action Report/Improvement Plan
ASPR	Office of the Assistant Secretary of Preparedness and Response
BH	Behavioral Health
BHCHD	Black Hawk County Health Department
BOH	Board of Health
BOS	Board of Supervisors
CADE	IDPH Center for Acute Disease Epidemiology
CARES	Coronavirus Aid, Relief, and Economic Security Act
CDC	Centers for Disease Control and Prevention
CERC	Crisis Emergency Risk Communication
CICT	Case Investigation and Contact Tracing
COOP	Continuity of Operations
CSC	Crisis Standards of Care
DHS	U.S. Department of Homeland Security
EAP	Employee Assistance Program
ED	(hospital) Emergency Department
EEI	Essential Elements of Information
EMA	Emergency Management Agency (Black Hawk County)
EMBARC	Ethnic Minorities of Burma Advocacy and Resource Center
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EUA	Emergency Use Authorization

Acronym/ Abbreviation	Description
FDA	U.S. Food and Drug Administration
FEMA	Federal Emergency Management Agency
FFCRA	Families First Coronavirus Act
FMLA	Family and Medical Leave Act
HAI	Healthcare Associated Infection
HCC	Health Care Coalition
HHS	U.S. Department of Health and Human Services
HIE	Health Information Exchange
HR	Human Resources
HSEMD	Iowa Department of Homeland Security and Emergency Management
IAP	Incident Action Plan
ICS	Incident Command System
ICS 213RR	WebEOC Resource Request From
ICU	(hospital) Intensive Care Unit
IDPH	Iowa Department of Public Health
IDSS	Iowa Disease Surveillance System
IRIS	Iowa immunization Registry Information System
IT	Information Technology
JIC	Joint Information Center
JIS	Joint Information System
LTC	Long Term Care facility
NAACP	National Association for the Advancement of Colored People
NEIFB	Northeast Iowa Food Bank

Acronym/ Abbreviation	Description
NIMS	National Incident Management System
NPI	Non-pharmaceutical intervention
OP	Operational Period
PCR	Polymerase chain reaction
PH	Public Health
PHEP	Public Health Emergency Preparedness
PHN	Public Health Nurse
PIO	Public Information Officer
POD	Point of Dispensing
PPE	Personal Protective Equipment
RCF	Residential Care Facility
RMCC	Regional Medical Coordination Center
RSS	Receive, Stage, Store (Warehouse)
SHL	State Hygienic Laboratory
SNF	Skilled Nursing Facility
SNS	Strategic National Stockpile
SOP	Standard Operating Procedure
WHO	World Health Organization

Appendix C: COVID-19 Focus Group Results

Black Hawk County Health Department (BHCHD) coordinated the implementation of five focus groups for the purposes of enhancing the county's understanding of how the COVID-19 pandemic response met the needs of the communities most impacted by the virus and to better understand the strengths and improvements experienced during the response.

The focus groups were conducted as part of the Black Hawk County COVID-19 After Action Report/Improvement Plan (AAR/IP). The AAR/IP assesses the ability to meet objectives and capabilities by documenting strengths, areas for improvement, capability performance, and recommendations. Through subsequent improvement planning, BHCHD will utilize identified corrective actions to improve plans, build and sustain capabilities, and maintain readiness. The focus group results were also used to determine priority issues for community health improvement and inform actions for the FY23-25 Community Health Improvement Plan.

BHCHD epidemiologists reviewed data from the Community Health Assessment and COVID-19 Impact Survey conducted in June 2022 to determine communities for focus group inclusion. Based on this review, the team planned for Black/African American, Burmese, Congolese, Hispanic/Latinx, and Rural focus groups. Leaders from these communities were consulted to determine recruitment strategies, locations and arrange for facilitation. The Otto Schoitz Foundation covered the expenses for the focus group facilitators and participants.

The focus groups were conducted in August and September 2022 and results were compiled in September 2022. Summarized data from each focus group are shown below followed by the interview tool and complete results.

Black/African American

- Top barriers or life impacts discussed included supply chain issues, ability to shop for/access fresh foods, limited social interactions/social isolation, sadness, mental health impacts, and impacts to childcare.
- Confusion in conflicting messages.
- Challenges experienced in accessing testing.

Burmese

- Top barriers or life impacts discussed included mental health and social isolation, reduced physical activity, lack of resources, and stigma.
- Challenges experienced in safely quarantining or isolating within the household.
- Because most appointments and medical services shifted to virtual, it became a barrier for families to apply for Medicaid and other services.
- Need for support/guidance/community health worker navigator. Inability to read written guidance, even in Burmese.

Congolese

- COVID-19 caused significant barriers in ability to live a healthy life, with reduced incomes, not being able to socialize, and loneliness.
- Significant fear was expressed.
- Lack of information in primary language (French).
- Lack of understanding of disease.

Hispanic/Latinx

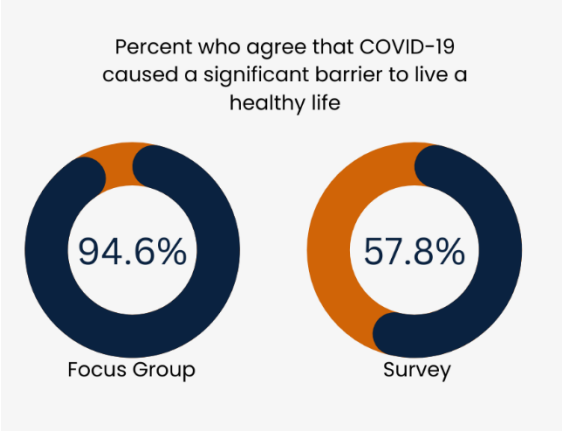
- COVID-19 caused significant barriers in ability to live a healthy life, experiencing isolation, unable to work, mental health issues/access to mental health services, children stuck at home/missing socialization.
- Lack of care/support when sick at home.
- Significant concern was expressed for lack of medical access/insurance for undocumented individuals.
- Social isolation and changes to gatherings, resulting effects on mental health of self and children.

Rural

- Individuals expressed they didn't know who to trust for information. Experienced distrust in medical community and the perception that they were not available.
- COVID-19 caused significant barriers in ability to live a healthy life due to isolation, confusion, and fear of the unknown.
- Mental health impacts were experienced, and the event was widely politicized.

BHCHD epidemiologists looked for trends and outliers in the focus group data and compared the results to the COVID-19 Impact Survey. The data showed that all focus groups mentioned mental health or social activities as a significant barrier to living a

healthy life caused by COVID-19, which is consistent with the survey results. 94.6% of focus group attendees agreed that COVID-19 caused a significant barrier to live a healthy life compared to 57.8% of survey respondents. Finally, 82.9% of focus group attendees agreed that COVID-19 changed their perspective on priority health issues compared to 70.8% of survey respondents.



Appendix D: Response Partner Recognition

Black Hawk County recognizes and thanks the many community-focused partnerships, including but not limited to:

- 1st Kids Preschool & Child Care Center
- A to Z Learning Center & Day Care
- Active Minds Early Learning Academy
- Advanced Heat Treat Corp
- All Nations
- Allen College
- BCSS ABC Program
- Bertch Cabinet LLC
- Black Hawk County Medical Examiner
- Black Hawk County Board of Health
- Black Hawk County Board of Supervisors
- Black Hawk County Emergency Management Agency
- Black Hawk County Sheriff's Office
- Black Hawk County Social Services
- Black Hawk Grundy Mental Health
- Blessed Beginnings
- Blue Bird Child Care
- Bosco Catholic Schools
- Bossard North America Inc.
- Building Bright Beginnings
- Building Products Inc
- Care Ambulance
- Casa Montessori Preschool
- Cedar Falls Community School District
- Cedar Falls Fire Rescue
- Cedar Falls Health Care Center
- Cedar Valley Catholic Schools
- Cedar Valley Preschool & Child Care Center
- Central Rivers AEA
- Circle of Care-St Patrick Catholic School
- City of Cedar Falls
- City of Dunkerton
- City of Elk Run Heights
- City of Evansdale
- City of Gilbertville

- City of Hudson
- City of La Porte City
- City of Raymond
- City of Waterloo
- Clover Patch Daycare
- Cohesive
- Community United Child Care Centers and Preschool
- Conagra
- CPM Acquisition Corp
- Crystal Distribution Services, Inc.
- Dike New Hartford Schools
- Donaldson Filter Minder
- Dunkerton Ambulance
- Dunkerton Community Learning Center
- Dunkerton School District
- Elevate
- EMBARC
- Evansdale Fire Rescue
- Fahr Beverage Inc.
- Faith Temple Baptist Church
- Family & Children's Council
- Family Medicine of Cedar Valley
- Farmstead Preschool
- Friendship Village Retirement Center
- Gilbertville Fire and Rescue
- Greenwood Pharmacy
- Grin & Grow Child Care
- Grow Cedar Valley
- Hagarty-Waychoff-Grarup
- Happy Time Preschool and Daycare
- Harmony House Health Care Center
- Hawkeye Child Development Center
- Hawkeye Community College
- House of Hope
- Hudson School District
- Hudson Volunteer Fire Ambulance
- Human Rights
- Hy-Vee
- Image Pointe
- Immanuel Lutheran Preschool

- Iowa Department of Homeland Security and Emergency Management
- Iowa Department of Public Health
- Iowa Family Services
- Iowa National Guard
- It Takes A Village Childcare, LLC
- John Deere
- Kent Nutrition Group
- Kid Zone, Blessed Sacrament
- Kingdom Kids
- La Porte City Fire Rescue
- La Porte City Preschool
- LaPorte City Specialty Care
- Learn & Play Preschool & Daycare
- Legacy Littles Early Christian Learning Center & Legacy Littles of Hope
- Little Pirates Preschool of Hudson, Iowa
- ManorCare Health Services of Waterloo
- Martin Bros. Distributing
- Martin Health Center, Inc.
- MercyOne
- Ministries
- Montessori System School
- NAACP
- NAMI of Black Hawk County
- Newaldaya Lifescapes
- Northcrest Specialty Care
- Northeast Iowa Food Bank
- Northland Products Co.
- Omega Cabinetry
- Orchard Family Medicine
- Orchard Hill Church Preschool
- Parrott & Wood
- Pathways Behavioral Services
- Peoples Community Health Clinic
- Pillar of Cedar Valley
- Pinnacle Specialty Care
- Pitter Patter Learning Center
- Precious Wonders Child Development Center
- Professional Office Services, Inc.
- PSSI
- Ravenwood

- Raymond Fire Rescue
- River Hills Schools, Central Rivers AEA
- Safe Care Kids Center LLC
- Safe Care Learning Center LLC
- Salvation Army
- Small Wonders Learning Center
- Small World Preschool
- Sonrise Christian School & Daycare
- St. Edward Early Childhood Center
- St. John Preschool and Childcare Center
- St. Patrick's School
- St. Timothy Preschool & Childcare
- State Hygienic Lab
- Target Food Distribution Center
- Target Regional Distribution Center
- The Suites of Western Home Communities
- TriCounty Head Start
- Trinity Preschool and Childcare
- Tyson Food
- UNI Child Development Center
- Union School District
- UnityPoint Health
- University of Northern Iowa (UNI)
- Valley Lutheran School
- VGM Fulfillment
- Waterloo Christian Schools
- Waterloo Fire/EMS
- Waterloo Police Department
- Waterloo School District
- White Funeral Home
- YMCA Child Development Center (Waterloo)
- YWCA of Black Hawk County Child Care

And all other partners that contributed towards our community's health and safety throughout this pandemic.

Appendix E: Improvement Plan

An Improvement Plan (IP) has been developed for Black Hawk County Health Department as a result of the 2019 Novel Coronavirus real world event response, specifically focusing on activities between March 2020-March 2022, based on recommendations made in the AAR.

The Improvement Plan is a living document; some recommendations have already been addressed and resolved. BHCHD will prioritize recommendations, assign as appropriate, and track progress in a separate, freestanding IP document.