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Quality improvement and patient safety abstracts

Royal College of Physicians

Standardised post-steroid glycaemic monitoring on R-CHOP regime improves long-term risk prevention in a tertiary care centre

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Introduction

High-dose glucocorticoids such as prednisolone are generally part of initial chemotherapy (R-CHOP regime) for patients with non-Hodgkin lymphoma.[1] Moreover, limited retrospective studies have shown a nearly 30% incidence in the rate of steroid-induced hyperglycaemia following R-CHOP therapy.[2] Therefore, our primary aim was to conduct a standardised audit to investigate poor compliance with post-steroid glucose monitoring, which is indicated by WHO guidelines. Further objectives were to understand the reasons for poor compliance and to formulate local guidelines to standardise the glycaemic screening pathway for this patient population.

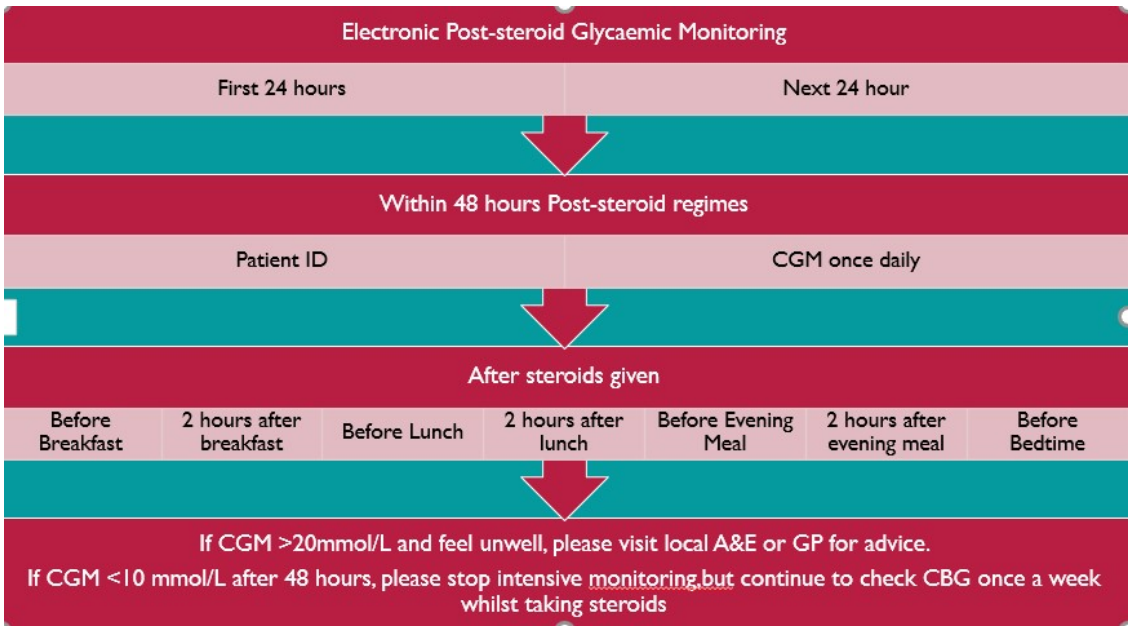
Materials and methods

A total of 30 patients were assessed from the haematology unit from 1 August to 1 September 2021. Of these, 20 received high-dose prednisolone (study population for the audit). Compliance was counted from the day patients received steroids to 48 hours post-therapy and was assessed within four domains (in terms of receiving a glucometer, proper education for instructions, proper monitoring at home, and recording results on monitoring charts delivered)[3] (Fig 2). An acceptable audit standard was devised as 100% of patients receiving high-dose steroids with full compliance in glycaemic monitoring 48 hours post-regime.

Results and discussion

It was found that only 12 out of 20 patients (60%) achieved the quality standard of full compliance. In eight (40%) of the 20 patients who did not meet the audit standard, the main reasons were poor nursing and patient education and lack of early awareness of outcomes related to poor glycaemic control following high-dose steroid treatment. A standardised glycaemic guideline was hence devised to improve the quality of blood sugar screenings.[3]

Fig 1. Post-steroid glycaemic monitoring.



This involved designating the on-call nurse in charge to flag up the poor compliance of steroid-induced hyperglycaemia screening. An electronic screening system was also devised with alerts to the haematology specialist nurses and the day unit treatment team. A re-audit following the implementation of recommendations was done between 15 September and 1 October 2021, during which it was found that out of 20 patients receiving high-dose steroids 18 (94%) met the audit standard of glycaemic screening (Fig 3).

Fig 2. Overall data analysis (first cycle).

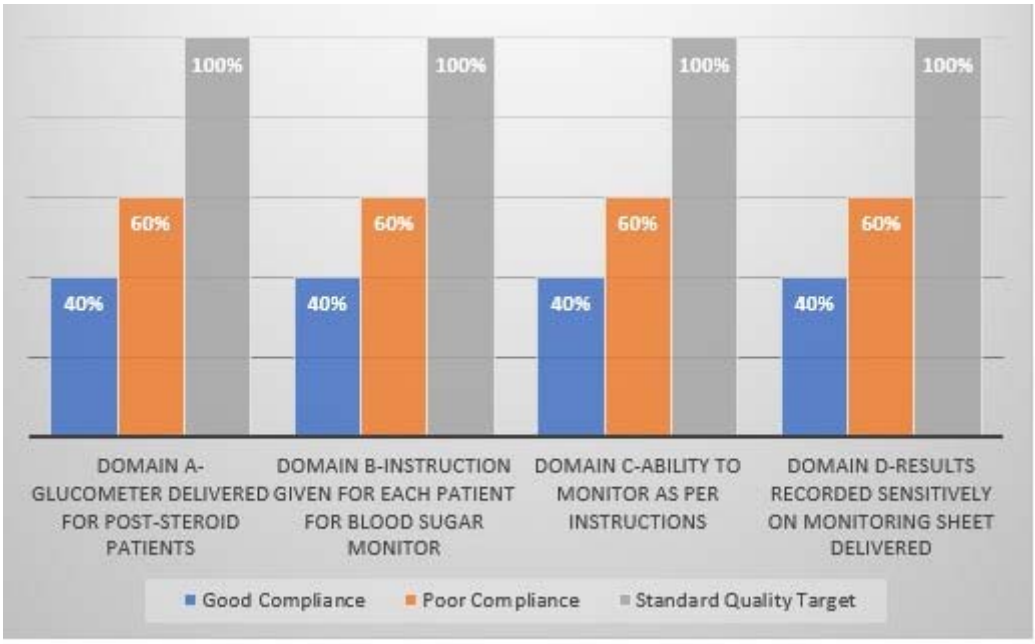
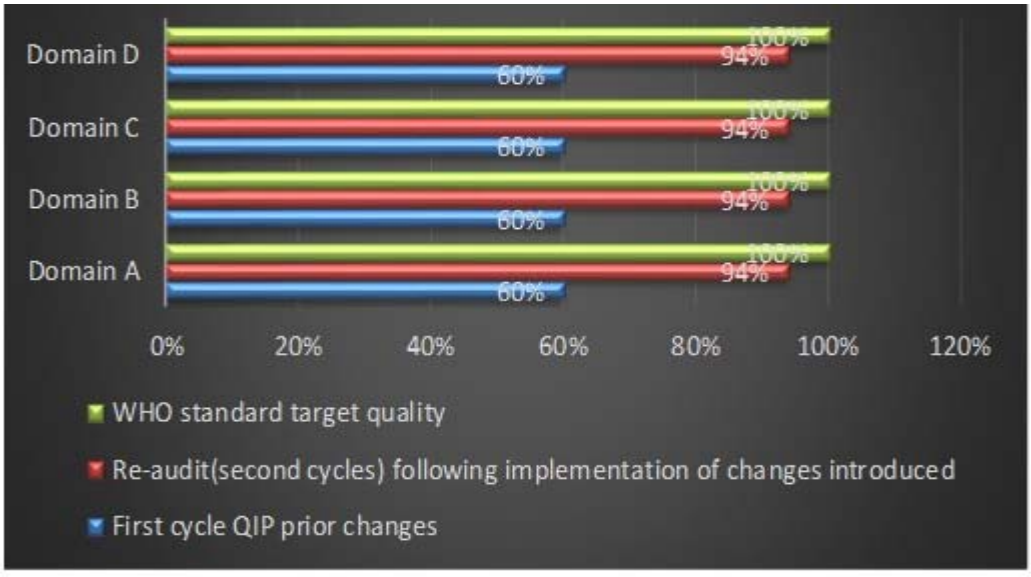


Fig 3. Targeted guideline compliance %.



A multiprofessional team discussion of steroid-induced hyperglycaemic screening will be discussed in the monthly local meeting as a quality control measure.

Conclusion

The incorporation of audit recommendations in local guidelines has led to significant improvement in patient quality of care and potential reduction in risk of serious outcomes due to poor glycaemic control.

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Introducing debriefing post-cardiac arrest at University Hospitals Dorset: a QI project

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Introduction

Resuscitation Council UK guidelines advise team debriefing post-cardiac arrest in order to allow team members to process and reflect on their experiences of the events, thereby identifying opportunities for improvement in future. However, debriefing rarely took place at University Hospitals Dorset. We aimed to promote the council's guidelines and to understand how we can improve the junior doctor experience around in-hospital cardiac arrests.

Materials and methods

This quality improvement project (QIP) was conducted at University Hospitals Dorset NHS Foundation Trust, which combines both Poole Hospital and Royal Bournemouth Hospital after the merger in 2020. Both are district general hospitals in the South of England.

Initially, a 10-question online survey was disseminated to junior doctors at University Hospitals Dorset. A total of 62 responses were obtained. The main findings included 54% of responders stating they often do not have time to process how they feel about what happened at a cardiac arrest call; 79% had attended cardiac arrest calls where they felt resuscitation was inappropriate; delay in discussion about resuscitation with the patient/family was deemed the most likely reason for inappropriate resuscitation (63%); and 68% of responders chose debriefing post-cardiac arrest as an area for improvement.

After review of current evidence-based models for debriefing, our proposed change was to add a debrief section to the existing online 'Medical Emergency Team (MET) form' on the electronic patient record (EPR) system that is completed after every cardiac arrest. This would prompt clinicians to have a debrief. We planned to start implementation and data collection at Poole Hospital first because of their use of the electronic MET form, which Royal Bournemouth Hospital does not use yet.

Implementation of changes and data collection began from 1 February 2021 at Poole Hospital. The first round of data collection was until May 2021 and is still ongoing.

Results and discussion

Documented debriefs were analysed for a debrief lead and common themes discussed (Table 1 and 2). 9/17 (53%) cardiac arrests during this period had a documented debrief, which is a major improvement considering prior to this QIP almost zero debriefs occurred.

Currently, data is still being collected at Poole Hospital, and we have yet to implement the changes at Royal Bournemouth Hospital. Another online survey is due to be disseminated to junior doctors again at the trust to obtain their views on the new changes. However, we require a longer data collection and testing period (at least 1 year) before doing so.

The main challenges encountered were as a result of the coronavirus pandemic, which slowed data collection as there were overall fewer hospital attendances and admissions for non-COVID related

conditions. Clinicians also recognised the importance of addressing resuscitation earlier with patients, reducing the number of inappropriate attempts.

Table 1. Debrief lead and themes discussed

Patient	Who lead the Debrief	Themes discussed					
		Communication	Teamwork	ALS Protocol	Safety	Areas of Improvement	Other
1	CCOT/Resus	Y	Y	Y	Y	Y	None
2	N/A						
3	CCOT/Resus	Y	Y	Y	Y	Y	None
4	N/A						
5	Intensive Care Registrar	Y	Y	N	Y	Y	None
6	Medical Registrar	Y	Y	Y	Y	N	None
7	N/A						
8	N/A						
9	Senior Nurse	Y	Y	Y	Y	Y	None
10	Senior Nurse	Y	Y	N	Y	Y	None

Table 2. Debrief lead and themes discussed (cont)

Patient	Who lead the Debrief	Themes discussed					
		Communication	Teamwork	ALS Protocol	Safety	Areas of Improvement	Other
11	CCOT/Resus	Y	Y	Y	Y	N	None
12	N/A						
13	CCOT/Resus	Y	Y	N	Y	N	None
14	CCOT/Resus	Y	N	Y	Y	N	None
15	N/A						
16	N/A						
17	N/A						

Conclusion

The new post-cardiac arrest debriefing form was successful in increasing the number of debriefs occurring at Poole Hospital between February and May 2021. The next steps involve implementing the changes at Royal Bournemouth Hospital and auditing its success there.

Local safety standards in invasive procedures in pain medicine

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Introduction

A study in 2009 reported that a series of serious incidences deemed preventable with guidance and safety measures, defined by the NHS Events Framework as Never Events (NE),[1] continue to happen across the UK. To mitigate these serious incidents, the National Patient Safety Agency (NPSA) released a report recommending the creation and implementation of National Safety Standards for Invasive Procedures (NatSSIPs),[2] and when applied at a local level, Local Safety Standards for Invasive Procedures (LocSSIPs).

Materials and methods

In 2017, University Hospitals Birmingham (UHB) NHS Foundation Trust set up a LocSSIP steering committee, with the commitment to develop and implement LocSSIPs across the trust. The aim of this committee was to ensure the ongoing safety of patients under UHB care and achieve a measurable reduction of serious incidences in invasive procedures conducted outside of theatres.

Our aim was to create and develop LocSSIPs within the Pain Medicine Department. By making patient safety central to the introduction, we were able to identify several procedures that could benefit from LocSSIPs. Those procedures included nerve root blocks, epidurals, and denervation.

Using the Model for Improvement method, the project plan was divided into four phases: scoping, development, implementation and maintenance and monitoring. We collaborated with a LocSSIP 'champion' within pain medicine and identified key procedures which would require LocSSIPs.

To standardise safety checks UHB has developed five key areas or elements of safety pertaining to the operator, the patient, allergies, procedural and post-procedural care. Our safety standards were framed on NPSA guidance, safety alerts and standards of the WHO checklist but tailored for procedures within pain medicine. Following implementation, compliance was audited quarterly.

Results and discussion

LocSSIPs were developed and approved with all five key elements included (Fig 1).

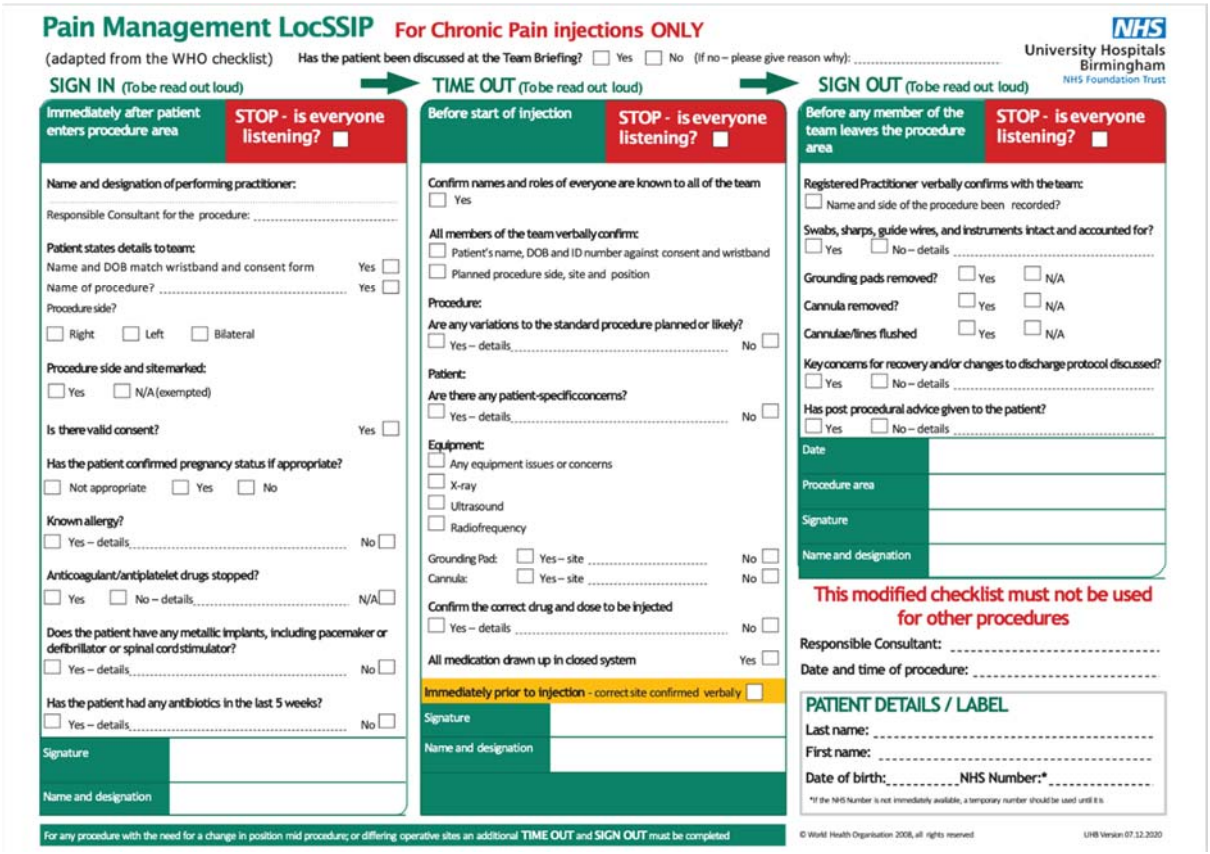
Following a successful trial beginning in November 2020, the LocSSIPs were fully rolled out in January 2021. The first audit cycle in June 2021 showed compliance of 100% in the use of the LocSSIPs and correctly completed LocSSIPs was 83.3%. The second audit cycle in October showed compliance of 100%, but only 73% of those were correctly completed. Following further education on the use of LocSSIPs within the department, a third cycle audit of January 2022 showed an improvement of correctly completed LocSSIPs of 86% (Fig 2).

There has not been any reported NE or serious incidents in UHB since the introduction of the LocSSIPs.

The five key elements serve to ensure that at each point pre-procedure and post procedure integral safety checks are completed.

Continuous feedback from the team is encouraged to improve compliance in use and correctly completed LocSSIPs. The checklists were also updated to reflect recent patient safety alerts and to make them more user-friendly for staff.

Fig 1. Pain management LocSIPP.



Pain Management LocSSIP For Chronic Pain injections ONLY

(adapted from the WHO checklist) Has the patient been discussed at the Team Briefing? ☐ Yes ☐ No (If no – please give reason why): .....

University Hospitals Birmingham NHS Foundation Trust

SIGN IN (To be read out loud) → **TIME OUT** (To be read out loud) → **SIGN OUT** (To be read out loud)

Immediately after patient enters procedure area — STOP - is everyone listening? ☐

Name and designation of performing practitioner:

Responsible Consultant for the procedure: .....

Patient states details to team:

Name and DOB match wristband and consent form Yes ☐

Name of procedure? ..... Yes ☐

Procedure side?

☐ Right ☐ Left ☐ Bilateral

Procedure side and site marked:

☐ Yes ☐ N/A (exempted)

Is there valid consent? Yes ☐

Has the patient confirmed pregnancy status if appropriate?

☐ Not appropriate ☐ Yes ☐ No

Known allergy?

☐ Yes – details..... No ☐

Anticoagulant/antiplatelet drugs stopped?

☐ Yes ☐ No – details..... N/A ☐

Does the patient have any metallic implants, including pacemaker or defibrillator or spinal cord stimulator?

☐ Yes – details..... No ☐

Has the patient had any antibiotics in the last 5 weeks?

☐ Yes – details..... No ☐

Signature

Name and designation

Before start of injection — STOP - is everyone listening? ☐

Confirm names and roles of everyone are known to all of the team

☐ Yes

All members of the team verbally confirm:

☐ Patient's name, DOB and ID number against consent and wristband

☐ Planned procedure side, site and position

Procedure:

Are any variations to the standard procedure planned or likely?

☐ Yes – details..... No ☐

Patient:

Are there any patient-specific concerns?

☐ Yes – details..... No ☐

Equipment:

☐ Any equipment issues or concerns

☐ X-ray

☐ Ultrasound

☐ Radiofrequency

Grounding Pad: ☐ Yes – site ..... No ☐

Cannula: ☐ Yes – site ..... No ☐

Confirm the correct drug and dose to be injected

☐ Yes – details ..... No ☐

All medication drawn up in closed system Yes ☐

Immediately prior to injection - correct site confirmed verbally ☐

Signature

Name and designation

Before any member of the team leaves the procedure area — STOP - is everyone listening? ☐

Registered Practitioner verbally confirms with the team:

☐ Name and side of the procedure been recorded?

Swabs, sharps, guide wires, and instruments intact and accounted for?

☐ Yes ☐ No – details .....

Grounding pads removed? ☐ Yes ☐ N/A

Cannula removed? ☐ Yes ☐ N/A

Cannulae/lines flushed ☐ Yes ☐ N/A

Key concerns for recovery and/or changes to discharge protocol discussed?

☐ Yes ☐ No – details .....

Has post procedural advice given to the patient?

☐ Yes ☐ No – details .....

Date

Procedure area

Signature

Name and designation

This modified checklist must not be used for other procedures

Responsible Consultant: .....

Date and time of procedure: .....

PATIENT DETAILS / LABEL

Last name: .....

First name: .....

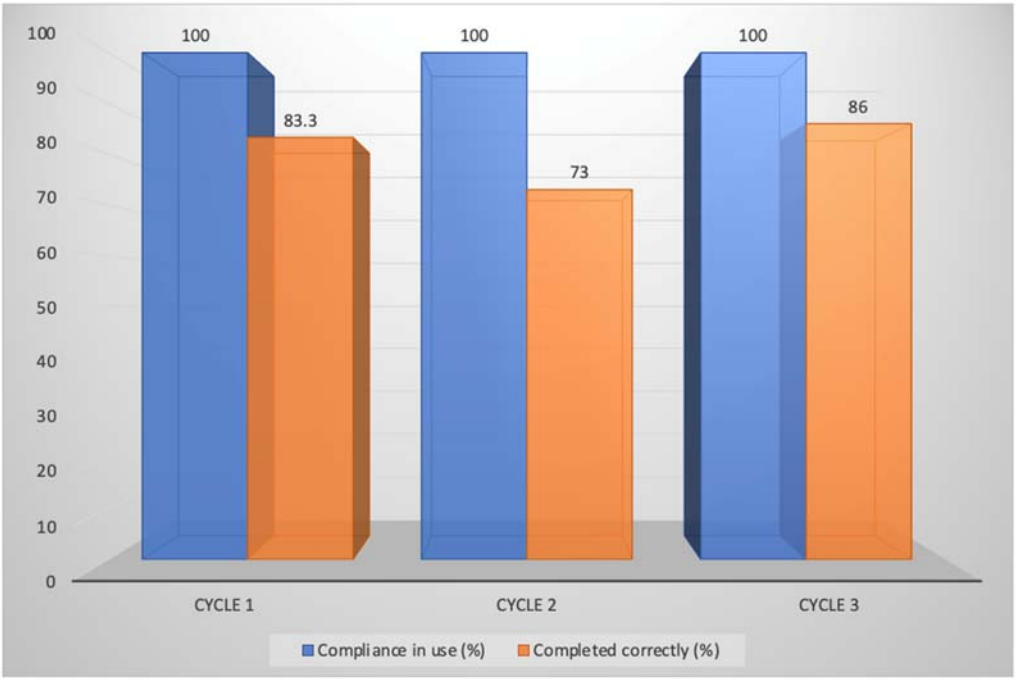
Date of birth:..... NHS Number:* .....

*If the NHS Number is not immediately available, a temporary number should be used until it is

For any procedure with the need for a change in position mid procedure; or differing operative sites an additional TIME OUT and SIGN OUT must be completed

 UHB Version 07.12.2020

Fig 2. Compliance and completion during three audit cycles.



Conclusion

There is overall good compliance, however, as with every quality improvement process, the work is longitudinal, and the troubleshooting process is still ongoing. Continuous auditing and monitoring of their use is required as well as the long-term effects on serious incidents to determine the true impact of LocSSIPs on patient safety in invasive procedures.

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The management of acute kidney injury in orthopaedic patients

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Introduction

Acute kidney injury (AKI) affects 20% hospital admissions,[1] is associated with 17% 30-day mortality,[2] and there is increasing evidence that prompt recognition and appropriate management are poor.[2]

Orthopaedic patients, often suffering perioperative blood loss and dehydration, are at high risk of developing AKI with the multimorbid orthogeriatric population being particularly vulnerable.[3]

This quality improvement project aimed to assess compliance to best practice defined by local, NICE and Renal Association guidelines at a busy major trauma centre and to evaluate the improvement of care with the introduction of a new AKI care bundle.

Methods

Data was collected from 49 orthopaedic patients developing an AKI over a 5-week period in the Northern General Hospital, Sheffield. Individuals were identified using creatinine results, and data collected from electronic observations, fluid charts and notes.

We developed a simple mnemonic and AKI care bundle which was introduced in the form of ward posters and stickers in patient notes. A re-audit was then performed on 27 patients with AKI to evaluate the impact of our intervention.

Results

Of the 27 patients in the post-intervention cohort, 48% had our AKI care bundle physically in their notes. The post-intervention cohort had an increase in the number of patients receiving a documented daily AKI review on the orthopaedic ward (59% vs 27%) (P value 0.010) and daily fluid monitoring in the form of input/output charts (59% vs 29%) (P value 0.018). The post-intervention cohort had a statistically higher rate of patients receiving a maintenance fluid prescription; (89% vs 53%) (P value 0.004) and had a statistically higher rate of patients with a urine analysis requested and performed (48% vs 12%) (P value 0.001). Our results suggest that the introduction of the AKI care bundle led to a clinically but not significant reduction in the number of patients who developed a worsening AKI (7% vs 24%).

Discussion

Our results show that the introduction of a trust AKI care bundle led to an overall improvement in adherence to the AKI best practice guidelines. However, our results did not show an overall reduction in the number of days to recovery from AKI between the pre- and post-intervention cohorts. Future audit cycles should aim to include larger numbers of patients in order to demonstrate significance across more areas. Future cycles should also encourage the increased use of our AKI bundle physically in the patient notes in order to further improve compliance with best practice guidelines as our results suggest that this subset had higher overall levels of compliance with guidelines.

References

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Improving oxygen prescribing on the Kardex in ward-level care

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Introduction

Oxygen is considered a type of drug and is one of the most common drugs prescribed in the hospital for treatment of hypoxaemia. As such, it should be prescribed on the Kardex like any other medication. According to the British Thoracic Society (BTS) oxygen use guidelines, unwell patients who are not at risk of hypercapnic respiratory failure should be getting a target saturation range of 94–98%, whereas those at risk of hypercapnic respiratory failure (ie COPD, morbid obesity, advanced cystic fibrosis, chest wall deformities, neuromuscular disorders, severe bronchiectasis, overdose of opioids /benzodiazepines) should have a target saturation range of 88–92%, while waiting for the blood gas results.

The administration of inappropriate oxygen concentration can have fatal consequences such as prolonged hypoxaemia or hyperoxia. It is therefore good practice to prescribe oxygen on the Kardex and specify the target range as well as whether patient is at risk of hypercapnic respiratory failure for all inpatients in the wards. This should ideally be done at time of admission even if the patient does not require supplemental oxygen at that time. This is to allow appropriate oxygen therapy to be started promptly and safely if the patient deteriorates with hypoxaemia. It also provides nurses with a clinically safe reason to adjust the oxygen flow to meet the target saturation and document the NEWS score appropriately. The aim of the QIP was to raise awareness about the importance of oxygen prescription among healthcare staff and improve the oxygen prescription rate on the Kardex by 50% in 3 weeks at both surgical and medical wards.

Method

Data was collected from 25 patients from surgical and medical wards once weekly. Three Plan-Do-Study-Act (PDSA) interventions were undertaken. Source of information were the Kardex, NEWS observation chart, direct observation of oxygen delivery at patient's bedside and ward round documentation. The reason both surgical and medical wards were selected was to showcase just how prevalent the use of oxygen is in the hospital regardless of the underlying diagnosis.

Results

In PDSA 1, only 8% of the patients had oxygen prescribed. The first intervention was to educate the doctors and nurses at the wards on the importance of oxygen prescription and the harmful effects of inaccurate target oxygen saturations. Following this, oxygen prescription increased to 45% in PDSA 2. In the second intervention, visual prompts were displayed in the wards. The oxygen prescription rate in PDSA 3 reached 53%.

Conclusion

We achieved the goal of this QI project through three PDSA cycles, which was to improve oxygen prescription by 50%. However, there is still room for improvement to sustain this good clinical practice.

References

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Urgent suspected cancer referrals in a district general hospital: a re-audit of referrals and comparison to NICE guidelines

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Introduction

The NICE criteria for referring urgent suspected cancer (USC) cases have been developed to facilitate and streamline the pathway for patients thought to have a possible malignancy.[1] In a previous audit of the radiology department in a district general hospital in 2018 there were 157 referrals over a 1-month period with 31 cases (19.7%) not meeting NICE criteria. Demands on the NHS have subsequently been exacerbated greatly by the COVID-19 pandemic, and waiting lists are at record levels.[2] The primary aims of this re-audit are to ascertain changes in the volume of referrals received, and imaging performed in the radiology department. Secondary aims included whether the referrals met NICE criteria and were performed and reported within 14 days of request.

Materials and methods

Patient data was collected prospectively for USC referrals over 1 month (1–30 November 2021 inclusive) for the radiology department. Exclusion criteria included patients who subsequently declined imaging, imaging that was cancelled for clinical reasons, and requests received outside of the aforementioned dates. Clinical and radiology results were evaluated via the appropriate electronic platforms (Welsh clinical portal and Synapse respectively) and added to a database for subsequent analysis.

Results and discussion

A total of 293 referrals were received during the study period with 269 cases being imaged (135 men (50%), mean age 66 (16–97)) representing a 72% increase in imaging compared with the previous audit. Of those imaged, 61 cases (23%) did not meet NICE criteria compared with 19% in 2018. The most common indication in these patients was staging for a previously diagnosed malignancy (45 cases; 74%). The imaging modalities used were CT (155 cases, MRI 54, ultrasound 60). Overall, 129 cases (48%) were imaged and 107 cases (40%) reported within 14 days of the request.

Conclusion

The volume of routine work in radiology has been increasing for several years,[3] and the backlog of elective work in the NHS has been greatly exacerbated by the COVID-19 pandemic. Our results show the volume of imaging performed for USC referrals in our unit has increased by 72% compared with 2018. Almost a quarter of these cases (23%) did not meet NICE criteria with the most common indication being staging for a previously diagnosed malignancy. Overall, less than half of cases were imaged and reported within 14 days which may contribute to delays in the diagnosis and management of suspected cancer cases.

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Assessment of abdominal pain in older people: a quality improvement project in the emergency department

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Introduction

The cause of acute abdominal pain can hold great uncertainty. In older people this is further complicated by co-existent disease, delays in presentation and physical/social barriers. With increased risk of serious and rapidly progressive pathology associated with a 6–8-fold increase in mortality in comparison to younger patients.[1] At present, there is no defined pathway in the assessment of older patients with acute abdominal pain. This QIP aims to look at the assessment of older patients presenting with abdominal pain to St Mary's Hospital London Emergency Department.

Methods

Older patients over the age of 70 years presenting with abdominal pain were retrospectively selected. Data was collected on baseline demographics, comorbidities, investigations/imaging, senior review assessment and referral to specialty. After the initial audit, we presented a slide detailing triage investigations daily at morning handover, and held a teaching session for doctors assessing these patients. We then re-audited in two subsequent cycles to assess the efficacy of these interventions.

Results and discussion

Between 1–17 October 2021, 45 patients over the age of 70 presented with abdominal pain. Overall, the majority of patients were men (62%), the median age was 80.3 years and 20% of patients had four or more comorbidities. Hypertension (15%) and type II diabetes mellitus (15%) being the most common. Only 5–6% of patients had previous surgery or existing abdominal pathology. 92% of patients had a C-reactive protein (CRP) test, 68% had an amylase and 84% had a venous blood gas lactate test. 49% had a CT imaging and 35% had an X-ray (chest or abdomen). The average time to X-ray was 260 minutes; average time to CT imaging was 324 minutes. Of those patients assessed, 59% had a documented discussion or review by a senior. A digital rectal examination was documented in 24% of patients. 49% of patients had a medical or surgical referral.

After presenting to triage nurses and doctors, we found marked improvements in rates of venous blood gas (100% vs 84%), CRP (100% vs 92%) and amylase (80% vs 64%). Time to X-ray was 110 minutes (down from 260), and time to CT 313 minutes (312). 90% of patients had a senior discussion or review documented (vs 59%), and 30% of patients had a PR (vs 24%).

Abdominal pain in older people is a common presentation to the emergency department, with nearly half of patients requiring referral to either a medical or surgical specialty. Of note, over half of patients underwent CT imaging, yet this formed the main cause of delay. In this population, a high degree of diagnostic uncertainty and a relatively low radiation risk may prompt the question whether CT imaging can be warranted prior to X-ray.

Conclusion

Our quality improvement project has demonstrated that simple teaching for doctors and nurses can improve the rates of important investigations of these patients. We plan to develop a pathway to bring about timely assessment and management for older adults presenting with abdominal pain in the hope of further improving their care.

References

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Integrated palliative care in the management of advanced heart failure

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Introduction

Heart failure (HF) remains a progressive and highly symptomatic disease that places great demands on patients, caregivers, and healthcare systems. Heart failure affects about 900,000 people in the UK with 60,000 new cases yearly,[1] and accounts for about 2% of the total NHS budget.[2] Studies have shown that an integrated-palliative care approach to managing heart failure will reduce hospital admissions, provide a better experience for patients and carers, support people when their condition becomes more advanced and enable them to have more choice regarding their end-of-life care.[3–5] However, despite growing numbers of guidelines from major cardiology societies including the European Society of Cardiology (ESC) and British Heart Foundation (BHF), the implementation of integrated palliative-heart failure management remains suboptimal.[6] The aim of this study is to assess the implementation of integrated palliative care in the management of advanced heart failure patients in a major tertiary cardiology centre in the UK.

Materials and methods

The electronic medical records of all 480 heart failure patients admitted to Leeds Teaching Hospitals Trust within the 6-month period of December 2020 to May 2021 were reviewed. Of this number, 228 patients with advanced heart failure with New York Heart Association (NYHA) stage III and IV with high symptomatic and psychosocial burden were recruited into the study. Data were gathered from electronic medical records using Microsoft Excel and analysed with IBM SPSS Statistics version 27.

Results and discussion

Among the 480 heart failure admissions during the study period, 228 patients with advanced heart failure and high symptomatic and psychosocial burden were recruited into the study. There were 125 men and 103 women with a mean age of 7.7 ± 13.7years; of these, 66.7% of patients had NYHA stage III symptoms and 33.3% had NYHA stage IV symptoms. 53.9% of the patients had HF with reduced ejection fraction (HFrEF), 40.3% had HF with preserved ejection fraction (HFpEF) and 15.7% had mid-range ejection fraction (HFmrEF).

Many of the patients had significant physical and palliative care needs such as pain, dyspnoea, oedema, and psychosocial needs with approximately one-third having more than five hospital admissions in the past 2 years. Table 1 outlines the palliative care needs of participants.

Table 1. Palliative care needs of advanced HF patients

Palliative care needs	Percent %
Dyspnoea	53.9
Oedema	53.1
Pain	28.1
Psychological needs	16.2
Social and spiritual needs	43.9

Despite these significant needs, only one-third (69) of the patients had been referred to the palliative care team with only about one-quarter (58) of patients having integrated care plans in place. Furthermore, a third of the patients had no advance care plan in place or do-not-attempt-cardiopulmonary-resuscitation (DNACPR) decision, and a similar proportion had no escalation/level of care decisions documented. Also, 20.1% of patients had a cardiac device in situ, of which 5.1% were implantable cardiac defibrillators (ICDs); however, only 2.2% of patients with ICDs had an end of life device plan in place. In addition, despite nearly 29% of patients having a documented preferred place of end-of-life care, this was only achieved in 12.7% of cases.

Conclusion

Patients with advanced heart failure have significant physical and palliative care needs which remain largely unmet as evidenced in this study. We recommend an integrated heart failure-palliative care MDT be introduced trust-wide with referral triggers to include NHYA stage III and IV symptoms despite optimal therapy and complex physical and psychosocial needs. Finally, we recommend that heart failure palliative care be the subject of regular quality improvement strategies.

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Using IT systems to improve the frequency of family and next of kin updates

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Introduction

Keeping families and next of kin (NOK) updated is a challenge in care for older people. Visiting restrictions, increased staff absences and higher admission rates during the COVID-19 pandemic have made it more difficult still.

This quality improvement project (QIP) aimed to assess how often the multidisciplinary team (MDT) updates NOK on the complex care wards in North Bristol Trust (NBT).

Previous attempts to use ward round prompt sheets to prompt doctors to update NOK were found ineffective in improving the frequency of NOK update.

This cycle implemented the use of the IT application 'Careflow' to document when NOK updates occurred. This was used as a prompt for discussion at the twice-daily MDT board round on Gate 28b (a complex care ward in NBT). Careflow can be accessed and edited by the whole MDT on both computers and personal handheld devices.

Materials and methods

The agreed standards were that for patients unable to update families themselves, their family member/NOK should be updated at least twice in any 7-day period when the patient is not yet medically fit for discharge, and once in any 7-day period when they are medically stable. Where a patient had not been admitted for 7 days or more they were deemed to have met the standard if the family had been updated once within a 4-day period.

The whole MDT was encouraged to document who and when they updated, and which member of the MDT updated the NOK. This was documented in the 'situation' section of the Careflow handover sheet as 'FAMILY LAST UPDATED BY AND WHEN:'.

On 2 August 2021, a month after the intervention was implemented, a spot audit was performed.

The data collected included which days patients' next of kin were updated. A documented discussion (either over the phone or in person) between any healthcare professional and patient's family member or NOK was accepted as an update.

Results and discussion

A total of 28 patient notes were audited in total, of which 11 patients' families/NOK were updated at least twice in a 7-day period (39.3%) (meeting the agreed standards). Six had been updated at least once (21.42%) during their admission and 11 had never been updated during their admission (39.3%).

When comparing pre- and post-intervention data on Gate 28b there was an improved rate of twice-weekly updates (pre-intervention 26.3%, post-intervention 39.3%). There was also a reduction in 'never' updated (pre-intervention 52.6%, post-intervention 39.3%) (Fig 1).

Conclusion

This project suggests a positive association between using IT systems (such as Careflow) and increased frequency of family updates.

While the introduction of Careflow and MDT prompts were shown to be the most effective intervention implemented so far during this project (Fig 2), the ward team only met the standards of this project 39.3% of the time. Further investigation is needed to improve frequency of NOK updates.

Fig 1. Pre- vs post-intervention frequency of family updates.

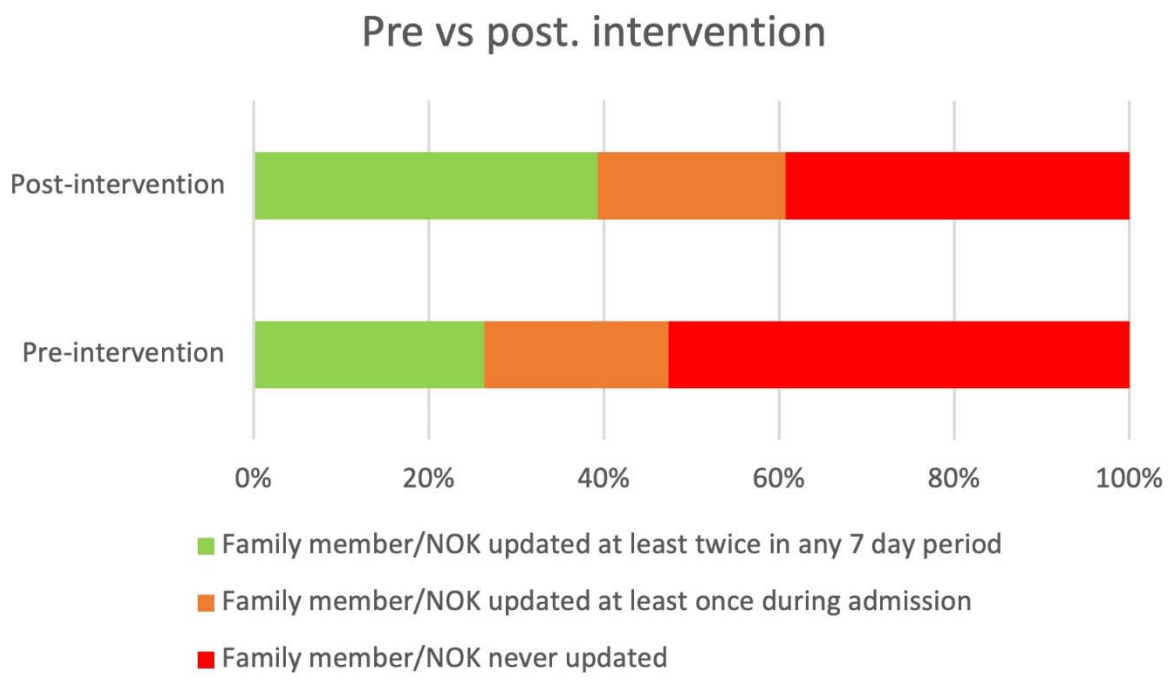
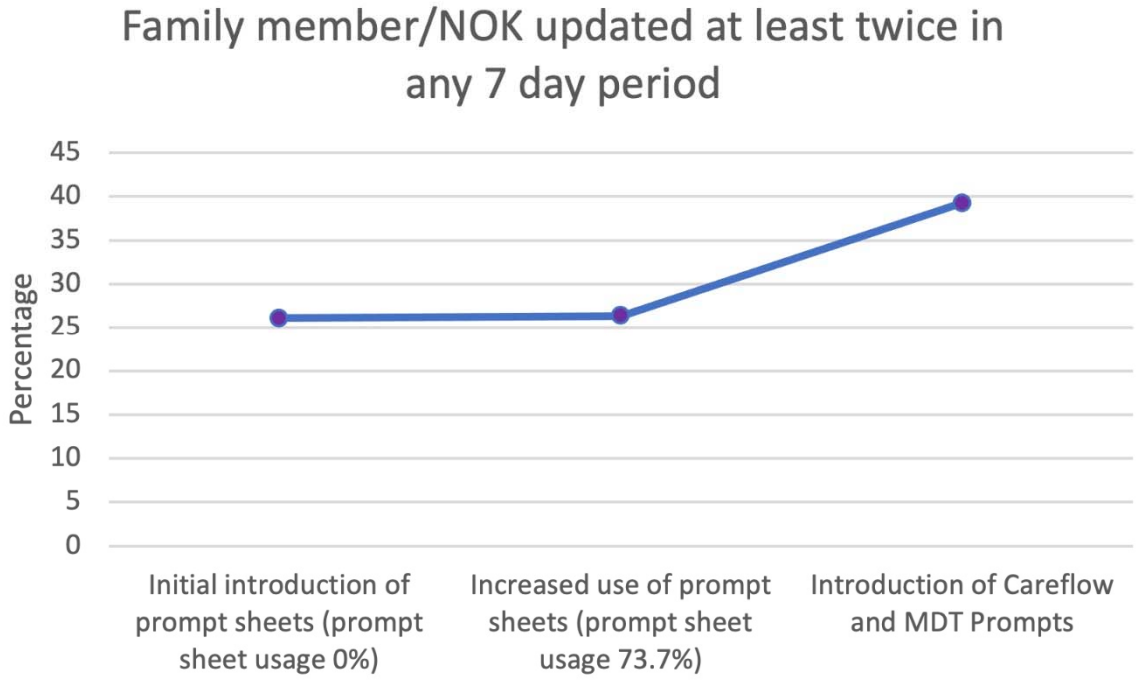


Fig 2. Previous interventions and impact on meeting family communication QIP standard on Gate 28b.



Improving anaesthetic chart documentation

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Introduction

Anaesthetic chart documentation is crucial to maintaining comprehensive records relating to perioperative events. Lack of adherence to documentation has medico-legal implications, and more importantly, can negatively affect the quality of patient care. The Royal College of Anaesthetists (RCoA)[1] and the Association of Anaesthetists of Great Britain and Ireland (AAGBI)[2] have produced guidelines outlining what constitutes the minimum required data set of information. The aim of this quality improvement project was to improve paediatric anaesthetic record documentation at the Evelina Children's Hospital, with charts to contain ≥90% of the minimum required information by 4 February 2022.

Materials and methods

A scoring system was designed based on the minimum documentation requirements outlined by RCoA and AAGBI, and the percentage completion of anaesthetic charts was calculated. Baseline data were retrospectively recorded using these criteria. Three Plan-Do-Study-Act cycles were implemented over the following 5 months. The implemented interventions were: (1) department education regarding protocol via e-mail; (2) follow-up reminder emails with progress reports; (3) education through PowerPoint presentation. Performance data was plotted on a run chart and improvement was assessed using the rules outlined by Perla *et al*.[3]

Results and discussion

Our baseline data collection identified the anaesthetic charts to be clear, accurate and legible, containing on average 75% of the minimum required information. The main areas of poor documentation were the anaesthetist GMC number and physiological data monitoring at appropriate time intervals, in particular temperature monitoring, as summarised in Fig 1.

Fig 1. Pareto chart showing information commonly missing from anaesthetic charts, as identified during the baseline data collection.

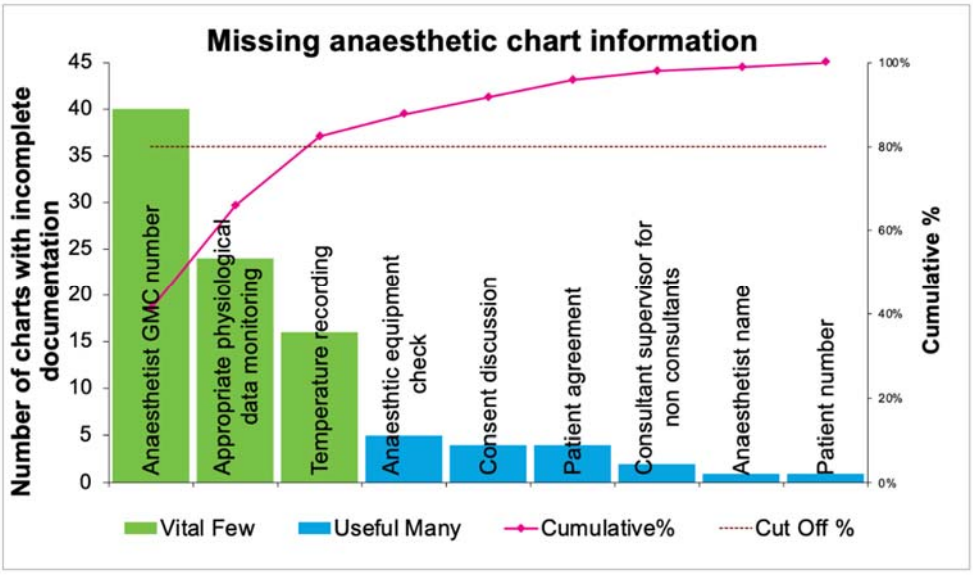
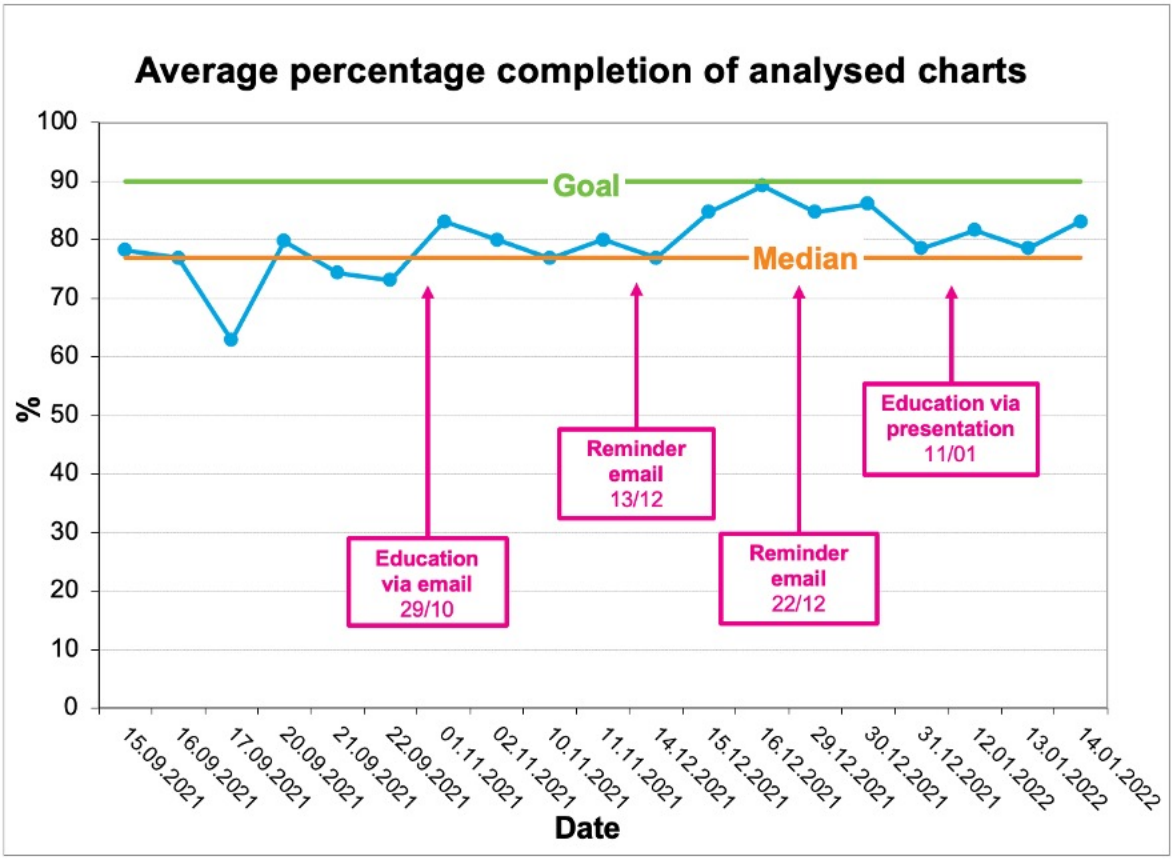


Fig 2. Run chart showing the effect of our interventions upon our outcome measure – average percentage chart completion.



Following our interventions, we recorded a shift in chart completion, with more than six consecutive points recorded above the median line (Fig 2). This suggests the improvement cannot simply be attributed to chance and is likely a result of the interventions.

The recorded improvement did not sustainably reach the ≥90% goal we had set, which can be explained by the law of 'diminishing returns' whereby greater effort is required for improvement the closer the target is to 100%.

A shift from paper charts to the use of electronic systems for anaesthetic documentation is expected at the trust. This project helped us identify commonly missed fields during documentation which could aid in tailoring the new electronic system to the needs of the anaesthetists. Documentation flow could be improved by automatically exporting data, setting on-screen reminders, using autocomplete fields which would facilitate documentation.

Conclusion

The use of combined methods such as education and reminders proved helpful in improving anaesthetic chart documentation. Creating sustained, systemic change is difficult but our methods, which are relatively cost effective and not time consuming, could be relevant in enhancing other areas of medical documentations.

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Quality improvement project to improve diagnosis and management of postural hypotension in older patients over 65 years during acute admission

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Introduction

Postural hypotension, also called orthostatic hypotension, is an abnormal drop in blood pressure on standing.[1] It impairs quality of life and increases the risk of falls, cardiovascular disease, depression, dementia and death. Early detection in patients with symptoms or certain risk factors may prevent some of these complications. Current guidelines for detecting and managing postural hypotension are varied and based on limited evidence.[1]

NICE guidelines for management of falls in patients over 65 recommend a multifactorial risk assessment including measurement of lying to standing blood pressure (LSBP) for all hospital patients presenting with fall.[2] According to our previous departmental audit in August 2021, it was noted only 35.6% of patients above 65 admitted with fall had their LSBP measured. In view of this, we decided to improve the practice of measurement of LSBP and management of postural hypotension.

Methods

We used Royal College of Physician guidelines (2013) as a standard to measure LSBP. During the initial cycle, we provided in-house teaching to nurse and medical staff through a brief educational video and dissemination of literature about postural hypotension via email. Following this, we collected our data for the first PDSA cycle. The next intervention was the development of an illustrative poster depicting the correct method of measurement and documentation of LSBP. We also disseminated the educational video to emphasise the teaching to all medical and nursing staff. Following this intervention, further data was collected to see improvement in the next PDSA cycle.

Results

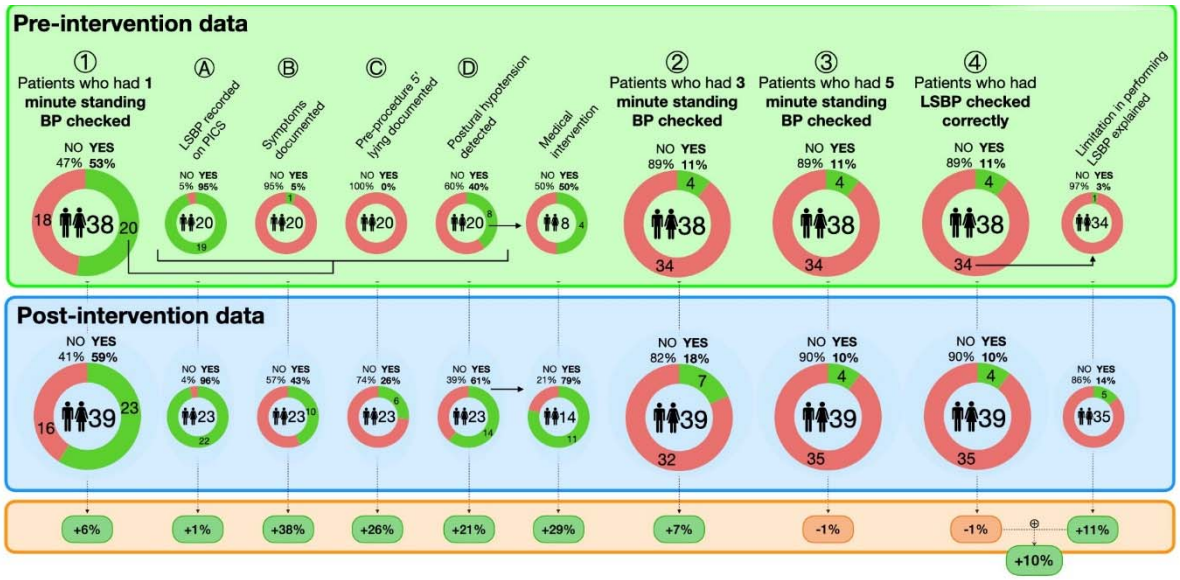
Results showed that initially 53% of patients had their LSBP measured correctly at 1 minute on standing and this improved to 59% after intervention. At 3 minutes on standing the initial percentage of measurement improved from 11% to 18%. Also, documentation of symptoms significantly improved from 5% pre-intervention to 43% post-intervention. Management of postural hypotension improved post-intervention from 50% to 79% (Fig 1).

Conclusion

Postural hypotension is an important cause of falls in patients above 65. Accurate measurement of postural hypotension and its management is imperative in preventing further falls. Our quality improvement project shows that adequate education and PDSA interventions does help in improving awareness and management of postural hypotension.

Further improvement could be achieved by providing an aide memoire such as flashcards to nursing and medical staff which will remind them of the steps of accurate measurement of LSBP and the management of postural hypotension.

Fig 1. Pre- and post-intervention data.



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Analysis of recent trends in aetiology of diabetes-related ketoacidosis

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Introduction

Diabetes-related ketoacidosis (DKA) is a commonly encountered acute endocrine emergency that requires prompt recognition and treatment. Most often, DKA is triggered by risk factors that are preventable. There are only limited studies evaluating the precipitating causes of DKA and depicting their trends over the years. The latter is important in the prevention of DKA by ensuring appropriate education and interventions.

Materials and methods

To study the trends of aetiologies that precipitate DKA over the years, we conducted a retrospective analysis of all DKA-related admissions across six regional hospitals in the UK between April 2014 to November 2021. DKA was diagnosed as serum glucose ≥11 mmol/L, ketones ≥3 mmol/L and pH ≤7.3 or bicarbonate ≤15 mmol/L. Precipitating factors were classified as alcohol-related, COVID-19, drug-induced, intercurrent illness, new diagnosis of type 1 diabetes, SGLT-2 inhibitor-associated, sepsis, suboptimal compliance to treatment and trauma respectively. Statistical analysis was done using SPSS version 27. Results are expressed in percentage and proportion.

Results and discussion

A total of 1,463 DKA episodes were included in the analysis. Intercurrent illness (34.8%, n=509) and suboptimal compliance to treatment (28.2%, n=413) were the most common factors identified. Other notable causes of DKA were: New diagnosis of type 1 diabetes (8.9%; n=130), sepsis (4.2%; n=62), alcohol-related (3.9%; n=57). The proportion of these aetiologies has remained consistent over the years. Newer varieties of precipitating causes such as SGLT-2 inhibitor-associated[1] (1.3%; n=19) and other drug-induced (1.1%; n=16) had an increasing trend since 2019. COVID-19[2] accounted for 5% of the total episodes (n=41). Precipitating aetiology was unclear in 8%(n=187) of the DKA admissions. However, the proportion of unclear causes as precipitating aetiology for DKA has been steadily down trending since 2016 (24.0% in 2016, 19.2% in 2017, 14.5% in 2018, 16.2% in 2019, 12.6% in 2020 and 8.0% in 2021).

Conclusion

Infections and suboptimal compliance to treatment accounted for a majority of 63% of the DKA cases, suggesting more work needs to be done to minimise these preventable causes. A rise in medication-induced DKA prompts the need to educate patients and clinicians regarding the role of these contributory medications. The decreasing trends seen in unclear causes of DKA is a welcome result as increasing awareness regarding the known or established precipitating factors help in preventing recurrences in patients, as they could be vigilant in regard to these in future.

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A comparison of giant cell arteritis referrals and outcomes during the COVID-19 pandemic: experience from a district general hospital in the UK

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Introduction

Patients with giant cell arteritis (GCA) often require a long duration of steroid therapy. Therefore, steroids should only be commenced when the diagnosis is highly suspected, following a thorough history and blood results to match. Equally, the availability of fast-track pathways will prevent the long-term steroid burden for patients who do not have GCA. Our department's fast-track pathway is still in development, and we aimed to assess the quality of GCA referrals and their outcomes before and during the first wave of the COVID-19 pandemic.

Methods

We retrospectively reviewed all case notes of GCA referrals between 1 April and 30 September in 2019 and 2020. The referral letters were assessed for the inclusion of GCA symptoms, the blood results and the treatments prescribed. The clinic letters were reviewed to determine the interval between patient referral and rheumatology appointment and the outcome, which was the decision to continue or stop the prednisolone.

Results

As illustrated in Table 1, the number of new patients and the proportion of GCA referrals were similar. Interestingly, we found many similarities between these two periods.

In terms of the inclusion of GCA symptoms as either a positive or negative finding, jaw claudication was the second least mentioned symptom despite being the most specific for GCA.[1] Moreover, not all referral letters commented on visual symptoms despite irreversible blindness being one of the major complications.[2] In terms of blood results, less than 90% of referral letters included the results of inflammatory markers and erythrocyte sedimentation rate was favoured over C-reactive protein. Less than two-thirds of patients were commenced on the appropriate prednisolone dose and most patients were not started on calcium/vitamin D tablets.

We also found significant delays in both periods, with the interval exceeding 3 months between patient referral and rheumatology review. Finally, the proportion of patients who had their steroids discontinued following their first rheumatology appointment was more than 50%.

Table 1. Giant cell arteritis referrals and outcomes before and during the COVID-19 pandemic

Year	2019	2020
Total number of new rheumatology patients, n	744*	717*
Total number of suspected GCA referrals, n (percentage)	22 (0.03%)*	15 (0.02%)*
Female, n (percentage)	16 (73%)	9 (60%)
White – British, n (percentage)	19 (86%)	9 (60%)
Age in years, median (range)	69 (50-87)	71 (40-85)
The number of GCA referrals from GP, n (percentage)	14 (63%)	9 (60%)

The number of referrals which stated GCA symptoms as either a positive or negative finding, n (percentage):		
i. Polymyalgia rheumatica	7 (32%)	7 (47%)
ii. Jaw claudication	13 (59%)*	10 (67%)*
iii. Headaches	19 (86%)	12 (80%)
iv. Scalp tenderness	16 (73%)	12 (80%)
v. Visual symptoms	18 (82%)*	13 (87%)*
The number of referrals which included blood results, n (percentage)	19 (86%)*	12 (80%)*
The number of referrals which stated the results of inflammatory markers, n (percentage):		
i. C-reactive protein (CRP)	15 (68%)*	7 (47%)*
ii. Erythrocyte sedimentation rate (ESR)	19 (86%)*	10 (67%)*
iii. Both CRP and ESR	15 (68%)	5 (33%)
The number of referrals which stated the start date of prednisolone, n (percentage)	17 (77%)	9 (60%)
The number of patients commenced on appropriate prednisolone dose; 60mg (with visual symptoms) or 40 mg (without), n (percentage)	11 (50%)*	9 (60%)*
The number of patients who had a PPI (proton pump inhibitor) prescribed, n (percentage)	20 (91%)	14 (93%)
The number of patients who had calcium/vitamin D tablets prescribed, n (percentage)	8 (36%)*	7 (47%)*
The interval between the date of referral and the first rheumatology appointment in days, range (median)	2–103 (34)*	2–161 (13)*
The number of patients in which a decision was made to continue with steroids following the first appointment, n (percentage)	10 (45%)*	7 (47%)*

Conclusion

Our findings suggest a minimal effect of the COVID-19 pandemic on the quality and quantity of GCA referrals to our hospital. The constant variable was the lack of a fast-track assessment pathway. Our perspective as a district hospital is reflective of other UK hospitals that do not yet have fast-track pathways. Furthermore, only six out of 16 sites (37.5%) in our region, north-west England, have GCA fast-track pathways in place.[3]

These findings highlight the importance of improving awareness on the management of GCA. Our recommendations include using a GCA-specific referral template to improve the quality of referrals (Fig 1), promoting the use of the British Society for Rheumatology guideline and encouraging other rheumatology departments to develop or improve their GCA fast-track assessment pathways.[2] This report led to the startling revelation that the issues identified from these results did not arise from the COVID-19 pandemic but rather from other factors that existed prior to and persisted through it.

Fig 1. Referral pro forma.

GCA Referral Form

NHS number: _____

Date of birth: _____ Sex: M/F

Ethnicity: _____

Co-morbidities:

Diabetes ☐ Osteoporosis/osteopenia ☐

Hypertension ☐ Gastroesophageal reflux disease ☐

When did the symptoms start? (please provide exact date if possible)

_____

Date patient seen: _____

Symptoms:

Jaw claudication ☐ Visual symptoms ☐ PMR symptoms ☐

Headache ☐ Scalp tenderness ☐

Bloods requested:

CRP ☐ ESR ☐ FBC ☐ LFT ☐

Others: _____

Was the patient referred to Opthalmology? YES/NO

Did you contact Rheumatology for advice? YES/NO

Did you request for temporal artery biopsy? YES/NO

Did you request for USS? YES/NO

What was the date steroids were commenced? _____

What was the dose? _____

Was the patient commenced on PPI? YES/NO

Was the patient commenced on Calcium and Vitamin D? YES/NO

Date of referral to Rheumatology: _____

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Setting up a centralised DKA registry: a leap towards coordinating DKA management in the UK

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[A]University Hospitals Birmingham NHS Foundation Trust, UK; [B]Walsall Manor Hospital, Birmingham, UK; [C]Sandwell and West Birmingham Hospitals NHS Trust, UK; [D]University of Birmingham, UK; [E]Haberdashers' Adams' Grammar School, Newport, Shropshire, UK; [F]Sandwell and West Birmingham Hospitals NHS Trust, UK; [G]Queen Elizabeth Hospital, Birmingham, UK

Background

Diabetes-related ketoacidosis (DKA) is a common and potentially life-threatening complication in people with diabetes. Despite national and international guidelines, interhospital guideline variation and mismanagement during admission are important contributory factors to increased DKA duration and length of stay.

Aim

To establish a common DKA registry to identify gaps in management, assess outcomes and share best practises across centres.

Methods

Retrospective analysis of all DKA admissions between 1 January 2021 and 1 December 2021 across six hospitals in the UK was undertaken. People aged <18 years, admission pH >7.3 or self-discharged before treatment completion were excluded. Information was collected on fluid and insulin prescriptions, glucose and ketone monitoring, DKA duration and length of hospitalisation. Comparison between hospitals was performed using the Independent-Samples Kruskal-Wallis Test. Data was analysed using SPSS version 27.0 and presented in median interquartiles, frequencies and proportion as appropriate.

Results

Since the objective was to identify best practice and not to compare, hospital names were coded A to F to ensure anonymity. A total of 465 DKA episodes across the six hospitals were included. There were differences observed in the DKA duration (median in hours; A-13.1, B-11, C-9.7, D-15.7, E-19.5, F-15.2; p value <0.001) and length of hospitalisation (median in days; A-4.6, B-5.4, C-2, D-3.9, E-4.5, F-3.5; p value <0.001) across hospitals. Similarly, variations were noticed in appropriateness of glucose monitoring (A-110.9%, B-86.3%, C-95.9%, D-89.1%, E-92.6%, F-117.8%; p value <0.001), appropriateness of ketone monitoring (A-61.3%, B-83.6%, C-91.5%, D-67.3%, E-62.6%, F-69.6%; p value <0.001) and fluid prescription (A-83.6%, B-80.0%, C-102.8%, D-100%, E-100%, F-133.3%; p value <0.001). No significant differences were noted in the appropriateness of fixed rate intravenous insulin infusion (A-100%, B-100%, C-100.8%, D-98.8%, E-98%, F-100%; p value: 0.156).

Conclusion

With the exception of fixed rate intravenous insulin infusion, significant inter-hospital variation in other individual parameters were observed. A centralised DKA registry can help identify gaps in DKA management and dissemination of best practice across centres to aid improved patient outcomes.

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A new paradigm for medical trainee participation in quality improvement

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Introduction

There is an expectation that trainee doctors should participate in quality improvement (QI) projects as part of their continuous professional development.[1] Foundation year and internal medicine training (IMT) curricula state the QI learning objectives and assessment requirements at the annual review of competency progression (ARCP). However, there may be limited constructive alignment as to how QI training is delivered, with individual healthcare organisations often being left to fill the void. Doctors may experience limited opportunities to participate in QI, leading to unwanted behaviours, such as treating QI as a tick box exercise at ARCP, and 'having to do a QI project'.

Materials and methods

As part of an information-gathering exercise, a set of principles were developed comparing current approaches to QI participation for trainee doctors against a potential future state, where QI becomes 'business as usual'.

We sought feedback from active healthcare QI community through the social media portal Twitter, on a new model that reframes the current approach for QI involvement for trainee doctors (Fig 1).

The message below was posted on Twitter on 2 September 2021, together with Fig 1.

'Trainee doctors express huge frustrations about doing QI within acute #NHS trusts, with the QI 'projects' often left abandoned. Perhaps time to build a 'new world' for trainee involvement in QI? A better experience for trainees, NHS trusts and for patients.'

Choudary A (2 September 2021) https://twitter.com/AklakC/status/1433507363206668299

Fig 1. A new paradigm for trainee doctor participation in quality improvement.

A new paradigm for improvement - trainees

Old QI World for Trainees	New QI World for Trainees
You have to initiate your own QI work and be involved in every stage from start to end	**You have to demonstrate participation in a QI project only**
QI work should be constrained to the time you are rotated to that department	**QI work should be independent to rotation length in department (hop on bus)**
Trainees to identify a problem within the first few weeks of starting a new rotation	**The department is responsible for identifying problems that need improving**
ARCP should assess Trainees from start to end of an improvement	**ARCP should assess trainee participation and learning from QI**
Trainees need to lead the improvement work	**Trainees need to actively participate in the improvement work**
Trainees to sort out their own QI training when they join a trust	**NHS Trusts/HEE are responsible for QI training for new trainees**
Trainees to search out their own QI mentor & sponsor for an accepted QI proposal	**A mentor and sponsor will be available for each accepted QI proposal**
QI assessment should be summative and must be done by Educational supervisor	**QI assessment is formative and be assessed by staff with improvement background**

Results and discussion

The tweet received 248 likes and 75 retweets. We divided feedback comments into four emergent themes (Table 1).

Table 1. Comments from social media information gathering

Emergent theme		Indicative comments
i)	Acute Organisational QI Infrastructure	• "Has to be part of what trusts do - a culture", • "Current approach is wasteful", • "Clarity on what organisations responsibility to support improvement" • "Consultants and nurses to take ownership on QI"
ii)	Limitation of 'QI project' model	• "Project not being the end goal" • "Projects never continue past initial element" • "Issues with rotations and size of projects" • "QI being seen as a project rather than continuous approach"
iii)	Training outcomes vs Patient experience outcome	• "Trusts focus on training rather than building QI infrastructure" • "Evidence for portfolio trumped the need to complete" • "Focus on skills and knowledge not the output" • "Junior doctors -expecting temporary staff to drive change was never going to yield fruit"
iv)	Suggestions to improve trainee doctor QI participation	• "Potential to use regional QI collaboratives, shared approach to similar issues" • "Need to focus on multi-professional teams with core QI curriculum" • "No need to create own piece of work and lead improvement - just be part of what exists" • "QI needs to be owned by the teams and not initiated by trainees"

Conclusion

The feedback was deemed positive for a reframing of QI for doctors in training. There is an appetite for a more integrated, multidisciplinary approach for developing improvement skills and experience within organisations and a move away from doctor-led 'QI projects'. Changing the current paradigm will require coordinated action from professional and educational bodies and leaders, hospital and wider system improvement leads. Trainee assessments in the future may need alignment to this more collaborative framework on QI. Further work is planned to publish a positional paper for 'Reframing QI for physicians in

training' in the near future led by physicians working with the RCP, and involving other stakeholders. We encourage examples of good practice that fit the potential 'new world' to be shared via RCPQI@rcp.ac.uk and headed 'Reframing QI'.

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Improving documentation regarding ceilings of care upon intensive care unit discharge – a quality improvement project

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Introduction

The discharge of a patient from the intensive care unit (ICU) to the ward requires clear communication in order to maintain patient safety and ensure continuity of care.[1] The discharge summary is an essential piece of documentation that summarises the patient's journey through the ICU. It contains information regarding the patient's treatment and ongoing care needs, as well as information on the patient's resuscitation status and ceilings of care. This information can also be relayed through a verbal handover. Together, they ensure patient safety is maintained.[2] We aimed to assess and improve the quality of ICU discharge documentation at a district general hospital.

Materials and methods

A quality improvement project (QIP) was designed using a Plan-Do-Study-Act (PDSA) cycle technique. The ICU discharge summaries produced over a 2-month period were retrospectively analysed. Data was collected on the patient age, gender, and evidence of documentation of resuscitation status and ICU readmission status. The results were analysed and presented to the ICU team through an educational session on the importance of documentation (first intervention). The cycle was then repeated and discharge summaries were analysed again after a 2-month period post-intervention.

Results and discussion

In the first PDSA cycle, 53 patients were included (mean age 63, 55% male). In total, 47 of these patients were discharged to hospital wards, two were discharged home and four patients sadly passed away. Of the patients alive at discharge, only 67% of them had ICU readmission status documented, while only 55% of discharge summaries contained documentation of resuscitation status. The second PDSA cycle included 30 patients (mean age 53, 64% male), 28 of whom were discharged to the wards. Following our intervention, there was a vast improvement in documentation of resuscitation status to 80% and readmission status to 73%.

The documentation of a patient's ceiling of care is essential to maintain patient wishes, dignity and to ensure prior decisions are respected. Many discussions regarding ceilings of care may occur while a patient is in ICU, and thus clear documentation and handover of such is critical.[3] We found that our educational intervention resulted in a vast improvement in this documentation, and subsequently had a positive impact on patient care.

Conclusion

Documentation of a patient's resuscitation status and ICU readmission status is important when discharging a patient from the ICU as discussions regarding these ceilings of care often occur during an ICU admission. We performed a QIP that resulted in a positive change in the documentation of these decisions when patients are discharged from ICU.

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Improving the standard of discharge summaries using a quality improvement approach

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Introduction

Discharge summaries are an important handover tool used to ensure effective communication of clinical information between secondary and primary care. Poor discharge summary completion can have a negative impact on the safe transfer of care, quality of clinical care, and patient safety. GP quality alerts, patient safety incidents and patient advice and liaison services (PALS) complaints within the trust had highlighted concerns regarding discharge summaries. Our aim was to improve the standard of discharge summaries on the acute medical unit (AMU) using a quality improvement (QI) approach.

Materials and methods

Our multidisciplinary team (MDT) included two medical students, a physician associate, four junior doctors, a consultant physician, a GP, a pharmacist, a quality improvement adviser, and a patient representative.

Using guidance from the Professional Records Standard Body (PRSB)[1] and the Royal College of Physicians (RCP),[2] 10 core components of a discharge summary were identified (Table 1). Process mapping, feedback questionnaires and driver diagrams were used to visualise the discharge process, identify areas of concern and develop ideas for change.

Table 1. The 10 core components of discharge summaries

Core components of discharge summaries
Reason for admission
Relevant past medical history/past surgical history
Social context
Key investigations and results
Procedures
Primary and secondary diagnoses
Medication changes
Medications to be reviewed by the GP
GP actions following discharge
Plan for follow up

Using an Excel spreadsheet, the total average compliance of 10 randomly selected discharge summaries was calculated weekly, as well as the average compliance for each of the 10 core components. Data was uploaded to LifeQI© software to track in real time and visualise data shifts.

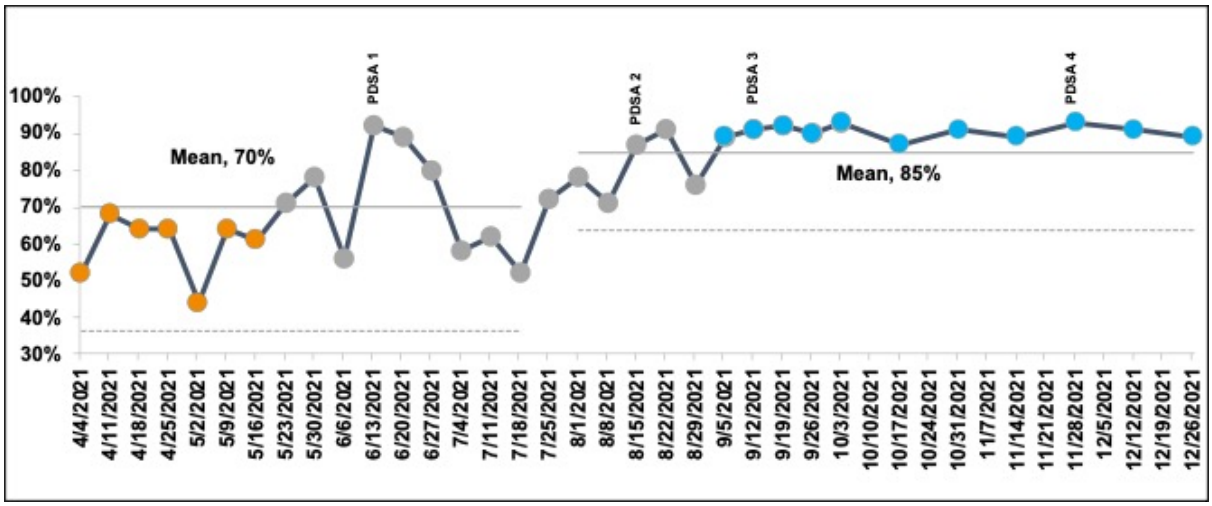
We completed four Plan-Do-Study-Act (PDSA) intervention cycles during the project: the introduction of a discharge summary template, sharing patient feedback, sharing pharmacist feedback, and sharing combined patient and GP feedback. Formal feedback surveys were performed to monitor discharge

summary satisfaction from GPs, district nurses and patients. Our patient representative took an active role to ensure a patient focus by designing the patient feedback questionnaire.

Results and discussion

The baseline compliance of discharge summaries was 61% measured in April 2021; this improved to an average compliance of 92% following our first PDSA intervention in June 2021. We subsequently achieved a compliance of 91% following both our second and third PDSA cycles. Our fourth cycle achieved a compliance of 93%. We have achieved sustained improvement from a baseline mean compliance of 70% to a mean of 85% (Fig 1*)*.

Fig 1. Run chart displaying the average discharge summary compliance measured weekly.



Patient feedback has been positive, with 93% (n=15) reporting that discharge summaries were easy to understand. There have been no further GP quality alerts or patient safety incidents relating to discharge summaries on the ward, and a 70% reduction within the wider hospital.

Conclusions

This project has shown significant improvement in discharge summary quality as measured by our 10 core components. We anticipate that sustaining improvements will be a challenge requiring significant behavioural change. The project is now being expanded into the Paediatrics Department and Community Response Teams within the trust. Our next goal is to expand this project further throughout multiple trusts. Widespread adoption of such changes will improve patient safety and satisfaction.

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Trends in rates of complications and adverse outcomes in diabetic ketoacidosis following changes to the Joint British Diabetes Societies' management guidelines

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Introduction

Serious complications of diabetes-related ketoacidosis (DKA) and its management with fixed rate intravenous insulin infusion (FRIII) include hypoglycaemia, hyperkalaemia and hypokalaemia. Revised Joint British Diabetes Societies for Inpatient Care (JBDS) guidelines in June 2021 recommend a reduced rate FRIII of 0.05 units/kg/hour from 0.1 units/kg/hour once blood glucose levels fall to ≤14.0 mmol/L to alleviate the risk of these complications.[1]

Materials and methods

The aim of this study was to study the impact on trends of hypoglycaemia, hyperkalaemia and hypokalaemia in DKA prior to and following the JBDS guideline update. We performed a retrospective analysis of all DKA admissions between February and November 2021 across six hospitals in the UK. Three out of the six hospitals have updated their management guidelines to reflect the new national recommendations. The trends in hypoglycaemia, hyperkalaemia and hypokalaemia episodes pre- (February to June) and post-guideline update (July to November) were compared.

Results and discussion

In total, 220 (February–June) and 188 (July–November) DKA admissions were identified. 23 (10.5%) patients experienced hypoglycaemic episodes prior to the guideline update compared with 29 (15.4 %) patients post-guideline update (p=0.116). 55 and 58 episodes of hypoglycaemia were identified pre- and post-guideline update, respectively. 82 (37.3%) admissions pre-guideline update experienced episodes of hyperkalaemia compared with 51 (27.1%) admissions post-guideline update (p= 0.306). Additionally, 67 (30.5%) patients experienced hypokalaemic episodes pre-guideline update compared with 72 (38.3%) patients post-guideline update (p=0.033). Overall, 141 and 142 episodes of hypo- and hyperkalaemia were identified pre-guideline update in comparison with 189 and 72 hypo- and hyperkalaemic episodes post-guideline update. The median DKA duration was 13.5 hours (IQR 9.0–20.6) in February–June vs 14.1 hours (IQR 9.6–19.7) in July–November (p=0.424). Median length of stay was 4.4 days (IQR 2.3–8.2) in February–June vs 3.4 days (IQR 2.0–6.7) in July–November (p=0.58) respectively. Lack of awareness and understanding was listed as the reason for minimal changes in complications and outcome post-guideline update.

Conclusion

With an exception a higher number of hypokalaemic episodes was observed after the guideline revision, there were no significant changes in the complications or outcomes of DKA. These findings suggest more work needs to be done in implementing and educating the end-user to improve the anticipated outcomes from the revised guidelines.

Reference

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An audit into improving current referral practices to the haematology department at Hillingdon Hospital

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Background

The system used within the haematology department at Hillingdon Hospital relied on referrals conducted via pagers, potentially at any time and is a one-way form of communication.

Objectives

To identify potential risk areas and downfalls in the current referral system to the haematology department from other hospital inpatient specialties; and from this audit, to develop a standard for safe patient referral system, and implement this standard.

Methods

Current risk factors associated with the pager referral system were identified via a questionnaire given to all haematology doctors (n=10). To confirm the questionnaire reliability a Cronbach's alpha was calculated and determined as 0.77. Following this, a tailored solution addressing these issues was developed and implemented, consisting of an online platform where referrals can be received, documented and subsequent advice delivered. The new system was tailored to target these pitfalls by allowing for more efficient access of important information and greater traceability. In addition, guidance was delivered to other departments on how to use this new system. The new system was compared with the previous using the same questionnaire 1 month later.

Results

Many problems with the current referral procedure were identified including inability to document discussions, poor quality of note taking and wasting of clinicians' time. The findings suggested that an online referral platform would improve patient care by reducing the inefficiency and unreliability of the current process. When asked on a scale of 1–10, how much do you think shifting to an online referral platform will improve patient care and quality of referrals, 100% of respondents answered 10.

Conclusions

Referral practice is an important process with patients often presenting with multiple health conditions requiring the attention of multiple specialties. It therefore needs to be well-documented and traceable. Implementation of an online referral system enables timely documentation and improves patient care.

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Coding method change during COVID-19: a catalyst to improving the quality of electronic discharge summaries

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Introduction

All inpatients discharged from hospital are expected to have a discharge summary to provide communication of important information to the community team and for the patient and any carers. At East Surrey Hospital, methods to increase compliance of completing discharge summaries, for example adding outstanding summaries to the medical division performance scorecard and including them on the risk register, resulted in an improvement of compliance from 68 to 83%. However, the quality of electronic discharge summaries was found to be lacking. During the COVID-19 initial response, coding was changed to electronic documentation, with coding taking 60% less time per patient. The coding team noted multiple errors on discharge summaries with four key disciplines identified: trauma and orthopaedics, general surgery, cardiology and stroke. Key concerns were surrounding primary diagnosis, use of 'likely or query' leading to symptom coding, poor recording of comorbidities and minimal information on complications. Admissions had to be recoded due to errors on discharge summaries and coders reverted to using written documentation. This led to a body of work to improve the quality of the content of discharge summaries.

Materials and methods

In total, 200 discharge summaries (50 from each key discipline) were randomly selected from August 2020 and reviewed using a unique tool created from the RCP discharge summary resources and Professional Record Standards Body guideline.[1,2] Multiple domains were analysed including 'Reason for admission', 'Past medical history', 'Rationale for medication changes' and 'Follow-up plan'. Limitations were interpretation by the assessing team, with some categories less relevant to certain specialties, ie procedures or mobility restrictions. A further analysis of 100 randomly selected discharge summaries across the medical division was conducted to evaluate the accuracy of diagnoses.

Results and discussion

The reason for admission and hospital follow-up plan were done well, with 74% having clear actions for the GP. However, 23% did not include a diagnosis. Of those that had a documented diagnosis 30% did not include the correct primary diagnosis. 45% did not have clear past medical history documented, leading to inaccurate coding of comorbidities. Analysis identified a potential cause for incorrect discharge diagnosis being the automatic inclusion of an initial diagnosis from the Emergency Department electronic system. Reasons for changes to medications were often poorly documented, although a medication list was usually included.

Conclusion

Improving discharge summary quality has many benefits including accurate coding, patient safety and handover of correct information to community teams. An action plan was developed with a focus on training, education and improving electronic systems. An online education programme concentrating on quality of discharge summaries as well as induction to the IT software was introduced for the foundation doctors starting at East Surrey Hospital in August 2021. East Surrey Hospital has a strong network of physician associates and the electronic records team suggested creating 'super users' to help support users in action. Junior doctor representation was recommended for the working group rolling out electronic

records for East Surrey Hospital. A collaborative approach between clinicians, coding and the information technology team is encouraged for improving healthcare informatics.

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Improving compliance to DEXA scanning in IBD population according to BSG guidelines in Morriston Hospital, Swansea

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Introduction and aims

Individuals with inflammatory bowel disease (IBD) have an increased risk of osteoporosis compared with the general population.[1,2] Bone disease is attributed to vitamin D deficiency, steroid use, and/or systemic inflammation[3] and deficits in bone mass can persist despite absence of symptoms of active IBD.[4] Osteoclastogenic function of multiple cytokines have been documented.[5] Screening, monitoring and treatment for osteoporosis and low bone mineral density is recommended and has shown to reduce associated risks.[7–10]

A large percentage of IBD patients at risk of osteoporosis did not have appropriate bone mass density testing and there is only one similar previous project found on literature review.[6] We aim to improve return rate of DEXA scanning in IBD population by at least 20% according to British Society of Gastroenterology (BSG) guidelines criteria.

Method

Retrospective data collected over the past 12 months (September 2020 to September 2021) from IBD follow-up clinics through screening of clinic letters. Inclusion criteria was set according to BSG guidelines (three indications of DEXA scanning).

Results

Pre-intervention data:

A total of 450 medical records from IBD follow up clinics were screened. A DEXA scan was indicated in 115 (25%) of those patients due to one or more reasons. A DEXA scan was requested in 17% (20/115) patients while it was not requested in 83% (95/115) patients

Interventions:

1. Educating stakeholders (junior doctors, IBD clinical nurse specialists, consultants) done through teaching session.
2. Introduction of a clinic pro forma for IBD follow up patients (Fig 1) after collaboration with two other centres in Wales.
3. Patient empowerment through pre-clinic self-screening checklist completion (possible future intervention when patient reported outcome measures (PROMs) are in place).

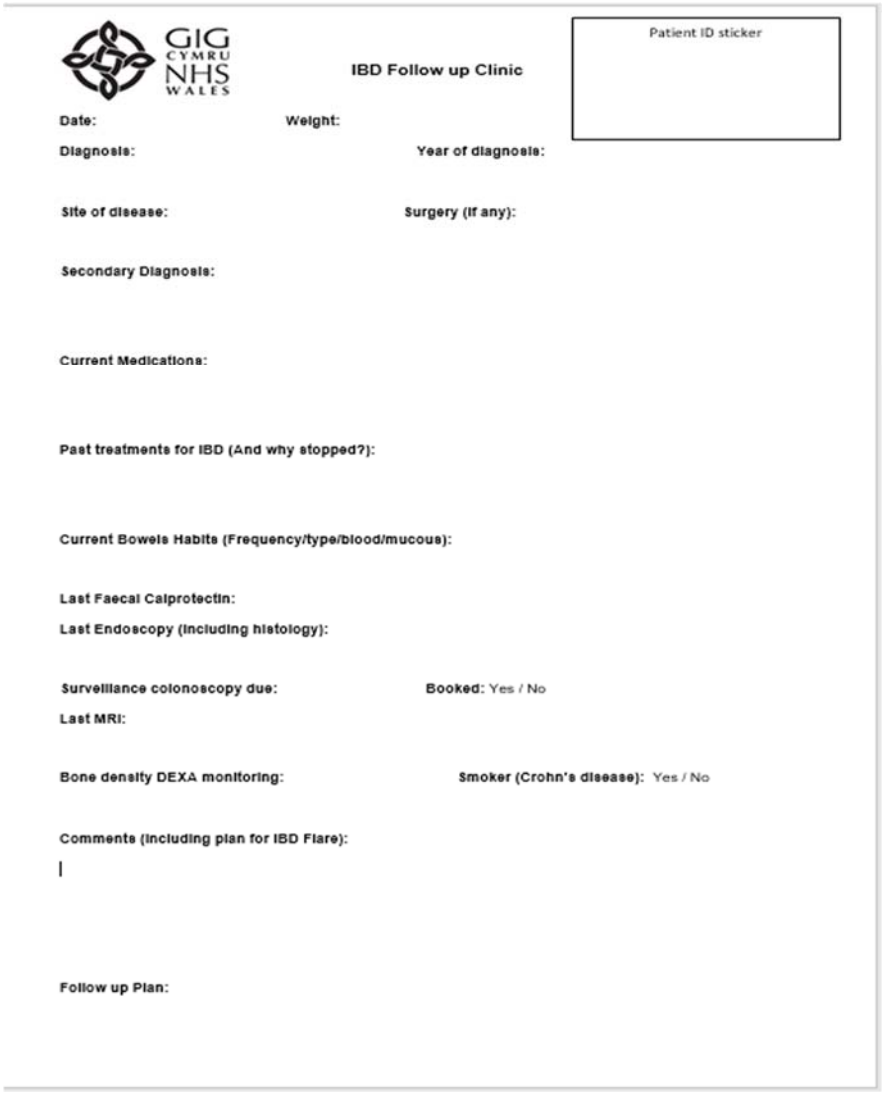
Post-intervention:

Prospective data was collected over a 3-month period following interventions. We managed to improve compliance of DEXA scanning according to BSG from 17% to 63%. We aim to repeat another PDSA cycle in July 2022 to see if any further improvement can be made.

Conclusion

Compliance with BSG guidance for requesting DEXA scanning in high-risk IBD patients is suboptimal. We have standardised the IBD follow up clinic practice by introducing a proforma according to BSG guidance. This has shown improved compliance and subsequently better care for the IBD population in Swansea Bay Health Board.

Fig 1. Clinic pro forma for IBD follow-up patients.



GIG CYMRU NHS WALES

IBD Follow up Clinic

Patient ID sticker

Date: Weight:

Diagnosis: Year of diagnosis:

Site of disease: Surgery (if any):

Secondary Diagnosis:

Current Medications:

Past treatments for IBD (And why stopped?):

Current Bowels Habits (Frequency/type/blood/mucous):

Last Faecal Calprotectin:

Last Endoscopy (including histology):

Surveillance colonoscopy due: Booked: Yes / No

Last MRI:

Bone density DEXA monitoring: Smoker (Crohn's disease): Yes / No

Comments (including plan for IBD Flare):

Follow up Plan:

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Telecommunication during COVID-19 – a multicentre quality improvement project

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Introduction

Communication is an essential part of daily work in clinical settings. During the COVID-19 pandemic, more and more communication with patients/relatives has been carried out remotely (through phone or similar means). With no or little training, communication regarding sensitive decisions like DNACPR/escalation plan/breaking bad news/death etc is challenging.

Methodology

This piece of work was carried out as a quality improvement project to help doctors/staff communicate effectively. Pre- and post-intervention qualitative data was collected. An online training/teaching session was organised (as an intervention) across four sites.

Results

Pre-intervention data:

- 65 responses in total (15 foundation doctors, 12 SHOs, 21 registrars, nine consultants and eight allied healthcare professionals)
- 25% (16/65) had had some formal/informal training about remote telecommunication, while 75% (49/65) had had no training.
- 5% (3/65) were extremely confident, 3% (2/65) were very confident, 44.5% (29/65) were somewhat confident, 44.5% (29/65) were not so confident and 3% (2/65) were not at all confident about communicating remotely.

Intervention:

A Microsoft Teams meeting was organised with two consultant leads to teach/train on how to effectively communicate remotely. It was attended by 59 participants in Singleton Hospital Swansea, 13 in Morriston Hospital Swansea, 10 in Glenfield Hospital Leicester and 15 staff in the Royal Liverpool University Hospital.

Post-intervention data:

- 62 responses
- 64.5% (40/62) found the session extremely helpful, while 35.5% (22/62) found it very helpful.
- 6.5% (4/62) were now extremely confident, 32% (20/62) were now very confident, while 60% (37/62) were somewhat confident and 1.5% (1/62) were not so confident to effectively communicate remotely.

Conclusion

Remote communication during COVID-19, especially about sensitive decisions, remains a challenge. Our QIP has shown that innovative teaching methods can help improve a doctor's confidence in this area.

FIT and the endoscopy service in Swansea Bay Health Board during the COVID-19 pandemic

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Introduction

Endoscopy services have been significantly disrupted during the COVID-19 pandemic which led us to look for alternatives for prioritising diagnostic procedures. FIT (faecal immunochemical test) has been widely used to prioritise endoscopy requests and this study evaluated its reliability in clinical settings.

Methodology

This piece of work was carried out as part of wider quality improvement project to effectively improve the diagnostic yield of endoscopy especially during the COVID-19 pandemic. Retrospective data was collected on all the FITs requested from 17 January to 7 October 2020. A FIT was sent to everyone waiting for a lower GI endoscopy and also to those with anaemia awaiting an upper GI endoscopy as per our local protocol. Patients with visible rectal bleeding were excluded from FIT analysis.

Results

In total, 385 patients were sent a FIT kit during the timeframe out of which six (1.5%) were for oesophago-gastro-duodenoscopy (OGD), 41 (11%) for flexible sigmoidoscopy, 233 (60.5%) for colonoscopy, 102 (26%) for double ended endoscopy while one request was for FIT only. No reason was mentioned in two of the requests.

FIT was positive in 54 (14%) of those patients and negative in 232 (60%), while in 99 (26%) patients it was either not returned or endoscopy was directly booked/cancelled by the referrer.

Out of those patients with a positive FIT, 9 (17%) were found to have no abnormality, another 9 (17%) were found to have polyp(s) <1cm, 7 (13%) had polyp(s) >1cm, 10 (18%) had cancer, 12 (22%) showed other abnormality including diverticular disease, haemorrhoids, IBD, angiodysplasia or upper GI ulcer. Five (9%) patients cancelled their appointments for endoscopy while one (2%) was deemed appropriate to have an urgent outpatient appointment and one (2%) was diverted to have a CT scan instead.

Overall, 98 (25%) endoscopies were requested out of a total 385 FIT requests. Out of these, 28 (28.5%) showed no abnormality, 22 (22.5%) showed polyp(s) <1cm, 7 (7%) showed polyp(s) >1cm, 10 (10%) showed cancer and 31 (32%) showed another abnormality as described above.

Interestingly, all 10 (100%) of cancer outcomes had a positive FIT result as did six (85.7%) out of seven with significant abnormality, ie polyp(s) >1cm. FIT results in these two categories were anywhere between 12.1 to 400 (10 being upper normal limit and 400 being the highest reported value for FIT).

Conclusion

FIT is an effective way of prioritising endoscopy requests and our study has shown this. A higher FIT result did not correspond to a serious endoscopic outcome in our study. We plan to further develop FIT-related endoscopy prioritisation protocol. Our project led to a business case in the local health board and as a result FIT testing is available to all gastroenterologists, colorectal surgeons and GPs in primary care.

Reducing anti-cholinergic burden in older patients

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Background/aims

Anticholinergic burden (ACB) is referred to the cumulative effect of taking one or more medications with anticholinergic activity.[1] Increased ACB is associated with increased cognitive impairment and mortality in the older population, particularly patients with an ACB score of three or more.[2] Adverse effects associated with anticholinergic use in older adults include memory impairment, confusion and hallucinations.

The aims of this QIP were:

- to reduce ACB of geriatric patients
- to encourage routine review of polypharmacy in older inpatients
- to improve patients' prospective long-term cognition on discharge.

Methods

Two cycles of QIP, in which the ACB score of Wandle 2 patients was calculated on arrival to the ward, and then recalculated on discharge. ACB was calculated using http://www.acbcalc.com/.

Cycle 1 was comprised of two parts. Baseline (4 November 2020–22 November 2021): in this first part, ACB scores were calculated for Wandle 2 patients across the time period in order to assess the percentage who had their ACB reduced on discharge without any intervention. The second part involved intervention 1 (23 November 2020–9 December 2021): promotion of QIP to whole ward team, highlighting drive of intervention to review ACB and reduce prior to discharge.

Cycle 2 was done 4 months later involving intervention 2 (22 March 2021–7 April 2021): an educational poster on ACB (prompting drug chart review to help calculate and reduce ACB score) was placed in Wandle 2 MDT office. The ward pharmacist was also involved to calculate and input the ACB score of patients in their electronic patient record, to flag scores to doctors and encourage medication review.

Results

Baseline (42 patients): 6 of 42 (14%) had their ACB reduced. Of the high scorers/high-risk patients with ACB score of ≥3, three of eight (37.5%) had their scores reduced. Cycle 1 (45 patients): eight of 45 (17%) had their ACB reduced, and of the high scorers 37.5% had their scores reduced. There was only a marginal difference in results [17% vs.14%] despite increasing the team's awareness of ACB (Table 1).

Table 1. Comparison of baseline, cycle 1 and cycle 2 results

	Baseline	**Cycle 1**	**Cycle 2**
Total number of patients	42	45	47
No of patients with ACB reduced on discharge	6	8	9
% of patients with ACB reduced (from all patients included in cycle)*	14.28	17.77	19.15
% of patients with ACB reduced of patients with ACB score ≥1 on admission	35.29	32	29
No of patients with ACB increased on discharge	6	3	5
% of patients with ACB increased (from all patients included in cycle)	14.28	4.84	10.64

	Baseline	Cycle 1	Cycle 2
Number of patients with admission score of ≥3	8	8	15

Number of patients that had ACB score ≥3 reduced on discharge	3	3	7
% of patients with high-risk ACB reduced on discharge	37.50	37.50	46.67

Cycle 2 (47 patients): 9 of 47 (19%) had their ACB reduced, and of the high scorers 46.67% had scores reduced. There was a negligible improvement of overall number of patient reduced scores between interventions [19% vs. 17%] but there was an improvement of reduction of high scorers ACB [46.67% vs. 37.5%] (Table 1).

The most common medication stopped (reducing ACB) across both cycles was promethazine (n=6). The most common medications started (adding to ACB) across both cycles were morphine (n=6) and codeine (n=4).

Conclusions

In both cycles, patients with higher scoring ACB were more likely to have medications stopped as an inpatient. These patients are at greatest risk of their medications negatively impacting cognition, and overall mortality, therefore it is right they are prioritised. However, the frequency of ACB reduction in patients scoring lower scores (1–2) only showed marginal improvement between cycles.

There is an increased risk of future accumulation of anticholinergic effect if redundant medications contributing to ACB are not stopped when the opportunity arises. There is still a lot of scope to improve stopping of medications that contribute to ACB while an inpatient.

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Implementation of decompensated cirrhosis discharge bundle: a university hospital experience

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Background

Decompensated liver cirrhosis is a frequent reason for admission to acute medical and gastroenterology units. Over the past 2 decades, a significant rise in the prevalence of liver cirrhosis in the UK has been noted, with the major culprits being alcohol-related liver diseases, hepatitis B and C, and non-alcoholic obesity related disease.[1,2] It has been observed that readmissions to the hospital are common following discharge of the patients with decompensated liver cirrhosis. In order to improve the quality of discharge and reduce the readmissions a decompensated discharge bundle has been developed by the British Society of Gastroenterology (BSG) and British Association for the Study of Liver Diseases (BASL). A study revealed that the decompensated cirrhosis discharge bundle improves outcomes in the patient care.[3] We aimed to assess the practice in our hospital against BSG and BASL guidelines, and the impact by the implementation of the said discharge bundle.

Methods

All those patients who were admitted with decompensated cirrhosis were included for data collection. Standard Quality Improvement model was adopted using two PDSA cycles. In cycle 1, discharge letters of 40 patients were assessed retrospectively against the decompensated cirrhosis discharge bundle toolkit during the months of January, February and March 2021. In cycle 2, there was reassessment of discharge letters for 40 patients during the months of April, May and June 2021 to look for any change or improvement.

Results

In cycle 1, it was noted that only 20% of the decompensated cirrhotic patients had weight, urea and electrolytes, diuretic dose adjustment and communication with the patients recorded on the discharge letters. Hence, the bundle was introduced by displaying the awareness posters in the gastroenterology and hepatology unit, and it was discussed with the junior doctors in the board round. Additionally, emails were sent to the doctors in the gastroenterology unit regarding the discharge bundle introduction.

There was a significant improvement of results in cycle 2, where 60% of the patients with decompensated cirrhosis had the above-mentioned parameters documented in the discharge letters respectively.

Conclusion

There were inconsistencies in the discharge letters when assessed during PDSA cycle 1 and the documentation was suboptimal. However, the introduction of the discharge bundle during cycle 2 in the hospital has led to a significant improvement in the discharge letter documentations when compared against the decompensated cirrhosis discharge bundle. In order to get much better results and to continue the improvement, we would consider the incorporation of the bundle in the trust e-library and include in junior doctor inductions.

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A clinical audit on the management of inpatient hyperglycaemia in diabetic patients at Scarborough Hospital

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Introduction

Patients with diabetes are three times more prone to hospitalisation, and numerous data indicate that hyperglycaemia in patients with or without a history of diabetes is associated with an increased risk of complications and mortality. Hence the management of inpatient hyperglycaemia is not only important for achieving euglycaemia, but also has a significant role in improving patient outcomes and patient care.

Aims and standards

The objectives of this audit were to evaluate the compliance of inpatient management of hyperglycaemia in diabetes patients at Scarborough Hospital with the York Trust Hospital (YTH) guidelines and to know the extent of adherence to diabetes specialist nurses' (DSNs') advice .The audit standards were based on the YTH protocols for management of inpatient hyperglycaemia, YTH protocol for blood ketone testing for diabetic adults and the YTH best practice guidance for the use of stat doses of rapid-acting insulin for the treatment of hyperglycaemia in adult patients with diabetes.

Methodology

A prospective study was done from mid-August to mid-September 2020 and information was collected from electronic health records and patient notes of diabetic patients with hyperglycaemia who had an inpatient stay of 3 days or more.The total number of patients was 30, with 27 patients having type 2 diabetes and the other three patients having type 1 diabetes. Data were recorded and analysed in Microsoft Excel.

Results

In patients with type 1 diabetes the median age was 30 and in patients with type 2 the median age was 78. Sixty per cent of patients in this audit were male. Blood glucose readings after admission were above 16 mmol/L in about 70% of type 1 and in 52% of type 2 diabetics. All the type 1 patients and 22% of type 2 patients were tested for blood ketones. Seventy per cent of type 2 diabetics and 67% of type 1 diabetics had their blood ketone measured according to the YTH protocol. In type 2 diabetics who needed blood ketone monitoring but were not tested, half of them were missed, and in the other half testing was not in line with YTH protocol. Overall compliance with the YTH ketone testing protocol was 70%. In type 2 diabetics, in 15% oral hypoglycaemic drugs were increased, in 45% insulin was increased by 10% and in 26% a stat dose of rapid-acting insulin was given. But in almost 40% of those treated with a stat dose of insulin, blood glucose was not checked after 2 hours. The DSN advice was followed in 70% of the cases.

Conclusion

Even though compliance with the YTH protocol in blood ketone testing and the DSN advice were good, failure to test ketones in type 2 diabetics who were unwell and who had a blood glucose above 16 mmol/L could have serious consequences. Blood glucose is to be checked after 1 or 2 hours depending on the type of stat dose of insulin and leaving blood glucose unchecked could result in fatal complications.

Improving steroid and immunosuppressant prescribing and treatment plans – quality improvement project on an intensive care unit

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Introduction

Steroids are commonly used in critical care for a broad range of conditions: COVID-19, respiratory, cardiovascular, neurological and additionally, in our patient cohort, haematological and for those who are immunosuppressed post-organ transplantation.[1] Each patient should have an individual treatment regime, guided by known best practice guidelines or specialist advice. Adherence is important as exogenous steroid use has well-known complications (such as hyperglycaemia and nosocomial infections) and appropriate weaning is key in avoiding relapse cortisol insufficiency in those on long courses.[1] We conducted a quality improvement project (QIP) on our 35-bed general intensive care unit (ICU) with the aim to assess whether clear steroid regimes were indicated (including appropriate dose and duration for indications and, if necessary, weaning instructions) and whether interventions could be introduced to improve quality and patient safety. During the second cycle, we introduced long-term immunosuppressant prescribing and monitoring as a secondary outcome.

Materials and methods

Data were collected from electronic drug charts and medical notes, team handover lists and junior doctor surveys via Google Forms. Anonymised information was collected on patient demographics, admission, indication for steroid and/or immunosuppressant, dosage, duration, medication plan and monitoring instructions. Data were analysed on Microsoft Excel. The small step changes per cycle are outlined as below:

- Cycle 1: Addition of section on manually updated Microsoft Word handover list
- Cycle 2: Addition of individual subheadings on self-generating handover list
- Cycle 3: Teaching and circulation of drug chart functions to assist in duration regimes and monitoring instructions

Results and discussion

In the initial data collection in September–October 2021, 15 patients were prescribed steroids and six were on long-term immunosuppressive therapy. Indications are outlined in Table 1. In 40% (6/15) of patients on steroids, there was no clear documentation of indication, proposed duration or plan, and one-third of patients on tacrolimus or ciclosporin immunosuppression had clear therapeutic drug target levels indicated. Changes from the first two cycles were minimal and a junior doctor survey of proposed changes guided the next steps, as 50% of responders preferred to utilise electronic medical notes and drug charts on the IntelliSpace Critical Care and Anaesthesia (ICCA) system. Third-cycle data recollection in January–February 2022 (n=8 for steroids, n=3 on immunosuppressants) indicates that performance improved, with 100% patients on steroids with clear indications (correct doses as per guidelines) and 50% with clear plans (weaning instructions or stop dates) and, for those on immunosuppression, 66% had clear monitoring instructions and target levels. Utilising electronic drug chart and medical notes features has an increasing role in reducing errors and improving patient safety.[2] Remaining points of improvements for next cycles will be on setting a unit protocol for viral titre monitoring for patients on long-term immunosuppression.

Table 1. Steroid indications in our patient cohort

Steroid indication	**Frequency**
COVID-19	3
Shock	4
Asthma	1
Intracranial lesion	1
Haematological malignancy	1
Haemophagocytic lymphohistiocytosis (HLH)	2
Unclear/mixed indications	3
Long-term immunosuppression indication	
Kidney transplant	2
Bone marrow transplant	2
Haemophagocytic lymphohistiocytosis (HLH)	2

Conclusion

We have shown that quality of steroid and immunosuppressant prescribing and monitoring can be improved using local measures and team involvement. This is beneficial for patients and staff to reduce unnecessary dosing and complications.

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The impact of a smoking cessation programme on referrals in a cardiorespiratory admissions unit

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Introduction

The National Institute for Health and Care Excellence (NICE) recommends that all patients above 12 years of age who smoke should receive smoking cessation advice and interventions.[1] Our aim is to improve the number of assessments to ensure that the majority of the smokers presenting to the Clinical Decision Unit (CDU), which is a cardiorespiratory admissions unit, have been offered smoking cessation advice and referral to stop smoking services.

Materials and methods

We retrospectively collected data for patients admitted in December 2020 in the first cycle and for patients admitted in July 2021 in the second cycle. The data source was the department database. The interventions were offered by the staff in the CDU as well as members of the CURE team, our local smoking cessation team.

The key interventions from the staff were: assessing smoking status, delivering verbal brief advice, prescribing nicotine replacement therapy (NRT) and referring to the CURE team.

The key interventions from the CURE team were bedside consultations by tobacco dependency advisers, reviewing prescribed NRT, behavioural support, then offering a direct referral to the community Stop Smoking service on discharge, creating and distributing communication materials to staff and patients such as prescribing advice, medication leaflets, Stop Smoking service contact details, delivering staff training on a rolling monthly basis.

Results and discussion

In the first cycle, 974 patients were admitted in December 2020. Of these, 346 (36%) were assessed for their smoking status and 628 (64%) were not assessed. Of the 346 assessed patients, 55 (16%) were current smokers while 291 (84%) were either non-smokers or ex-smokers. Of the 55 current smokers, 40 (73%) were offered referral to Stop Smoking services but declined, and for 15 (27%) there is no documentation that they were offered verbal brief advice.

In the second cycle, 1,895 patients were admitted in July 2021. Of these 1,673 (88%) were assessed for their smoking status and 222 (12%) were not assessed. Of the 1,673 who were assessed, 275 (16%) were current smokers while 1,398 (84%) were either non-smokers or ex-smokers. All the 275 current smokers (100%) were offered referral to Stop Smoking services but only 53 patients (19%) agreed, while 222 (81%) declined referral.

In the second cycle, there was a 52% increase in assessments and 27% increase in the smoking cessation referrals compared with the first cycle.

Conclusion

Despite the significant enhancement of the number of assessed patients, there is still room for improvement and ideally more than 90% of patients should be assessed. In the unique CDU environment, there are irreversible factors that are contributing to a limited number of assessments, such as patients

who self-discharge before the smoking assessment is carried out, drowsy or unconscious patients, patients who will be moved immediately to the ITU or catheterisation laboratory, an extremely busy unit where, due to COVID-19 pandemic restrictions, patients have to be moved out of the unit very quickly to prevent overcrowding.

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Improving fluid balance charts through staff education on a general medical ward – a quality improvement project

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Introduction

From personal experience, inaccurate and incomplete fluid balance charts are a common issue across medical wards. An accurate fluid balance chart is important as it allows medical teams to monitor patient input and output. Fluid balance charts are of particular importance when a patient is on intravenous (IV) fluids and it is a key recommendation in National Institute for Health and Care Excellence (NICE) guidelines that patients have regular monitoring of fluid balance over each 24-hour period.[1] As well as those patients on IV fluids, monitoring fluid balance is important in all patients, especially those who are being treated for acute kidney injury (AKI) and decompensated cardiac failure. The same NICE guidance highlights that there is a lack of staff education on the importance of fluid balance, and it is often left to the most junior staff to monitor, for example healthcare assistants.[1] Because of this, fluid charts are often overlooked as these staff don't realise their importance. This project hoped to address this.

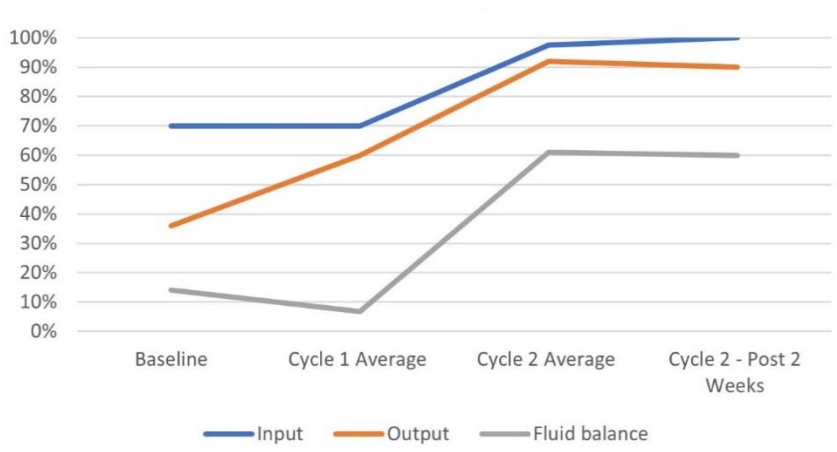
Method

To set a baseline, data were collected from ten patients at random on five different days. Data were also collected on age and diagnosis. Data were collected on whether fluid input during the day had been totalled (baseline average 70%), whether fluid output had been totalled (baseline average 36%) and whether the difference or total fluid balance for that day had been totalled (baseline average 14%).

After this baseline, a goal was set of substantially improving the completion of fluid balance charts within a 4-month rotation on the ward.

Due to the NICE recommendation about improving staff education and following discussions with staff on the ward, the quality improvement project focused on staff education as an area to target for improvement. As part of the quality improvement project, the plan–do–study–act (PDSA) cycle method was followed. There was limited improvement after the first PDSA cycle. After reassessment of the second PDSA cycle, completion of fluid charts improved to an average fluid input total of 97.5%, fluid output total of 92% and total fluid balance of 61%. See Fig 1 for run chart.

Fig 1. Run chart showing fluid chart completion of input, output and fluid balance at baseline and after each PDSA cycle.



Results

Baseline completion of fluid charts on the ward was poor before the quality improvement project. With rather simple interventions targeting staff education, there was a substantial improvement.

Conclusion

By publishing the findings of this quality improvement project, it is hoped that that colleagues in other hospitals will be able to undertake similar quality improvement projects and make similar effective changes to staff education to improve fluid chart completion and ultimately patient care and safety.

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Analysing the knowledge among clinicians on the relevance of HEADSSS assessment in young people and improving the assessment structure using quality improvement methodology

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Introduction

The HEADSSS assessment is an internationally used tool to help give structure and framework to the assessment of an adolescent patient.[1,2]

Objectives

To analyse the knowledge among doctors in the emergency department, paediatrics and acute medicine on the relevance of using the HEADSSS assessment tool (Home life, Employment, Alcohol, Recreational drugs, Smoking, School and interests, Sexual activity, Sexuality, Sleep and mood, Self harm, Safety, friendship, relationship), to study how often the tool is being used and confidence levels among clinicians on performing the assessment. To propose measures to make doctors more aware of its relevance and developing a poster to help execute the assessment in a structured and organised manner.

Materials and methods

The initial phase used a 35-question survey, aimed at junior doctors to gauge current knowledge of management, awareness of currently available resources and enthusiasm for a new reference guide and teaching. The questions were developed both with a Likert scale (1–5, where 1 = strongly disagree and 5 = strongly agree) and with free text space where applicable. The next stage, which is currently in progress, is to design teaching sessions by paediatric A&E consultants and developing a poster/reference guide to aid with the assessment. Finally, the survey will be repeated to see if knowledge base and confidence in handling the tool have improved.

Results

The initial survey was completed by 20 junior doctors at Ealing Hospital and Northwick Park Hospital (London North West University Healthcare NHS Trust), who ranged in grade from foundation year 1 to specialty trainees. Question 34 was aimed to assess how often the 'complete' assessment was being done; <10% of the clinicians always did a thorough assessment. Moving on to the individual components of the tool, questions 1–16 were used to gauge how often the clinicians enquired about the individual components of HEADSSS during their consultation; this demonstrated that 70% always take history on alcohol, drugs and smoking, but at the other end of the spectrum, <10% always ask about interests, relationship, friendship, sleep and sexuality .Questions 16–32 were multiple choice questions to analyse the confidence levels of the doctors on assessing the individual elements of HEADSSS; this demonstrated that >85% were confident on taking history on alcohol, drugs, smoking and self-harm, but <55% were confident on asking about sexuality and sexual history. One hundred per cent of those surveyed felt that a new reference poster and teaching would be helpful to their clinical practice.

Conclusion

The initial survey suggests a lack of knowledge among clinicians on the relevance and methodology of using the individual components of the HEADSSS assessment in young patients, and demonstrated an enthusiasm for a new reference poster and teaching. We hope to roll out the posters, organise the teaching sessions

and then repeat the survey. Once that cycle is complete, there will be some indication as to whether a new and expanded HEADSSS assessment poster would be a useful accessory for clinicians in the overall structured assessment of young people.

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Exploring COVID-19 lateral flow testing engagement and compliance in selected Imperial College Healthcare Trust wards

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Introduction

Asymptomatic infections have driven the COVID-19 pandemic, accounting for 40.5% of all cases.[1] Consequently, a duty to undertake routine testing has been imposed on healthcare staff. Lateral flow tests (LFTs) are a cornerstone of this, providing absolute sensitivity above 80% in individuals shedding SARS-CoV-2 antigens.[2] Modelling data led NHS England to require biweekly self-testing and reporting, which Imperial College Healthcare Trust (ICHT) initiated in November 2020.[3] The peak pan-London testing compliance rate of 32% was reached in December 2020, but was followed by a steady decline to 7% in September 2021.[4] The comparable trend across ICHT, coupled with limited published literature, highlights a need for further investigation. This study on ICHT compliance beginning September 2021 had two objectives:

a Review compliance with LFTs and identify barriers.
b Implement small-scale interventions to test efficacy and sustainability.

Materials and methods

Phase 1: A questionnaire was given to 56 staff on eight wards. Section one quantified staff's self-testing and reporting tendencies and identified factors influencing them. Section two identified potential interventions and probed for staff sentiment on them.

Phase 2: Drawing on phase 1 results and the efficacy of nudge theory in a prior ICHT hand-hygiene campaign, a two-pronged intervention approach was piloted across seven poorly compliant wards.[5,6] 'Gentle-nudging' posters (Fig 1) were strategically placed in busy areas to collect staff feedback (poster 1) and encouraging engagement by using popular references (posters 2–7). A ward-led initiative with test kits and QR codes for the trust's reporting form was also piloted, alongside large visual aids advertising them (poster 8).

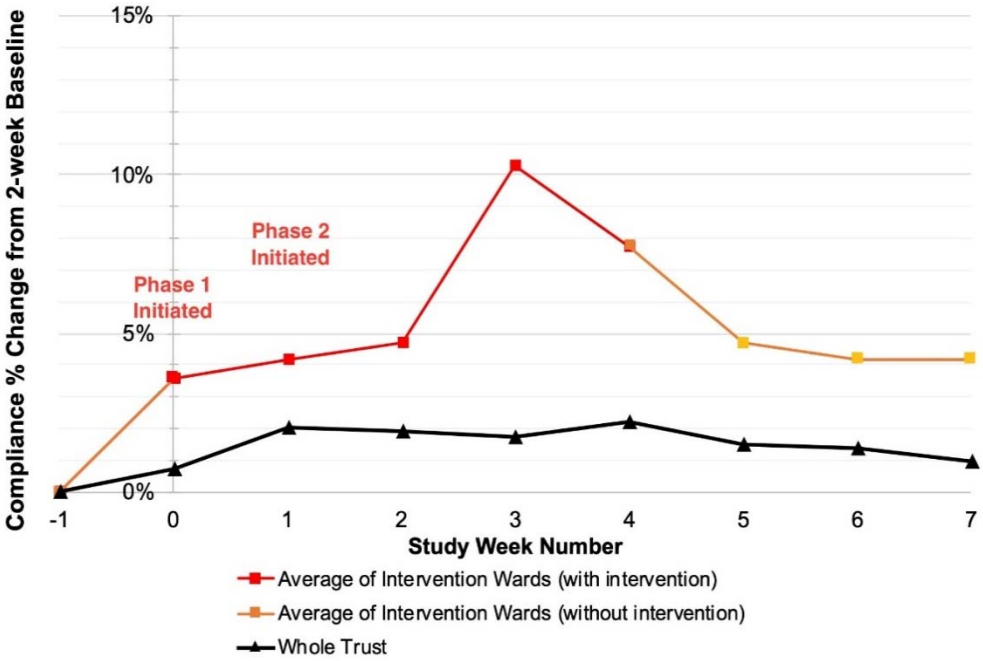
Fig 1. Visual aids.

Results and discussion

Phase 1: Though only 36% of staff claimed biweekly compliance, 52% reported testing 1–4 times a month. Similarly, only 34% always reported results, 41% reported results sometimes. This reveals a discrepancy between published compliance rates and actual engagement levels. Staff had strong preferences about interventions, with 71% finding allocated ward testing time encouraging and 79% supporting mandatory testing.

Phase 2: Hospital-wide compliance fluctuated throughout the study, but its percentage change from baseline average (calculated from the preceding 14 days) never rose above 2.5%. In contrast, there was a peak of 10% increase in average compliance rates among targeted wards on week 3 of the study, though this fell to 7.75% the following week. In the 3 weeks following intervention withdrawal, compliance rates fluctuated around 4% above baseline (Fig 2). This suggests that short-term, intense interventions improved ward compliance, and a long-term, enduring positive (albeit less significant) effect can remain.

Fig 2. Compliance percentage change from baseline in targeted wards and trustwide.



Conclusion

This study highlights that healthcare staff are more engaged and supporting of the testing scheme than reported compliance rates suggest. Barriers disclosed by staff focused on their lack of time and frustration with the reporting process, with similar opinions and behaviours found in another study.[7] Cost-effective solutions to improve engagement in healthcare trusts' schemes do exist and future schemes may perform better if more consideration is given to making necessary resources as accessible and flexible as possible.

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The use of continuous positive airway pressure (CPAP) in adults with obstructive sleep apnoea / hypopnoea syndrome (OSAHS) at Wythenshawe Sleep Service: a clinical audit

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Introduction

Obstructive sleep apnoea / hypopnoea syndrome (OSAHS) is a chronic condition pertaining to episodes of airway obstruction during sleep, causing a disruption to breathing. The management of OSAHS is dependent upon its severity, with moderate or severe cases requiring continuous positive airway pressure (CPAP). CPAP is only recommended by the National Institute for Health and Care Excellence (NICE) in mild cases if lifestyle advice has been deemed inappropriate or unsuccessful.[1,2] This audit aimed to explore the compliance of the regional sleep service at Wythenshawe Hospital with the NICE guidance for the management of OSAHS. NICE guidance helps patients to receive care which is based on the best available evidence.[3] It ensures that patients are cared for in a consistent, evidence-based manner and helps to eliminate healthcare inequalities across the country. Ensuring that NICE guidance is implemented in day-to-day clinical practice is therefore of major importance.

Materials and methods

New patients referred to the regional sleep service for assessment of OSAHS from 1 October 2020 to 3 November 2020 were reviewed. Patients' clinic letters and sleep study results were analysed to ascertain the severity of their sleep apnoea and the management which they had. These data were collected into a spreadsheet for analysis.

Results and discussion

The results showed that 93% of cases were managed by the service in a manner compliant with NICE (Fig 1). It was also highlighted that the current NICE guidance is only a guide and that clinical discretion is required during particularly complex cases where there are many factors at play. NICE guidance cannot account for all these different factors. A re-audit is recommended following the publication of the new NICE guidance in August 2021 to ensure that standards are being maintained.

Fig 1. Proportion of OSAHS management compliant with NICE guidelines.

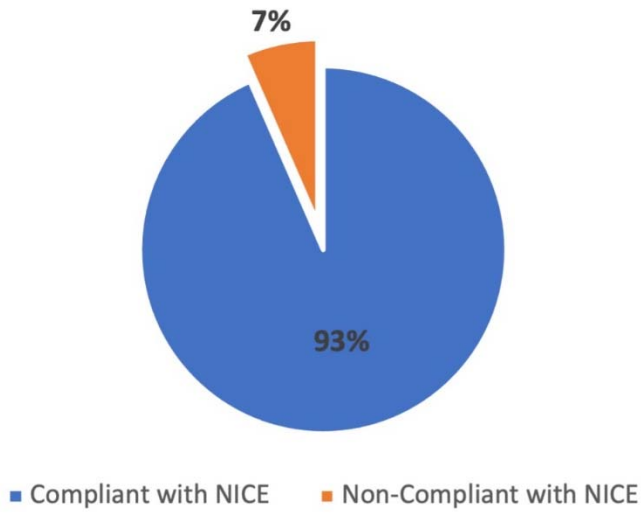
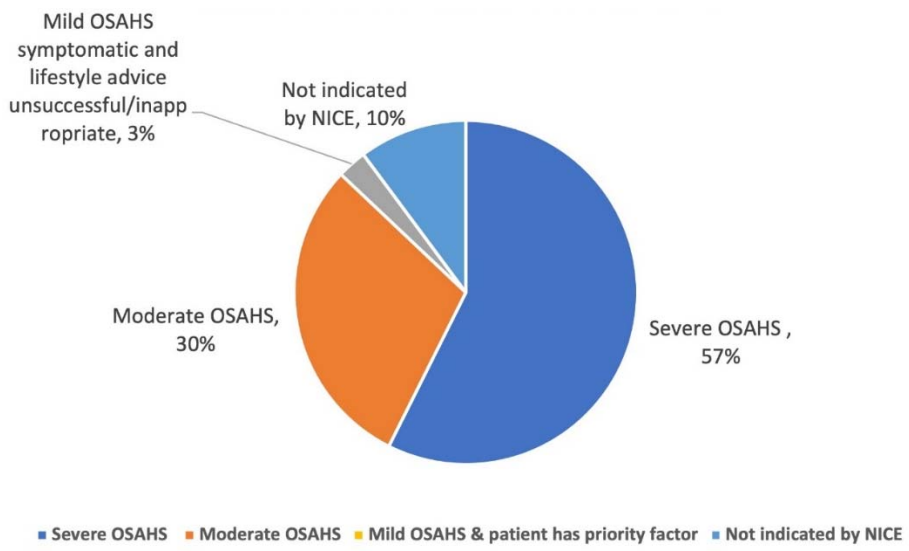


Fig 2. Indication for those offered CPAP.



Conclusion

This audit confirmed that all patients with moderate or severe OSAHS were offered CPAP as per the NICE guidance (Fig 2). Management plans which were non-compliant with NICE were all mild OSAHS cases who were offered CPAP at the discretion of the consultant, which appears to be justified. NICE guidance cannot account for all clinical scenarios and sometimes clinical decision making must be used by the consultant.

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Development of a clinical respiratory QI faculty in an acute hospital using QI methodology

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Introduction

Clinicians are often best placed to identify problems and design solutions within their clinical environments. Current training scheme requirements for doctors in training mandate participation in quality improvement projects (QIPs).[1] Often the 'lived experience' for trainees is that these QIPs are simplistic, not aligned to the departmental needs, and hence not sustained following trainee doctor rotations.[2]

The InQuIRe (In-hospital Quality Improvement for Respiratory) Faculty was formed in August 2020 as a departmental quality improvement (QI) faculty at a large teaching hospital with two acute hospital sites. The faculty's vision was to increase participation in QI across our multidisciplinary clinical staff, with a framework and support for mentorship and sponsorship.

Materials and methods

Our aims were to:

- increase the number of respiratory QIPs registered on the LifeQITM platform
- improve engagement and progression for respiratory QIPs
- improve handover and sustainability of QIPs at times of trainee rotation.

Multiple plan–do–study–act cycles were devised to test change ideas aligned to our primary improvement drivers, namely: i) QI training for staff, ii) QI participation, iii) communication of active QI work to wider staff and iv) progression of QI work past the initial planning phase.

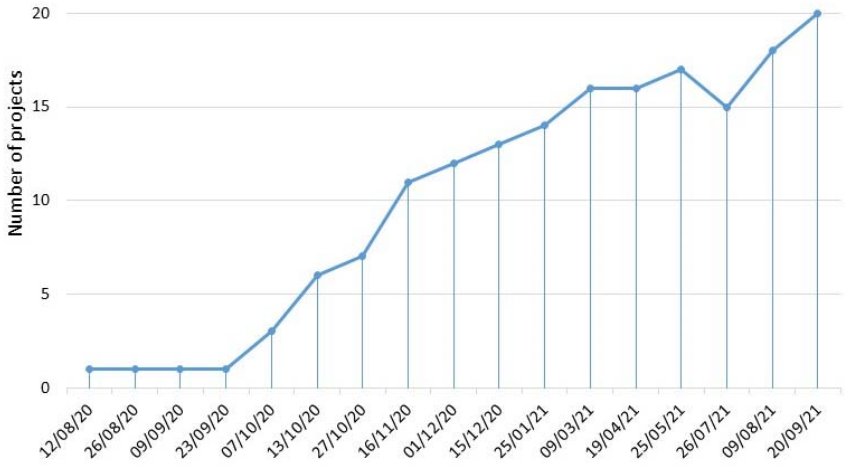
Members of the multidisciplinary team, including medical, nursing, physiotherapy, pharmacists and clinician library staff, were invited to join the faculty. Fortnightly meetings were held to discuss the progress of departmental QIPs and troubleshoot difficulties. More recently, an educational focus using action learning sets has been introduced. Some staff have progressed to become local or national improvement leaders. Many individual respiratory QIPs have been presented at national improvement conferences.

Results and discussion

23 new QIPs were registered in the first year of the faculty. The mean LifeQITM QI progression score improved from 0 to 1.63. Some individual projects became sustainable, reaching a progression score of 4.5. Five projects were subsequently closed due to completion or lack of progression.

Some of our more successful projects have led to embedded system change, scaling at trust level and measurable improvements in patient outcomes. This was most seen in projects where faculty members were directly involved in mentoring the QIP team. However, some projects struggled to progress, often related to limited senior sponsorship and the impact of COVID-19 operational workforce pressures.

Fig 1. Number of active QIPs registered in the respiratory department.



Conclusion

The departmental QI faculty has enabled a process for rotating medical staff to join existing projects rather than starting new, unsustainable projects. There is now oversight of all QI work across the department with fortnightly faculty meetings. We have shown that a multidisciplinary QI faculty can embed a culture of continuous improvement and lead to sustainable change. It is a useful model for improving access, organisation and project progression across a large department and may be transferrable to other departments within NHS organisations. A faculty should ideally be supported by dedicated administration support and time allocated for members to do this work in order to be sustainable in the future.

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Older Persons Assessment Service (OPAS): delivering comprehensive geriatric assessment (CGA) in the emergency department (ED)

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Introduction

Innovative models of service delivery are required to provide comprehensive geriatric assessment for older patients presenting to the emergency department (ED) with frailty syndromes. Out of 139,636 attendances in 2020–21 to the ED at Morriston Hospital, Swansea, 3,906 were due to falls in patients >65 years.

In patients >80 years, 41.6% of these were admitted in 2018–20, and readmissions to ED occurred in 24%.

Method

Phase 1: In 2018, the Older Persons Assessment Service (OPAS) began a liaison service to the ED, taking referrals from the medical and ED teams for patients who presented with frailty syndromes (falls, cognitive impairment, care dependence, polypharmacy). The service saw 437 patients between April and August 2018. 76% of the patients assessed were discharged by utilising available community services, rapid access outpatient follow-up and inpatient re-ablement off the acute site. The service was estimated to avoid 50–80 admissions per month to medicine (Fig 1, Table 1), saving 17–23 beds a year, and was commissioned as a permanent service.

Fig 1. Emergency admissions to medicine by month.

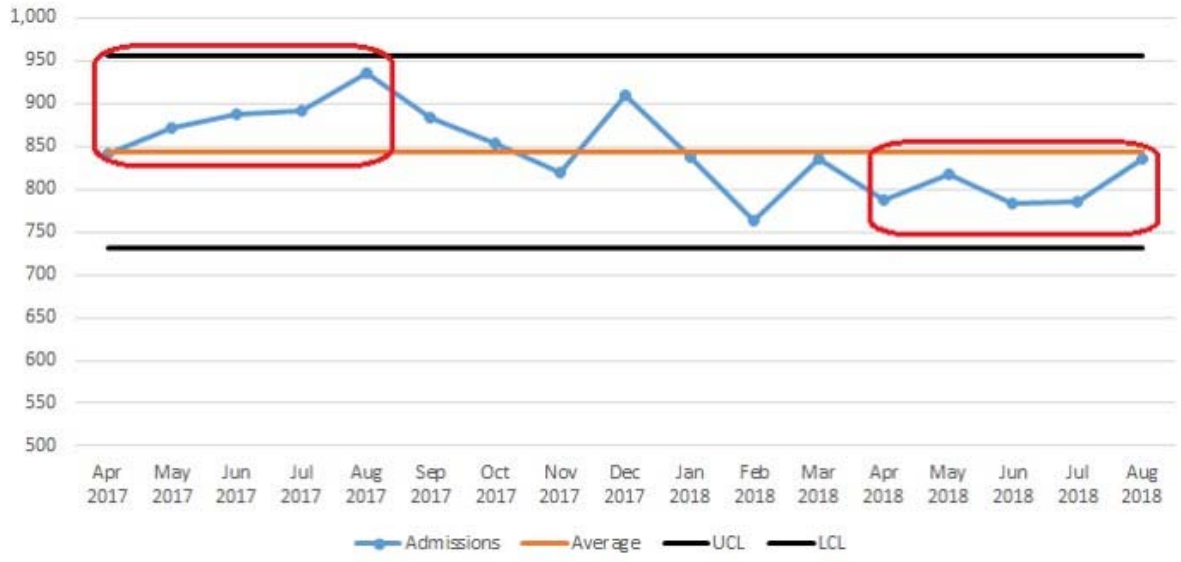

Table 1. Admissions 2017/2018

	April	May	June	July	August
Admissions 2017	842	871	887	892	936
Admissions 2018	788	817	784	786	835
Difference	–54	–54	–103	–106	–101
OPAS admission avoidance	16	51	49	84	54

Phase 2: In 2020, a dedicated unit within the ED was allocated to OPAS, enabling the acceptance of patients directly from triage and from the Ambulance Service. This provided rapid access to specialist assessment and continued access to elderly care services, and avoided exposure to coronavirus-related admissions and the risks of nosocomial infection associated with admission. The service operated from 8am–4pm on weekdays.

Results

Between June 2020 and December 2021, the service saw 1,302 new patients (950 presenting with falls). 1,087 patients (83.5%) were discharged from the acute site on the day of assessment. 69 (5.3%) patients were admitted to other facilities run by the health board (eg inpatient re-ablement). The average age of an OPAS patient was 83 years and they had a Clinical Frailty Scale score >5 on average. The readmission rate at 14 days was 5% (55). Of the 284 patients who were admitted to an inpatient setting, 12.3% (35) contracted nosocomial COVID-19.

Conclusion

This service demonstrates the ability of consultant-led multidisciplinary services that provide comprehensive geriatric assessment in the emergency department to avoid hospital admissions and readmissions. This study has been able to demonstrate a greater measurable impact on these service metrics than has been previously published.[1–3] The team has secured investment and now functions 7am–7pm on weekdays, with plans for future weekend working.

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Time to antibiotics (TTA) in paediatric patients with fever in the setting of neutropenia

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Introduction

Immunocompromised cancer patients are at elevated risk of infections.[1] The major contributing factors that predispose cancer patients to immunodeficiency include the underlying disease and related management.[2] Febrile neutropenia is a common and life-threatening complication in paediatric cancer patients on chemotherapy.[3,4] It is characterised by fever (temperature ≥38.3°C (101°F) or ≥38°C (100.4°F) for at least 1 hour).[2] Bacterial infection facilitated by immunosuppression is the vital cause of mortality and morbidity in cancer patients.[5] Morbidity and mortality correlated with this situation can be minimised if the clinicians initiate antibiotic treatment expeditiously.[3] It has been established that the administration of antibiotics in patients presenting with febrile neutropenia in <60 minutes of arrival in the emergency room (EAR) can significantly reduce mortality and morbidity.[6] This study aimed to ensure timely administration of antibiotics (in <60 minutes) in paediatric oncology patients presenting to the EAR with fever following chemotherapy.[7]

Materials and methods

Baseline data from October 2019 to July 2020 were reviewed. Patients who had a delay of >60 minutes in antibiotic administration were chosen to understand the causes of process variation. The data reviewed revealed non-compliance with the benchmark, ie average time <60 minutes. A team with multidisciplinary expertise analysed the preliminary data and initiated a quality improvement project. A four-stage approach, the Plan–Do–Check–Act (PDCA) cycle, was undertaken to improve the service and resolve the issues faced.[8] The PDCA was aimed to mitigate the identified reasons of process variation, ie i) delays in patient assessment, ii) delays in antibiotic prescription, iii) delays in dispensing, iv) transportation of prepared medicine, and v) delays in administration. The team proposed multiple strategies to reduce the process variation, including but not limited to the amendment of hospital electronic system (HIS) medication module, defined timelines for each service, dose banding, and educating the relevant staff members to ensure timely communication. Statistical analysis, interrupted time series (ITS) analysis, was performed on two cohorts (pre-intervention and post-intervention phases) to study the effectiveness of interventions. R-software was used to conduct the analyses. All tests were two-sided, and a statistical significance level of 5% was used.

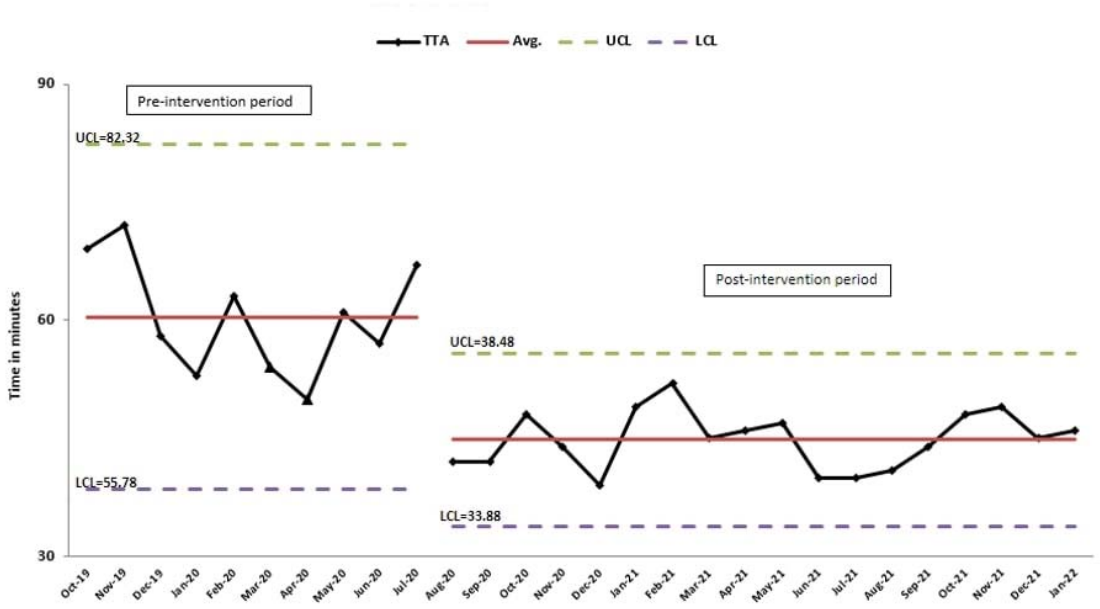
Results and discussion

The statistical process control chart suggested that the variation of the processes reduced significantly in the post-intervention period. The results showed that initially, the average time to antibiotic was 64.6 minutes/month (Fig 1). In the pre-intervention period, there was no significant change in antibiotic administration. The administration time decreased significantly by 12.9 minutes/month in the post-intervention period. However, no significant month-to-month change was observed in the average antibiotic administration time (P-value for the time after the intervention was 0.1839). The Durbin–Watson statistic for the model was 1.744 (P-value=0.2), indicating no autocorrelation.

Conclusion

This study highlights the benefits of using the PDCA cycle for improving the quality of care in a healthcare setting. The changes such as amendment of the HIS module, defined timelines for each service, dose banding, and relevant staff member education helped improve and sustain timely administration of antibiotics in the emergency room setting.

Fig 1. Average time to antibiotics in paediatric patients with febrile neutropenia from October 2019 until January 2022.



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Developing a patient story pathway

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Introduction

Patients are the cornerstone of healthcare, and understanding the experience they have is a fundamental to the delivery of quality care.[1] The NHS patient safety strategy advocates the involvement of patients in improving the quality of care in the NHS with the use of patient safety partners. The implementation of patient safety partners ensures that patients are 'empowered to play an active role in patient safety'.[2] In addition, the sharing of patient experiences can be a valuable learning tool for staff working within a healthcare organisation.

There are a number of ways in which patients can feed back to a healthcare organisation, but the effectiveness of these modes of engagement being relayed back to the staff working on the clinical floor is variable. We felt that this was a missed opportunity for sharing the patient experience with all relevant staff and, in turn, allowing people to learn through reflection on how our actions as healthcare professionals impact on the overall patient experience.

Method

We have developed a patient story pathway, which involves allowing patients and relatives the opportunity to provide a video account of the experience of the care they received in our hospital. We encouraged patients and relatives to share all aspects of their experience, both positive and negative, so that the true patient-lived experience can be appreciated by the healthcare audience. The experiences are shared in a video format, either filmed by the patient in their own environment or by us in the hospital setting. Videos are subsequently reviewed and edited to produce a short 5–6-minute patient story, which we feel is an appropriate length of time to maintain audience engagement.

We have developed the pathway to provide guidance on how to start the patient story process, appropriate time frames and essential checkpoints which need to be met, along with a timely follow-up procedure.

Results

We have shared a number of videos, both at a local trust conference and at our regular public trust board meetings. The feedback we have received from staff is promising – they appreciate the opportunity to understand how micro-interactions impact on the patient experience. In addition, patients welcome the opportunity to share their experience so that others can reflect and learn from it as a way of giving back.

Conclusion

There is clear evidence to suggest that engaging patients and utilising patient feedback to measure outcomes is an effective way to support an improved patient experience.[3] Furthermore, when the patient has a positive experience in healthcare, there is evidence to suggest this leads to improved outcomes for them and improved satisfaction for staff.[1] We believe that sharing patient stories can be utilised in this way. As our patient story pathway develops, we hope to share patient experiences more widely and potentially to more focused audiences. In addition, we would like to look at ways to share patient stories as part of 'lessons learnt' training.

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Improving the clinical handover of patients discharged from the intensive care unit to inpatient wards at a district general hospital: a quality improvement project

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Introduction

The discharging of a patient from the intensive care unit (ICU) to an inpatient ward for ongoing care is a crucial juncture in a patient's hospital journey. This transfer of care requires clear communication and documentation regarding the patient's care to date, as well as ongoing care needs. A written discharge summary forms the backbone of this process,[1] but verbal handover is also essential to ensure that the immediate care needs of the patient are conveyed, thus maintaining patient safety. We aimed to assess and improve the quality of the ICU discharge and handover process at a district general hospital.

Materials and methods

A quality improvement plan was designed using a plan–do–study–act (PDSA) cycle technique. Electronic ICU discharge summaries were reviewed retrospectively over a 2-month period; data collected included patient age and gender, discharge destination and evidence of a documented verbal handover to the accepting ward team. The results were then analysed and presented to the ICU medical team as part of an educational session on the importance of clinical handover (first intervention). The PDSA cycle was then repeated, and a second round of data collection took place after a further 2-month period. A third PDSA cycle is currently in process.

Results and discussion

In the first PDSA cycle, 53 patients were included (mean age 63, 55% male). 47 of these patients were discharged to hospital inpatient wards for further care, while two were discharged directly home and four died. Only 17 of the 47 patients (36%) discharged to inpatient wards had a documented verbal handover to the appropriate ward doctors. The second PDSA cycle included 30 patients (mean age 53, 64% male), 28 of whom were discharged to inpatient wards; 36% of these patients had a documented verbal handover.

The verbal clinical handover of patients discharged from ICU to their new ward teams has previously been shown to improve patient outcomes and reduce ICU re-admission.[2] This process is essential in maintaining patient safety, as well as improving ICU capacity by reducing avoidable readmission.[3] We found that verbal handovers were only occurring in 36% of ICU discharges. After presenting these findings to the responsible team and giving an educational session on the topic, the rate of verbal handover remained unchanged at 36%.

The lack of improvement in this metric, despite education, highlighted the need for systemic change. The clinical team understood the importance of handover but felt the communication systems in place were an obstacle, particularly out of hours when resources are stretched. As part of a third PDSA cycle, we have now integrated a new hospital-wide clinician-to-clinician digital messaging application into the ICU discharge process as a method of verbal handover.

Conclusion

Verbal handover is a critical aspect of the ICU discharge process. However, rates of successful handover are persistently low (36%) and limited by a variety of factors, one of which is routes of communication between

teams. A new digital communication platform has now been introduced, which we hope will improve communication between teams and subsequently improve the handover process.

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Modernising the weekend medical handover

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Introduction

Direct and comprehensive handover between medical professionals is critical in ensuring the delivery of effective high-quality patient care while maintaining patient safety. It has been widely cited that poor handover majorly contributes to negative patient outcomes and, in that vein, both the Royal College of Physicians (RCP) and the UK General Medical Council (GMC) have published guidance for suggested standardisation of practice.[1,2]

The weekend handover poses a particularly complex challenge, requiring navigation through a large volume of patients alongside a complete changeover of staff who are typically unfamiliar with them. It is thus crucial that a streamlined handover process is in place to ensure that pending interventions are clearly documented and assigned appropriately.

Methods

Within our central teaching hospital, prior to the pandemic, the weekend handover combined pre-population of a locked 'Excel' spreadsheet with patients and a face-to-face handover to the weekend team. Redeployment of staff provided the opportunity for quality improvement, with an overhaul of the system via the introduction of a new embedded electronic handover.

Baseline data: a retrospective questionnaire was distributed to all junior doctors working on the on-call general medical rota in May 2020 to gather issues with the prior process to identify improvements to be made.

Implemented action: a fully embedded functional electronic handover system was created within 'Epic'; our electronic patient records (EPR) platform, creating a 'one-stop' for all necessary information. This was supplemented by a face-to-face handover as prior.

Subsequent review: retrospective surveys of junior doctors working across all general medical specialties were distributed at several time points following subsequent plan–do–study–act (PDSA) cycles (June 2020 – December 2021) to improve technological functionality.

Results and discussion

Initial survey: junior doctors highlighted that the prior handover process was unstructured, protracted and inefficient. Meetings were inappropriately unproductive, compounded by inter-doctor variability in documentation/handover.

Review of new system: pre-population of the embedded handover system, which followed RCP guidance, led to clearer documentation and handovers.[2] The new system allowed complete access to all data on the EPR across the hospital which could be edited in real time for all users, ensuring that interventions could easily be monitored and completed by the weekend team.

Conclusion

The implementation of a new electronic medical handover process embedded onto our EPR system has led to more efficient weekend handovers between staff, with an associated improvement in the quality of data

recording and documentation. This has been observed positively by junior doctors and remains in use, with alterations via subsequent PDSA with the aim of further optimising its functionality.

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A quality improvement project to improve completion rates of treatment escalation and resuscitation forms at St George's Hospital

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Introduction

Treatment escalation plans (TEPs) and resuscitation forms are essential to communicate a patient's ceiling of care and whether cardiopulmonary resuscitation (CPR) should be attempted or not.[1,2] Completion of resuscitation forms is important 'to protect people from receiving CPR that they did not want, that would not work, or would not give them overall benefit'.[3] Discussion regarding escalation status identifies patients unlikely to benefit from escalation to critical care and supports individualised treatment goals.

This project aimed to improve completion rates of TEPs and resuscitation forms for medical inpatients at St George's Hospital, London.

Materials and methods

In September 2021, an audit of 200 medical inpatients admitted through the medical take for more than 24 hours was performed to identify completion rates of TEPs and resuscitation forms.

Our intervention was designed using feedback from a qualitative survey of junior doctors, assessing confidence in form completion, barriers to completion and ideas on effective interventions. It included induction materials for doctors starting in the acute medical unit (AMU) in February 2022. A demonstration of electronic TEP and resuscitation form completion was given to nine doctors, alongside a flowchart of the step-by-step process. A pre- and post-induction survey was completed to assess impact of the intervention.

Results and discussion

Of the 200 patients audited, only 46% (85) of patients had TEPs and resuscitation forms completed during their admission. 17% (54) had previous TEP forms which were not reviewed or reimplemented. In 11% (6), there was an error in documentation in the form.

26 junior doctors answered the qualitative survey, which shaped the intervention. 61% of respondents felt that completing resuscitation forms was 'very important'. 15% lacked confidence in completing resuscitation forms and 34% lacked confidence in viewing previous forms. Most doctors (38%) completed the form in their clerking, therefore suggesting interventions aimed at AMU doctors would be effective. 23% of respondents felt that induction materials would help. 80% felt that consultant discussion of resuscitation status would be beneficial. The qualitative survey provided insight into cultural and broader challenges of completing TEPs and resuscitation forms, eg time pressures, arduous forms, lack of confidence in DNAPCR discussions and need for consultant ownership.

Following our intervention, 88% of doctors felt more confident in completing TEPs and resuscitation forms and 100% gained confidence in viewing previous forms.

Conclusion

In conclusion, completion of TEPs and resuscitation forms is important in preventing inappropriate interventions and to allow 'a natural, dignified death in those who would not benefit from CPR.[4]

In our preliminary audit, the majority of medical inpatients did not have a documented escalation plan. Our qualitative survey of doctors identified barriers to completion including lack of knowledge, lack of time and delay in senior decision making.

Our project overall showed that induction materials can increase confidence in TEP and resuscitation form completion. In accordance with the wider literature, we found that seeking opinions of doctors can help to design interventions that are practical and sustainable, with greater chance of improving patient care.[5]

Next steps involve reauditing completion rates and adapting the intervention based on survey results.

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Cervical smear uptake in Black, Asian and minority ethnic and learning disability populations

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Cervical screening has been fundamental in reducing the incidence and mortality of cervical cancer, yet inequalities persist in its uptake. Women from Black, Asian and minority ethnic backgrounds are less likely to attend cervical screening than White British women. Similarly, uptake is much lower in women with learning disabilities (LDs) than other women. The aim of this audit was to identify cervical smear attendance in these populations in a primary healthcare setting.

This retrospective study enrolled 1,641 patients aged 25–64 and eligible for cervical screening. Data were collected using an electronic patient record system, and pre-existing codes generated population-specific patient lists. The primary end point was to determine numbers of non-attenders within each group. Secondary end points included the number of reminders sent to non-attenders.

250 out of 1,641 patients in the cohort had inadequate cervical screening performed in the past 3.5 or 5.5 years, with 63/250 of these patients being of Black, Asian or other minority ethnicity (Figs 1 and 2). 55/63 had been sent a 'second recall SMS', yet only one had booked a cervical screening appointment. An additional 4/250 of the non-attenders have a learning disability, with 2/4 having signed a recall withdrawal disclaimer. Only 1/4 had been sent a 'second recall SMS', and 0/4 had an appointment booked.

We conclude that a significant proportion of cervical screening non-attenders are of Black, Asian and other minority ethnicity, and that a second SMS reminder is not adequate in increasing cervical screening uptake in this group or the LD population. Quality improvement activities have been suggested to tackle this inequality.

Fig 1. Proportion of patients missing up-to-date cervical smear belonging to Black, Asian and minority ethnic or LD populations.

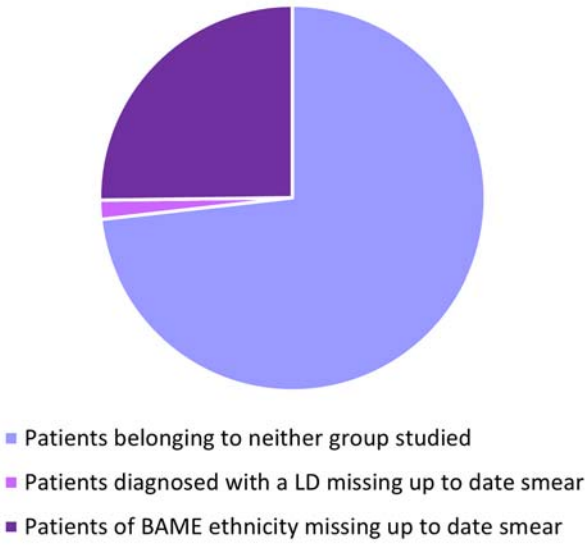
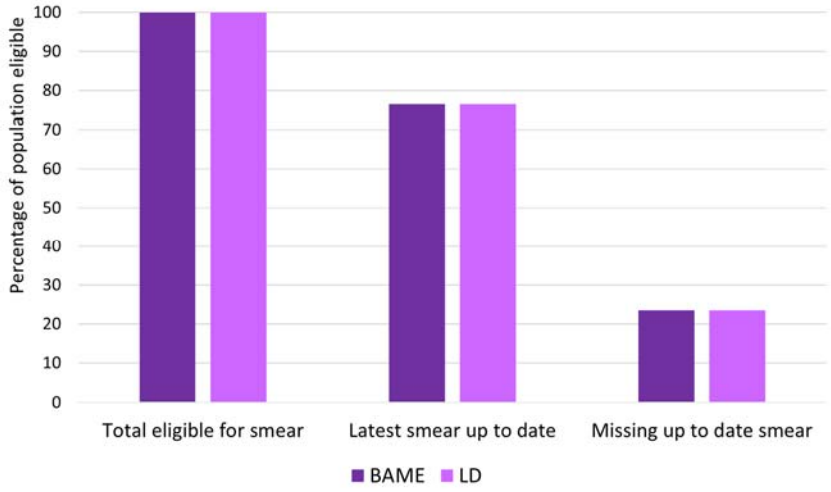


Fig 2. Cervical smear uptake in Black, Asian and minority ethnic or LD populations as a proportion of total number eligible.



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Improving the inpatient referral system in the acute medical unit

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Introduction

The acute medical unit (AMU) receives high number of acutely unwell patients with variety of medical conditions. For an AMU to function well, it needs to maintain strong links with all hospital specialties.[1] Specialist team input is part of patient care. An efficient referral pathway is vital for timely management of acute patients. In our AMU, we found that patients were waiting longer for specialty team review. This impacted on patient care, discharge and flow of patients to and from the AMU.

Aim

To Improve the inpatient specialty referral system in our AMU.

Objectives

- To identify:
  - i. time taken for review of the patient after referral to specialty team from AMU
  - ii. any impact on length of stay of patients in hospital due to delay in specialty review
  - iii. specialty team referral process
- To reduce delay:
  - i. for specialty team review
  - ii. improve method of referral
  - iii. improve junior doctors' efficiency in the AMU.

Materials and methods

- Location: AMU, Eastbourne District General Hospital (EDGH)
- Time: 16 November – 4 December 2020: 3 weeks' continuous data
- Study patients: all patients admitted to the AMU who required specialist input after the consultant post-take ward round
- Data collected:
  - i. date of referral
  - ii. specialty referred
  - iii. date/time seen by the specialty team
  - iv. discharges from AMU – whether a delay in referral is present?
- Source: Medical notes, eSearcher, Evolve
- Data analysed: Excel, Google Survey

3.Results and discussion

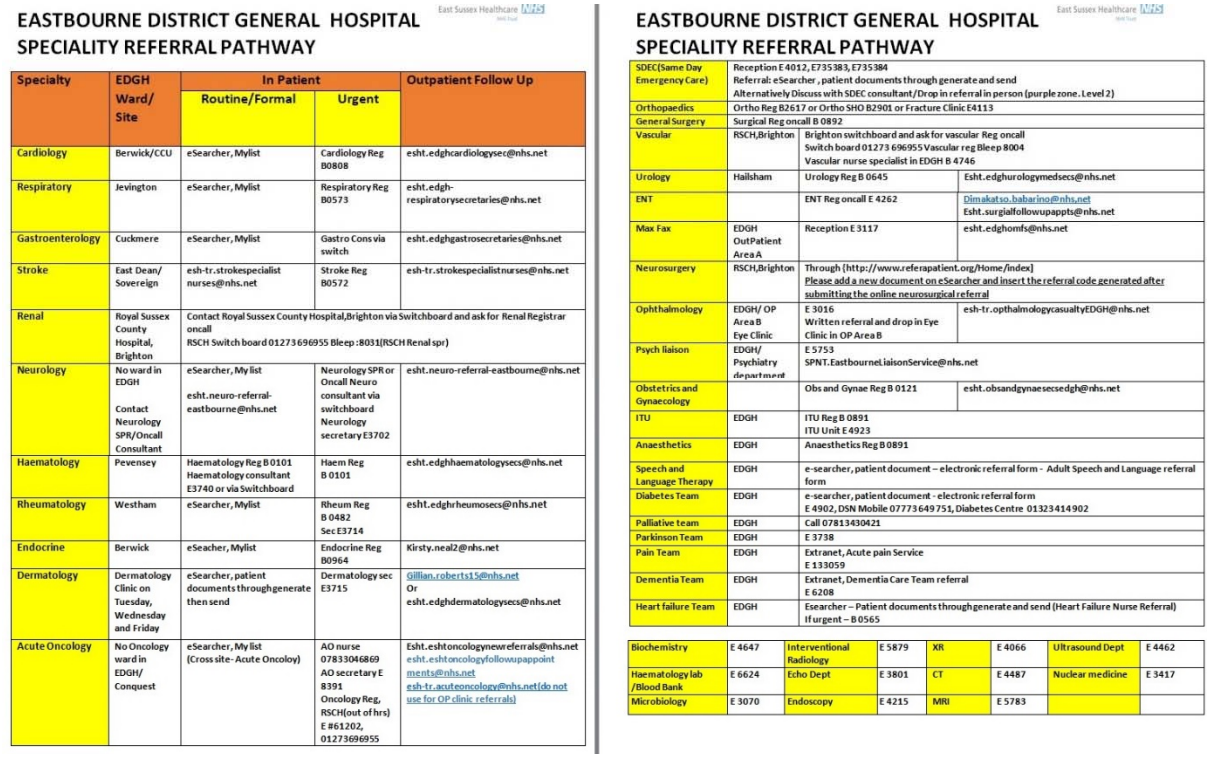
i. 185 (39%) of 475 patients were referred to a specialty.
ii. Eight (4%) referrals were missed by the junior doctor, despite planned on post-take.
iii. The top five specialties for referrals were gastroenterology (22%), cardiology (16%), respiratory (11%), oncology (11%) and mental health team/psychiatry (6%).
iv. 24 (13.6%) patients were identified as having an avoidably delayed discharge due to delayed specialty review.
v. Of all the referrals, only 53.1% of referrals were seen by the specialty team within 24 hours, 22.03% in 24–48 hours, 7.9% in >48 hours. 16.96% of referrals were omitted due to missing data.

Common causes of delays included paper referral requiring hand delivery, limited accessibility and communication, lack of junior doctor awareness, increased admin work and duplication, impact of the pandemic.

Interventions/actions:

- Electronic referral system for all specialties. Key advantages included faster submission, paperless, secure, minimising errors, shared access and improved communication between referrer and reviewer.
- Hospital referral pathway poster (mobile phones, intranet accessibility) – see Fig 1.

Fig 1. Hospital referral pathway poster.



EASTBOURNE DISTRICT GENERAL HOSPITAL
SPECIALITY REFERRAL PATHWAY

East Sussex Healthcare NHS

Specialty	EDGH Ward/ Site	In Patient		Outpatient Follow Up
		Routine/Formal	Urgent	
Cardiology	Berwick/CCU	eSearcher, Mylist	Cardiology Reg B0808	esht.edghcardiologysec@nhs.net
Respiratory	Jevington	eSearcher, Mylist	Respiratory Reg B0573	esht.edgh-respiratorysecretaries@nhs.net
Gastroenterology	Cuckmere	eSearcher, Mylist	Gastro Cons via switch	esht.edghgastrosecretaries@nhs.net
Stroke	East Dean/ Sovereign	esh-tr.strokespecialist nurses@nhs.net	Stroke Reg B0572	esh-tr.strokespecialistnurses@nhs.net
Renal	Royal Sussex County Hospital, Brighton	Contact Royal Sussex County Hospital,Brighton via Switchboard and ask for Renal Registrar oncall RSCH Switch board 01273 696955 Bleep :8031(RSCH Renal spr)		
Neurology	No ward in EDGH Contact Neurology SPR/Oncall Consultant	eSearcher, My list esht.neuro-referral-eastbourne@nhs.net	Neurology SPR or Oncall Neuro consultant via switchboard Neurology secretary E3702	esht.neuro-referral-eastbourne@nhs.net
Haematology	Pevensey	Haematology Reg B 0101 Haematology consultant E3740 or via Switchboard	Haem Reg B 0101	esht.edghhaematologysecs@nhs.net
Rheumatology	Westham	eSearcher, Mylist	Rheum Reg B 0482 Sec E3714	esht.edghrheumosecs@nhs.net
Endocrine	Berwick	eSeacher, Mylist	Endocrine Reg B0964	Kirsty.neal2@nhs.net
Dermatology	Dermatology Clinic on Tuesday, Wednesday and Friday	eSearcher, patient documents through generate then send	Dermatology sec E3715	Gillian.roberts15@nhs.net Or esht.edghdermatologysecs@nhs.net
Acute Oncology	No Oncology ward in EDGH/ Conquest	eSearcher, My list (Cross site- Acute Oncoloy)	AO nurse 07833046869 AO secretary E 8391 Oncology Reg, RSCH(out of hrs) E #61202, 01273696955	Esht.eshtoncologynewreferrals@nhs.net esht.eshtoncologyfollowupappointments@nhs.net esh-tr.acuteoncology@nhs.net(do not use for OP clinic referrals)

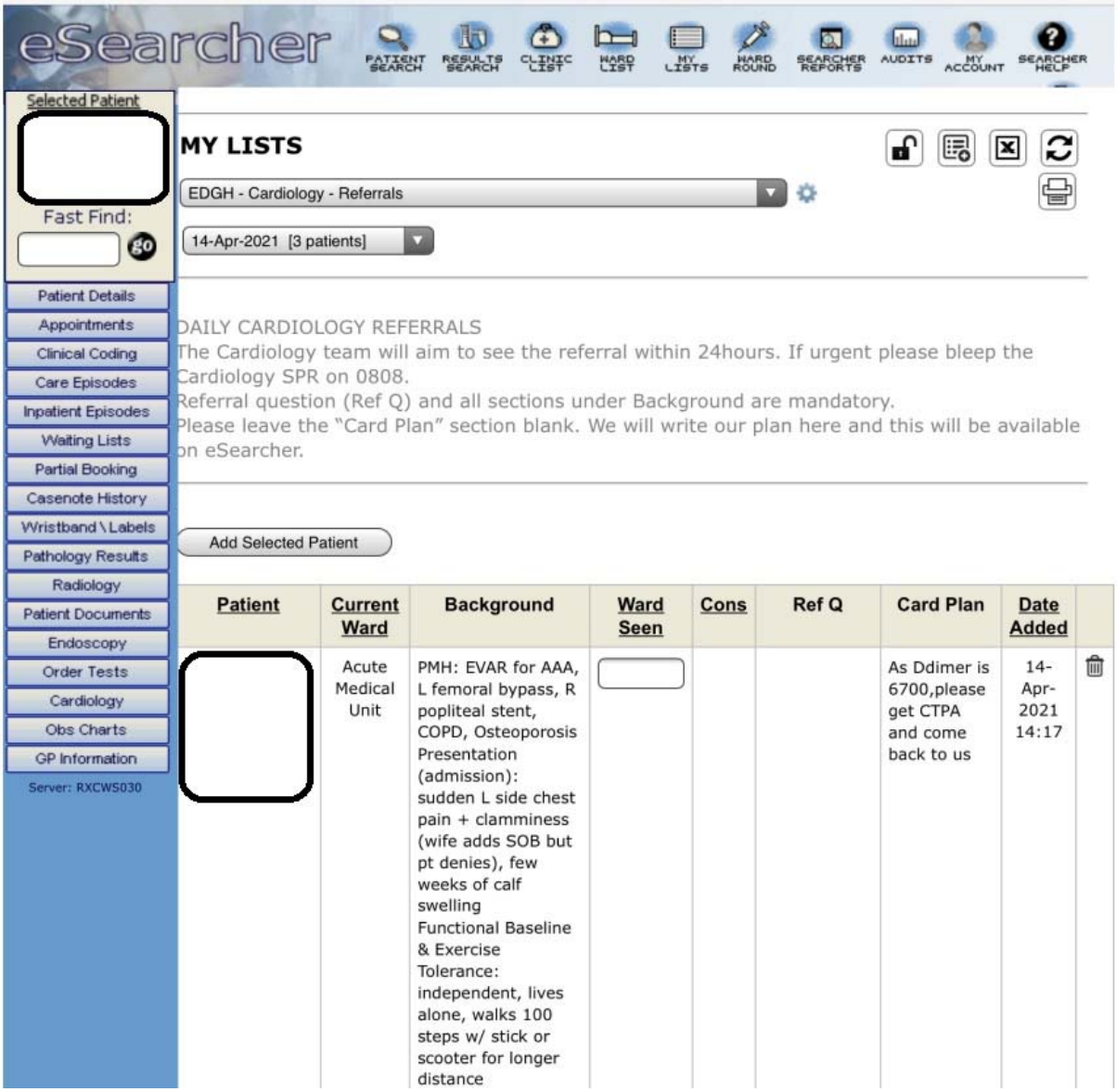
EASTBOURNE DISTRICT GENERAL HOSPITAL
SPECIALITY REFERRAL PATHWAY

East Sussex Healthcare NHS

SDEC(Same Day Emergency Care)	Reception E 4012, E735383, E735384 Referral: eSearcher , patient documents through generate and send Alternatively Discuss with SDEC consultant/Drop in referral in person (purple zone. Level 2)		
Orthopaedics	Ortho Reg B2617 or Ortho SHO B2901 or Fracture Clinic E4113		
General Surgery	Surgical Reg oncall B 0892		
Vascular	RSCH,Brighton	Brighton switchboard and ask for vascular Reg oncall Switch board 01273 696955 Vascular reg Bleep 8004 Vascular nurse specialist in EDGH B 4746	
Urology	Hailsham	Urology Reg B 0645	Esht.edghurologymedsecs@nhs.net
ENT		ENT Reg oncall E 4262	Dimakatso.babaring@nhs.net Esht.surgialfollowupappts@nhs.net
Max Fax	EDGH OutPatient Area A	Reception E 3117	esht.edghomfs@nhs.net
Neurosurgery	RSCH,Brighton	Through (http://www.referapatient.org/Home/index) Please add a new document on eSearcher and insert the referral code generated after submitting the online neurosurgical referral	
Ophthalmology	EDGH/ OP Area B Eye Clinic	E 3016 Written referral and drop in Eye Clinic in OP Area B	esh-tr.opthalmologycasualtyEDGH@nhs.net
Psych liaison	EDGH/ Psychiatry department	E 5753 SPNT.EastbourneLiaisonService@nhs.net	
Obstetrics and Gynaecology		Obs and Gynae Reg B 0121	esht.obsandgynaesecsedgh@nhs.net
ITU	EDGH	ITU Reg B 0891 ITU Unit E 4923	
Anaesthetics	EDGH	Anaesthetics Reg B 0891	
Speech and Language Therapy	EDGH	e-searcher, patient document – electronic referral form - Adult Speech and Language referral form	
Diabetes Team	EDGH	e-searcher, patient document - electronic referral form E 4902, DSN Mobile 07773649751, Diabetes Centre 01323414902	
Palliative team	EDGH	Call 07813430421	
Parkinson Team	EDGH	E 3738	
Pain Team	EDGH	Extranet, Acute pain Service E 133059	
Dementia Team	EDGH	Extranet, Dementia Care Team referral E 6208	
Heart failure Team	EDGH	Esearcher – Patient documents through generate and send (Heart Failure Nurse Referral) If urgent – B 0565	

Biochemistry	E 4647	Interventional Radiology	E 5879	XR	E 4066	Ultrasound Dept	E 4462
Haematology lab /Blood Bank	E 6624	Echo Dept	E 3801	CT	E 4487	Nuclear medicine	E 3417
Microbiology	E 3070	Endoscopy	E 4215	MRI	E 5783		

Fig 2. Electronic referral system for all specialties.



Reaudit and outcome:

- June 2021, 155 patients.
- Specialties on board with the electronic referral pathway in EDGH: respiratory, cardiology, gastroenterology, endocrine, neurology, acute oncology, rheumatology.
- Patients seen within 24 hours of referral increased from 53% to 91%, those seen within 24–48 hours reduced from 22.03% to 9%.
- No referrals were seen after 48 hours. Previously 7.9%.
- No discharge delays from AMU were due to delayed specialty referrals seen. Previously 13.6%.
- No referrals were missed by junior doctors. Previously 4%.
- Post-intervention, a junior doctors' survey showed that 100% preferred the electronic referral system to paper and agreed that it was easy and straightforward. 87.5% of doctors had made a referral while being on call, rather than leaving it for the ward team after liaising with the registrar/consultant.
- Overall reduction in ward work by 16.7 mins per referral (time from generating to submission).
- Immediate benefit also to referrals generated from wards outside AMU which adopted the same platform.

- Adoption by acute oncology team is cross-site and expanding.

Conclusion

We have shown that the flow of patients through the AMU can be improved by streamlining the hospital referral system. This provides timely patient care, ensuring a positive patient experience while in hospital. An electronic referral system was found to be an efficient means of making an inpatient referral. This project has also helped improve junior doctor morale, efficiency and communication, which had a positive impact given the challenges of the pandemic in the hospital.

References

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2. Acute internal medicine: designing services. www.rcpmedicalcare.org.uk/designing-services/specialties/acute-internal-medicine/ [Accessed 18 March 2022].

Medical handover QIP

Author: Nishma Harker

Fairfield General Hospital, Bury, UK

Aim

To improve the structure and standardisation of medical doctors' handover in a district general hospital (Fairfield General Hospital, Northern Care Alliance) in concordance with RCP recommendations for good clinical handover.[1]

Methods

Quality improvement project (QIP) methodology was adopted with plan–do–study–act (PDSA) cycles and staggered interventions. Interventions were guided by the RCP acute care toolkit for handover.[1] Interventions included introduction of a fixed venue and time for handover meetings, addressing punctuality via senior engagement and communication, formal documentation via a paper proforma (subsequently upgraded to an electronic spreadsheet) and introduction of a proforma agenda for the meeting. Data were collected via anonymous surveys following interventions.

Results

The written feedback data demonstrated that interventions such as the proforma introduction improved structure and direction of the handover. Clarity of whom we should handover to was increased with formal introductions. The percentage of people who were unsure which person they should direct the handover to fell from 39.1% to 5.5%. Written feedback also showed that people felt the documentation meant handover quality improved and the handover was accountable. Punctuality also improved, with 20.8% describing handover starting punctually as 'Rarely' or 'Never' versus 0% within the same categories post-intervention. 100% of people found that the interventions had improved handover overall. We also improved engagement by addressing key areas such as unexpected bereavements (improved from 54.2% to 100% post-intervention) and discussing unresolved issues (75% to 89.5%) during the handover meeting.

Conclusion

Overall, the results demonstrate a positive improvement in a number of key areas of the handover process in line with RCP guidance.[1] Clearly, surveys relied on user participation and therefore are subject to an element of engagement bias. However, they offered a safe space to provide written feedback and suggestions, which were extremely positive and constructive to instigating further changes.

References

1. Royal College of Physicians. *Acute care toolkit 1: Handover*. RCP, 2015. https://www.rcplondon.ac.uk/guidelines-policy/acute-care-toolkit-1-handover [Accessed 11 February 2022].

Evaluation of clinical practice regarding SGLT2 inhibitor use in patients with type 2 diabetes mellitus and established coronary artery disease in James Cook University Hospital

Authors: Ching Khai Ho,[A] Andrew Turley[B] and Mark Hammonds[B]

[A]Royal Victoria Infirmary, Newcastle, UK; [B]South Tees Hospital NHS Foundation Trust, Middlesbrough, UK

Introduction

Type 2 diabetes mellitus (T2DM) is a significiant risk factor for coronary artery disease (CAD). The landmark EMPA-REG trial demonstrated that SGLT2 inhibition significantly decreased the risk of all-cause mortality (number needed to treat: 39 at 3.1 years) in patients with T2DM and CAD.[1]

In a previous audit, we showed that six out of 259 (2.3%) diabetic patients were prescribed gliflozin on discharge. Therefore, a clinical protocol on SGLT2 inhibitor commencement (Fig 1) has been in place at James Cook University Hospital coronary care unit for all T2DM patients who present with an acute coronary syndrome (ACS) (STEMI and NSTEMI). This protocol is in line with the national CaReMe intiative endorsed by the British Cardiovascular Society.

Objective

To evaluate whether T2DM patients admitted with ACS are commenced on SGLT2 inhibitor prior to hospital discharge.

Methods

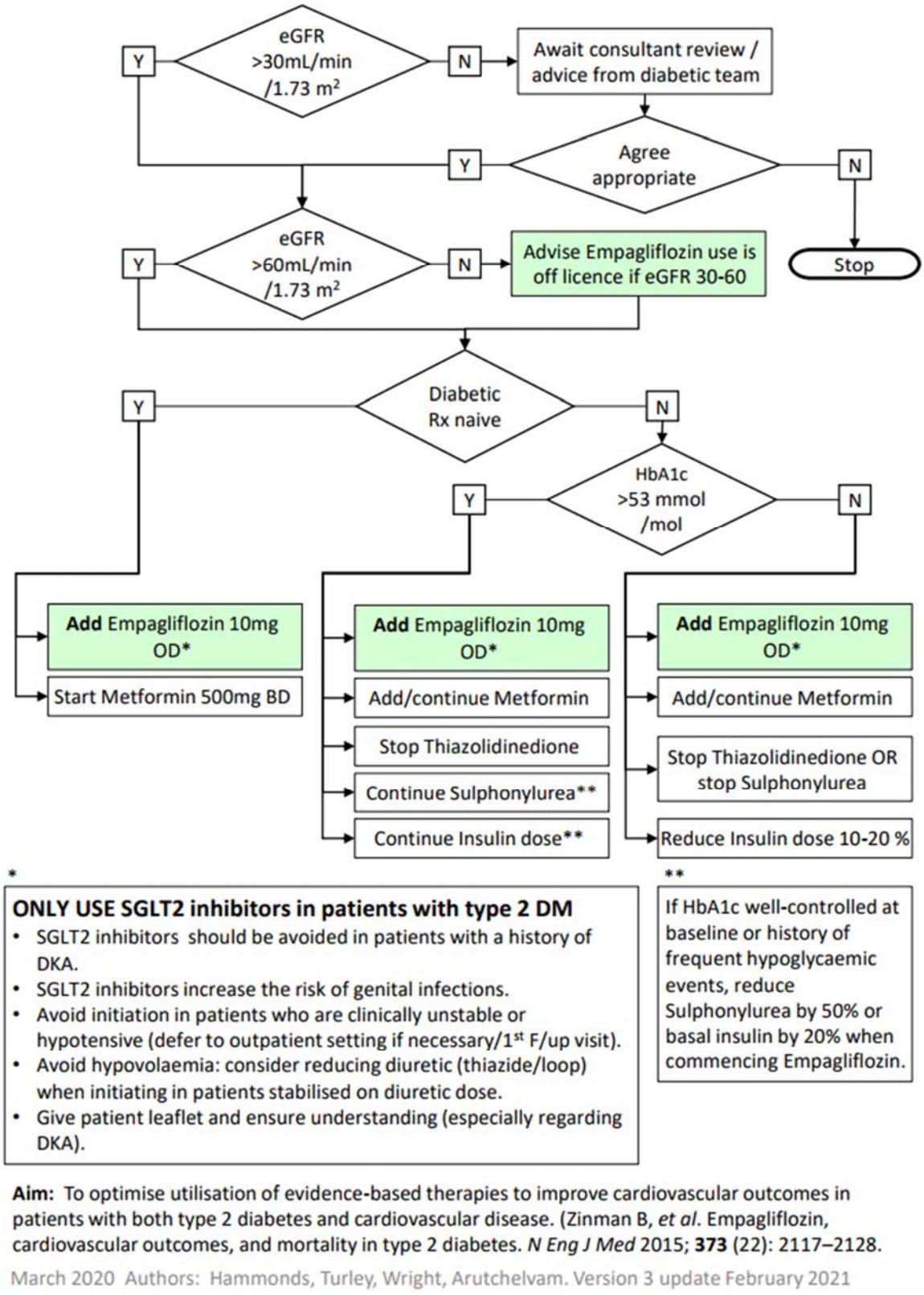
Data were collected retrospectively from the validated Myocardial Ischaemia National Audit Project (MINAP) database for the months of August and September 2020. HbA1c and eGFR results were gathered from the hospital electronic biochemistry database while diabetic medication was recorded from the British Cardiovascular Interventional Society (BCIS) discharge letter.

Results

Table 1. Data for patients in our cohort

Admission route	Coronary care unit	Cardiology ward
Total number of patients	19	23
Number of patients on SGLT2 inhibitor at discharge	7	4
Percentage of patients on SGLT2 inhibitor at discharge	37%	17%
Number of patients HbA1c >53 mmol/mol	12	18
Number of patients eGFR >30	17	23

Fig 1. Protocol for commencing empagliflozin (SGLT2 inhibitor) in patients with T2DM and confirmed CAD.



42 patients with T2DM admitted between August and September 2020 with ACS and subsequently discharged were audited. In this reaudit, 11 out of 42 (26%) T2DM patients were prescribed gliflozin on discharge. Prescribing of an SGLT2 inhibitor in T2DM patients with CAD has risen.

Patients were divided between ward areas – coronary care unit (CCU) versus cardiology ward admission. The CCU group had a higher percentage of patients, 37%, prescribed an SGLT2 inhibitor compared with 17% of patients in the cardiology ward category.

The main reason for this difference is that all CCU patients are reviewed daily by cardiology consultants, while ward patients are generally looked after by junior doctors and specialty interventional nurses. Although a clinical protocol is available, junior doctors and specialty interventional nurses were cautious in integrating SGLT2 inhibitor into take-home medication.

Conclusion

SGLT2 inhibitor is proven to have mortality benefits in patients with CAD and T2DM. Our clinical protocol was effective in increasing numbers of patients discharged on an SGLT2 inhibitor. To improve this further, we have instigated cardiologist specialist nurse prescribing of SGLT2 inhibitor into daily practice. In addition, we enforced the SGLT2 inhibitor pathway during the junior doctors' and CCU nurses' meeting. We aim to reaudit after 1 year.

Reference

1. Zinman B, Wanner C, Lachin JM *et al*. Empagliflozin, cardiovascular outcomes, and mortality in type 2 diabetes. *N Engl J Med* 2015;373:2117–28.

SNAPTIMED study: does the Scottish and Newcastle Anti-emetic Protocol achieve timely intervention and management from the emergency department to discharge for paracetamol poisoning?

Authors: Christopher Humphries,[A] Jason Smith,[A] Georgina Roberts,[B] Rebecca Kidd,[B] Hashem Abdel Kader[B] and Anjeli Taheem[B]

[A]University Hospitals Plymouth NHS Trust, Plymouth, UK; [B]Peninsula Medical School, University of Plymouth, Plymouth, UK

Introduction

Many hospitals across the UK have instituted the modified 12-hour Scottish and Newcastle Anti-emetic Protocol (SNAP) for paracetamol poisoning but, to our knowledge, no validation has been undertaken of the SNAP for its perceived benefit of decreased length of stay (LoS). While the SNAP theoretically offers shorter treatment duration (12 hours vs 21 hours), it also has more stringent requirements for the cessation of N-acetylcysteine therapy, which may influence real-world effect on LoS.[1] This study aimed to establish whether the SNAP is associated with improvement in hospital LoS, as well as validate the performance of the protocol for the prevention of anaphylactoid reactions and total infusion duration.

Materials and methods

Retrospective chart review from 25 March 2019 to 25 September 2020 was performed. Patients aged 16 or older with a diagnosis of suspected or confirmed paracetamol overdose were included in the analysis if they received treatment for paracetamol poisoning, and the protocol used could be identified. Data were collected for LoS, number of extended treatment infusions used, and evidence of anaphylactoid reaction. Inter-rater reliability for data abstraction was assessed using Krippendorff's alpha.

Results and discussion

1,167 records were assessed for eligibility, and 294 were included for analysis. Use of the SNAP was associated with a statistically significant reduction in LoS of –7.9 hours (95% confidence interval –12.6 hours to –2 hours), and a reduced risk of anaphylactoid reaction (number needed to treat = 10). There were no significant differences in the rate of hepatotoxicity or other adverse outcomes.

Table 1. Baseline characteristics. Data given as median and interquartile range (IQR) or percentage. P values obtained by Mann–Whitney U test, or test of proportions. n = number of patients for whom data were available for abstraction

	SNAP (n=76)	**21-hour (n=218)**	**21-hour vs SNAP P value**
Age, years (IQR)	30 (21–46) (n=76)	29 (21–46) (n=218)	0.99
Female, %	69.7% (n=218)	67.9% (n=218)	0.77
Weight, kg (IQR)	73.0 (60–82.5) (n=69)	72.3 (61.5–91.5) (n=196)	0.35
Paracetamol dose ingested, median mg/kg (IQR)	241 (173–371) (n=67)	223 (133–326) (n=181)	0.09
Single acute overdose[a] as a proportion of patients requiring treatment	84.2% (n=75)	83.2% (n=212)	0.96
Time from ingestion to NAC for single acute overdose, hours (IQR)	8.0 (6.0-10.5) (n=57)	9.0 (7.0-12.0) (n=143)	0.02

NAC = N-acetylcysteine.

[a]Single acute overdose = ingestion of paracetamol over a period of 1 hour or less, as opposed to staggered overdose.

Table 2. Comparison of 21-hour and SNAP treatment protocols (secondary outcomes), demonstrating a statistically significant absolute risk reduction in anaphylactoid reaction in patients treated with the SNAP

	SNAP (n=76)	21-hour (n=218)	ARR/ARI (95% CI)
Anaphylactoid reaction	5.3%	15.4%	0.10 (0.03–0.17)
Mean duration of extended NAC infusion required, hours[a]	3.0	2.4	–
Mean total duration of NAC infusion, hours	15.0	23.4	–

ARI = absolute risk increase; ARR = absolute risk reduction.

[a]This figure is the mean time required for infusion across all treated patients, not solely those receiving extended infusions.

Conclusion

In this retrospective study, use of the SNAP reduced the duration of inpatient admissions and the rate of anaphylactoid reactions.

Reference

1. Pettie JM, Caparrotta TM, Hunter RW *et al*. Safety and efficacy of the SNAP 12-hour acetylcysteine regimen for the treatment of paracetamol overdose. *EClinicalMedicine* 2019;11:11–7.

Improving morale among the junior medical team during the COVID-19 pandemic in a busy respiratory department: a quality improvement project

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Wythenshawe Hospital, Manchester, UK

Introduction

The volume of patients, the complexity of illnesses, and the unrelenting nature of the COVID-19 pandemic are having a huge impact on morale among junior doctors.[1] A GMC survey in 2020 found that one-third (32%) of doctors indicated that the pandemic had a negative impact on their mental health and wellbeing.[2] In their 2018–19 census, the Royal College of Physicians reported that 54% of doctors described their morale as low or very low, and burnout was reported in 68–88% of respondents.[3]

It has become increasingly apparent that morale among physicians has declined while the prevalence of burnout has continued to rise. While working in the busy respiratory department at a regional tertiary centre, we have witnessed how lack of support for the junior medical team and negative culture can impact on team morale and individual wellbeing. Further exacerbated by the strain of the COVID-19 pandemic, we decided to embark on a quality improvement project looking at improving morale and identifying the key factors in achieving this.

Materials and methods

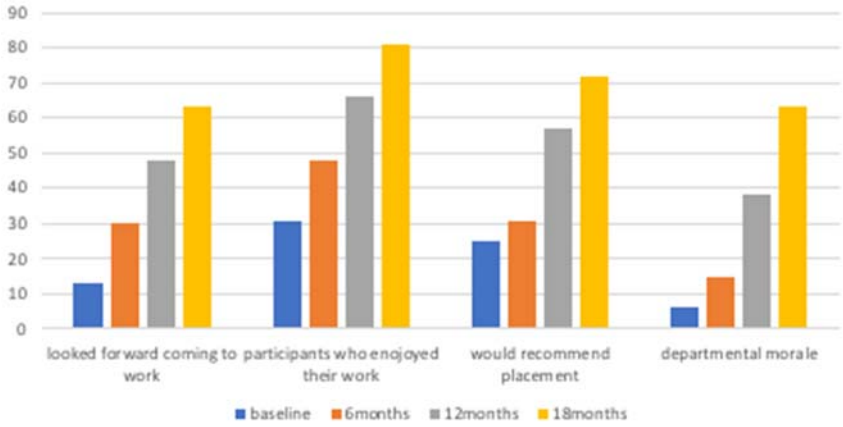
Qualitative surveys were electronically distributed to all junior doctors, physician associates and advanced care practitioners within the department, and the results were used to identify contexts for change. We performed four plan–do–study–act (PDSA) cycles over an 18-month period and our aim was to improve morale by 50%.

Results and discussion

Baseline data revealed poor scores across the board; however, through implementation of several changes, we were able to significantly improve the experience of the junior medical team (Fig 1). The number of juniors who felt valued by the senior team increased from 31% to 63%. This was associated in a further improvement in feeling empowered to make change from 6% to 27%. 48% of participants looked forward to coming to work, compared with 13% at baseline. Signs of burnout significantly reduced, with 45% of juniors left feeling exhausted at the end of the day (decreased from 71%) and 45% reported taking longer than 1 day off to unwind from work (decreased from 70%).

The number of staff who felt that departmental morale was good increased from 6% to 63%, and 90% of participants enjoyed their job compared with 31% at baseline. There was a threefold increase in the number of participants who would recommend this placement to their peers (from 25% at baseline to 72%). Significant improvement was seen in the number of participants who were appreciated for their work both on the ward (81% vs 38% baseline) and on call (54% vs 25% at baseline).

Fig 1. Summary results of our QI project to improve morale.



Conclusion

This project confirms that exceptional clinical pressures can significantly impact on team morale, with increasing symptoms of burnout and an overwhelming feeling of being undervalued. With each PDSA cycle, we identified a diverse variety of themes affecting morale. The most effective changes implemented include allocating individual mentors, regular weekly teaching sessions, increasing senior support, better access to workplace-based assessments, encouraging audits / quality improvement projects, improving staffing levels and prioritising junior doctor staffing continuity on the wards. While we have met our SMART aim to improve morale, there is still much room for further improvement.

References

1. Nabavi N, Munro C. Junior doctors' morale: The pandemic groundhog day. *BMJ* 2021;373:n576. https://doi.org/10.1136/bmj.n576
2. General Medical Council. *The state of medical education and practice in the UK: 2020*. GMC, 2020. www.gmc-uk.org/-/media/documents/somep-2020_pdf-84684244.pdf Accessed 11 February 2022].
3. Royal College of Physicians. *Focus on physicians: 2018–19 census* (UK consultants and higher specialty trainees). RCP, 2020. www.rcp.ac.uk/projects/outputs/focus-physicians-2018-19-census-uk-consultants-and-higher-specialty-trainees [Accessed 11 February 2022].

Improving the provision and quality of safety netting instructions for patients seen in same day emergency care (SDEC)

Authors: Chloe Jacklin, Saniya Naseer, Barbara Onen, Nathan Spence and Daniel Lasserson

Oxford University Hospitals NHS Foundation Trust, Oxford, UK

Introduction

Patients need know what to do should they deteriorate at home following assessment in same day emergency care (SDEC). The Society for Acute Medicine / Royal College of Physicians of Edinburgh quality standards for SDEC[1] specify that safety netting instructions should be both clear and written down for the patient. Furthermore, ensuring that this safety net is patient centric optimises effectiveness, and aligns with a key ethos of the NHS.[2] Our objective was to improve the provision of written safety netting instructions to at least 85% of patients in any given 7-day period, in the John Radcliffe SDEC unit, named locally the Ambulatory Assessment Unit (AAU).

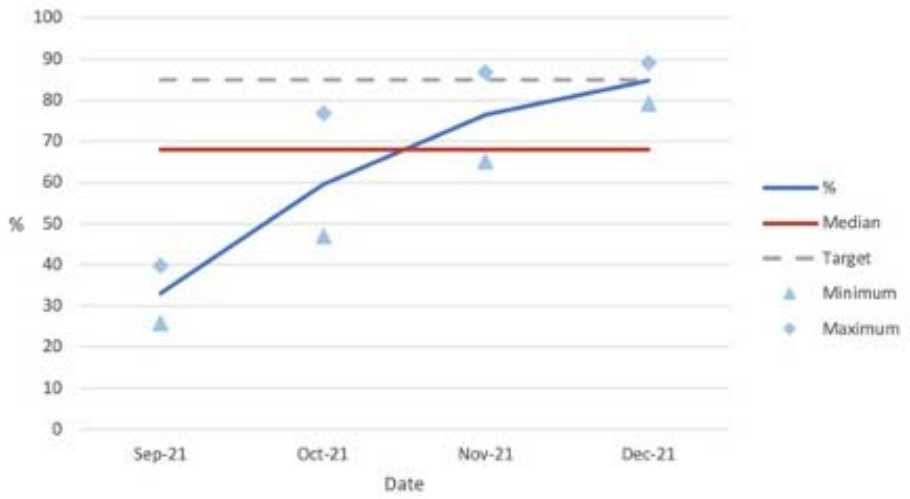
Methods

Safety netting instructions were defined as 'instructions for what a patient should do if they were to deteriorate at home, and whom they should contact should they have any concerns'.[1] Inclusion of written safety netting instructions in the discharge summary was recorded. All data were collected over a 7-day period, and mean average results were inputted into a run chart. Baseline data were collected in September 2021, and repeated on a monthly basis until December 2021. Two patient and public surveys, and a staff survey, were carried out.

Results

The baseline data showed that 33% of AAU discharge summaries included written safety netting instructions. This improved to 60% in October 2021 following introduction of a dedicated safety netting section in the proforma. In December 2021, following further reminders and education of staff, this reached 85%. In addition, a patient and public survey was carried out on 4 November 2021 with 18 patient and 18 public respondents, finding a preference for written instructions and for advice specific to their condition rather than generic. A further survey carried out on 23 December 2021 had eight respondents and found that all had received, and were confident with, the safety netting advice provided. In the staff survey, the main barrier identified in delivering safety netting instructions was time pressure.

Fig 1. Run chart. Mean percentage of ambulatory assessment unit discharge summaries over a 7-day period that included written safety netting instructions (target = 85%).



Discussion

A simple intervention of including a prompt in the discharge summary proforma significantly improved the provision of safety netting instructions. This would be feasible to replicate in similar units, and the convenience of the prompt in the proforma may allay the time pressures in a busy clinical setting. Furthermore, written and tailored instructions were preferred by surveyed patients.

References

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Reduction of home-acquired pressure ulcers among palliative patients using quality tools and techniques

Authors: Fareeha Kanwal, Anosha Jabeen Butt, Haroon Hafeez, Khawaja Shehryar Nasir, Sidra Batool, Marrium Munawar and Samran Yaqub

Shaukat Khanum Memorial Cancer Hospital and Research Centre, Lahore, Pakistan

Introduction

Pressure ulcers (PU) are a substantial health problem, and they are considered a surrogate for compromised quality care. The prevalence of pressure ulcers in palliative patients is significantly high due to altered skin integrity, mobility issues and chronic diseases.[1,2] Pressure ulcers increase the burden on healthcare and treatment costs.[3,4] Patients receiving palliative care at home are more likely to develop pressure ulcers, with a prevalence of 18.8%. The incidence of pressure ulcers in palliative patients receiving domiciliary care can be reduced by early detection and preventive strategies.[5,6] The objective of the study was to reduce the number of home-acquired pressure ulcers in palliative patients.

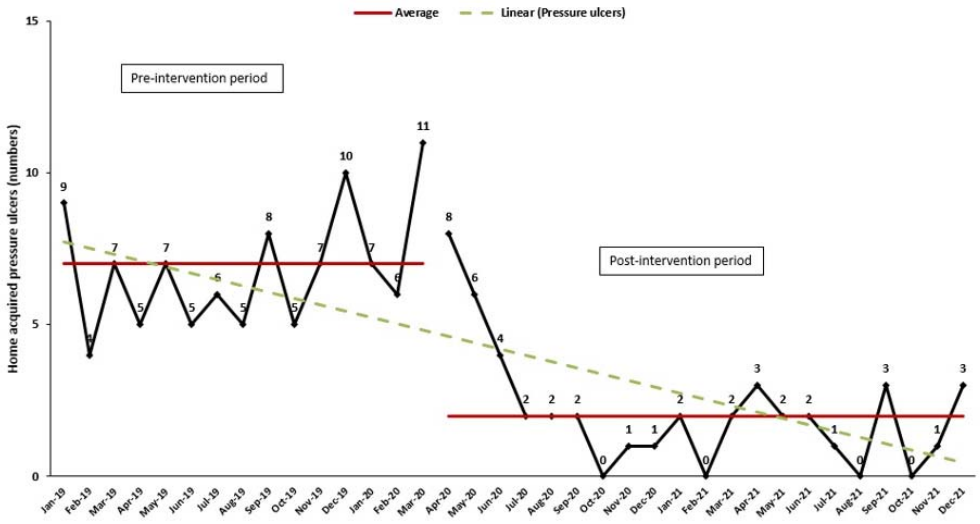
Materials and methods

Baseline data from January 2019 to March 2020 were reviewed. Multiple causes leading to process variation were identified using a quality tool, cause-and-effect diagram. The categories of problem areas identified were reviewed and analysed by a team with multidisciplinary expertise and a quality improvement project was initiated. A four-stage approach, the plan–do–check–act (PDCA) cycle, was undertaken to improve the service and resolve the issues faced.[7] The measures planned to reduce the pressure ulcers included identifying palliative nurses, staff education and family engagement/education at the time of discharge, and implementation of skin bundles. The staff strictly complied with the dissemination of education brochures to patients' families and skin assessment at the time of follow-up visits. The pre-intervention and post-intervention phases were statistically analysed using interrupted time series (ITS) analysis and segmented regression to evaluate the effectiveness of interventions. The analyses were conducted by using R-software. All tests were two-sided, and a statistical significance level of 0.05 was used.

Results and discussion

The visual inspection of data showed that the average number of home-acquired pressure ulcers noticeably reduced from 7 per month to 2 per month in the post-intervention period (Fig 1). The results of segmented regression indicated that there were five palliative patients with home-acquired pressure ulcers just before the initiation of the observation period, while in the pre-intervention period, no significant month-to-month change was identified in the incidence of pressure ulcers (P=0.12726). However, with the implementation of the preventive strategies in the post-intervention period, the number of incidents reduced significantly by four patients (P≤0.01) and remained significant after the post-intervention period (P=0.015).

Fig 1. Home-acquired pressure ulcers in palliative patients from January 2019 to December 2021. The average incidence of pressure ulcers in the pre-intervention phase (January 2019 – March 2020) reduced from 7 per month to 2 per month in the post-intervention phase (April 2020 – December 2021).



Conclusion

The implementation of quality tools, such as the cause-and-effect diagram and the PDCA approach, proved worthwhile in decreasing the number of home-acquired pressure ulcers. The incidence of pressure ulcers reduced significantly after providing family education brochures, detailed discharge instructions on pressure ulcers and skin assessment on follow-ups.

References

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3. Hill-Brown S. Reduction of pressure ulcer incidence in the home healthcare setting: a pressure-relief seating cushion project to reduce the number of community-acquired pressure ulcers. *Home Healthc Nurse*. 2011;29:575–9.
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6. Artico M, Dante A, D'Angelo D *et al*. Prevalence, incidence and associated factors of pressure ulcers in home palliative care patients: a retrospective chart review. *Palliat Med* 2018;32:299–307.
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Acute management of seizing patients – a quality improvement project

Authors: Saima Khurshid, Tawfik Rajab and Ummulbaneen Shamji

University Hospitals of Northamptonshire NHS Group, Northampton, UK

Introduction

Seizures are a frequent occurrence among hospitalised patients and they were identified in approximately 3.6% of total hospitalisations.[1] Data from Northampton General Hospital suggested that 30 patients per week were at risk of having a seizure. Junior doctors working in an emergency setting with little experience, under the expectation to act in seconds, may miss vital steps and make irrational decisions.

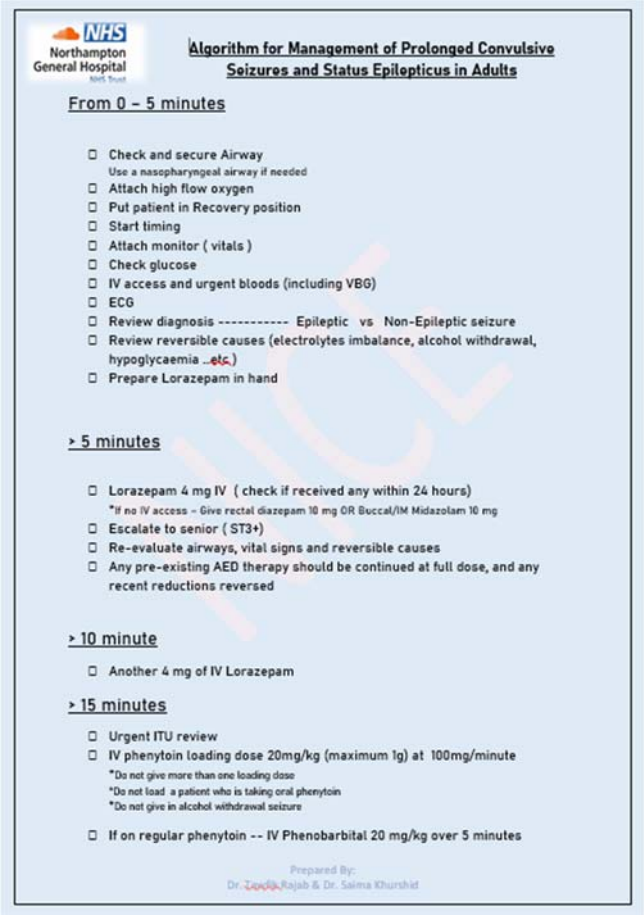
Aim

To provide high-quality education for junior doctors in developing a comprehensive and clear approach to managing a seizing patient and bridging any knowledge gaps. To provide a more supportive and safe practice in a peri-arrest scenario of a seizure.

Materials and methods

An assessment tool (Fig 1) was produced using National Institute for Health and Care Excellence (NICE) guideline CG137,[2] by which 24 junior doctors working in acute medicine were assessed to determine their level of knowledge on managing a mannequin simulating a seizure. Based on the first cycle result, a bundle on seizure management was approved and introduced in the trust. A post-intervention assessment was conducted using the same assessment tool. Data were analysed using Microsoft Excel to compare pre- and post-intervention knowledge on managing a seizure and detect any improvement.

Fig 1. Algorithm for management of prolonged convulsive seizures and status epilepticus in adults.



NHS Northampton General Hospital NHS Trust

Algorithm for Management of Prolonged Convulsive Seizures and Status Epilepticus in Adults

From 0 – 5 minutes

- ☐ Check and secure Airway
  Use a nasopharyngeal airway if needed
- ☐ Attach high flow oxygen
- ☐ Put patient in Recovery position
- ☐ Start timing
- ☐ Attach monitor (vitals)
- ☐ Check glucose
- ☐ IV access and urgent bloods (including VBG)
- ☐ ECG
- ☐ Review diagnosis ---------- Epileptic vs Non-Epileptic seizure
- ☐ Review reversible causes (electrolytes imbalance, alcohol withdrawal, hypoglycaemia ...etc.)
- ☐ Prepare Lorazepam in hand

› 5 minutes

- ☐ Lorazepam 4 mg IV (check if received any within 24 hours)
  *If no IV access – Give rectal diazepam 10 mg OR Buccal/IM Midazolam 10 mg
- ☐ Escalate to senior (ST3+)
- ☐ Re-evaluate airways, vital signs and reversible causes
- ☐ Any pre-existing AED therapy should be continued at full dose, and any recent reductions reversed

› 10 minute

- ☐ Another 4 mg of IV Lorazepam

› 15 minutes

- ☐ Urgent ITU review
- ☐ IV phenytoin loading dose 20mg/kg (maximum 1g) at 100mg/minute
  *Do not give more than one loading dose
  *Do not load a patient who is taking oral phenytoin
  *Do not give in alcohol withdrawal seizure
- ☐ If on regular phenytoin -- IV Phenobarbital 20 mg/kg over 5 minutes

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Results and discussion

65% of junior doctors checked the airways during the pre-assessment versus 100% post-intervention. In addition, pre-intervention 56% and 48% attached the patient to high-flow oxygen and placed the patient in the recovery position, compared with 89% in both areas post-intervention. 21% checked glucose pre-intervention versus 100% post-intervention. 60% considered reversible causes such as electrolyte imbalance and alcohol withdrawal as part of management, in comparison to 90% after the intervention. A significant improvement was noted in the timing, dosage, indication and choice of drug to abort the seizure post-intervention. Approximately one-third of junior doctors escalated to senior and/or ITU colleagues after 5 minutes of the simulated seizure, versus 97.5% after the intervention. Pre-intervention, none of the doctors were aware of use of second-line medications in status epilepticus, compared with 83.5% post-intervention.

Conclusion

Based on our findings, a remarkable improvement was observed in junior doctors' knowledge and confidence in managing a seizing patient. This is essential for having a positive impact on patient safety and care.

References

1. Fields MC, Labovitz DL, French JA. Hospital-onset seizures: an inpatient study. *JAMA Neurol* 2013;70:360–4. https://doi.org/10.1001/2013.jamaneurol.337
2. National Institute for Health and Care Excellence. *Epilepsies: diagnosis and management* [CG137]. NICE, 2020. www.nice.org.uk/guidance/cg137 [Accessed 21 March 2022].

Admission trends on AMU – an opportunity in a pandemic

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Introduction

An audit was conducted based on the admission criteria[1] to see how well admission beds were utilised right before the winter surge of 2021. The aim was to look at practice and system factors that might have contributed to good or bad practices in this regard. The aim was to design a strategy that built on positive findings and identified solutions for factors which could be improved upon.

Methodology

The methodology of data collection was similar to the SAMBA data collection format. Online electronic data forms were designed and data collected over a 24-hour cycle on 18 November 2021, based on the admission criteria. This was expanded upon by looking at robustness of the evidence base for decison making and practice. The data were analysed and process changes were trialled.

Results and discussion

- 22% of the dataset showed either no clear diagnosis or no evidence to support the diagnosis made.
- 54% of the patients admitted did not satisfy the NEWS criteria for admission.[2]
- Early discharge options could have been considered for 43% of the patients if services such as early supportive discharge, specialty hot clinics and outpatient parenteral antibiotic therapy (OPAT) were available, or same day emergency care (SDEC) services were more appropriately utilised.

Fig 1. Diagnosis.

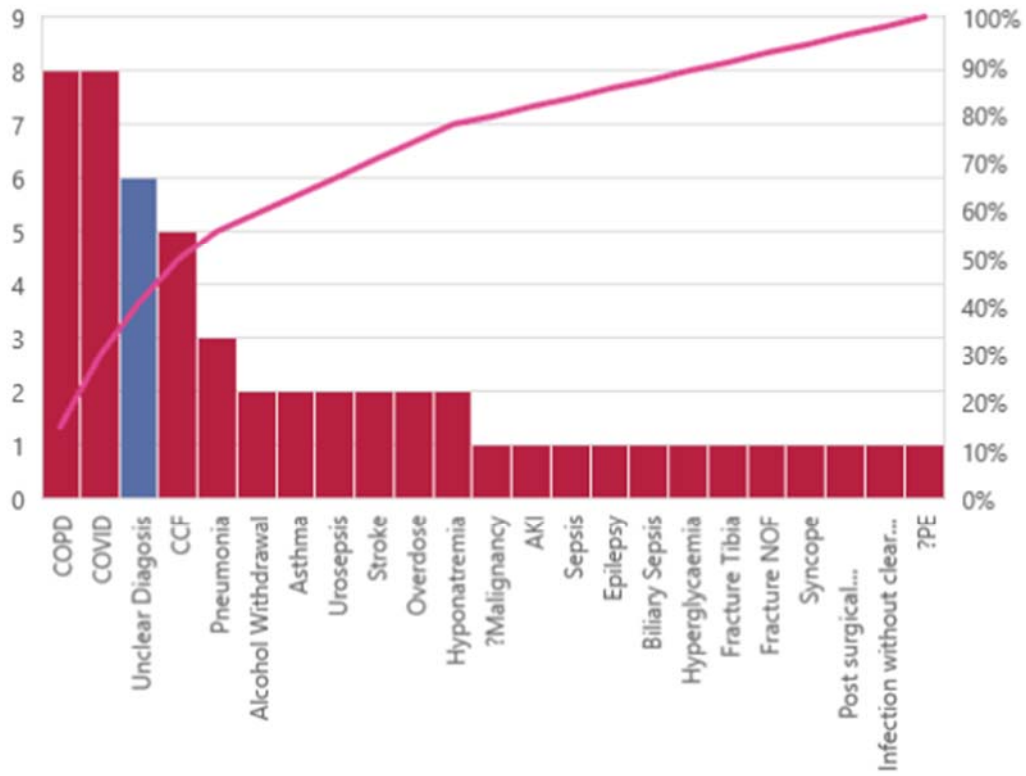
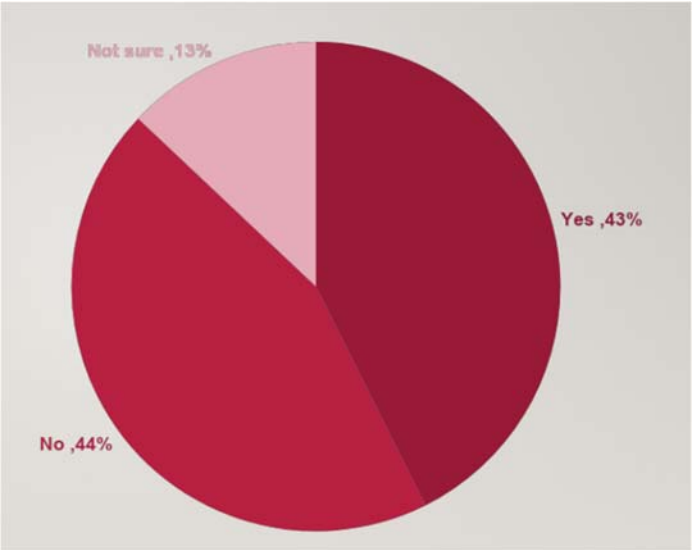


Fig 2. Could they be discharged if a pathway was available?



Intervention

Our initial plan was to use a Pareto chart from this audit to have a more focused look at the conditions that predominantly contributed to admissions, and to formulate targeted teaching and bedside decision tools to help support decision making. This was abandoned due to the proximity of the audit to the winter surge.

A new assessment area was designed to focus on mitigation for the factors that directly contributed to poor decision making. The area's process focused on diagnostic strategy, assessment and management with a strong emphasis on human factors and common diagnostic biases. About 9% of the acute bed base was assigned to this area and it processed around 20% of the take over a 5-day period. The area had a 74% discharge rate, showing a saving of 54 bed days.

Discussion

The decision-making process for acute admissions from the emergency department remains suboptimal for multiple reasons. We designed an intervention that was non-conventional to see if a change in environment/location along with process and expectations can change outcomes, and in a limited trial found that this was the case.

References

1. NHS Emergency Care Improvement Support Team. NEWS2 flow chart – Decision support tool. https://fabnhsstuff.net/storage/NEWS2__Decision_support_tool_V2.pdf [Accessed 21 March 2022].
2. National Institute for Health and Care Excellence. National Early Warning Score systems that alert to deteriorating adult patients in hospital. NICE, 2020. www.nice.org.uk/advice/mib205/resources/national-early-warning-score-systems-that-alert-to-deteriorating-adult-patients-in-hospital-pdf-2285965392761797 [Accessed 21 March 2022].