Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Category: Service delivery
Purpose:
To identify the reasons for rejecting radiology requests as well as the overall rejection rate at our centre.

Methods and materials:
A six-month retrospective review of all rejected GP and outpatient radiology requests was undertaken with each examination classified according to its reason for rejection. Any subsequent imaging requested in the six months following rejection was reviewed to look for related requests in both primary and secondary care.

Results:
We found overall rejection rates of 1.17% for GP and 0.6% for outpatient requests. Half of all GP rejections could have been avoided through education and signposting to appropriate clinical pathways and local policies. 14.4% of rejections were due to form errors, which could be avoided through electronic requesting.

Conclusion:
Overall GP and outpatient radiology request rejection rates were 1.17% and 0.6% respectively. Use of appropriate pathways could reduce GP rejected requests by 50%. Electronic requesting could reduce rejection by 14.4%.

Trauma in a non-trauma centre: Outcomes and incidental findings

Authors: Meghavi Mashar, Ammaarah Said, Madilha Hussain, Vivienne Eze

Category: Service delivery
Purpose:
Non-trauma centres (NTCs) receive a notable number of patients presenting with trauma. NTCs rarely investigate the demographics or outcomes of the local population presenting to them. Also, the increased imaging volume leads to incidental findings, which may need further investigation. Investigating both may allow the development and streamlining of local trauma pathways. We present a single-centre experience of the outcomes of our trauma patients and follow up of their incidental findings.

Methods and materials:
Whole-body trauma studies performed over six months at University College London Hospital, a tertiary hospital and non-major trauma centre, were collected then analysed with Microsoft Excel. Clinical presentation, experience of the outcomes of our trauma patients and follow up of their incidental findings.

Results:
149 patients had a whole-body computed tomography (CT) with 53% of patients aged over 60, categorised as silver trauma. 37% of patients had one or more injury and 8% had significant injuries. Incidental findings were detected in 51% and 31% had follow up warranted or recommended. Follow up was not conducted in 26% of cases.

Conclusion:
Our centre's experience demonstrates an equal distribution of patients with and without silver trauma. Volume of significant trauma is notable, re-establishing the need for prompt imaging. Pick-up rate of incidental findings is similar to literature but a key number of cases did not have follow up, with no explanation documented. Challenges in handling incidental findings include a large volume of results sent to clinical teams, lack of awareness in emergency and radiology teams to ensure findings are dealt with appropriately and lack of established pathways to manage non-acute trauma scan findings.

Impact of COVID-19 on CT imaging in a tertiary care hospital

Authors: Eva Pereira Mendes Serrao, Abhishekh Ashok, Obinna Abani, Sumit Karia, Ashley Shaw, David Bowden, Robert MacKenzie, Teik See

Category: Service delivery
Purpose:
The COVID-19 pandemic significantly affected healthcare systems worldwide. During pandemic waves, the UK government imposed national lockdowns and social distancing policies, leading to fluctuations in imaging workflow. Several imaging centres around the world reported reductions from 7% to 64% in imaging volume during the first wave. The aim of this study was to assess the computed tomography (CT) imaging volumes during the first and second wave of COVID-19 pandemic in a large tertiary UK centre.

Methods and materials:
Monthly CT scan volumes in a single tertiary centre were retrospectively assessed by patient service locations in 2020 and 2019. Inpatient and emergency department (ED) exams were further analysed.

Results:
Historical data shows 7% increase in CT activity annually. In 2020, total and outpatient scans declined 11% (18% accounting for the projected annual increase rate) and from 2019 16%. ED exams dropped 9% and inpatient scans increased 3% on average. ED scans dropped 37% in the peak of the first wave (April 2020) and 9% during the second lockdown (November 2020). Months between lockdown periods showed an increased or similar volume to normal practice. Upon a 30% decrease in April 2020, inpatient scans surpassed 2019 numbers. Despite a 17% reduction in hospital admissions in 2020, we found that each patient had more scans, likely due to clinical acuity.

Conclusion:
Despite significant cuts in outpatient activity and hospital capacity during the pandemic, we found a small reduction in overall activity. Activity drop was steeper in the first wave followed by progressive increase in inpatient imaging in response to hospital demand.

Reducing interruptions during radiology reporting: Beneficial effect of duty radiologist and office reporting

Authors: Kirsty McNeil, Carina Banziger, Ian Zealley

Category: Service delivery
Purpose:
Interruptions have been implicated as a cause of discrepancy, errors and potential safety incidents in radiology. The aim of this study was to identify if changes made to the location of the reporting radiologist and role of the 'duty' radiologist have reduced the interruptions for the computed tomography (CT) radiologist reporting the inpatient CT list.

Methods and materials:
This was a pragmatic prospective observational study of the inpatient CT list within Ninewells Hospital following introduction of a new duty radiologist role and change of reporting location. The number of potentially disruptive events was recorded during 20 separate one-hour observations pre-intervention in 2015 and repeated post-intervention in 2020/21.

Results:
The number of potentially disruptive events decreased from a median of 11 events per hour to 4.5 events per hour (p = 0.0001). In particular, there has been a substantial 82% reduction in the frequency of interruptions requiring the radiologist to abandon their task (122 events to 22 events over the 20 pre-intervention and 20 post-intervention one-hour observation periods).

Conclusion:
The change to introducing the role of the duty radiologist to include taking all external CT queries, and having radiologists report inpatient CT scans from their own offices, resulted in far fewer potentially disruptive events, in particular those interruptions that required the radiologist to abandon the reporting task and return to it later on.

Opportunistic CT thorax imaging for the detection of SARS-CoV-2 infection in patients presenting with an acute abdomen

Authors: Farah Din, Sara Zafar, Jody Maclachlan, Katie Planche

Category: Service delivery
Purpose:
Gastrointestinal symptoms are a presenting feature in as many as 20% of patients with SARS-CoV-2 infection. Patients with an acute surgical abdomen requiring operative intervention may also have incidental COVID-19. Studies suggest that computed tomography (CT) is 54% sensitive
in detecting asymptomatic COVID-19. From 25 March 2020 the British Society of Gastrointestinal and Abdominal Radiology (BSGAR) and the British Society of Thoracic Imaging (BSTI) recommended opportunistic thoracic imaging in patients presenting emergently with an acute abdomen, where a decision for CT abdomen and pelvis had been made. We present data from our institution assessing the prevalence of COVID-19 detected by opportunistic CT thorax imaging.

**Methods and materials:**
A retrospective picture archiving communications system (PACS) search identified 148 patients presenting with acute abdomen to the emergency department between 27 March 2020 and 1 May 2020. Clinical history, imaging protocol, CT findings and virology data were compiled.

**Results:**
Of the 148 cases meeting criteria for CT thorax, 107/148 (72.2%) had an opportunistic CT thorax: five cases (4.7%) demonstrated probable CT features of COVID-19, of which one patient proceeded to have a polymerase chain reaction (PCR) test (negative). Four patients had indeterminate CT features, but only two of these four patients went on to have PCR tests, both of which were negative. Overall, 39/148 patients were swab tested (38 negative, one inadequate for analysis).

**Conclusion:**
This study detected a low prevalence of incidental CT features of COVID-19 in patients presenting with an acute abdomen. At our institution, opportunistic CT thorax imaging did not result in significantly greater detection of disease. Data from the first wave of infection allowed us to adapt our imaging protocol and better manage imaging demands for subsequent outbreaks.

**Patient information and the consent process in lumbar nerve root injections: A quality improvement project**

**Authors:** Derek Smith, Orla Ward, Mark Rodrigues

**Category:** Service delivery

**Purpose:**
Obtaining and documenting consent is essential to ensure patients can make informed decisions about their healthcare. At present, there is variation in the consent process both from the referring team and the radiologists involved in the nerve root injection (NRI) service.

This project aims to use data from previous NRI procedures and qualitative feedback from referring clinicians, radiologists and current patients to inform and update the department’s patient information resources.

**Methods and materials:**
Data from electronic patient notes from June 2018 to March 2020 was audited, including documentation of consent from the procedure and recorded complications.

Staff and patient questionnaires were distributed to assess the current consent process.

**Results:**
No major complications from NRIs were documented in 106 reports over the 21-month period, with 2.8% (n=3) reporting worsening of symptoms. 24 patients, seven referrers and 14 radiologists fully completed the questionnaires.

37% of current patients (n=9) did not receive a patient information leaflet (PIL) from the radiology department prior to their appointment. 100% of referring clinicians (n=7) did not advise patients they would receive a PIL before their procedure, and only 15% of radiologists (n=2) felt it provided sufficient information about the potential procedural risks/comlications.

**Conclusion:**
Although no serious complications had been recorded, there is inconsistent information provided to patients in advance of NRI to allow satisfactory consent. A standardised approach to consent, with a PIL modified by patient feedback, will promote consistency and efficiency for this NRI service.

Is there value in repeating lower limb doppler ultrasound for suspected deep venous thrombosis, without clinical reassessment?

**Authors:** Claire Ryan, Oliver Hulson, Reshma Koshy, Sophie Wismayer, Adam Morrell, Catherine Sharp, Akshitha Kesharaju, Stephen Wolstenhulme, Shishir Karthik

**Category:** Ultrasound

**Purpose:**
Lower limb deep vein thrombosis (DVT) causes significant morbidity, posing a diagnostic challenge. The National Institute for Health and Care Excellence (NICE) advises repeat ultrasound evaluation six to eight days after an initial negative scan, if the Wells Score is ≥2 and D-dimer >230 ng/ml. Occasionally, in our trust, patients in whom symptoms improved have returned for repeat scans. We question the value in rescanning without clinical reassessment, aiming to investigate: a) the frequency of positive repeat scans and b) factors increasing the likelihood of DVT on the second scan. Our aims evolved in the context of the coronavirus (COVID-19) pandemic.

**Methods and materials:**
We evaluated 13 months of data (January 2018 to January 2019). Patients with two scans within six weeks (no DVT on initial scan and arranged as per NICE guidance) were selected. We retrospectively analysed data from the trust’s ultrasound database, the CDN radiology information system (CRIS) and electronic patient records system (PPM+). We analysed five months of data following the first UK COVID-19 lockdown (23 March 2020) to evaluate how the positive yield was impacted.

**Results:**
Pre-pandemic, of 1,006 patients (412 male, 594 female; age range 18—101), 19 had repeat ultrasound scans that were positive (1.9%). Following the UK national lockdown, of 170 patients, 11 were positive (6.5%).

**Conclusion:**
In the pre-lockdown setting, positive yield after a negative ultrasound is low (<2%). We support a clinical reassessment before rescan, combining persistent clinical suspicion with positive D-dimer. In a pandemic context, this has improved diagnostic yield (6.5%, p<0.01); however, long-term safety data is required.

Cardiac sarcoidosis: A single tertiary centre experience

**Authors:** Isobel Chen, Laura Clarke, Tamir Ali, Anna Beattie

**Category:** Other

**Purpose:**
Cardiac sarcoidosis presents challenges in terms of diagnosis and determination of disease activity. Histology is prone to sampling errors and therefore non-invasive imaging plays an important role.

**Methods and materials:**
Patients undergoing cardiac positron emission tomography-computed tomography (PET-CT) were identified on a database from 17 June 2016 to 1 April 2019. These scan results were correlated with cardiac magnetic resonance imaging (MRI), histopathological clinical data and follow-up PET-CT, as available. Final outcomes were determined by the cardiac sarcoid multidisciplinary team (MDT). Follow-up PET-CT data was also correlated with the ejection fraction determined by myocardial perfusion scans.

**Results:**
18 patients had a cardiac PET, of whom 15 also had a cardiac MRI. Of the 15 patients, 7 received follow-up cardiac PET-CTs. All cardiac MRIs were performed prior to PET-CT. One patient was diagnosed with myocardial oedema on MRI on short tau inversion recovery (STIR), with only one patient having T1 and T2 mapping. 13 of 15 patients had delayed myocardial enhancement. In the patients ultimately diagnosed with cardiac sarcoid, PET-CT demonstrated seven active sarcoid, three inactive, one indeterminate and one normal. On follow-up PET-CT there were improvements in 18F-fluorodeoxyglucose (FDG) activity that did not correlate with improvements in ejection fraction on myocardial perfusion scanning (MPS).

**Conclusion:**
Our data suggests that STIR imaging underdiagnoses myocardial oedema, and delayed enhancement is relatively non-specific. PET-CT improved detection of active sarcoid disease, but there were difficulties in adhering to the fasting protocol. Improvements in follow-up PET-CTs with reductions in FDG activity also unfortunately did not ultimately correspond with improvements in cardiac function. Larger data sets will be required to assess the impact of treatment on cardiac function and outcomes.