Providing Orthopaedic Care During a Pandemic

Andrew Kanoff, MHA[1], Sean Looby, MHA[2], Eric Hume, MD[3]

[1]Administrator of Practice Operations, [2]Director, Service Line & Network Integration, [3]Associate Professor, Director of Quality & Safety

As a specialty with primarily elective surgeries and a majority of patient issues that can be postponed in the short term, orthopaedics came to a screeching halt in mid-March 2020. To ensure we could continue to provide safe access to quality care, our clinical and administrative teams pivoted quickly, working tirelessly to reimagine our business model and re-engineer workflows and protocols. While elective surgeries at Penn Medicine were postponed in March and April, our steadfast efforts allowed us to begin rebounding in May when they reopened. Several key efforts helped us get back to business fairly quickly and continue to provide care throughout the pandemic.

Telemedicine

Prior to the pandemic, we had implemented a telemedicine pilot with several of our surgeons for post-operative visits. At the time, there was limited payer coverage and reimbursement for telemedicine services, and some questioned where and how it was appropriate in a hands-on specialty like Orthopaedic Surgery. We had some but limited traction, and most patients opted for in-person visits when offered telemedicine. But when March 2020 came along seemingly overnight payers, providers and patients all embraced telemedicine. We quickly pivoted to providing over seventy percent of our total visits via telemedicine for much of March and April. This allowed us to meet patients where they were, provide safe and efficient care, and continue to see new patients. While we have since transitioned back to primarily in-person visits, we have continued to examine the optimal use of telemedicine for the long term. Permanent payer policies and reimbursement will heavily influence how we move forward, but telemedicine in some fashion is here to stay.

Practice Operations

In May we began shifting back to more in-person visits, with strict practice protocols removing almost all patient interactions with support staff and streamlining everything other than the actual visit with a provider. The traditional flow of clinic was reimagined and we recognized almost all steps could be done fully remotely or with a hybrid model that significantly decreased face to face time. As shown in the flowchart below (Figure 2), we identified nine key steps in a patients' journey through the office and were able to convert five of those to fully remote, one to a hybrid approach, and eliminate one step almost completely. Before the pandemic it would have been unthinkable to run a day of visits with no one sitting in the waiting room, however we achieved and sustained this for months. Social distancing, masking, limiting support persons, and screening questionnaires were strictly enforced and effectively prevented the spread of COVID-19 between patients and our team, and amongst colleagues.

Surgeries

From mid-March through the beginning of May, elective surgeries were postponed, with only urgent and emergent orthopaedic cases being performed. During this period, a backlog of close to 1,500 surgeries built up across the Department of Orthopaedics. While elective surgeries weren't being performed, there was a fury of activity in the month of April in determining when and how to safely return to elective surgery in the face of COVID-19.

Much of this was informed by a scoring system developed by a team of investigators at the University of Chicago, which incorporated 21 factors balancing the patient's need for surgery and the risk of contracting COVID-19. The system, called

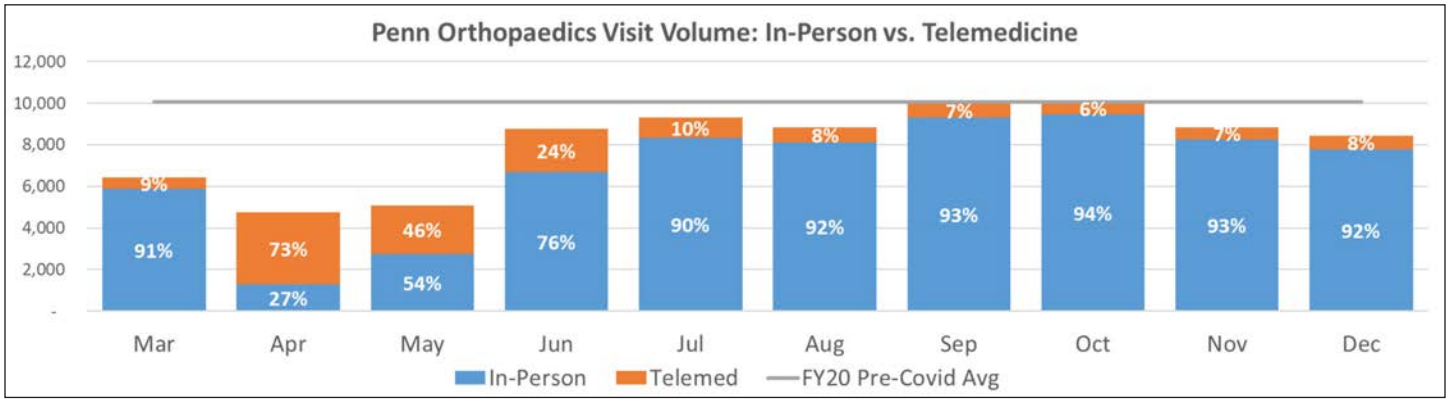

Figure 1

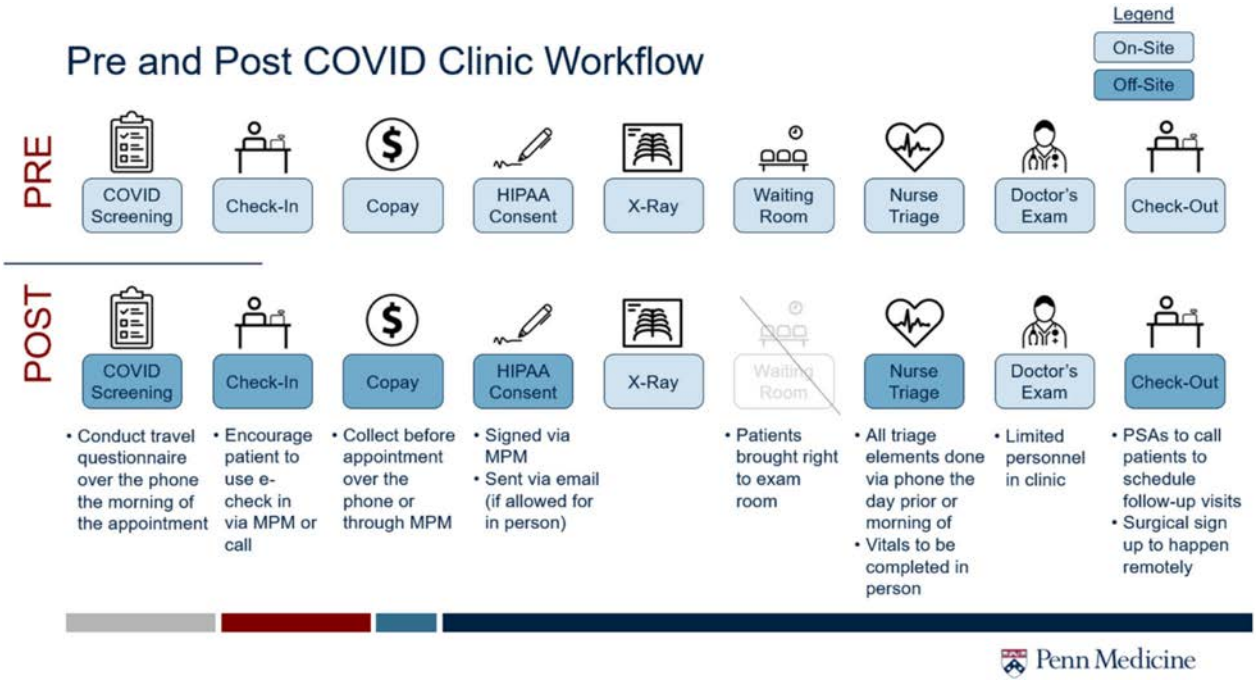

Figure 2

Medically Necessary Time-Sensitive (MeNTS) Prioritization, was published as an "article in press" on the Journal of American College of Surgeons website ahead of print on April 14. It quickly became a national standard and was widely adopted for empowering surgery departments to prioritize medically necessary operations that should not be delayed because of concerns about hospital resources or risk associated with COVID-19. Additionally, on April 17, the American College of Surgeons (ACS) published local resumption of elective surgery guidelines to help facilities to not only optimally provide safe and high-quality surgical patient care, but also to ensure that surgery resumes, and doesn't stop again. The 10 principles are highlighted in Figure 3.

Penn Medicine incorporated MeNTS and the ACS guidance and restarted elective surgery on May 4, 2020. A manual process was initially required for MeNTS scoring of each patient, which eventually became an on-line, Epic integrated tool. Figure 4 shows the number of backlog cases by division and the overall MeNTS score distribution across the Department of Orthopaedics.

Through the MeNTS scoring, optimal patients with fewer comorbidities and those likely to be discharged to home were prioritized. This allowed us to move forward while minimizing stress on the hospitals, post-acute facilities, and entire healthcare system. Pre-surgical COVID-19 testing was also implemented for all patients. Surgical cases during May through July were primarily these lower risk patients. With decreased risk of COVID-19 in Philadelphia and decreased stress on hospital systems, as of August 11 elective patients were scheduled based on our usual preparation and preoperative evaluations. Patients during this time period who had expectations for prolonged inpatient stays were

American College of Surgeons: Local Resumption of Elective Surgery Guidance (Released 4/17/20)	
COVID-19 AWARENESS	Know your community's COVID-19 numbers, including prevalence, incidence, and isolation mandates Know your COVID-19 diagnostic testing availability and policies for patients and health care workers
PREPAREDNESS	Promulgate personal protection equipment (PPE) policies for your health care workers Know your health care facility capacity (beds, intensive care units (ICUs), ventilators), including expansion plans (e.g., weekends) Ensure OR supply chain/support areas Address workforce staffing issues Assign a governance committee
PATIENT ISSUES	Patient communication Prioritization protocol/plan
DELIEVERY OF SAFE AND HIGH-QUALITY CARE	Ensuring safe, high-quality, high-value care of the surgical patient across the Five Phases of Care continuum

Figure 3

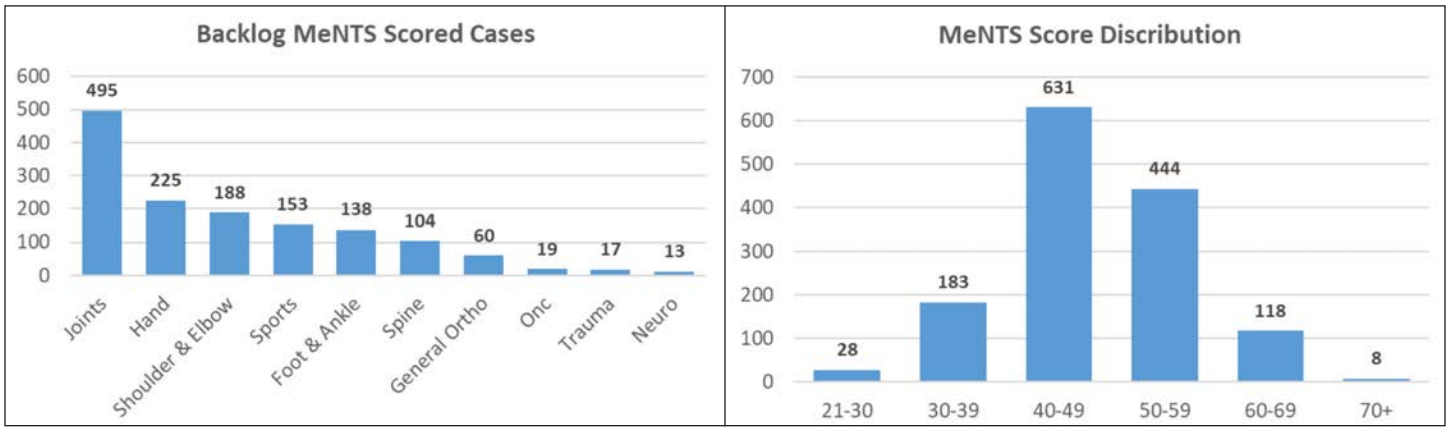

Figure 4

slowly phased back in, allowed for by a lower SNF census of COVID-19 patients. SNFs required COVID-19 testing inpatient before an admission even though all patients were tested preoperatively. With this the ability to operate on most of the available active patients was improved.

As COVID-19 cases increased in the early fall into winter, MeNTS prioritization was once again put in place effective December 1, 2020. Implementing this process through two major COVID-19 case spikes allowed us to safely treat our surgical patients while minimizing risk. These systems were effective in managing elective surgery through a complex year, with many protocols and innovations being harnessed long term.