Managing the COVID-19 pandemic: Five lessons learned from a Georgia healthcare system

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Abstract On 9 March 2020, Piedmont Healthcare diagnosed its first case of COVID-19. Piedmont is committed to the operating company model with a focus on the value of 'systemness' at our facilities. We dealt with the COVID-19 pandemic using a system approach but allowed for local management to modify as context required. This paper is an attempt to capture the learnings of our system by balancing these system and local dynamics. In view of the urgency of the pandemic, system and local incident command centres were set up in less than 12 hours. Piedmont used a combination of quality and process improvement methodology, as well as the Hospital Incident Command System (HICS) structure. Piedmont Henry Hospital — a 236-bed community hospital in Stockbridge, Georgia — set up its local incident command centre on 16 March that focused entirely on that single facility. Soon after the first case of COVID-19 arrived, a wave of many others soon followed, filling up the intensive care units (ICUs). The COVID-19 pandemic has been a challenging time for our healthcare system and our employees, but it has given us an opportunity to grow as an organisation. Most notably, we experienced the benefits of a true operating company model, with a centralised corporate structure supporting the hospitals and clinics within the system. In what follows we share five lessons we have learned at Piedmont Healthcare from this global pandemic.

KEYWORDS: COVID-19, Hospital Incident Command Center, pandemic management, lessons learnt, systemness

INTRODUCTION

On 9 March 2020, Piedmont Healthcare admitted its first case of COVID-19. As one of the largest healthcare systems in Georgia, Piedmont served 2.5 million patients in 2019, including nearly 1 million outpatient encounters and over 620,000 emergency room visits.[1] The private, not-for-profit organisation consists of 800 locations with over 24,000 employees dedicated to serving 11 hospitals, 59 urgent care and quick care centres and over 550 physician practice locations.[2,3] When we admitted our first COVID-19 patient, there were fewer than 800 cases across the United States. Piedmont is committed to the operating company model. As such, the COVID-19 pandemic was managed using a system approach, though allowing for local management to modify as context requires. This paper attempts to capture the learnings of our system early in the pandemic by balancing system and local dynamics.

The COVID-19 Incident Command Center (ICC) at Piedmont is made up of subject matter experts in various departments, including infection prevention, quality improvement, supply chain, finance, communications and biomedical engineering. The centre is staffed with representatives from these teams, operations leads to manage the centre, an incident commander to guide decisions, as well as volunteers to triage issues as they are reported. At the system level, we set up an ICC (Incident Command Center) based in our Piedmont Columbus Regional Midtown Hospital to centralise our response, operations and planning. Piedmont Columbus Midtown is the Region I Coordination Command Center for the Georgia Hospital Association, an important factor in the choice to set up at this location.

In view of the urgency of the pandemic, the system ICC was set up in less than 12 hours. Piedmont used a combination of quality and process improvement methodology, as well as the HICS structure.[4] The Piedmont system quality improvement team is well versed in improvement go-lives and has a very carefully designed structure in

place to ensure the success of improvement initiatives. Using this experience and the tools that have been adapted to our system, we implemented a structure to the system ICC as quickly as possible.

The system ICC utilised a combination of technological and manual solutions in order to stay organised and ensure progress in the management and prevention of COVID-19. Employing the help of a white-board painted wall, each task force's function and priorities for the day were listed in erasable markers. Also included were hand-drawn charts to track positive patients, patients under investigation (PUIs), bed availability and issues as they arose. This wall was the focal point of the system ICC and provided those on shift with a way to track and monitor progress throughout the day. Printed reports for staffing and supply levels with colour-coded indications were also included on this wall to visualise potential issues and barriers. The information on the wall was entered digitally throughout the day so that once erased, it could be referenced at a later date and time.

On the technology side of the ICC, we worked diligently to get solutions in place that could be accessed from across the system. A log used to track issues, status and barriers for a variety of items across the system was developed and utilised to manage over 500 items (and counting). This tool, which was available on a shared drive so that the local ICCs had access to the information, provided much needed structure to the chaos that can be a command centre. Issues could be reported through a call to the incident command centre or via the system ICC e-mail inbox. We relied heavily on our intranet and e-mail communications to inform staff of changes, make announcements and communicate updates. In addition to the digital resources and tools, six television screens were used to provide the incident commander and team with a variety of information, one displaying the digital bed management board for each of our 11 hospitals, one playing the local news, one on the Johns Hopkins Coronavirus Mapping tool,[5] one on the Georgia Department of Public Health (GDPH) website, one monitoring our intranet and, lastly, two teleconferencing the local incident command centres, including the one at Piedmont Henry Hospital. In order to protect our leaders, the directors participate via Webex, whereas only the executive team participates in person, physically distanced and with masks on (see Figure 1).

Piedmont Henry is a 236-bed community hospital in the city of Stockbridge, in Henry County, Georgia. Piedmont Henry offers a variety of care, including cardiovascular services, orthopaedics, stroke care, critical

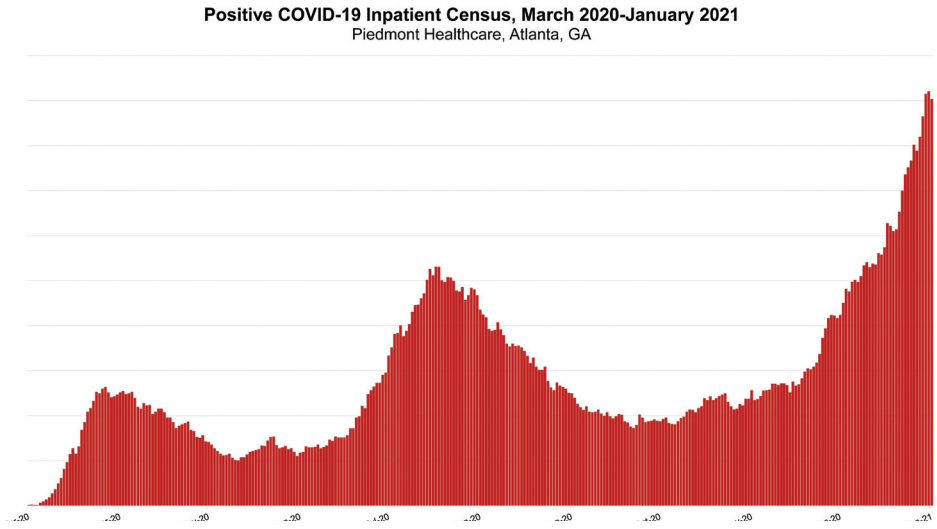
Figure 1: Piedmont Henry Hospital Incident Command Center meeting

care, rehabilitation, radiation oncology, 24-hour emergency services, medical and surgical services, as well as obstetrics and women's services, including a level III neonatal intensive care unit (NICU).[6] The local incident command centre at Piedmont Henry was set up on March 16, and the experience was similar to that of the system ICC but focused entirely on a single facility.

At Piedmont Henry, we felt the adrenaline of anticipating our first case of COVID-19. We had our first PUI in the first week of March. The patient was negative for COVID-19, but our team of executives, clinicians, infection prevention nurses, laboratory director and communications specialist spent hours on the phone discussing the patient's risk factors, when his test result would come back, how to protect the hospital staff taking care of him, how to allay the staff's fears and that of the community and how and when to inform the public of our first case. Soon our first real case showed up, followed by a wave of many others, filling up our ICU. In the early days of the pandemic, the turnaround time for COVID-19 testing was as high as ten days, which significantly impacted our personal protective equipment (PPE) supply as we awaited test results.

The pandemic, as experienced by Piedmont Healthcare, was defined by waves. Our first positive COVID-19 case was on March 9, and in May we believed we had hit our peak. Early on, most of us were in denial about the duration of the pandemic. We were used to having incident command centres set up for hurricanes and other situations that lasted at most a week. We kept thinking that, at worst, this was going to be a one-month phenomenon, maybe two, and that if we just powered through it with 'all hands on deck', we would get through it. The system ICC went virtual after 84 days, and as things began to return to 'normal', we felt as though we could take a breath. Obviously, we were wrong about the resolution of the COVID-19 outbreak, as, at the time of this writing, we are nine months into the pandemic, have weathered our second peak and are experiencing the third, and largest, peak.

The truth is that these last nine months have been a challenging time for our healthcare system and our employees, but it has given us an opportunity to grow as an organisation. Most notably, we experienced the benefits of a true operating company model, with a centralised corporate structure supporting the hospitals and clinics within the system. With that said, we are sharing five lessons we have learnt at Piedmont Healthcare from this global pandemic.



Lesson 1: Take a deep breath; this is a marathon, not a sprint

At the start of the pandemic, our system ICC staff were working around the clock with little to no breaks. As burnout was imminent, we began assigning shifts to all the staff members who had volunteered their time to the ICC. It became the responsibility of each of us in the centre to help monitor and provide support to each other as the days turned into weeks and the weeks into months. Rest and recovery are essential to successfully managing this pandemic.

At Piedmont Henry, the executive team had made the decision to assume responsibility for manning the local ICC and taking on the direct administrator on call role, as opposed to the usual protocol of backing up directors who took call. Our medical staff and our healthcare workers are tired and numb as they do not see any light at the end of the tunnel in the foreseeable future. The staff are trying to balance wearing full PPE, including face masks, eye protection, gowns and gloves while working 10- to 12-hour shifts in the summer heat, while emotionally processing the losses of the COVID-19 patients for whom they had provided care. We felt the panic and sadness associated with seeing friends and colleagues fall ill. Concurrently, our staff had to worry about potentially exposing their loved ones when they went home. Many isolated themselves from their family by staying in separate rooms at home or in temporary housing. Almost all shed their work clothing at the door and underwent extensive cleaning before embracing their loved ones when they returned from work.

As the pandemic continued, we realised we could not keep this up. We recognised that we had to take time off to rejuvenate. We began enforcing time off for each member of the executive team, our directors and our managers, with the understanding that we had to turn off our phones and e-mails and truly take a break from the responsibilities of managing the pandemic. We also willingly jumped in to cover each other so that our colleagues could have their personal time off. In the spring, after schools were closed, Piedmont arranged for pop-up day cares to accommodate workers who did not have alternative day care options. With the school season starting, those with children are struggling with the difficult personal questions of virtual versus in-person learning and the implications of how to juxtapose their parenting responsibilities with those of their professional obligations.

As leaders, most are incredibly dedicated to their work and understood the 24/7 nature of their positions during this crisis. We were all used to 'just sucking it up' in terms of long hours and being 'available' all day, every day; however, we quickly realised that we cannot take care of our communities if we do not take care of ourselves first.

Lesson 2: Nothing is perfect — there is no 'right' way to do things

There is very much that is unknown about this new virus. The guidance from the Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO), as well as our state Department of Public Health (DPH), changed frequently and often as it learnt more about the virus. Our system ICC, as did healthcare systems across the country, struggled to keep up with the frequent updates, and the constant changes took a toll on our staff at the system and local levels. Communications posted to our intranet sometimes became obsolete within 12 hours, but in the midst of this, we recognised that nothing is perfect and that with a novel virus such as COVID-19 there is no 'right' way of doing things, because the entire world was learning together.

As the system ICC made their recommendations and forwarded them to the individual hospitals, the facilities had to pivot frequently to accommodate the changing guidance and also understand how to make it work with the supplies and

staffing we had in our own facilities. This entailed daily discussions at the local ICC to adjust to the changing recommendations. In addition, as hard as it was for leaders to flex to the rapidly evolving landscape, managing this to our staff was also not easy, as they also struggled to understand the 'why' of these changes.

Changing scenarios in testing indications also occurred. With very limited testing supplies early on, decisions had to be made as to which patients to test. When lab testing became more available in the community, hospitals saw a drop in their supply. Our own lab supply waxed and waned according to the capabilities of our suppliers, and we had to educate our community as to why we could not test everyone who sought it at our doorsteps. Throughout the spring and summer, our recommendations for testing had to change owing to supply constraints, the latest best practice recommendations and community transmission of the disease. The organisation needed to adapt, and the original way of doing testing was no longer relevant. In addition, we needed to effectively communicate the changes as they occurred, in a way that promoted community and staff support.

As therapeutic options for treating COVID-19 patients were studied and became available, first on a research basis, then commercially, Piedmont had to adjust indications for their use as information regarding their effectiveness became available. Traditionally, pharmacy and therapeutics committees make changes in the formulary that can sometimes cause clinicians to complain about the lack of availability of drugs they want to use. Interestingly, as physicians began to understand how fluid the situation around this pandemic had become, there was relatively little pushback about the tightening of indications for the use of these therapeutics, as well as other changes and recommendations that were evolving as we delved further into the pandemic. This flexibility of our clinicians was important as the new therapies were approved for commercial use, and our medical staff's compliance with the indications ensured we did not waste resources that were not medically appropriate.

Lesson 3: Be kind to yourself and to others

As healthcare leaders, we all embraced the Piedmont value of 'being an owner'. All of us believe in servant leadership and rolled up our sleeves in any capacity needed to manage this pandemic. At the system level, the pressure to produce recommendations and deliverables in a timely manner to keep our staff and communities safe, with the ever revolving door of updated recommendations from various public health agencies, was significant and challenging to manage.

At the facility level, the clinical leaders carried a greater burden early on, when less was known about COVID-19 and we had to rely on our overall healthcare experience to manage the crisis. Our non-clinical leaders voiced their frustration that they could not be more helpful, and we had to reassure them that they too had value to the team. We had to be resourceful in dividing up work responsibilities so that all could feel valued. When the time came to focus on our financial recovery from the initial COVID surge, our finance and human resource leaders had to take the lead in guiding us while the clinical leaders took a break from the barrage of new information on how to manage the virus. In the system ICC, non-clinical team members were able to offer their support through shifts, creation of deliverables, answering of phones and strategy development for the management of this virus. Each individual willing to support provided value to the team; everyone had a part. This was a great reinforcement of another Piedmont value, namely that of exemplifying teamwork and connections.

Our community turned out with tremendous enthusiasm to provide support

early on in the outbreak. We received food, letters and cards and multiple parades on a daily basis. As the pandemic dragged on and everyone became fatigued, the manifestations of support dwindled, which became another loss for our staff at a time when they most needed encouragement. This is where our leaders stepped in to support our staff on a new level. As noted previously, our leaders were adamant that our teammates paid attention to their own well-being. The Piedmont Henry Leadership Team found that acts of kindness went a long way. For example, one day, the executive team served lunch to all the managers and directors. Because of social distancing, many had not seen each other in the same room for several months. We arranged seating to ensure responsible distancing but encouraged our leaders to spend time catching up personally. The smiles we saw as our leaders socially engaged were a wonderful reward for our effort. On another occasion, we had an afternoon reception with sparkling cider and cheese and fruit for our leaders. As they departed, they were each given a gift to thank them for their hard work.

Additionally, the executive team made efforts to help the staff who were taking care of COVID-19 patients by donning PPE to deliver meal trays. Although a small gesture, it showed the staff we understood what they were going through with their PPE burden and gave them extra time to focus on patient care. Piedmont Henry also had 'break-cations' for our staff, where departments were decorated in various travel themes and staff were treated to snacks based on the themes. One of our sister hospitals had travelling discos, in which the executive team showed up in departments dressed in 1970s disco outfits complete with music and a disco ball to entertain the staff. These interactions reminded us that although physical distancing was critical to maintaining safety for our staff, the socialisation of teams was critical for their emotional well-being.

The system ICC sometimes made decisions at the system level that the local facilities did not see eye to eye on. We were able to discuss our differences and make compromises that allowed us to focus on another Piedmont value, that of championing patient-centred care. By focusing on the quality and safety of the care we provided our communities, we were able to fulfil the Piedmont Purpose of making a positive difference in every life we touch.

Lesson 4: Teamwork!

As with any team, the formation of the incident command centres at the system and local levels required work and acclimation. All teams went through Tuckman's five stages of team development: forming, storming, norming, performing and adjourning.[7] At this time, we have not quite made it to the adjourning stage as we are still very much in the midst of virus management. Piedmont employs a safety culture, in which 11 error prevention tools guide us to safe and effective interactions, both at the patient and at the staff level. 'Support the Team' is one of the principles that our staff use most, and that was no different during this pandemic.

At Piedmont Henry, the Chief Executive Officer had just rejoined our executive team a month before our first COVID-19 patient presented on our doorstep. Fortunately, she had been the chief medical officer at Henry for four years and had been gone only for seven months before returning. Our new chief medical officer (CMO) had been part of the medical staff for many years and had been heartily welcomed to the executive team in her absence. As the pandemic started, we were able to quickly coalesce as a high-functioning team to help manage the situation. As with any other team, we came from different backgrounds, but we used our diverse experiences to respectfully discuss the ramifications of the rapidly changing scenarios we encountered. Ultimately, our different perspectives allowed us to make

the best decisions possible in a very fluid environment.

During the pandemic, all 11 Piedmont facilities recognised that there was an opportunity to take advantage of the large system we belonged to. In line with the systemness approach that is taken for improvement initiatives, equipment, staff, beds, supplies and lessons learnt were shared across the facilities. Patients were transferred from hospitals filled to capacity to sister facilities within the system that had available beds. Equipment such as ventilators and bi-level positive airway pressure (BiPAP) were shared according to demand. Staff floated to facilities that were in need. Piedmont performed as a true operating company in which corporate support facilitated the needs of its hospitals and clinics.

One of the important things we learnt early on is how everyone reacted differently to the fear of this novel virus. We realised that individual risk aversion and educational backgrounds led to very different approaches to managing personal safety. Being kind to each other in this respect meant that we had to recognise that not everyone felt the same way about how to approach their personal safety and that we had to be respectful even if we disagreed about others' opinions. Even in an essential field like healthcare, we realised that many were not comfortable working in a potentially risky area and accommodated those in non-patient facing areas to work from home.

There was no shortage of colleagues across the state and country that were willing to share their experiences. Early on in the pandemic, before we really had much experience with COVID-19, Dr. Henson was able to reach out to her colleagues in Seattle who had been managing the virus for approximately a month before it arrived in Georgia. We benefited from the insights they gained from addressing issues that we ultimately had as well and learnt from their successes and their failures. Working partnerships were also formed with other local healthcare systems. The sharing of best practices and information between systems in Georgia was incredibly useful. These organisations also collaborated by using their collective voice in publicly addressing the critical importance of wearing a mask, washing hands and watching one's distance (the three W's.)

Lastly, teamwork meant showing local hospital staff the support they had from their system leaders. Piedmont's system CEO, Kevin Brown, went around to the local facilities to survey the efforts and thank the staff for their hard work. The impact on the staff was transformational as they saw what teamwork at all levels of the organisation looked like.

Lesson 5: Be flexible

Our system was not immune to the global shortages of PPE, testing, staffing and beds. Clearly, the healthcare world was not ready for this pandemic, but being flexible allowed us to manage it as well as we did. When we first started preparing for this pandemic, PPE availability was a concern. Our usual way of stocking PPE in nursing units was clearly not a sustainable way to ensure we had adequate stock, as masks quickly disappeared faster than would be expected. Piedmont Henry stored PPE in their local ICC that was manned 24/7 to ensure that healthcare workers had access to the appropriate PPE based on their roles. We have since been able to manage PPE distribution in individual departments with weekly review by our supply chain manager to ensure adequate supplies.

With the first surge of COVID-19 patients inundating our intensive care unit (ICU) beds and the closure of our operating rooms (ORs) to preserve PPE, we were able to manage staffing our ICU by using our OR staff as resources on the units. We thus managed to avoid furloughing our staff and ensure that we had adequate manpower to take care of the

patients wherever they were needed. As we reopened our ORs, our second surge of COVID occurred, stressing the availability of beds. Rather than closing our ORs again, our procedural areas (cardiac catheter labs, interventional radiology, OR) flexed again by keeping post-procedural patients in their areas rather than using hospital beds needed for our admissions. This was a big help to us as it allowed us to continue normal hospital operations while managing COVID-19 patients. This flexibility is consistent with another Piedmont value, that of embracing the future, and recognising that we are not always able to do what we have done in the past.

As we started filling our hospitals with COVID patients, the system began to prepare contingency plans for when we might potentially run out of ICU beds and ventilators. Piedmont Henry prepared to turn its intermediate care unit (IMCU) and cardiac step-down units into an interim ICU. Across the system, facilities looked at their post-procedural areas as potential ICU beds. Each medical-surgical unit was assessed to determine its maximum bed capacity from a physical standpoint. As a healthcare system that was seeing COVID-19 surges at different times at different facilities, plans were developed to expeditiously transfer patients to facilities that had capacity.

At the system level, we convened a work group led by a medical ethicist, with representation by our intensivists, hospitalists, infectious disease specialists, and nursing, legal and risk management colleagues, to prepare for situations that might require limiting or reallocating scarce resources. We became familiar with the University of Pittsburgh model.[8] We performed tabletop exercises to understand how to operationalise an allocation model if needed.

CONCLUSION

Our organisation, like many others, took a financial hit from the pandemic. Between pausing elective procedures, spending above budget for supplies, therapeutics and staff and seeing a loss of our usual admissions because of the uncertainty experienced in the community, we had to make difficult decisions, including reducing leader salaries temporarily and increasing the productivity of our staff. It was a time to review how we had been doing business, and no sacred cows were allowed. We assessed every programme we had for necessity and asked if there were alternative options. Ultimately, what we ended up with was a redesigned leaner organisation.

We have described the culmination of months of managing the pandemic with a focus on Piedmont's essential values of championing patient-centric care, being an owner, exemplifying teamwork and connections and embracing the future. To ensure that our healthcare system remains successful, we continue applying these lessons in our daily work and in COVID-related decisions. We recognise that this novel virus and our response to it will most likely continue to evolve over the next year as vaccines are developed and new protocols are released. Our system's success depends on our endurance, our teamwork, our flexibility and acceptance of the inevitability of change in the world around us. And, of course, being kind always goes a long way.

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