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Hospital Experiences Responding to the COVID-19 Pandemic: Results of a National Pulse Survey March 23–27, 2020

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Purpose of the Review

This review provides the Department of Health and Human Services (HHS) and other decision-makers (e.g., State and local officials and other Federal agencies) with a national snapshot of hospitals' challenges and needs in responding to the coronavirus 2019 (COVID-19) pandemic. This is not a review of HHS response to the COVID-19 pandemic. We have collected this information as an aid for HHS as it continues to lead efforts to address the public health emergency and support hospitals and other first responders. In addition, hospitals may find the information about each other's strategies useful in their efforts to mitigate the challenges they are facing.

The hospital input that we describe reflects their experiences and perspectives at a point in time—March 23–27, 2020. The pandemic is fast-moving, as are the efforts to address it. We recognize that HHS, Congress, and other government entities across the Federal, State, local, and Tribal levels are taking substantial actions on a continual basis to support hospitals in responding to COVID-19. HHS has already taken and continues to take actions related to each of the challenges that hospitals identified in our survey, and the Coronavirus Aid, Relief, and Economic Security (CARES) Act provides the basis for additional actions. We present this information for HHS's and other decision-makers' consideration as they continue to respond to the COVID-19 pandemic.

Key Takeaway

Hospitals reported that their most significant challenges centered on testing and caring for patients with known or suspected COVID-19 and keeping staff safe. Hospitals also reported substantial challenges maintaining or expanding their facilities' capacity to treat patients with COVID-19. Hospitals described specific challenges, mitigation strategies, and needs for assistance related to personal protective equipment (PPE), testing, staffing, supplies and durable equipment; maintaining or expanding facility capacity; and financial concerns.

How OIG Did This Review

This information is based on brief telephone interviews ("pulse surveys") conducted March 23–27, 2020, with hospital administrators from 323 hospitals across 46 States, the District of Columbia, and Puerto Rico, that were part of our random sample. Our rate of contact was 85 percent. Interviews focused on three key questions:

1. What are your most difficult challenges in responding to COVID-19?
2. What strategies is your hospital using to address or mitigate these challenges?
3. How could government best support hospitals responding to COVID-19?

Respondent hospitals included Special Pathogen Centers, critical access hospitals, and a range of hospitals nation-wide of various sizes and characteristics. At the time of our surveys, most hospitals reported they were treating patients with confirmed or suspected COVID-19, but some were not currently treating any patients with confirmed or suspected COVID-19. (See Methodology on pages 18–20 for additional information.)

Findings at a Glance: Hospital Challenges

Severe Shortages of Testing Supplies and Extended Waits for Results

Hospitals reported that severe shortages of testing supplies and extended waits for test results limited hospitals' ability to monitor the health of patients and staff. Hospitals reported that they were unable to keep up with COVID-19 testing demands because they lacked complete kits and/or the individual components and supplies needed to complete tests. Additionally, hospitals reported frequently waiting 7 days or longer for test results. When patient stays were extended while awaiting test results, this strained bed availability, personal protective equipment (PPE) supplies, and staffing.

Widespread Shortages of PPE

Hospitals reported that widespread shortages of PPE put staff and patients at risk. Hospitals reported that heavier use of PPE than normal was contributing to the shortage and that the lack of a robust supply chain was delaying or preventing them from restocking PPE needed to protect staff. Hospitals also expressed uncertainty about availability of PPE from Federal and State sources and noted sharp increases in prices for PPE from some vendors.

Difficulty Maintaining Adequate Staffing and Supporting Staff

Hospitals reported that they were not always able to maintain adequate staffing levels or offer staff adequate support. Hospitals reported a shortage of specialized providers needed to meet the anticipated patient surge and raised concerns that staff exposure to the virus may exacerbate staffing shortages and overwork. Hospital administrators also expressed concern that fear and uncertainty were taking an emotional toll on staff, both professionally and personally.

Difficulty Maintaining and Expanding Hospital Capacity to Treat Patients

Capacity concerns emerged as hospitals anticipated being overwhelmed if they experienced a surge of patients, who may require special beds and rooms to treat and contain infection. Many hospitals reported that post-acute-care facilities were requiring negative COVID-19 tests before accepting patients discharged from hospitals, meaning that some patients who no longer required acute care were taking up valuable bed space while waiting to be discharged.

Shortages of Critical Supplies, Materials, and Logistic Support

Hospitals reported that shortages of critical supplies, materials, and logistic support that accompany more beds affected hospitals' ability to care for patients. Hospitals reported needing items that support a patient room, such as intravenous therapy (IV) poles, medical gas, linens, toilet paper, and food. Others reported shortages of no-touch infrared thermometers, disinfectants, and cleaning supplies. Isolated and smaller hospitals faced special challenges maintaining the supplies they needed and restocking quickly when they ran out of supplies.

Findings at a Glance: Hospital Challenges (continued)

Anticipated Shortages of Ventilators

Anticipated shortages of ventilators were identified as a big challenge for hospitals. Hospitals reported an uncertain supply of standard, full-feature ventilators and in some cases used alternatives to support patients, including adapting anesthesia machines and using single-use emergency transport ventilators. Hospitals anticipated that ventilator shortages would pose difficult decisions about ethical allocation and liability, although at the time of our survey no hospital reported limiting ventilator use.

Increased Costs and Decreased Revenue

Hospitals described increasing costs and decreasing revenues as a threat to their financial viability. Hospitals reported that ceasing elective procedures and other services decreased revenues at the same time that their costs have increased as they prepare for a potential surge of patients. Many hospitals reported that their cash reserves were quickly depleting, which could disrupt ongoing hospital operations.

Changing and Sometimes Inconsistent Guidance

Hospitals reported that changing and sometimes inconsistent guidance from Federal, State, and local authorities posed challenges and confused hospitals and the public. Hospitals reported that it was sometimes difficult to remain current with Centers for Disease Control and Prevention (CDC) guidance and that they received conflicting guidance from different government and medical authorities, including criteria for testing, determining which elective procedures to delay, use of PPE, and getting supplies from the national stockpile. Hospitals also reported concerns that public misinformation has increased hospital workloads (e.g., patients showing up unnecessarily, hospitals needing to do public education) at a critical time.

Findings at a Glance: Hospital Strategies

Secure Necessary PPE, Equipment, and Supplies

To secure the necessary PPE, equipment, and supplies, hospitals reported turning to new, sometimes un-vetted, and non-traditional sources of supplies and medical equipment. To try to make existing supplies of PPE last, hospitals reported conserving and reusing single-use/disposable PPE, including using or exploring ultra-violet (UV) sterilization of masks or bypassing some sanitation processes by having staff place surgical masks over N95 masks. Hospitals also reported turning to non-medical-grade PPE, such as construction masks or handmade masks and gowns, which they worried may put staff at risk.

Ensure Adequate Staffing

To ensure adequate staffing to treat patients with COVID-19, hospitals were training medical staff such as anesthesiologists, hospitalists, and nursing staff to help care for patients on ventilators.

Support Staff

To support staff, some hospitals reported assisting staff to access services such as childcare, laundry, grocery services, and hotel accommodations to promote separation from elderly family members.

Manage Patient Flow and Hospital Capacity

To manage patient flow and hospital capacity, some hospitals were providing ambulatory care for patients with less severe symptoms, offering telehealth services when possible, and setting up alternate facilities such as fairgrounds, vacant college dorms, and closed correctional facilities as additional spaces for patient care.

Secure Ventilators and Alternative Equipment to Support Patients

In anticipation of increased needs for ventilators, hospitals tried to obtain additional machines by renting ventilators, buying single-use emergency transport ventilators, or getting ventilators through an affiliated facility. Some hospitals reported converting other equipment, such as anesthesia machines, to use as ventilators.

Findings at a Glance: Hospital Requests for Assistance

The hospital input and suggestions in this report reflect a specific point in time—March 23–27, 2020. We recognize that HHS is also getting input from hospitals and other frontline responders and has already taken and continues to take actions toward each of these suggestions. For example, on March 28, 2020, the Centers for Medicare & Medicaid Services (CMS) announced the availability of advanced payments to hospitals and other providers, and on March 30, 2020, CMS announced an array of regulatory changes to increase hospitals' and other health care providers' flexibility in responding to this pandemic, including changes to support facility capacity and workforce, among many others.

We present hospitals' suggestions for ways that the government could assist them for HHS's and other decision-makers' consideration as they continue to respond to COVID-19. We note that authorities for some of the assistance sought by hospitals may reside with entities outside of HHS (e.g., other Federal agencies or States).

Testing, Supplies, and Equipment

Many hospitals noted that they were competing with other providers for limited supplies, and that government intervention and coordination could help reconcile this problem nationally. For example, hospitals wanted the government to ensure that they have access to test kits and swabs, make tests faster by allowing more entities to conduct and produce tests, and help hospitals obtain PPE supplies and other equipment such as ventilators.

Workforce Allocation

Hospitals requested that government allow reassignment of licensed professionals and realignment of duties as needed, provide flexibility with respect to licensed professionals practicing across State lines, and provide relief from regulations that may restrict using contracted staff or physicians based on business relationships.

Capacity of Facilities

Hospitals asked for relaxed rules around bed designations, the ability to establish surge facilities in non-traditional settings, and expanded flexibilities in telehealth, such as the types of services, caregivers, and modalities eligible to receive reimbursement.

Financial Assistance

All types of hospitals, and especially small rural hospitals, requested financial assistance, including faster and increased Medicare payments, and loans and grants.

Communication and Information

Hospitals sought centralized communication and public information, including evidence-based guidance, reliable data and predictive models, and a central repository for all COVID-19-related guidance, data, and information.

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FINDINGS

Hospitals reported that their most significant challenges centered on testing and caring for patients with COVID-19 and keeping staff safe

Hospitals across the country reported facing similar challenges, regardless of which stage of the process they were in—treating patients with coronavirus 2019 (COVID-19), testing patients who were potentially infected, or preparing to treat COVID-19 patients in the near future. The most commonly reported challenges centered on hospitals' efforts to confirm cases of COVID-19, to keep health care staff safe, and to provide needed services to patients requiring hospital care for a wide array of medical reasons, including COVID-19. Challenges included difficulties related to testing, lack of personal protective equipment (PPE), and staffing, including specialized staffing.

Hospitals reported that severe shortages of testing supplies and extended waits for test results limited hospitals' ability to monitor the health of patients and staff

Hospitals explained that they were unable to keep up with testing demands because they lacked complete kits and/or the individual components and supplies needed to complete tests, such as nasal swabs, viral transfer media, and reagents used to detect the virus.

These shortages left hospitals unable to effectively test staff, patients, and others in the community who reported that they were concerned about possible exposure. One hospital administrator said that across the industry, "millions [of tests] are needed, and we only have hundreds." Without access to needed testing materials, some hospitals described dividing the media in COVID-19 kits in half to double their capacity and resorting to using the transfer media in flu and strep kits to provide testing.

Hospitals described extended waits for COVID-19 test results. Hospitals reported frequently waiting 7 days or longer for test results. According to one hospital, 24 hours would typically be considered a long turnaround time for virus testing. Hospitals' reliance on external laboratories contributed to delays, particularly as these laboratories became overwhelmed with tests to process from around the State or country. Hospitals also reported delays related to infrequent specimen pickups, mailing delays, and labs' restrictive business hours. Some hospitals described success getting results more quickly by using commercial labs, whereas others received more timely results from public sources. Still others experienced inconsistent turnaround times, leaving them unable to predict when results would arrive or advise patients on how long they should self-quarantine or undertake other measures while awaiting results.

Testing challenges exacerbated other challenges, including bed availability, PPE supplies, and staffing shortages. Hospitals reported that to prevent the spread of the virus in the hospital and community, they were treating symptomatic patients as presumptive positive cases of COVID-19 (i.e., an individual with symptoms that strongly indicate COVID-19 and tests have ruled out

similar conditions, but without a positive COVID-19 test result). The scarcity of COVID-19 tests and length of time it took to get test results back meant presumptive positive patients greatly strained bed availability, PPE supplies, and staffing, as noted in Exhibit 1.

Exhibit 1: Hospitals reported that the lack of testing supplies and delays in receiving test results caused additional challenges.

Patients stayed in **beds** longer and experienced delays in transfers while they waited for tests and/or test results.

Staff used **PPE** in interactions with patients that they may not have needed to use.

Staff may not have known whether they were exposed to patients with the virus or if they had the virus. To avoid potentially spreading the virus, staff may have stopped providing clinical care while unsure if they were contagious.

Hospitals reported that some presumptive positive patients remained in the hospital for days while awaiting test results, which reduced the hospitals' availability of beds for other patients. One hospital that was holding presumptive positive patients in intensive care unit beds reported that testing with a quick turnaround would free up bed availability and increase patient and staff safety. An administrator at another hospital noted that the sooner the hospital knows whether patients are negative, the faster it can move them to a lower level of care that consumes fewer resources. As one administrator put it, "sitting with 60 patients with presumed positives in our hospital isn't healthy for anybody."

Hospitals reported that extended patient stays while awaiting COVID-19 test results also depleted PPE supplies used by staff in treating those patients during those additional days. One hospital reported that its staff, at the time of our interview, used (on average) 307 masks per day for its 23 patients with suspected cases of COVID-19. Another hospital administrator said, "The testing turnaround presents a challenge, especially for our 'rule-out' patients...we have to use a lot of PPE on those rule-outs. And especially when it's a negative, we basically used all that PPE for nothing."

The inability to quickly identify confirmed cases exacerbated challenges with hospital staffing. In one hospital, between 20-25 percent of staff were determined to be presumptively positive for COVID-19. Due to the lack of quick test results, staff who ultimately were not positive were prevented from providing clinical services for longer than necessary, causing a substantial strain on staffing availability. Another hospital noted that it wanted to set up a separate testing clinic to keep potentially infectious patients from exposing staff, but it did not have enough testing kits and/or related components and supplies to set up such a clinic.

Delays in receiving test results also made it more challenging for hospital staff to provide patients with the most appropriate care. One hospital reported that these delays put patients at risk because physicians were unable to make effective treatment decisions without the test results. Another said that some patients faced unnecessarily long hospital stays because some long-term-care facilities and nursing homes will not accept patients without a confirmed negative COVID-19 test.

Testing challenges hampered hospitals' efforts to reduce community spread, protect staff, and care for patients. Hospitals reported that their inability to test patients quickly was affecting their efforts to limit the transmission of COVID-19 within the wider community. Given supply

shortages and uncertainty about future access, hospitals reported prioritizing testing for their employees and for patients with more severe symptoms. Prioritized testing meant that many hospitals reported they were currently unable to conduct widespread testing of patients and community members to help contain the spread of COVID-19.

Hospitals raised concerns that widespread shortages of PPE put staff and patients at risk

Hospitals across the country reported that a shortage of PPE was threatening their ability to keep staff safe while they worked to treat patients with COVID-19. The most commonly needed PPE items reported were masks (including N95 masks, surgical masks, and face shields), followed by gowns and gloves.

Hospitals reported that heavier than normal use of PPE contributed to shortages. The administrator of one hospital stated that before COVID-19, the hospital's medical center used around 200 masks per day and that it was now using 2,000 per day. Delays in test results led to heavier use of PPE until a patient's status was confirmed. Another hospital administrator noted the "fear factor" associated with COVID-19, which led to all staff wearing masks instead of only a subset. One hospital administrator reported that some supply distributors limited the quantity of supplies that any one hospital could order, which meant that even with no COVID-19 patients, the hospital was depleting PPE faster than it could restock. Even among hospitals that reported that they currently had enough PPE, some noted that a surge in patients would quickly deplete their supplies. One hospital noted that with its high "burn" rate (i.e., rate of use), its inventory of PPE would last only 3 more days. Another hospital administrator expressed a common concern: not wanting to put employees in a position that "endangers their lives and the lives of their families because [they] do not have PPE."

Hospitals pointed to the lack of a robust supply chain as delaying or preventing them from restocking the PPE needed to protect staff. Hospitals reported that the supply chain for medical equipment had been disrupted because of increased demand for PPE from health care providers and others around the country. As one administrator said, everyone is "trying to pull [PPE] from the same small bucket." Another administrator stated that their hospital's purchaser was reporting delays of 3-6 months in being able to replenish key supplies, including surgical and N95 masks. Another hospital made the point that this competition for supply was unusual in that it involved not only health care providers, but also the public. An administrator at this hospital reported apprehending a person trying to steal face masks from the hospital lobby.

Hospital administrators expressed uncertainty about availability of PPE from Federal and State sources. Some hospitals noted that at the time of our interview they had not received supplies from the Strategic National Stockpile, or that the supplies that they had received were not sufficient in quantity or quality. One administrator stated that getting supplies from the stockpile was a major challenge, saying that the supplies the hospital received "won't even last a day. We need gloves, we need masks with fluid shields on—N95 masks—and we need gowns. It's the number one challenge all across the system." One health system reported that it received 1,000 masks from the Federal and State governments, but it had been expecting a larger resupply. Further, 500 of the masks were for children and therefore unusable for the health system's adult staff. One hospital reported receiving a shipment

of 2,300 N95 masks from a State strategic reserve, but the masks were not useable because the elastic bands had dry-rotted. Another hospital reported that the last two shipments it had received from a Federal agency contained PPE that expired in 2010. The shipment contained construction masks that looked different than traditional masks and did not contain a true N95 seal.

Hospitals noted sharp increases in prices for some equipment. Multiple hospitals reported concerns that prices of equipment, particularly masks, had increased significantly. One administrator noted that masks that originally cost 50 cents now cost \$6 apiece. Other hospitals reported concerns about vendors buying up supplies and selling them to the hospital at a higher cost. As one hospital administrator noted, "We are all competing for the same items and there are only so many people on the other end of the supply chain." Another administrator reported being concerned about poor quality products despite high-prices and "...wonder[ing] if you get what you paid for."

Hospitals reported that they were not always able to maintain adequate staffing levels or to offer staff adequate support

Many hospitals reported that they did not have enough staff to meet current or anticipated needs for COVID-19 patients, which put a strain on existing staff. Some hospitals reported that they were already struggling with staffing limitations prior to COVID-19, which made any additional demand particularly challenging. One hospital administrator explained that their hospital would have significant staffing shortages if faced with a surge of COVID-19 patients because the hospital relies heavily on traveling nurses. Another administrator stated, "Unlike a disaster where the surge is over in a matter of days, with this situation we have to prepare for this to last many months. We have to scale up in equipment and staff, and prepare for this to last a long, long time. This is very challenging for staff."

Hospitals reported a shortage of specialized providers needed to meet the anticipated patient surge. Several hospitals emphasized a particular need for specialized staff, such as infectious disease providers, respiratory therapists, and physicians and nurses who can provide intensive and critical care. Many hospitals also stated that they lacked trained staff that can operate ventilators and treat patients receiving that level of care. One hospital administrator said his hospital has only one ventilator and only one respiratory therapist, adding that the therapist can't work 24 hours a day monitoring the ventilator. Another administrator said, "You can build thousands of ventilators, but you need an army to manage that equipment and care for those patients."

Hospitals raised concerns that staff exposure to the virus may exacerbate staffing shortages and overwork. Several hospitals reported that they would struggle to maintain hospital operations if even a few staff were exposed to the virus. The administrator for one small, rural hospital explained that if one patient tested positive for COVID-19 the hospital would have to put 16 staff members in quarantine, which would essentially halt its operations. Administrators in two hospitals described how staffing levels in their facilities had been significantly impacted after a large number of staff had contracted or been exposed to the virus.

Hospital administrators expressed concerns that fear and uncertainty were taking an emotional toll on staff, both professionally and personally. Hospitals reported that fear of being infected, and uncertainties about the health and well-being of family members, were impacting

morale and creating anxiety among staff. As one administrator put it, "The level of anxiety among staff is like nothing I've ever seen." Another hospital administrator explained that staff were carrying a heavy burden both professionally and personally. Professionally, staff were worried about the security of their jobs and the difficult choices they must make regarding their patients, such as who should get one of a limited number of tests. They also feared contracting the virus. At one hospital, a staff member who tested positive exposed others on staff, but the hospital did not have enough kits to test those exposed. Personally, staff were worried about spreading the virus to their family members and ensuring that their families were cared for, especially with schools and daycare centers being closed. As one administrator said, "Health care workers feel like they're at war right now...[they] are seeing people in their 30s, 40s, 50s dying...This takes a large emotional toll."

Hospitals also reported substantial challenges maintaining and expanding capacity to care for patients

The other most prominent concerns reported by hospital administrators centered on maintaining facility operations while receiving and treating patients with known or suspected cases of COVID-19. These challenges included concerns about bed availability, particularly specialized beds such as intensive care unit beds, and supplies, as well as maintaining financial solvency given reductions in routine patient care and elective surgeries.

Hospitals were concerned about their capacity to treat a surge of patients who may require special beds and rooms to treat and contain infection

Hospitals anticipated being overwhelmed by a surge in COVID-19 patients, who would need specialty beds and isolation areas for effective treatment. Specifically, hospitals reported concerns about potential shortages of intensive care unit beds, negative pressure rooms, and isolation units. Hospitals also reported that, given the limitations to bed availability, it was challenging to sufficiently separate COVID-19 and non-COVID-19 patients within their facilities. Separating patients is thought to allow health care workers to better coordinate and direct needed treatment specific to COVID-19 patients as well as reduce the spread of infection. One hospital administrator observed that: "Being a rural hospital, we have to be ready to convert beds to prepare for surge capacity. We still have to take care of our non-COVID situations. We have to make people feel like we can still take care of them if they have [an] emergent situation."

Hospitals reported being unable to discharge patients to certain post-acute facilities while awaiting COVID-19 test results. Many hospitals reported that some post-acute facilities, such as skilled nursing facilities or facilities with lower-level care, were requiring negative COVID-19 tests before accepting patients discharged from hospitals. As such, patients who no longer required acute care were taking valuable bed space while waiting to be discharged. One hospital reported a case in which a post-acute-care facility refused to take a patient unless the hospital sent them a week's worth of masks for the patient and for the staff who would care for the patient, even though the patient was not positive for COVID-19. Delays in receiving test results contributed to delays in transferring patients to these lower level facilities and in freeing beds in the hospitals for incoming COVID-19 patients.

Hospitals reported concerns about securing other critical supplies, materials, and logistic support

Hospitals reported they do not have a reliable source for the equipment and supplies they use to support patient care. One hospital reported that, in addition to beds, it needed to source the materials that accompany additional beds and did not know where to order them. For example, hospitals described the supplies that support a patient room, such as intravenous therapy poles, medical gas, linens, and food. Multiple hospitals also cited a shortage of toilet paper. Hospitals discussed the need for supportive services, such as sanitation services, staffed mobile field hospitals, and mortuary services, as well as the construction work and maintenance needed to convert rooms.

Hospitals reported shortages of no-touch, infrared thermometers needed for temperature screening. One hospital reported an inability to implement a policy to screen all hospital entrants because it did not have enough no-touch thermometers to allow for timely testing and avoid long lines at entrances. (No-touch thermometers use infrared technology to rapidly provide accurate temperature results.) This hospital reported it resorted to only screening patients, staff, and vendors on a random basis. Similarly, another hospital explained that it was unable to monitor employee temperatures in a timely manner, given it had a 700-plus person staff and had just a few of the no-touch thermometers that could be devoted to staff testing rather than patient care.

Hospitals faced shortages of disinfectants and cleaning supplies. Hospitals reported insufficient inventory of essential cleaning supplies, such as disinfectant wipes, hand sanitizer, and hand soap. One hospital described being unable to buy disinfectant cleaning supplies and not knowing when supplies will be available. Another hospital described making disinfectants, such as bleach, out of on-hand chemicals, such as chlorine.

Isolated or smaller hospitals reported that they have a harder time accessing necessary supplies. Isolated and smaller hospitals reported that they were facing special challenges maintaining the supplies they need to continue their operations. One hospital noted that its island location made it difficult to restock quickly when it runs out of supplies. Another hospital reported that it was not able to request the amounts of disinfectants and other supplies that it needed from the State. Instead, products were “divvied up” by the State, and because the hospital is small, it received fewer of the products and supplies than larger hospitals.

Hospitals cited anticipated shortages of ventilators as a potential challenge

Many hospitals reported concerns that they would not have enough ventilators if faced with a surge of COVID-19 patients. One administrator explained the difficulty of predicting whether a surge would come and how many ventilators would be needed, “[We] just don’t know two weeks down the road what we will need.” Hospitals pointed to overall supply shortages and the unavailability of ventilators in other facilities, as well as the scarcity of ventilator components such as tubes.

Some hospitals’ concerns about the supply of ventilators were exacerbated by their small size. Small hospitals reported that they were able to maintain few, if any, ventilators. Some of these hospitals described contingency plans to repurpose alternative machines from other hospital

departments or to transport patients to other facilities, if needed. However, one hospital with no ventilators expressed concern that if a patient needs ventilation, neighboring hospitals may not have the space to take them. Another hospital noted that larger hospitals may be given priority in receiving ventilators.

Hospitals also explained that potential ventilator shortages would pose difficult decisions about ethical allocation and liability. As hospitals planned for a surge of patients, many reported that they were either developing or revising guidelines regarding ventilator utilization decisions, although at the time of our survey no hospital reported limiting ventilator use. Some administrators noted that with difficult decisions about ventilator allocation also come concerns about liability. For example, one hospital administrator described concerns about the liability embedded in decisions regarding which patients would receive assistance from a ventilator and which would not, concluding that: “Government needs to provide guidelines on ethics if health resources are limited and decisions need to be made about which patients to treat. Are physicians liable for their decisions if that happens?”

Hospitals described increasing costs and decreasing revenues as a threat to their financial viability

Hospitals reported that the increased costs and loss of revenue were quickly depleting cash reserves and could be disruptive to ongoing hospital operations. Hospitals reported having essentially ceased performing elective procedures and many other services, which many hospitals said accounted for a substantial portion of their revenue. Meanwhile, hospitals explained that their costs have increased as they prepare for a potential surge of patients by purchasing extra equipment (such as PPE and ventilators), remodeling rooms for negative pressure, or setting up drive-through clinics and tents. One administrator explained that having cash on hand was becoming an urgent issue with the specialty clinic volume down 80 percent, primary care volume down 50 percent, and cancellation of all elective surgeries. One administrator said their hospital is in a favorable financial position, but it is concerned it could be overwhelmed if other hospitals close. Another administrator said their hospital is tracking all of its costs for treating COVID-19 patients or potential cases, so that it can be reimbursed in the future. Other hospitals reported laying off staff due to financial difficulties, which further exacerbated workforce shortages and the hospitals’ ability to care for COVID-19 patients and the routine patient population. One administrator stated that it had been “an absolute financial nightmare for hospitals.”

Hospitals that were part of a larger health system reported that they considered themselves to be better situated to absorb financial losses compared to smaller independent and rural hospitals. Being part of a larger health system enabled hospitals to distribute losses from the hardest hit hospitals to the other hospitals in the system. Smaller, independent hospitals, such as rural hospitals and critical access hospitals, reported that they were at greater financial risk than those in larger systems and that they could face more financial uncertainty. As one hospital administrator observed, “There is no mothership to save us.”

Hospitals reported circumstances in which insurance reimbursements were not covering hospitals’ costs for providing services in the midst of the COVID-19 crisis. Hospital administrators reported that insufficient reimbursement for some services and a lack of flexibility in

billing rules that affect reimbursement amounts have created financial challenges. For example, some hospitals were using telehealth to provide services without patients having to come to the hospital, but reported that reimbursement amounts for telehealth services often do not cover the hospitals' costs. In another example, hospitals reported facing resistance from health plans to paying for patients' additional days in the hospital while the patients were awaiting COVID-19 test results. Negative test results were needed for the patients to be accepted for admission or re-admission at post-acute-care facilities and nursing homes.

Further, hospitals reported difficulty in getting reimbursed for treating patients in non-traditional spaces because there were no qualifying billing codes when treating patients in these locations. For example, to mitigate COVID-19 spread, one hospital relocated speech, occupational, and physical therapy services off-site. However, the hospital said it was unable to bill for these services because it does not own the building housing the relocated services, or meet billing requirements.

Hospitals reported that changing and sometimes inconsistent guidance from Federal, State, and local authorities posed challenges and confused hospitals and the public

Hospitals reported that it was sometimes difficult to remain current with CDC guidance when training staff on PPE and safety precautions. To reduce the spread of COVID-19 and prepare staff for patient surges, hospitals reported providing training regarding proper use of PPE, procedures for putting on and taking off PPE, and isolation practices. As new information about the virus becomes available and circumstances on the ground change, the Centers for Disease Control and Prevention (CDC) has changed its guidance over time. However, some hospital administrators expressed that it was challenging to stay up to date with CDC guidance and re-educating staff on changes to the guidance (e.g., who needs PPE, when to remove it, and when to reuse it). Some hospitals reported that the multiple changes in guidance contributed to a greater sense of confusion, fear, and distrust among staff that they could rely on hospital procedures to protect them.

Hospitals reported instances of receiving conflicting guidance from different Federal, State, and local authorities. Hospitals reported receiving conflicting guidance on criteria for testing, defining elective procedures to delay, use of PPE, and getting supplies from the national stockpile. For example, on proper use of PPE, one hospital administrator reported that CDC guidelines at that time called for use of an N95 mask for all patients suspected of COVID-19 infections, while at the same time, one State said that using a surgical mask and face shield was sufficient for staff treating patients with COVID-19. The hospital noted "[The inconsistency] makes everyone nervous. It would have been better if there was coordination and consistency in guidance among the different levels of government." Another administrator said, "It's difficult when a doctor or nurse shows you legitimate information from legitimate sources and they're contradictory."

Hospitals also reported concerns that misinformation had proliferated among the public, unnecessarily increasing workload on hospitals at a critical time. Many hospital administrators reported needing to spend time responding to fear, lack of information, and lack of understanding in their public communities, which they attributed to an absence of clear, accurate, and consistent information. These hospitals reported having to dispel misinformation and unrealistic

expectations among patients about testing and other issues, as well as having to work to educate the community about proper steps to prevent the spread of COVID-19 and when to seek medical attention versus self-isolating at home. One hospital administrator reported the challenge of taking on a public health advocacy role with mayors and county commissioners to advocate implementing social distancing at beaches, restaurants, and the like to slow the spread of COVID-19, in addition to performing normal duties. Another hospital administrator reported that employers were telling employees they cannot return to work without testing negative and that the hospital was having a difficult time educating employers that only certain people can be tested. One administrator stated: "The misinformation that is out there, and the lack of serious understanding about what we could be facing, is extraordinary. It is not helping the situation at all. We need to take this seriously."

Hospitals reported using a range of strategies to maintain or expand their capacity to care for patients and to keep staff safe

Hospital strategies often attempted to address multiple challenges. These efforts included broad-scale ideas that involved multiple providers and suppliers across the country, as well as smaller-scale, community-based efforts that rose in some cases from hospital leadership and staff, other public health stakeholders, and the general public. For a more detailed list of operational strategies that hospital administrators shared, see Appendix A.

Hospital administrators turned to alternative practices and unconventional sources to secure necessary PPE, equipment, and supplies for their staff

In an attempt to get needed equipment and supplies, hospital administrators turned to new, sometimes un-vetted, and non-traditional sources. The lack of PPE caused hospitals to consider new and un-vetted sources for PPE of whose reputability they were sometimes unsure. One hospital reported that in working with new vendors, some ordered items did not show up, were expired, or were different than what was ordered. The administrator also stated that the hospital did not have the ability to evaluate the quality of the equipment in a meaningful way.

Some facilities stated that they turned to non-traditional sources of medical equipment and supplies to combat supply chain disruptions. For instance, some hospitals considered sources for PPE that they would not normally use—such as online retailers, home supply stores, paint stores, autobody supply shops, and beauty salons.

To try to make existing supplies of PPE last, hospitals reported conserving and reusing PPE. Hospital administrators discussed implementing or considering new procedures to conserve PPE, including physically securing PPE to prevent theft or misuse, educating staff on appropriate use and conservation, and limiting PPE use according to patient condition. Other hospitals reported reducing the extent and frequency of patient interaction to reduce PPE burn; this included doing as much for a patient as possible in one interaction, having multiple providers see a patient together, or removing equipment like intravenous pumps from patients' rooms so that it could be prepped elsewhere without

PPE. At one facility, staff tested patients at remote sites to, in part, reduce PPE use. Hospitals indicated that staff performing testing remotely can remain in PPE all day, whereas staff who test inside hospitals typically change PPE frequently when moving from suspected COVID-19 patients to other patients. Another hospital described being in 'war mode' and abandoning the typical standard of care by only using N95 masks for certain higher-risk procedures for COVID-19 patients such as aerosolized procedures, which can send the virus into the air and put health care workers at risk.

Conservation strategies included reusing PPE, which is typically intended to be single-use. To reuse PPE, some hospitals reported using or exploring ultra-violet (UV) sterilization. Other hospitals reported bypassing some sanitation processes by having staff place industry masks over N95 masks so that the N95 mask could be reused. As one administrator characterized the situation, "We are throwing all of our PPE best practices out the window. That one will come back and bite us. It will take a long time for people to get back to doing best practices."

Hospitals also reported turning to non-medical-grade PPE, which they worry may put staff at risk.

Instead of reusing medical-grade equipment, some hospitals reported resorting to non-medical-grade PPE such as construction masks or handmade masks and gowns, but were unsure about the guidelines for how to safely do it. For example, one hospital administrator noted that recommendations were not clear about whether cloth masks were good enough, stating, "But if that's what we have, that's what we're going to have to use." One hospital reported using 3D printing to manufacture masks, while another hospital reported that its staff had made 500 face shields out of office supplies.

Other hospitals reported using community resources to make ends meet, including accepting homemade cloth gowns from a quilter's guild, asking volunteers to make masks, and asking for donations on their website. One hospital administrator described a plan for the local distillery to blend 100 liters of the hospital's ultrasound gel with the distillery's alcohol to produce CDC-compliant hand sanitizer.

Hospital strategies also focused on ensuring adequate staffing to treat patients with COVID-19

Hospital administrators reported using strategies aimed at ensuring they had sufficient staff with the needed skills to treat COVID-19 patients where most needed. For example, some administrators shared that their hospitals were training certain medical staff, like anesthesiologists, hospitalists, and nursing staff, to help care for patients on ventilators. Further, hospitals touted partnerships with large health care systems as beneficial because they can deploy medical staff, like nurses, to other hospitals in the health care system that may be experiencing a staff shortage.

Hospitals reported providing resources to help reduce employee burden as well as anxiety and stress

To ease anxiety and reduce outside burdens on staff that could distract them or prevent them from working, some facilities reported assisting staff to access services such as childcare, laundry pick up and drop off, grocery services, and hotel accommodations to promote separation from elderly family members. Hospitals also reported offering or expanding resources to provide employees with

emotional and psychological support. One hospital shared that it recruited external mental health clinicians and engaged its own psychiatry staff to help alleviate anxiety among hospital staff.

Some strategies focus on managing patient flow and hospital capacity to receive and treat patients

Hospital administrators reported using several strategies to manage patient flow as they respond to their communities' needs during the COVID-19 pandemic. Strategies included promoting the use of ambulatory care for patients with less severe symptoms to help relieve the pressure on emergency departments, and the use of telehealth services when possible to help protect both patients and staff through social distancing measures. In addition, to help triage patient flow into the hospitals, hospital administrators described efforts to educate community members about COVID-19 screening or testing processes to avoid patients entering the hospital if not advised under guidelines.

To address potential bed and facilities shortages, some hospitals reported converting or creating space to house a surge of additional patients. This included expanding their intensive care units, repurposing existing space, using tents, and utilizing other network facilities to separate COVID-19 patients when possible. One hospital administrator explained their strategy: "I've emptied the hospital and I'm waiting for it to come. Which it may or may not." Some hospital administrators described plans to make use of other facilities, such as local fairgrounds, vacant college dorms, and closed correctional facilities as additional space for patient care in the event of a surge.

With an uncertain supply of standard, full-feature ventilators, hospitals sought new sources and turned to alternative equipment to support patients

In anticipation of increased needs for ventilators, hospitals tried to obtain additional machines by renting ventilators, buying single-use emergency transport ventilators, or getting ventilators through an affiliated facility. Hospitals also discussed sharing supplies of ventilators between hospitals. Where these options were not available, some hospitals planned to transfer patients in need of a ventilator to a nearby hospital.

Some hospitals reported converting other equipment to use as ventilators. For example, adapting anesthesia machines and bilevel positive airway pressure machines. One hospital reported considering "doubling up on ventilators – that is, adding another hose to the ventilator so that it can push oxygen to two patients from a single machine." Another hospital detailed its staff's efforts at both converting anesthesia machines and using them to support more than one patient: "Our staff had figured out that we could transition some anesthesia machines using t-connectors and viral filters to turn them into ventilators. You jerry-rig the anesthesia machine by using a t-connector, you can support four patients off one of these."

Hospitals reported pressing needs for government assistance to meet COVID-19 challenges

Faced with the magnitude and diversity of challenges described above, hospital officials identified a range of government assistance that could support their COVID-19 response. One common theme was

the need for swift action to respond to the COVID-19 crisis. Broadly, the actions they described fall into five categories: 1) assistance with testing, supplies, and equipment (e.g., PPE); 2) assistance with workforce allocation; 3) assistance with capacity of facilities; 4) financial assistance; and 5) communication and public information.

The hospital input and suggestions reflect a specific point in time—March 23–27, 2020. We recognize that the Department of Health and Human Services (HHS) is also getting input from hospitals and other frontline responders and has already taken and continues to take action to alleviate many hospital challenges and implement suggestions. The Coronavirus Aid, Relief, and Economic Security (CARES) Act was signed into law on March 27, 2020, and provides HHS with additional funding and authorities to combat and respond to the COVID-19 pandemic, including in ways that address challenges and suggestions raised by the hospitals we surveyed.^{1, 2}

We present the following hospital suggestions on ways that the government could assist them for HHS's and other decision-makers' consideration as they continue to respond to COVID-19.

Assistance with testing, supplies, and equipment

In discussing potential government assistance related to testing, supplies, and equipment, hospitals often stated that they were in competition with other providers for limited supplies, and that government intervention and coordination could help reconcile this problem at the national level to provide equitable distribution of supplies throughout the country.

Hospitals wanted the government to:

- provide test kits and swabs, or for the government to take steps to ensure that supply chains can provide hospitals with a sufficient supply of tests;
- make testing faster by allowing more entities to produce tests and related supplies or to conduct tests;
- help in obtaining a range of supplies, such as N95 masks, surgical masks, gloves, and other protective gear;
- provide equipment such as ventilators, triage tents, and beds, among others, or take steps to bolster supply chains to provide needed equipment; and,
- loosen restrictions around the transfer or gifting of equipment and supplies (e.g., when providers want to send supplies necessary for treatment with patients when transferring them to another facility).

Assistance with workforce allocation

Given their concerns about staffing shortages, hospitals reported that they needed the government to enable maximum flexibility among their care-giving workforce.

Hospitals wanted the government to:

- enable reassignment of licensed professionals and realignment of duties within the hospital and throughout their health care networks;
- provide flexibility with respect to licensed professionals practicing across State lines,
- provide relief from regulations that may restrict using contracted staff or physicians based on business relationships.

Assistance with capacity of facilities

Hospitals reported concerns with their capacity to house a surge of COVID-19 patients. They described a range of government actions that they believe would help them on this front.

Hospitals wanted the government to:

- relax rules around the designation of bed types;
- take steps that enable hospitals to establish surge facilities in non-traditional settings such as hotels and civic centers; and
- allow more patients to be treated at home by expanding access to telehealth through flexibilities in the types of services, caregivers, and modalities eligible to receive reimbursement.

Financial assistance

Hospital representatives across all types of hospitals (and in particular small, rural hospitals) reported that they need financial assistance. Notably, some hospitals reported needing assistance in a matter of weeks in order to avoid insolvency.

Hospitals wanted the government to:

- speed up Medicare payments by dropping the 14-day wait period;
- increase Medicare payments; and
- offer loans and grants.

Communication and information

Hospitals told us that they thought the Federal Government could play a central role in messaging and communications to mitigate what they perceived to be conflicting or inconsistent guidance across levels of government, as discussed in the challenges.

Hospitals wanted the government to:

- provide evidence-based guidance (and as an example, they highlighted the usefulness of CDC's guidance on conserving N95 masks);
- provide reliable predictive models and data that would help them plan and prepare; and
- provide a single place to find the information they need, including information on the COVID-19 disease, guidance from agencies, and instructions for processes they need to follow, such as how to apply for waivers from certain requirements.

CONCLUSION

This report provides information about hospitals' experiences and perspectives in responding to COVID-19 at a point in time—March 23–27, 2020. The pandemic is fast-moving, as are the efforts to address it. Since our interviews, some hospital challenges may have worsened and others may have improved. Hospitals reported that their most significant challenges centered on testing and caring for patients with known or suspected COVID-19 and keeping staff safe. Hospitals also reported substantial challenges maintaining or expanding their facilities' capacity to treat patients with COVID-19.

We recognize that HHS, Congress, and other Federal, State, local, and Tribal entities are taking substantial action on a continual basis to support hospitals as they work on the frontlines to treat patients, ensure the safety of the health care workforce, and protect communities. We present this information for HHS's and other decision-makers' consideration as they continue to respond to the COVID-19 pandemic. In addition, hospitals may find the practical information about other hospitals' strategies useful as they confront the many challenges they face in fulfilling their mission.

BACKGROUND

Hospital Response to the COVID-19 Pandemic

The emergence of COVID-19 has created unprecedented challenges for the U.S. hospital system.³ As frontline responders, hospitals have significant responsibilities for identifying and treating patients with COVID-19. Hospitals around the country are adapting to the constantly changing face of the COVID-19 pandemic by adopting both expected and novel strategies to tackle the crisis. (See Appendix A on pages 21–25 for a list of hospital strategies reported.)

The Emergence of COVID-19

Four main sub-groupings of coronaviruses commonly circulate among humans worldwide, typically causing mild to moderate upper respiratory tract illnesses, and their incidence usually peaks annually in the United States during the winter months.^{4, 5, 6} COVID-19 is a highly contagious coronavirus.⁷ Common symptoms include fever, tiredness, dry cough, and shortness of breath, and it can be fatal in some cases.⁸

The first reported instances of COVID-19 occurred in Wuhan, Hubei Province, China, in December 2019 and January 2020.⁹ On January 13, 2020, the first patient with COVID-19 was reported outside of China, and the first patient in the U.S. was reported 7 days later.¹⁰ In late-February 2020, a hospital in California documented the first community spread transmission of COVID-19, meaning the illness was acquired through an unknown exposure in the community in the U.S.¹¹

On March 11, 2020, the World Health Organization characterized COVID-19 as a pandemic, which refers to an epidemic that has spread over several countries or continents, usually affecting a large number of people.^{12, 13} As of April 3, 2020, CDC reported 239,279 confirmed cases in the U.S. and 5,443 deaths.¹⁴

Role of HHS in Emerging Infectious Disease Preparation and Response

HHS is the lead federal agency responsible for medical support and coordination during public health emergencies, such as emerging infectious disease (EID) outbreaks. HHS operating divisions involved in the Federal response to EIDs, including the current COVID-19 response, include the Office of the Assistant Secretary for Preparedness and Response (ASPR), CDC, CMS, and the Food and Drug Administration (FDA).¹⁵

ASPR coordinates HHS's response to public health emergencies with other Federal agencies, such as the Federal Emergency Management Agency. ASPR also maintains the Strategic National Stockpile, which supplements State and local stocks of life-saving pharmaceuticals and medical supplies for use in a public health emergency.¹⁶ Since 2010, ASPR has managed the Hospital Preparedness Program, which provides grants to States and localities to distribute to hospitals and health care coalitions for improved preparedness. Health care coalitions are groups of health care providers and public health entities that

work together to prepare for, respond to, and recover from emergencies.^{17, 18} ASPR also created the Technical Resources, Assistance Center, and Information Exchange to provide information and technical assistance to health care coalitions, health care providers, and other stakeholders during public health emergencies.¹⁹

Following the Ebola outbreak in 2014, ASPR designated 10 hospitals as Ebola and Other Special Pathogen Centers.^{20, 21} ASPR defines “special pathogens” as highly infectious agents that produce severe disease in humans.²² These centers are to maintain capability to accept patients with suspected or diagnosed illness from special pathogens within 8 hours of notification and to conduct quarterly exercises to prepare for an EID outbreak.²³ During 2017–2018, all 10 Special Pathogen Centers participated in on-site readiness consultations conducted by the National Ebola Training and Education Center, which is a collaborative effort involving ASPR, CDC, and several academic institutions. The results of these assessments indicate that Special Pathogen Centers have higher levels of operational readiness to provide care to patients with special pathogens.²⁴

In response to COVID-19, ASPR is working with its partners to develop medical countermeasures and to provide resources to support the U.S. health care system’s response. On March 24, 2020, ASPR indicated that it will provide \$100 million to support U.S. health care systems in getting ready for an increase in patients with COVID-19.²⁵

CDC monitors and responds to public health emergencies, such as EIDs, conducts research, and provides guidance to health care providers, government entities, and the public.²⁶ In response to COVID-19, CDC recently released interim guidance for U.S. health care facilities on preparing for community transmission of COVID-19,²⁷ along with strategies for optimizing the supply of N95 respirators,²⁸ and steps health care facilities can take to prepare for COVID-19.²⁹

CMS oversees hospitals participating in Medicare and Medicaid by requiring them to meet Conditions of Participation, a set of minimum health and safety standards.^{30, 31} To help to address challenges presented by COVID-19, CMS has waived some requirements under the emergency authority set forth in Section 1135 of the Social Security Act.³² In addition, under its 1135 waiver authority and the Coronavirus Preparedness and Response Supplemental Appropriations Act, CMS expanded the telehealth benefit for Medicare beneficiaries to allow beneficiaries to “receive a wider range of services from their doctors without having to travel to a health care facility.”³³

FDA is responsible for protecting the public health by ensuring the safety, efficacy, and security of human and veterinary drugs, biological products, medical devices, our nation's food supply, cosmetics, and products that emit radiation.³⁴ FDA is working with hospitals and the medical industry to develop vaccines, drugs, and diagnostic tests while monitoring the medical supply chain during the COVID-19 outbreak.³⁵ FDA is also issuing emergency use authorizations for ventilators and other medical devices to treat patients.³⁶

Personal Protective Equipment

PPE is protective clothing, helmets, goggles, or other garments or equipment designed to protect the wearer's body from injury or infection. PPE also includes a variety of types of respirators and face

masks.³⁷ Most relevant to the types of PPE that hospitals are commonly using in treating patients with known or suspected cases of COVID-19 is the N95 respirator mask, a respiratory protective device designed to achieve a very close facial fit and very efficient filtration of airborne particles.³⁸

METHODOLOGY

Data Collection and Scope

We conducted a “pulse survey” (i.e., quick, point-in-time questions) by telephone (or in a few cases, by email) with administrators from a random sample of Medicare-certified hospitals across the nation and in some cases, their parent corporations. These conversations focused on three key issues regarding their COVID-19 response: 1) challenges responding to the COVID-19 pandemic, 2) strategies to mitigate the challenges, and 3) needs for government assistance.

We conducted the surveys on March 23–27, 2020 with one or more administrators. The positions of these hospital administrators were typically Chief Executive Officer, Chief Medical Officer, or representatives from teams and departments dedicated to emergency preparedness or incident command. In some cases, leadership from the relevant hospital networks participated in the interviews alongside hospital administrators or on the hospitals’ behalf.

Hospital selection and response

We had previously selected a stratified random sample of 410 hospitals for an October 2018 report examining hospital preparedness for EIDs.³⁹ We selected the 410 hospitals from 4,489 Medicare-certified hospitals with emergency departments in 2016, located in 47 States, the District of Columbia, and Puerto Rico. The sample was comprised of two strata: (1) all 10 ASPR-designated Special Pathogen Centers, and (2) 400 other hospitals with emergency departments.

For this review, we used the same sample, but removed 12 hospitals that were no longer in operation or no longer providing inpatient care, and 18 hospitals that were under investigation by OIG. This left a total sample of 380 hospitals that we attempted to survey.

We received responses from 323 of these 380 hospitals, for an 85 percent rate of contact. Among the hospitals that did not respond, 9 chose not to participate, and we were unable to contact 48 after a minimum of three attempts during the 5-day data collection period.⁴⁰

The responding hospitals are located across 46 States, the District of Columbia, and Puerto Rico. Most survey responses were provided directly by an administrator for a single hospital. However, for 46 sampled hospitals, we spoke with administrators from their parent corporation instead of, or in addition to, the hospital administrators. We considered the interviews with the administrators from the parent companies to be responses for each of the hospitals in our sample that were owned by those companies. These 46 hospitals were spread across 16 hospital networks.

The following two pages provide additional information about the hospitals that responded.

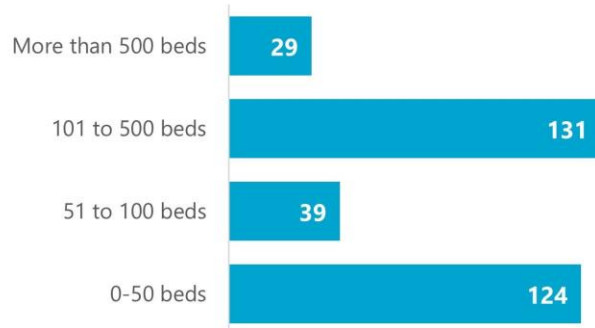
Exhibit 2: Hospital Respondents, March 23–27, 2020.

Most hospitals that we interviewed were currently treating patients with **confirmed** or **suspected** coronavirus disease 2019 (COVID-19).



Source: OIG analysis of hospital responses, 2020.

We interviewed hospitals with a range of bed counts.



Source: OIG analysis of hospital responses, 2020.

Exhibit 3: The 323 hospitals that we interviewed were located in 46 States, as well as the District of Columbia and Puerto Rico.



Exhibit 4: Among the 323 hospitals that we interviewed, some are designated as specialized hospitals.

Special pathogen centers are designated to treat patients with infectious diseases. We talked to all 10.

Major teaching hospitals are affiliated with medical schools. We talked to 24.

Critical access hospitals are smaller hospitals in rural communities. We talked to 100.

Limitations

We have three limitations: 1) hospital responses reflect a point in time (March 23–27, 2020), but the pandemic is fast-moving, as are efforts to address it. Since our interviews, some hospital challenges may have worsened and others may have improved; 2) we did not independently verify the information reported by hospital administrators. Rather, we report on hospitals’ experiences and perceptions as they were conveyed to OIG; and 3) our analysis found some evidence of response bias. Specifically, larger hospitals appear to be under-represented in the pool of respondents and as a result, their views may be under-represented.

Standards

We conducted this study in accordance with the *Quality Standards for Inspection and Evaluation* issued by the Council of the Inspectors General on Integrity and Efficiency.

APPENDIX A – STRATEGIES REPORTED BY HOSPITALS

The following are specific strategies reported by hospitals divided by topic areas: 1) securing PPE, other equipment, and supplies for staff; 2) ensuring adequate staffing to treat patients with COVID-19; 3) reducing employee anxiety and stress; 4) managing patient flow and hospital capacity; and 5) securing ventilators and alternative equipment to support patients. We note that these strategies are self-reported by the hospitals and OIG has not validated their effectiveness or safety.

Strategies to secure the necessary PPE, equipment, and supplies for staff

Seeking Alternative Sources of PPE

To supplement limited supplies, hospitals reported improvising PPE and reaching out to non-traditional sources or the community to acquire PPE.

- Using non-traditional sources of PPE, such as online retailers, home supply stores, paint stores, autobody supply shops, and beauty salons.
- Using 3D printers and office supplies to make PPE (e.g., masks).
- Repurposing masks from other industries such as dentists, veterinarians, construction workers, nail salons, etc.
- Purchasing expired PPE.
- Considering other materials to substitute for needed supplies (e.g., sandwich bags as thermometer covers, blending ultrasound gel and alcohol from a local distillery to make hand sanitizer).
- Creating supply by accepting handmade gowns and masks from community volunteers or local businesses.

Implementing Methods to Extend PPE Usage

To conserve existing PPE, hospitals reported implementing procedures to extend and/or reuse PPE.

- Reusing PPE (e.g., disposable masks, face shields, and gowns).
- Sanitizing PPE (e.g., face shields and masks) between use.
- Reducing the extent and frequency of patient interaction to reduce PPE burn.
- Physically securing PPE to prevent theft or misuse.
- Limiting use of PPE to certain staff or patients (e.g., intensive care unit staff or patients).

Strategies to ensure adequate staffing to treat patients with COVID-19

Maintaining Staffing Levels

To keep operations going, hospitals reported “cross-training” staff or bringing on additional medical staff.

- Supplementing medical staff with contractors, retired providers, nurse aides, and medical and nursing students.
- Training medical staff to support or play other roles (e.g., anesthesiologists, hospitalists, and nurses are being trained on how to operate ventilators and care for patients on the machines; non-Emergency Department physicians are being trained to triage in the Emergency Department).

Implementing Screening Procedures

To control the spread of COVID-19, hospitals reported implementing procedures to screen and monitor staff and patients.

- Monitoring the temperature of staff, patients, and visitors who come into the hospital.
- Establishing screening centers outside of the hospital.

Partnering and Collaborating

To aid in their delivery of care, hospitals reported leveraging their partnerships and collaborating with those in the community.

- Being part of a large health care system enables hospitals to deploy staff to other hospitals and share supplies (e.g., PPE).
- Rural hospitals working with other rural hospitals to share supplies and pass information about vendors.
- Working with the local emergency and health departments (e.g., fire department) to prepare and help with patient flow.
- Coordinating with local health authorities to find proper placement for people that need to isolate but do not have homes.
- Working with local community businesses and organizations (e.g., factories, fashion schools, and distilleries) to assist with supplies, such as PPE and cleaning supplies.

Strategies to help reduce employee anxiety and stress

Providing Social Support and Services

To ease anxiety and reduce outside burdens on staff, hospitals reported providing emotional and psychological support and other support services.

- Assisting staff to find childcare, grocery, and laundry services.
- Providing hotel accommodations to promote separation from elderly family members.
- Expanding Employee Assistance Program services.
- Recruiting mental health clinicians and psychiatry staff to provide emotional and psychological support.

Strategies to manage patient flow and hospital capacity

Using Ambulatory Care and Telehealth Services

To limit foot traffic, hospitals reported increasing their use of ambulatory care services and telehealth.

- Using ambulatory care clinics in the community and telehealth to triage patients in the clinic, in the car, or over the phone to limit Emergency Department visits.
- Establishing hotlines for education and advice.

Social Distancing and Restricting Access

To control the spread of COVID-19, hospitals reported restricting access to the hospital and across different parts of the hospital.

- Limiting the number of entrances to the hospital.
- Limiting the number of visitors and/or restricting visitors to attend only births and end-of-life situations.
- Dismissing hospital volunteers.
- Restricting access to common areas (e.g., making cafeterias "grab and go," closing gyms).
- Splitting the Emergency Department into separate areas - one area for patients with respiratory symptoms and another area for those without respiratory symptoms.
- Constructing temporary walls in the Emergency Department to isolate patients and create negative pressure space.
- Turning the ambulance bay into a respiratory assessment unit with portable X-rays and negative air pressure to keep unscreened patients from going through the Emergency Department.

Increasing Bed Availability

To address potential bed and facilities shortages, hospitals reported converting or creating space to house a surge in patients.

- Expanding intensive care units, repurposing existing space or using tents, and utilizing other network facilities to separate COVID-19 patients.
- Establishing alternate care sites at local fairgrounds and other spacious facilities.
- Converting nonoperational facilities in the community (e.g., prisons and college dorms) into temporary critical care units.

Conducting Community Outreach and Education

To keep communities informed and reduce public panic, hospitals reported conducting outreach and education activities to answer questions about COVID-19.

- Sending internal and external hospital communications, such as a daily newsletter; sharing information on employee health and human resources.
- Holding senior leadership meetings often with other hospitals and communicating with local and State governments.
- Partnering with local government to educate the public on the COVID-19 screening process, including indicating which potential patients should go to the emergency department and when, based on criteria such as symptoms.
- Developing ways for hospital leaders to hear hospital staff concerns, such as through daily webinars.

Eliminating Elective Surgeries and Other Procedures

To reduce risk of exposure and conserve PPE, hospitals reported eliminating elective surgeries and reducing other services such as ambulatory services, outpatient services, physical therapy, and medical imaging.

- Conserving the PPE and blood supply that would be used for elective procedures in preparation for a COVID-19 patient surge.
- Using surgery units and beds for potential COVID-19 patients.
- Reassigning surgical clinicians and staff to assist with COVID-19 response.

Activating Hospital Command Centers

To coordinate the hospitals' emergency plans, hospitals reported activating their incident command centers.

- Setting up hospital contingency plans to prepare for patient surge and demand for services (e.g., using clinic-based physicians to assist in hospital acute care, using a buddy system that pairs intensive care unit and non-intensive care unit providers together, plans for evacuating patients, as needed, to alternate settings).

Managing Financial Viability

To continue providing needed care and retain staff, hospitals reported assessing ways to manage their cash flow.

- Opening a line of credit to keep payroll going.
- Evaluating pay cuts and layoffs.
- Implementing mandatory and voluntary time off for staff that are not busy or essential, during which time staff would not be paid but would stay on staff.
- Using flexible staffing and furloughing staff.
- Identifying grants and other funding opportunities.
- Reducing inventory not related to COVID-19.

Strategies to secure ventilators and alternative equipment to support patients

Securing Ventilators and Alternative Equipment

To address a shortage in ventilators, hospitals sought new sources and alternative equipment to support patients.

- Renting ventilators, buying single-use emergency transport ventilators, or obtaining ventilators from an affiliated facility.
- Sharing supplies of ventilators between hospitals.
- Planning to transfer patients in need of ventilator to a nearby hospital.
- Converting medical equipment to use as ventilators (e.g., anesthesia machines and bi-level positive airway pressure machines).
- Fitting ventilators with additional hoses to connect more than one patient to a single machine.

APPENDIX B - GLOSSARY OF KEY TERMS

Office of the Assistant Secretary for Preparedness and Response (ASPR): HHS staff division that leads the nation's medical and public health preparedness for, response to, and recovery from disasters and public health emergencies. ASPR is assisting organizations to prepare for and respond to the COVID-19 outbreak.

Centers for Disease Control and Prevention (CDC): HHS operating division tasked with protecting the public health and safety through the control and prevention of disease, injury, and disability in the U.S. and internationally. CDC is studying COVID-19 worldwide and helping communities prepare and respond locally.

Centers for Medicare & Medicaid Services (CMS): HHS operating division that administers the Medicare program and works in partnership with State governments to administer Medicaid, the Children's Health Insurance Program, and health insurance portability standards. CMS is issuing clinical and technical guidance for providers and beneficiaries about COVID-19.

Community spread: Spread of an illness for which the source of the infection is unknown.

Coronavirus disease 2019 (COVID-19): An illness of the respiratory tract that is highly contagious. Symptoms include a cough, a high temperature (fever), and shortness of breath, and can be fatal in some cases. Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) is the virus that causes COVID-19 and is often called the COVID-19 virus; its prior name was the 2019 novel coronavirus (2019-nCoV).

Critical Access hospital (CAH): Rural primary health care hospital that gives limited outpatient and inpatient hospital services to people in rural areas. CAHs are designated by CMS, and to qualify these facilities must meet certain conditions such as: furnishing 24-hour emergency care services 7 days a week, having no more than 25 inpatient beds, and having an average length of stay of 4 days or less per patient for acute-care services. CMS is waiving requirements that CAHs limit the number of beds to 25 and length of stay of 4 days.

Emerging infectious disease (EID): Infections that have recently appeared within a population or those whose incidence or geographic range is rapidly increasing or threatens to increase in the near future.

Epidemic: Refers to an increase, often sudden, in the number of cases of a disease above what is normally expected in that population in that area.

Federal Emergency Management Agency (FEMA): Federal agency under the U.S. Department of Homeland Security that coordinates responses to natural disasters with State and local governments and provides Federal assistance.

Food and Drug Administration (FDA): HHS operating division that is responsible for protecting the public health by ensuring the safety, efficacy, and security of human and veterinary drugs, biological

products, medical devices, our nation's food supply, cosmetics, and products that emit radiation. FDA is working with hospitals and the medical industry to develop vaccines, drugs, and tests while monitoring the medical supply chain during the COVID-19 pandemic.

Intensive care unit (ICU): Specialized hospital or facility department that provides critical care and life support for acutely ill and injured patients.

Intravenous (IV) pump: Medical device that delivers fluids, such as nutrients and medications, into a patient's body in controlled amounts.

Isolation room: Negatively pressurized room to control the airflow so that the number of airborne contaminants is reduced to a level that makes the chance of cross-infection to other people within a health care facility unlikely (also see negative pressure room).

Middle East Respiratory Syndrome (MERS): Illness caused by a virus (more specifically, a coronavirus) called Middle East Respiratory Syndrome Coronavirus (MERS-CoV) and was first reported in Saudi Arabia in 2012. Most MERS patients develop severe respiratory illness with symptoms of fever, cough and shortness of breath and many people who are infected die.

N95 respirator mask: Respiratory protective device designed to achieve a very close facial fit and very efficient filtration of airborne particles. The 'N95' designation means that when subjected to careful testing, the respirator blocks at least 95 percent of very small (0.3 micron) test particles. If properly fitted, the filtration capabilities of N95 respirators exceed those of face masks.

Negative pressure room: Room in a hospital or facility that is used to contain airborne contaminants within the room.

Outbreak: Carries the same definition as "epidemic," but usually refers to a more limited geographic area.

Pandemic: Epidemic that has spread over several countries or continents, usually affecting a large number of people.

Personal protective equipment (PPE): Protective clothing, helmets, goggles, or other garments or equipment designed to protect the wearer's body from injury or infection. This includes respirators and face masks.

Positive COVID-19 test: Test has laboratory confirmation, either from a State or local laboratory or the CDC.

Powered air purifying respirators (PAPRs): Type of PPE used to safeguard workers against contaminated air. It includes a battery-powered blower that pulls air through filters then moves filtered air towards the facepiece. PAPRs are sometimes called positive-pressure masks, blower units, or just blowers (compare with elastomeric respirators).

Presumptive positive: someone with symptoms that strongly indicate COVID-19 and tests have ruled out other conditions like the flu, but there hasn't been an initial positive COVID-19 test result or

confirmatory test result. This term can also be used when an individual whose initial COVID-19 test has been positive, but the CDC or other laboratories have not confirmed it.

Pulse survey: Type of short feedback survey, typically narrow in scope and can be administered on an ongoing basis to track the same topic.

Quarantine: Condition that separates and restricts the movement of people who were exposed to a contagious disease. If the person in quarantine is determined to have contracted the disease, the person should seek treatment, as necessary, or go into isolation until they are no longer contagious.

Reagent: Substance that is used to produce a chemical reaction that allows researchers to detect, measure, produce, or change other substances. For RNA extraction tests that detect the COVID-19 virus, this is an essential component that is lacking in many health care facilities.

Respirator: Masklike device, usually of gauze, worn over the mouth, or nose and mouth, to prevent the inhalation of noxious substances. There are two main types: air-purifying respirators which remove contaminants from the air and air-supplying respirators which provide a clean source of air. "Respirator" is sometimes used interchangeably to refer to "ventilators." (Also see powered air purifying respirators and N95 respirators)

Severe Acute Respiratory Syndrome Virus (SARS): Viral respiratory illness caused by a coronavirus called SARS-associated coronavirus (SARS-CoV). SARS was first reported in Asia in February 2003. The illness spread to more than two dozen countries in North America, South America, Europe, and Asia before the SARS global outbreak of 2003 was contained.

Single-use (disposable or emergency) ventilator: A small, lightweight ventilator used outside of the hospital, typically for emergency care situations and intended only for short-term, single patient use, with no cleaning or calibration needed.

Social distancing: Limits human interaction to lower the risk of human-to-human transmission. Recommended measures can include keeping 6' away from others, avoiding social gatherings, and working from home.

Special Pathogen Centers: 10 hospitals designated by ASPR following the Ebola outbreak in 2014 to maintain capability to accept patients with suspected or diagnosed illness from special pathogens within 8 hours of notification and to conduct quarterly exercises to prepare for an EID outbreak. They receive annual assessments from the National Ebola Training and Education Center, which is a collaborative effort involving ASPR, CDC, and several academic institutions.

Special pathogens: Highly infectious agents that produce severe disease/illness in humans.

Strategic National Stockpile: Supplements State and local stocks of vaccines, medicines, and supplies for emergencies.

Surge: When patient volumes challenge or exceed a hospital's servicing capacity to effectively treat individuals.

Telehealth: Use of electronic information and telecommunications technologies to support long-distance clinical health care, patient and professional health-related education, public health and health administration.

Thermometer (no-touch): No-touch thermometers use infrared technology to rapidly provide accurate temperature results.

Traveling nurse: Nurses employed on a short-term or periodic basis. They include temporary staff, independent contractors, and seasonal hires.

Triage: Process of sorting, classifying, and assigning priority to patients based on degree of sickness or severity of injury.

Ventilator: Machine that supports breathing when a patient is having surgery or cannot breathe on their own due to a critical illness. The patient is connected to the ventilator with a tube that goes in their mouth or nose and down into their main airway.

WHO: World Health Organization, a United Nations agency that directs and coordinates international public health efforts.

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ABOUT THE OFFICE OF INSPECTOR GENERAL

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ENDNOTES

¹ Coronavirus Aid, Relief and Economic Security (CARES) Act of 2020, P.L. No. 116-136 (enacted Mar. 27, 2020).

² Actions that HHS has taken related to significant hospital challenges and suggestions include, but are not limited to, the following examples. Pursuant to the CARES Act, CMS will allow hospitals, critical access hospitals, and other Medicare providers and suppliers to request advance payment for 3 to 6 months of future Medicare claims. On March 30, 2020, CMS announced an array of regulatory changes to increase hospitals' and other health care providers' flexibility in responding to this pandemic. This includes enabling hospitals to leverage alternative sites (such as ambulatory surgical centers, hotels, and dormitories) to provide hospital services. CMS also made changes to increase the services that can be provided via telehealth and to make Medicare payments for services provided via telehealth equal to the traditional payment rates. In addition, CMS has temporarily waived certain regulations that may restrict how hospitals use physicians or contracted staff due to business or financial relationships. Specific information about these and many other HHS actions and resources is available at <https://www.hhs.gov/about/news/coronavirus/index.html>.

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- ⁴⁰ To ensure that the information in this report was released quickly, we did not include six interviews that either took place after Friday, March 27, 2020 or for which the primary interview notes were added to our database after that date. We included these 6 hospitals in the total of 48 hospitals that we were unable to contact.