Restructuring a Physician Assistant Department at an Orthopedic Specialty Hospital in Response to the COVID-19 Pandemic

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Introduction

In the winter of 2020, societies worldwide were confronted with an unprecedented healthcare and economic crisis in the form of SARS-CoV-2, the virus that has caused the COVID-19 pandemic. New York City was hit especially hard as a result of its population density and volume of international travelers and rapidly became the epicenter of the pandemic. The Hospital for Special Surgery (HSS), an international destination for orthopedic and musculoskeletal care in partnership with the NewYork-presbyterian (NYP) Hospital, was at the center of this crisis. The HSS physician assistant (PA) department and its staff were a highly valued and utilized resource during the crisis.

PA Profession Overview

The PA profession is unique in its medical preparation, and it positioned our PAs to adjust to the changing responsibilities in treating the varied medical and surgical patients our hospital saw with COVID-19. PAs are medical professionals who diagnose illness, develop and manage treatment plans, prescribe medications, and often serve as a patient’s principal healthcare provider. With thousands of hours of medical training, PAs are versatile and collaborative [1]. The PA didactic and clinical education and training prepares PAs to practice as generalist medical providers [2]. Unlike most medical professionals who specialize, PAs are required to maintain their generalist training through recurrent board re-certification. Additionally, PAs, like MDs, undergo surgical training and clinical rotations as part of their core medical training. The nature of a PA’s medical preparation and ongoing education provides the ideal flexibility necessary to pivot and adapt to the change in our patient population as a result of COVID-19. PAs were the ideal partners for our highly specialized physicians, who were far removed from generalist training and practice.

Pre-COVID-19 PA Role at HSS

The PA at HSS in normal times serves as an important partner and bridge to the care provided by our surgeons, internal medicine, and specialist physicians. There are approximately 200 PAs at HSS. Their roles are varied but mostly they care for the orthopedic and musculoskeletal patient. Along with our fellows and residents, PAs act as surgical first or second assistants in our operating rooms, covering 40% of staff demands on a typical day. PAs also work in private physician offices, partnering with their surgeons and acting as an entry point for patients at HSS. PAs also staff our orthopedic injury centers (OICs), which serve as an entry point for patients with musculoskeletal injury at HSS. Additionally, PAs are the primary care providers in the peri-operative setting, performing pre-operative preparation of patients in our holding areas prior to surgery, and managing patients post-operatively in both inpatient and ambulatory settings. Unlike HSS’s fellowship and residency programs that must comply to strict academic regulations, HSS PA roles are structured to optimize adaptability in the varied roles within orthopedics.
PA Department Response

The COVID-19 crisis resulted in profound changes in the type of patients, the volume of patients, and the way patients were seen at HSS. In response to this, the PA department reacted thoughtfully and efficiently to provide a durable structure to support all patient care needs.

Guiding Principles

At the outset of the crisis, senior PA department leadership established a set of guiding principles to inform our strategy and decisions. These principles needed to ensure that our PAs had the education, preparation, equipment, information, and direction while ensuring that all our staff had “skin in the game.” We thought it was critical to distribute the responsibility for patient care 24/7 and spread the risk of illness as broadly as possible to promote staff buy-in to the mission and challenges ahead. Our guiding principles included the following:

- Ongoing preparation
- All hands-on deck
  - Share the risk
  - Share the burden
- Prioritize staff safety
- Staff training, education, and ancillary support
- Prepare for return to new normal

Ongoing Preparation PA leadership performed a rapid human resource reassessment of our staff to identify capabilities and experience for future relevant patient care settings. This knowledge would become critical to inform future redeployment plans at HSS and at NYP ensuring that capabilities, experience and strength were appropriately distributed. Pre-COVID-19, the PA department’s roles and responsibilities largely revolved around peri-operative surgical and medical management of pre- and post-operative orthopedic patients. Our patient population was optimized prior to surgery and was followed by our internists and hospitalists. During the COVID-19 pandemic, our patient mix was that of acute COVID-19 infected patients, emergent orthopedic operative, general surgery post-operative, and chronic internal medicine. COVID-19 crisis patient care would now become largely medical management of patients with pulmonary, cardiac, and vascular conditions with variable co-morbidities and risks. HSS also established an orthopedic triage center (OTC). In the absence of an emergency department and in support of NYP, whose emergency department resources were stretched caring for COVID-19 patients, we developed a pathway for orthopedic patients to be re-directed to HSS’s OTC. The OTC was staffed by PAs with support by HSS fellows and residents and the on-call NYP orthopedic trauma attending physician. To prepare our PAs for this completely new role at HSS, the PA department ensured that the PAs received training for acute orthopedic injury and skills labs for casting, suturing, joint reduction, and joint injection. The PAs also received Epic electronic medical record training to reflect the new workflows developed to provide this service. The PA department worked closely with orthopedic medical leadership to develop patient selection criteria and treatment protocols to optimally manage these patients and ensure proper follow-up. During our capabilities’ assessment, we identified members of our staff who had previous critical care experience. We re-deployed them to our Department of Anesthesia to support the critical care areas we created. In partnership with NYP, we also identified volunteers to re-deploy to NYP on their medical-surgical, critical care, and emergency departments in case their staff needed additional support as the NYP system became overwhelmed.

All Hands-On Deck Staff management was a critical area that needed attentive leadership. We quickly adopted the philosophy of share the burden and risk of managing COVID-19 patients during the crisis. Early on, there was a lot of uncertainty and fear of the unknown associated with COVID-19. Because of the severity of the crisis, we needed to overhaul the PA staffing model to optimally manage our patient population. Because we did not know how the severity of the crisis would impact staffing attrition with illness or reluctance to work, the PA department established a 24/7 patient care model with 3- and 4-day work weeks and 12.5-h shifts. The pre-COVID-19 day staff were organized into 4 color teams: yellow, blue, green, and purple. The model ensured equitable staffing 7 days/week. The overnight staff was maintained, and each week a day color team flexed to nights to support our night staff. We upstaffed each team by 30% to absorb for attrition. To share the risk, we rotated the color teams during the day among our inpatient units, whether the unit was a COVID-19 unit, a medicine unit, or a surgical unit. This minimized individual staff exposure to known COVID-19 infected patients.

Prioritize Staff Safety Staff safety was the highest priority from the outset of the COVID-19 crisis. Personal protective equipment (PPE) and isolation protocols were areas of focus for the entire organization including the PAs as frontline providers. Conversely, a recent survey of PAs found that more than a third of respondents said that they treated COVID-19 patients without adequate PPE [3]. By April 2020, more than 95% of HSS PAs were fit tested for N95 masks, and the PA department had procured our own supply of surgical masks, goggles, face shields, gowns, and disinfectant wipes. Education was repeatedly provided and updated to enable staff to adjust to new safety parameters as they evolved. PAs were also frontline providers for COVID-19 testing. Education on how to properly swab a patient and protect oneself while swabbing was also provided. Additionally, managing contact and droplet isolated COVID-19 patients with education on proper donning and doffing of PPE ensured staff safety was optimized. Lastly, we worked with internal medicine to develop rounding protocols to minimize unnecessary exposure to infected patients, while leveraging technology to ensure patients could be appropriately cared for.
Staff Training, Education, and Ancillary Support

The PA department was able to leverage the PA generalist training to re-deploy PAs on the frontlines to be the first line of provider care for this new patient population. Working collaboratively with our internists and infectious disease specialists, the PA department provided our staff with didactic education of the COVID-19 patient population and some of the more common co-morbidities we expected to see. Our medical leadership in collaboration with NYP established protocols for medical management including use of hydroxychloroquine, clot prevention, and antimicrobials such as azithromycin. Laboratory monitoring protocols including D-dimer and procalcitonin levels were established to monitor risk of clots and bacterial superinfection. Most of our admissions were patients transferred from the NYP health system, and patient care information often did not transfer across disparate electronic medical records. Leveraging our close relationship, HSS senior medical and PA leadership persuaded NYP’s medical and surgical leadership that we needed to do something extraordinary to optimize communication and information sharing. In response we enabled access to NYP’s electronic medical records for our PA staff. This allowed the PA to review the patient’s care prior to admission to HSS. We also worked closely with the medical and surgical teams from NYP as their patients were admitted to HSS to ensure a seamless plan of care and good communication and handoff. We enabled access to our electronic medical records, through Epic, to NYP’s staff. We integrated NYP staff into our communication system (Perfect Serve) and established communication algorithms to ensure that all could reach the correct persons responsible for the care of the patient while ensuring a 2-way dialog. Pre-COVID-19, HSS did not have electrocardiography (ECG) technicians and phlebotomists available for inpatient care overnight. Phlebotomy and ECG were the responsibility of our overnight PAs. The PA department worked with our cardiopulmonary and central accession/venipuncture departments to ensure that we had overnight technician support to free up our PA staff to medically manage the sicker patients and surge of patient admissions that tended to come late in the day and overnight during the crisis. Lastly, the PA department established weekly livestreams to ensure continual communication to staff. We invited senior leadership to participate and provided a group chat for staff to ask any questions.

Prepare for Return to New Normal

During the COVID-19 crisis, employees reacted differently to the stress and anxiety related to exposure, illness, employment, and family. Organization staffing and employment policies were established that protected the employee. Employees were able to draw on paid time off that did not come from their own benefit time whether due to personal reasons or COVID-19 illness. This helped staff sort through their individual situation. These policies engendered trust within the PA department as evidenced by lower than normal absenteeism when adjusted for COVID-19 illness.

Once the impact of the COVID-19 crisis began to abate in New York City and at HSS, the PA department needed to assess and prepare for return to new normal. Our approach was to gradually unwind the crisis staffing model in a phased approach. We continued to have a separate team managing COVID-19 and non-COVID-19 patients. Phases included maintenance of additional overnight support as preparation for an unexpected re-surge in either patients or attrition of staff. Because our fellows and residents were not as available for inpatient management as before, we maintained our color team staffing to ensure comprehensive 24/7 inpatient coverage. We selectively returned key staff back to their pre-COVID-19 schedules. Optimal patient care coordination and PAs with sub-specialized operative skills to support the increase in operative cases informed our decision for who to first return to their pre-COVID-19 schedules.

Rather than furloughing or laying off staff, organization staffing policies were established that directed management to keep staff home at 80% pay if there was no work for them. Because volume was significantly reduced, we assessed staff need weekly and reduced staff by 36% weekly starting in late April and May 2020. Many staff volunteered to stay home at 80% if the demand was not there. While maintaining business operations and staffing structure, the PA department managed volunteers who wanted to stay home at 80% while ensuring that the burden of reduced pay was shared broadly across the department.

Lesson Learned

There were many lessons learned as a result of the COVID-19 crisis. Restructuring the entire department, putting managers in the staffing plan, and sharing the burden of off hour staffing created a cohesive all in culture that was rewarded with overwhelmingly positive feedback and good will. Prioritizing PPE and training demonstrated our commitment to staff safety. Though the crisis abated, the return to normal will be prolonged. The pace of unwinding our COVID-19 staffing model is influenced by a variety of factors both internal and external. Location of ORs open, volume of ORs with open time, cases performed, inpatient units open, and inpatient days will all inform the pace of return to normal. Lastly, we will need to identify any permanent structural changes as a result of the crisis that may require us to re-think our pre-COVID-19 patient care strategies.

Feedback from staff and senior organizational leadership was overwhelmingly positive; messages of praise and pride in how we are handling the crisis were numerous.

On a personal note, although the crisis was an incredibly stressful time, I found it to be an honor to be responsible for developing the strategy and tactics to enable the PA department to successfully pivot into crisis mode. I am so appreciative of our senior medical and administrative leadership for their input, guidance, and trust in me to develop and execute a reliable and durable plan. I am also most proud of my management team and staff, who understood the magnitude of the moment and rose to meet all challenges thrown our way.
Compliance with Ethical Standards

Conflict of Interest: Peter W. Grimaldi III, PA-C, MS, MPT, MBA, declares that he has no conflict of interest.

Human/Animal Rights: N/A

Informed Consent: N/A

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