The challenges and opportunities for radiology departments in the COVID pandemic

By M Kanyasa, T Lumeyu & H Ali

This article describes the experiences and challenges faced by the radiology department in a large orthopedic hospital in the Midlands area of England during the COVID-19 pandemic.
In particular the article describes the experiences during the second COVID-19 lock-down period compared to the first, explores the transition period between the two lock-downs and summarizes how safety measures were developed and implemented to keep the department running throughout the global pandemic.

The Royal Orthopaedic Hospital NHS Foundation Trust, (ROH) in Birmingham, England is renowned as a specialised oncology and orthopedic service not only locally and nationally but also on a global level. Imaging at the ROH plays a vital role in service delivery, especially in the orthopedic and oncology departments. Patients may come to radiology from their very first visit to the oncology and outpatient departments, or halfway through their hospital journey during surgery and post-surgery. Among the imaging service that we provide are specialised ultrasound guided procedures, X-rays, CT guided biopsies and injections, CT- guided radiofrequency ablations and vertebroplasties.

The COVID-19 pandemic has had a huge impact on all essential clinical and non-clinical practice in the UK's National Health Service (NHS). The crisis called for creative and innovative ideas to keep the services running while maintaining the same high-quality care under a 'new normal'. Understandably, knowledge about the disease and how best to manage it was initially limited despite regular news and scientific updates. Regular review of the response of the disease has challenged us to update our working practises to continue to offer a safe and efficient service to our patients.

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FIRST WAVE OF COVID-19

Although we always followed UK government guidelines and Public Health NHS England guidance as soon as they were released, it was always paramount that the service be kept running in the safest possible manner, which at the time meant carrying on with essential imaging and urgent operations. Thus, some of the imaging services were kept open during the first COVID wave. However, most of our intervention lists were initially cancelled from March 2020 in response to the COVID-19 pandemic. This was mainly due to the extremely limited knowledge we had at the time about the pandemic in the first lock-down. The main concern was of course how best to keep patients, staff and the wider community safe.

During the first lock-down, the implementation- of a '*long day rota*' allowed us to accommodate more patients. It was so effective that we realized that the service could be further optimized if we stopped working on an appointment-only service, so we opened our service back to cater for walk-in patients, as it was pre – COVID-19, but with an increased frequency of cleaning in-between patients. This involved housekeeping and X-ray staff thoroughly cleaning all relevant areas according to protocols. The department liaised closely with outpatients in order to keep the service running. This ensured patient safety at all times. When rules regarding shielding were eased there was a positive effect on the department as it led to an increase in staff numbers and therefore an ability to cope

With clear management and leadership, the team was able to pull together and manage to keep the department running despite staff shortages because of COVID- and non-COVID related issues.
Above left to right, Mationesa Kanyasa, Sandra Milward, Dr Rajesh Botchu, Tatenda Lumeyu, Dr Christine Azzopardi, Hodon Ali

with the growing demands of providing an efficient and safe service. One of the undertakings of the ROH during the pandemic was an extension of services to urgent trauma and emergency surgeries. We liaised with the clinicians from other trusts as to how to deliver the best care possible at the time with all the required safety measures put in place. Our safety measures continued to be updated in line with government guidelines as they were published. In addition, our trust developed its own local guidelines based on government, WHO and Public Health England guidance. All updates were shared within the departments through regularly scheduled team briefing meetings and disseminated via the trust intranet communications and trust-wide emails.

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We were adequately prepared and did the best we could in line with the evidence at the time of the first COVID-19 lock-down wave. Careful consideration of how to rearrange, and remove excess, furniture was needed to make space for social distancing measures, along with initiating a one-way system flow through the department. Further protective measures included the clean and dirty technique, continued use of Personal Protection Equipment (PPE), portable imaging when appropriate, social distancing as much as possible and increased hand hygiene and general housekeeping.

SECOND COVID WAVE

When plans for the second UK national lock-down were announced, we were still somewhat apprehensive, but nowhere near to the same extent as we were at the first lock-down. In fact, the second time around, the national lock-down was almost expected and had been foreshadowed by the UK four tier system before the lock-down actually started. Essentially, the trust was better prepared for the second lock-down thanks to the lessons learnt from the first and the transitional period in-between the lock-downs, which was still challenging. What we once referred to as "a new normal", did not stay the "new normal"' but soon became a "continuously reviewed changing normal".

While the trust is at the level four alert level, it remains open to priority one and priority two patients for operations, allowing anaesthetic support to neighboring trusts. Theatre activity was reduced in the second lock-down. However imaging, therapies and the out-patient department remained open as normal since the first lock-down. COVID-19 risk assessments carried out after lock-down one were reviewed. The result was that social distancing was increased, as was touch-point cleaning. Notices indicating the number of people in the staff room at a time were put in place.

We have always had enough PPE in the department, which has been vital because of the increased flow of activity during this second lock-down compared to the first. Priority based appointments were made. The number of on-the-day outpatient referrals for imaging was monitored daily and reduced to allow for social distancing. We increased turnover time between patients to allow increased cleaning and safety measures.

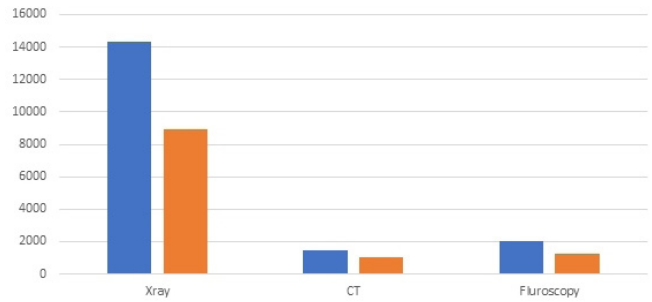
With effective and easy access to test kits and quick results, our department has remained open throughout the pandemic, even during the second lock-down. This meant suspected or symptomatic staff and patients in the department could be tested, with results received within 48 hours.

We carried on as a COVID 19-free site by making sure all patients self-isolated for 14 days before their procedure. Inpatients are swabbed twice to determine their COVID-19 status. In some instances, there were delays in obtaining those results mostly because the labs were overwhelmed with the pressure of having to produce results for a large number of patients. Because of this, it was decided during the second lock-down that there was no need for patients attending the imaging department for CT-guided injections to be tested for COVID-19. Rather, they could attend the department as walk-in patients and have their procedure carried out as such. CT guided injections would be performed as a separate list to CT guided biopsies, on separate days as part of the ongoing COVID-19 risk management.

There were concerns about the use of steroid injections during the COVID-19 pandemic especially in the first lock-down, which, at the time, caused all injection procedures to be cancelled. However as more evidence emerged and concerns were clinically evaluated, necessary measures were put in place to facilitate the continued use of steroid injection and prevent further harm or increased risk to the effects of COVID-19 as in lock down one. An evidence-based standard operating procedure was created to guide the safe use of steroid injections. This enabled us to perform steroid injection procedures for our patients from the end of the first wave right through the second wave lock down.

In imaging, we now have socially distanced daily meetings in which team leaders disseminate any changes and updates that may be happening in the trust. Innovatively, a COVID-19 team briefing WhatsApp group was created by management to further support and update the team as appropriate. This helps us all to plan ahead and to minimise any disruption to patients.

As a team under excellent management and leadership, we all pulled together and managed to keep the department running despite staff shortages of COVID related and non-COVID related issues.



The figure above shows that activity in imaging for X-ray, CT and Fluoroscopic examinations was reduced significantly between June 2019 and October 2020. The reduction in x-ray exams was nearly 40%. A similar reduction was seen in fluoroscopic examinations, with the lowest reduction (-27%) being in CT. Blue column 2019; Orange 2020

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