Activating the Hospital Incident Command System Response in a Community Specialty Practice: The Mayo Clinic Experience

Ellen A. Love, MHA; Susanne C. Degen, RN, MBA; Jason E. Craig, MBA; Richard A. Helmers, MD

ABSTRACT

Introduction: The COVID-19 pandemic presented health care organizations with a unique challenge in determining effective management of a large-scale incident across an extended time period.

Case Presentation: This report describes the response of a multisite integrated system to the COVID-19 pandemic through activation of the Hospital Incident Command System.

Discussion: A robust emergency response plan with multidisciplinary involvement can help to ensure clear lines of accountability and expedite decision-making. Consistent physician input across affected specialties allows for a robust understanding of impacted areas, peer-to-peer communication, and a sense of ownership across the medical staff. The necessity of effective communication with staff and patients during times of crisis cannot be understated. The potential for information overload in a pandemic is significant but can be overcome through consistent and transparent communication from leadership.

Conclusion: Health systems should have a well-organized emergency response system prepared to launch in small-scale or large-scale situations. The threshold to implement the response system and accountability to make that decision must be a clearly defined organizational policy.

INTRODUCTION

The Mayo Clinic Health System is a series of 16 hospitals and 35 clinics across 3 states within a 120-mile radius of Mayo Clinic in Rochester, Minnesota (See Appendix). The Northwest Wisconsin region of the Mayo Clinic Health System is comprised of a clinic and 200-bed hospital campus in Eau Claire, Wisconsin; 25-bed critical access hospitals in Barron, Bloomer, Menomonie, and Osseo, Wisconsin; and clinics in Chetek, Chippewa Falls, Elmwood, Glenwood City, Mondovi, and Rice Lake, Wisconsin. The practice across these sites is primarily community-based primary and secondary care, with tertiary care provided in Eau Claire. The hospitals and clinics operate as an integrated system, with shared leadership, expertise, and resources. The critical access hospitals strive to provide state-of-the art care that is equivalent to the Eau Claire hub, minimizing the need to transfer patients outside of rural communities. The region employs over 300 physicians and 4,000 staff.

Operating under a highly matrixed leadership structure, the region is led by an executive triad comprised of physician, nursing, and administrative leaders. Service line and site leadership teams are structured similarly. Service line leaders support their practice at all sites within the region; site leaders oversee a regional service line in addition to their local responsibility. Historically, this structure has allowed for broad knowledge development across leaders and ensures decisions are made with consensus from all affected sites and services.

The Hospital Incident Command System (HICS) was created in 1991 by the Orange County Emergency Medical Services Agency.[1] HICS is used to coordinate the response to an internal or external event that impacts normal operations. The structure enables common terminology and consistent procedures for emergency response across health systems. Examples of situations requiring HICS activation include hazardous materials incidents, mass casualty incidents, severe weather events, and infectious disease outbreaks.[2] The HICS structure is typically used to respond to a short-term incident that is isolated to a single location.

• • •

Author Affiliations: Mayo Clinic Health System Northwest Wisconsin, Eau Claire, Wisconsin (Love, Degen, Craig, Helmers); Mayo Clinic College of Medicine, Rochester, Minnesota (Helmers).

Corresponding Author: Ellen Love, 4500 San Pablo Rd, Jacksonville, FL 32224; phone 904.953.4645; email Love.Ellen@mayo.edu.

Table. Challenges Faced During Hospital Incident Command System (HICS) Activation for COVID-19

Challenge	Solution
Ongoing preparedness to implement an emergency response plan	Clear policies and procedures for activation of HICS are combined with regular training for leadership team
Lack of an existing multisite, long-term emergency management system	Adjusted the HICS structure to increase physician involvement, create leadership redundancy, and clearly define accountability for decision-making
Need to prioritize patient care and effectively manage capacity in case of a surge in positive cases	Providers triaged outpatient visits and surgical procedures based on urgency of care need. Visits and procedures deferred or converted to telemedicine when appropriate
Safe and timely care for urgent, semi-urgent, and elective patient care	Created COVID-mitigated surgical and hospital spaces with enhanced screening and sterilization processes
Allocation of limited resources, including medical staff	Implemented physician and allied health labor pools to reallocate staff to surge areas based on skills and prior training. Provided inpatient education to outpatient staff to prepare for potential reassignments
Communication of rapid changes to patients	Leveraged multiple communication pathways to provide patients with reassurance and up-to-date information
Communication of rapid changes to staff	Provided staff with consistent daily messaging and frequent opportunities to ask questions of leadership

In early March 2020, the Northwest Wisconsin region of the Mayo Clinic Health System activated HICS in response to the potential for COVID-19 impacts to its communities based on rising international cases and concerns about personal protective equipment (PPE) supply levels. The first confirmed case in the region was identified in Eau Claire on March 19, 2020, with gradual community transmission.[3] As cases began to rise in the United States and positive cases were identified in the region, the focus of incident command shifted to management of COVID-19 within the organization. Response tactics included titration of the outpatient and surgical practices, creation of labor pools, and surge capacity planning. As cases reached a plateau, the need for integration of pandemic response activities into daily operations was recognized in coordination with continued monitoring of positive case volumes. Throughout the pandemic, a multidisciplinary and robust incident command structure was required to manage the systematic response.

PROBLEM

The HICS structure exists as a single-site solution to a short-term incident; utilizing this system to respond to a multi-month pandemic across a network of hospitals and clinics presented a number of challenges (Table). The use of HICS to manage a pandemic response required a detailed consideration of leadership role assignments, physician involvement and time allocation, and reporting structure of the emergency response system within the overall organization. Due to the matrix organizational structure, we needed to clearly define accountability for decision-making between incident-related problems and operational challenges. Throughout the response, effective collaboration across departments, sites, and shared services was critical.

In addition to the systematic challenges faced, we realized the need to prepare for the unknown of the pandemic. Specifically, we needed to be prepared for a rising surge in hospitalized patients with COVID-19 across our region, while safely providing necessary patient care. This meant identifying ways to prioritize care needs, ascertain and appropriately allocate needed resources, and source both provider and care staff labor.

Finally, robust and real-time communication of rapid policy changes to staff and patients was critical throughout the pandemic. It was clear we needed to address staff uncertainty and patient concerns quickly and effectively. We questioned what the most effective communication channel would be for these stakeholders and how to quickly convey the state of the virus and its impact on our operations.

SOLUTION

Hospital Incident Command System

Activation of HICS should be defined by a clear policy within the organization, specifically citing who has the accountability for activating HICS and the cadence of required action steps to stand up the system. At Mayo Clinic, the first person who identifies a hazard is to notify the house supervisor or administrator on call (AOC), who then has the authority to activate incident command for any event the leader determines is a disruption to normal operations. This leader now serves as the incident commander in the HICS structure and is responsible for the overall direction of the incident response.[4] The incident commander assigns the roles of section chiefs, officers, and technical specialists

The incident commander makes the determination of when the event has stabilized and incident command can be demobilized. For a successful HICS activation, it is critical that detailed training and tabletop exercises are held regularly to ensure any leader in the AOC rotation is prepared to serve as incident commander and any potential section chiefs understand the roles and structure of HICS.[5] Supplemental documentation detailing how the organization uses HICS, the procedure for activating and deactivating, the location of resources, and a roster of appropriate leaders for each role within the system assists in an efficient emergency response.

Recognizing the potential for an extended timeline of HICS activation for the system COVID response, 2 people were identified for each of the section chief roles to create redundancy and rotations among leaders. The role of incident commander was rotated across a team of senior level administrators in 2-week

increments. Importantly, the regional chief executive officer and chief administrative officer did not serve as incident commander to allow for objective decision-making and consistent leadership outside of the HICS structure. This early establishment of HICS allowed for a well-organized structure and quick reactivity to missteps or unanticipated issues.

Multidisciplinary HICS Involvement

In establishing the HICS structure for the COVID-19 pandemic response, the incident commander identified the need for multidisciplinary involvement from physicians, nursing, and administration. Consistent physician input across affected specialties, including critical care, primary care, and surgical specialties—provided a robust understanding of impacted areas and a sense of ownership across the medical staff. Critical areas of input and involvement in HICS from support departments included infection prevention and control, emergency preparedness, employee health, and public affairs. Additional support sections that are not typically included in HICS were added as critical areas to the pandemic, such as a senior services branch to coordinate with local skilled nursing facilities.

Physician participants in HICS were selected from the specialties considered to be critical to the emergency response. Physician administrative time was allocated based on the level of involvement as identified by the incident commander; for example, the infectious diseases chair was allocated a 1.0 full-time equivalent (FTE) to HICS, while the pulmonary and critical care chair was allotted 0.5 FTE. This physician administrative time was charged to the HICS accounting unit. A cardiovascular surgeon was selected as medical branch director based on the need for a physician with knowledge of clinic, surgical, and hospital operations. The medical branch director was assigned 1.0 FTE based on the scope of changes to be implemented and coordination of the physician labor pool. This level of physician FTE allotment was specific to the COVID-19 response and level of complexity required in the medical response. A typical emergency response activation may not require significant physician administrative time and would utilize services appropriate to the response, such as trauma providers for a mass casualty incident.

Multidisciplinary involvement in HICS also created the need for a clear definition of accountability between incident-related and operational decisions. AOC responsibilities were maintained separate from incident command to respond to non-COVID-19-related emergencies. Collaboration between regional incident command, enterprise incident command in Rochester, operations leadership at each hospital and clinic site, and shared support services was necessary to identify an effective pandemic response across a system while still maintaining normal operations. Clearly defined accountability and effective collaboration allowed for rapid decision-making in a historically consensus-driven organization.

Planning for a Surge

In anticipation of a rapid surge in positive cases as experienced in other areas of the United States and Europe, additional bed capacity availability at each hospital site in the region was identified—particularly focused on intensive care-level capacity in Eau Claire. Emergency credentialing and privileging policies were implemented to allow any Mayo Clinic credentialed and privileged provider to practice at any Mayo Clinic site, in any department, for the duration of the national emergency. In order to limit the number of individuals onsite, elective surgical procedures and outpatient visits were rapidly deferred, with the clinical practice declining to approximately 20% of normal volume. Physicians triaged all existing and requested outpatient appointments and surgical procedures based on urgency of care needs into emergent, urgent, semi-urgent, and elective categories. This was completed to determine which patients had the most acute needs and which patients could safely be deferred for 4 to 6 weeks. All suitable visits were shifted to video visits to ensure continuity of care while limiting the volume of patients on campus. If a patient was unable to complete a video visit, a phone visit was offered. Those patients whose acuity or care needs indicated they would benefit most from an in-person visit continued to see their provider on-site. Overall, this strategy allowed our practices to continue safely providing care in a way that best fit patient needs while minimizing negative effects to chronic disease management.

At a system critical access hospital, "COVID-mitigated" surgical and hospital spaces were formed with the goal of providing necessary care in a safe manner. The focus was to treat surgical patients whose health status, chance of cure, or long-term function would be diminished if procedures were delayed until after the pandemic. The virus-free space was created through robust presurgical patient testing and isolation, employee screening, and enhanced sterilization measures. The COVID-mitigated zones had designated traffic flows, separate entry and exit points with limited access, and facilities adjustments for sufficient air exchange.

A robust process was implemented to ensure the safety of surgical patients and staff. The department surgical team was expected to evaluate all cases on their need for surgery and submit those determined to be urgent and semi-urgent to a review committee. If the case was approved, the patient was contacted by a preoperative evaluation team 7 days prior to surgery to complete an enhanced COVID-19 screening. If the patient screened negative at this initial evaluation, a COVID-19 nasopharyngeal test was scheduled for 3 days prior to surgery. At 1 day prior to surgery, the preoperative evaluation team completed a final screening visit with the patient, and the surgeon completed a virtual visit to review the surgery and obtain informed consent. Upon arrival to the facility on the day of surgery, the patient was screened for symptoms and fever a final time. If at any point the patient reported symptoms or tested positive, the surgical procedure was cancelled and the patient was referred to their primary care provider for follow-up.

At a patient level, this robust process allowed us to ensure that patients were receiving necessary care to prevent long-lasting effects and were doing so in a safe manner with as minimal risk of exposure to the virus as possible. It also taught our care teams how to provide safe patient care in a pandemic, lessons that were shared with the specialty practices and facilities across the system. The learnings gained from implementation at the nearby critical access hospital allowed for the addition of a COVID-mitigated surgical area in the Eau Claire center. This enabled the separation of appropriate surgical cases by specialty across the 2 sites and the resumption of complex cases that could not be completed in the critical access hospital surgical space. Patients were able to receive urgent, semi-urgent, and elective care in the manner and facility most appropriate for them.

Physician and Allied Health Staff Labor Pools

Physician and allied health staff labor pools were created to prepare for a surge in cases and fill incremental roles created by the pandemic response. The physician labor pool, led by the medical branch director, was created to rapidly shift care providers from lower volume services into areas experiencing a surge based on the provider's specialty. A COVID medical officer of the day (CMOD) role was added as part of the medical branch of HICS and was rotated weekly across the medical branch director, chief medical officer, and outpatient practice chair. The CMOD was responsible for identifying and matching areas of the practice needing additional physician support with those departments with available labor, utilizing daily reports from the department managers.

To organize the physician labor pool, an inventory was first compiled of the physicians and advanced practice providers employed in the region, along with their prior training, experience, and current practice volume. Alternative assignments were then identified for each specialty practice based on the provider skillsets and training background, as well as the decline in clinic volume. In the case of a surge in intensive care-level inpatients, hospitalists, cardiovascular surgeons, and general surgeons would be moved to support the critical care unit. If additional hospitalist support was needed, internal medicine, cardiology, endocrinology, rheumatology, and nephrology providers would be shifted to support the hospital general medical floors. Behavioral health, cardiology, dermatology, family medicine, orthopedics, and pediatrics were all designated as emergency department backup in case of a surge. All other specialties were put into an available resource pool to be assigned to surge areas as needed by the CMOD. Once these assignments had been created, the above departments were trained on the electronic medical record functionality for their surge assignment.

An allied health staff labor pool was implemented to fill critical assignments that resulted from changes in operations. Employees shifted assignments to serve in testing site roles, as patient and employee symptom screeners, and as patient transport. Clinic-based nursing staff attended supplemental training on inpatient care and electronic medical record documentation in preparation for an increased need in hospital staff. Software typically used to manage volunteer assignments was leveraged to create and organize labor pool roles, gather available staff information from department managers, and notify staff of schedules and role assignments.

Communication with Patients and Staff

Early in the pandemic response, the need for frequent and transparent communication between regional senior leadership, incident command, front-line staff, and patients was identified. The pandemic led to rapid changes in policies and procedures that needed to be quickly communicated to patients, staff, and leaders across multiple venues. To reach patients, the following tactics were utilized: news releases, website banners, signage at physical locations, and patient portal notifications. As scheduled appointments and procedures were deferred or converted to virtual care, patients were contacted by scheduling staff to notify them of the change and offer an opportunity to respond to any questions or concerns. The leadership team also participated in virtual community events and newscasts to provide patients with the most up-to-date information. From the first quarter of 2020 to the second quarter of 2020, patient experience scores for likelihood to recommend care at our organization remained relatively consistent, which we view as a reflection of the effectiveness of our patient safety tactics and varied communication methods.

In the same week that the HICS structure was stood up in March, the regional chief executive officer, chief administrative officer, and chief nursing officer recognized the need to communicate the regional response tactics to staff. Initially, the team planned to share a prerecorded video with employees. The internal public affairs department advised that a regularly scheduled, interactive forum would be more effective, as it would allow for employee concerns to be addressed rapidly. The regional leaders began holding twice-weekly employee town halls on consistent days and times each week. Each forum was livestreamed to all employees and recorded for those who could not view in the moment. The platform Slido was used to solicit anonymous questions from staff, providing an opportunity to address concerns that otherwise may not have been escalated. In March and April, the employee forums averaged a total view count of approximately 1,400 views per forum and peak views of 2,200. The positive feedback received from staff indicates that the interactive forums were the most effective communication tool used during COVID-19. This has led to continued weekly forums throughout the pandemic response.

In addition to the twice-weekly forums, daily all-staff emails were utilized to reach employees. The emails were used to address pressing concerns, share regional planning updates, and inform

staff of urgent policy changes. In March and April, the daily emails had an average open rate of 64%.

LESSONS FOR THE FIELD

While our response to COVID-19 was generally effective, there were a number of lessons learned that will impact our future HICS activations for pandemic-level events. We recognize that we were late to comprehend the severity of the virus in the US and, as a result, were reactive rather than proactive in our response. Early activation of incident command as a monitoring function allowed us to quickly evolve into a phase of active response. The overall implementation of incident command, including leadership assignments and flexibility in structure, provided for a well-organized decision-making mechanism in a constantly changing environment.

When establishing the HICS assignments, we failed to adequately include leadership from our critical access hospitals into the structure and relied primarily on leaders based in the tertiary center. This resulted in communication errors and a lack of understanding of how policy changes affected other sites in the system. The extended HICS activation meant that the leaders serving as section chiefs were doing so in an incremental manner to their normal leadership roles for a prolonged period. This additional responsibility combined with the need to frequently and rapidly pivot directions, created the potential for burnout across staff.

Early in the pandemic response, we had substantial concerns about PPE levels and made the decision to scale back both inpatient and outpatient services. Focusing instead on aggressively acquiring additional PPE and proactive supply chain management would have allowed us to prevent deferrals of semi-urgent and elective patient care. In addition, our delay in implementing universal masking across all staff and patients led to avoidable employee exposures to the virus.

A high level of physician leadership promoted peer-to-peer communication of changes to provider workflows and ensured a robust plan for surge capacity staffing. Multidisciplinary involvement and clear lines of accountability helped facilitate rapid decision-making, but effectively managing across multiple sites with a single emergency response structure presented unanticipated challenges.

The necessity of effective communication with staff and patients during times of crisis cannot be understated. There is no such thing as over communicating. While we felt we were continuously communicating with employees at all levels through a wide range of tactics and a clear cadence, gaps in staff knowledge and understanding still existed. The potential for information overload in a pandemic is significant but can be overcome through consistent and transparent communication from leadership.

Overall, we recognize that a tremendous amount of leadership and physician time, along with numerous resources and expense, went into creating and maintaining this robust incident command system. We feel that the investment was worthwhile and has allowed our organization to respond to the pandemic with the least amount of waste possible.

Funding/Support: None declared.

Financial Disclosures: None declared.

Appendix: Available at www.wmjonline.org.

REFERENCES

1. *Hospital Incident Command System – Current Guidebook and Appendices.* California Emergency Medical Services Authority. Updated May 2016. Accessed July 14, 2020. https://emsa.ca.gov/disaster-medical-services-division-hospital-incident-command-system/

2. Tsai M, Arnold JL, Chuang C, Chi C, Liu C, Yang Y. Implementation of the hospital emergency incident command system during an outbreak of severe acute respiratory syndrome (SARS) at a hospital in Taiwan, ROC. *J Emerg Med.* 2005;28(2):185-196. doi:10.1016/j.jemermed.2004.04.021

3. Cases in the U.S., July 11, 2020. COVID Data Tracker. Centers for Disease Control and Prevention. Accessed July 14, 2020. https://covid.cdc.gov/covid-data-tracker/#datatracker-home

4. Schoenthal L. *A case study in the identification of critical factors leading to successful implementation of the hospital incident command system*. Dissertation. Naval Postgraduate School; 2015.

5. Bahrami P, Ardalan A, Nejati A, Ostadtaghizadeh A, Yari A. Factors affecting the effectiveness of hospital incident command system; findings from a systematic review. *Bull Emerg Trauma*. 2020;08(2):62-76. doi:10.30476/BEAT.2020.46445

advancing the art & science of medicine in the midwest

WMJ

WMJ (ISSN 1098-1861) is published through a collaboration between The Medical College of Wisconsin and The University of Wisconsin School of Medicine and Public Health. The mission of *WMJ* is to provide an opportunity to publish original research, case reports, review articles, and essays about current medical and public health issues.

Visit www.wmjonline.org to learn more.

Love E, Degen SC, Craig JE, Helmers RA. Activating the hospital incident command system response in a community specialty practice: the Mayo Clinic experience. *WMJ*. 2021;120(2):131-136.