
Lessons Learned: COVID-19 Radiology Response in a Major NYC Hot Zone



The COVID-19 pandemic had significant impact on radiology departments across the US. An article published July 4 in *Current Problems in Diagnostic Radiology* discusses the changes made by a Radiology department located in the Bronx, New York City, one of the major hot spots of the COVID-19 pandemic.

During NYC's first wave in March and April 2020, inpatient wards in the study hospital, Montefiore Medical Center (MMC) of the Albert Einstein College of Medicine were filled with COVID patients. Elective imaging volumes dropped sharply at the onset of the pandemic due to public fear of contracting COVID-19 in hospital, as well as outpatient case rescheduling. Overall imaging volumes fell by 60-70% during this time because most COVID-19 patients did not require advanced imaging and many patients with non-COVID-19 related medical conditions postponed care.

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During April 2020 outpatient imaging volumes showed the steepest decline by about 85% compared to 2019 volumes followed by emergency radiology volumes which decreased by about 50%. Inpatient imaging volume decreased approximately 20% at the start of the pandemic and remained at this level for the remainder of 2020.

Most radiology divisions experienced decreased imaging volumes except for the divisions of thoracic and interventional radiology (IR). Thoracic radiology experienced sustained volumes as chest imaging, most notably portable radiographs, continued and even increased above baseline at times for patients with known or suspected COVID-19 pneumonia. IR also had sustained case volumes as surgical specialties deferred cases.

Imaging of COVID-19 Positive or Suspected Patients

During NYC's initial surge in March and April 2020 a need for increased portable CXR capacity was seen across the health system. This challenge was met by immediately securing loaner units at no cost from multiple vendors. Prior to the surge, the hospital consisted of about 1,500 inpatient beds was performing on average 250 portable CXR's daily, whereas in March and April of 2020 the daily average was 380, an approximate 50% increase.

To limit personnel exposure, fixed modality of CT and MR scans requests were triaged by radiologists to ensure that the most appropriate examination was performed. Whenever possible the use of designated CT/MRI units for COVID-19 positive patients was implemented, and served as a useful tool for streamlining operations, controlling exposures and limiting downtime required for scanner room air exchange and cleaning. A COVID-19 radiology response team comprised of radiologists, administrators, nurses, technologists, and IT personnel was established. This team helped to rapidly develop and maintain procedures and workflows and was critical for communicating new or updated policies and processes throughout the health system.

Radiology Faculty and Staff Protection

Study authors noted that cohorting radiologists into on-site and off-site reading teams proportionate to the imaging workload and other departmental needs can decrease the risk of infection among the faculty and ensure sufficient coverage redundancy in case one cohort becomes infected. Maintaining social distancing of on-site radiologists and trainees by providing an increased number of on-site reading locations to reduce the number of individuals per reading room is crucial. They found that radiologists could work remotely to help cover inpatient and ED Radiology needs on weekends, and to balance workloads in the setting of decreased volumes.

Personnel Considerations

At MMC, authors say that significantly decreased imaging volumes during peak months of the pandemic propelled the department to shift

vacation and academic time to when case volumes were low. In turn, this allowed for more faculty to be available during the recovery phase when imaging volumes increased. Personnel who could not work due to medical or family reasons were provided with reasonable accommodation and/or allowed to take leave according to the The Family and Medical Leave Act (FMLA). With the severe strain on staffing of health systems, there may be a need for radiology staff redeployment to multidisciplinary frontline clinical teams taking care of COVID-19 patients. Study authors note that redeployment may cause significant stress and anxiety, and appropriate orientation, training, and support should be made available to the staff.

Staff Well Being and Support

Staff well-being and support are critical to help radiology personnel cope with the highly stressful environment that develops during a pandemic. The article suggests that institutions can support their staff by:

- Providing hotel nights to avoid the anxiety-provoking situation of infecting household members.
- Car rentals can be provided to staff who normally would take public transportation which may be unsafe or unavailable during the pandemic.
- Other actions to support staff may include providing free childcare, hospital meals, scrubs, and laundering.

Yee et al. also highly recommend implementing support centres and hotlines to help staff cope with their stress and anxiety. The initiation of an emotional support ally system can be a personal way to deal with the burden of the pandemic. They encourage "developing a system allowing expedited referrals to psychiatry for short-term therapy regarding emotional and psychological burnout during and after the pandemic." Other successful measures suggested to help with staff well-being include providing clergy for spiritual support and virtual parenting skills workshops.

Conclusions & Future Directions

Due to its location in the Bronx, New York, MMC provided care for many vulnerable patients in one of the first and one of the largest COVID-19 epicentres in the US. The department reported success in adapting to the new variables, and proactively performed continuous monitoring and re-evaluation of daily challenges with rapid development of new processes and guidelines to manage PPE, changing volumes, shifting locations for inpatients and outpatients, and imaging equipment needs.

Despite the increased stress of the period, article authors report effectively maintaining patient access to imaging exams and interventional procedures during the peak of the pandemic while instituting protocols to ensure the safety of patients and staff.

The team has created a 'Post-Pandemic Planning Task Force' based on lessons learned from the group's first experience with the pandemic. The focus of this task force is currently on maintaining infection control and PPE management. They have designated certain sites as restricted to those patients who screen negative for COVID-19 by history, travel and symptoms, which has served to reduce the risk of transmission to outpatients seeking imaging care, and other sites for those patients who have tested positive to receive COVID+ care with waiting room protocols and workflows in place to provide a safe environment for all patients at those sites as well.

Source: [Current Problems in Diagnostic Radiology](#)

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