Audit & Quality Improvement

ABSTRACTS
**Abdominal X-rays: less than honest, less than useful?**

Kevin O’Kane  
St Thomas'  
Jo Salkeld

**Aim**

To correlate Emergency Department (ED) abdominal X-ray (AXR) request indications with Royal College of Radiologist (RCR) iRefer Guidelines and to compare with the clinical notes.

**Methods**

100 consecutive AXRs taken over a 10 day period from the ED of St Thomas’ Hospital were studied retrospectively. Indications on the electronic request forms were correlated with the RCR criteria for AXRs and the clinical notes.

**Outcomes / Results**

53% of electronic requests matched an RCR indication for AXR. 26% of clinical notes included at least one differential which matched an RCR indication for AXR.

There were significant differences between the clinical notes and electronic requests. eg 40 requests queried obstruction, compared to 13 cases of obstruction as a differential in the notes.

The most common findings were no abnormality detected (39%), faecal loading (21%) and iatrogenic objects legitimately present within the abdomen (12%); less commonly, obstruction (5%), toxic megacolon (1%) and renal calculi (1%).

Overall, findings on AXR contributed to the final diagnosis in 18% of cases. However, in cases in which matched the guidelines, AXR findings contributed to the diagnosis in 48%, compared to 7% in cases which did not match them.

**Table1:** Reported guideline-matching indications for AXR compared with clinical notes.

**Table2:** Reported non-guideline-matching indications for AXR compared with clinical notes.

**Conclusion**

In most cases an AXR was not diagnostic but the diagnostic yield was significantly higher in cases in which the clinical notes matched the guidelines. The differences between clinical notes and electronic requests suggest that “obstruction” could be being used as a spurious reason to justify unnecessary AXR requests.

Ordering AXRs which are not indicated is not solely due to lack of awareness of the guidelines as illustrated by these differences. There could be several reasons for ordering unnecessary AXRs such as “completeness” of work up of abdominal pain, seeking to avoid criticism from seniors or junior doctors ordering investigations without understanding the reasons for them.

**References**

1. Royal College of Radiologists. *iRefer 7.0.2* http://guidelines.irefer.org.uk
Adjusting the D-Dimer cut off limit for age, is it safe?

Robert Johnston
northumbria trust
Alex Langridge
Charlotte Routh

Aim

D-Dimer testing is performed when a patient is thought to have venous thromboembolism. Current practice within Northumbria foundation trust ACU is that patients with a low BTS or Wells score should have a D-Dimer test and if positive are then referred for radiological investigation. The aim of this work was to evaluate whether using age adjusted D-Dimer (ageX10) on patients presenting in September 2014 would have decreased the number of radiology referrals, thus avoiding unnecessary scans, whilst maintaining test sensitivity and safety.

Methods

All patients who presented to ACU during September 2014 and had an USS or CTPA were included. These patients were identified either by reviewing daily attendance sheets or by reviewing the ACU radiology requesting folder. Of those patients, any aged under 50 years old were excluded. These patients’ D-Dimer scores and scans were then reviewed, incorporating a calculated age-adjusted D-Dimer.

Outcomes / Results

The total number of scans throughout September performed on patients over the age of 50 was 135, with 16 CTPAs performed and 119 USS dopplers. Of the 135 scans performed 108 (80%) were unavoidable as the D-Dimer value was greater than; patient age x 10. 11 scans (8%) could have been avoided if patients were not scanned when the D-Dimer was less than 0.5 and a further 16 scans (12%) could have been avoided by using the method of the age adjusted D-Dimer. The 16 scans that were performed when avoidable by age-adjustment were in 13 patients and included, 3 CTPA’s for PE and 10, 3 of whom needed a second scan, for DVT.

Conclusion

The results show that by using age adjusted D-Dimer values 12% of the patients reviewed could have safely had radiological referral avoided whilst not missing any VTEs thereby implying good negative predictive value.

Avoiding 16 referrals to radiology would equate to a saving of £887, based on national NHS tariffs for USS doppler and CTPAs. When the associated ACU care is taken into account this would result in a total saving of £6087 per month, extended over a year this could potentially result in a significant saving of £73,000. These initial findings identify good potential cost savings, resource provision and radiation safety, whilst offering safe negative predictive values.

Moving forward it would be advisable to run this audit again to further quantify the potential number of scans that could be avoided per month, whilst further investigating the reliability of this method avoiding any false negatives.
Aiming for a cardiac arrest free care: Our perspective and progress

Helen Wardle
Wigan Wrightinton and Leigh NHS Foundation Trust
Syed Mehdi
Conal Hayton
Janet Derricot
Kathryn Haslem
Abdul Ashish

Aim
As part of yearly cardiac arrest audit, cardio-respiratory wards were found to have the highest incidence in 2012. We aimed to understand the reasons behind this and minimise arrest calls, working towards cardiac arrest free care. Re-audit of such calls in 2013 revealed some successes and shortfalls.

Methods
Data on cardiac arrests that occurred on two 28 bedded cardio-respiratory wards between Jan-Dec 2012 and 2013 were reviewed. Several aspects of care preceding the arrest including early warning score (EWS) and escalation, senior medical review, and appropriateness of arrest call were analysed. Following initial audit, some changes were initiated to reduce cardiac arrest calls. Appropriateness of the arrest call was judged by respiratory registrar on review of notes.

Outcomes / Results
Of the 179 number of cardiac arrest calls in 2012, 14% were on cardio-respiratory wards. 92% (22/24) of the calls were out of hours, with mean age of 73 years. 96% (23/24) patients died. 58% (7/12) of cases had adequate escalation of EWS; however 50% (12/24) of patients were not reviewed by a senior in the preceding 24 hours. 50% (12/24) of the resuscitation attempts were inappropriate based on co-morbidities and current illness. We implemented daily senior review, monthly mortality meetings, educating nursing staff and ward round checklist to improve the situation.

Re-audit revealed 30% (17 vs 24) reduction in number of cardiac arrests in 2013 and 18% (3/17) higher survival. 67% (6/9) patients were escalated based on EWS and 70% (12/17) of patients were seen by senior in preceding 24 hours. 76% (13/24) were resuscitated inappropriately with no improvement compared to previous year.

Conclusion
In conclusion, daily senior review and nurse education on the cardio-respiratory wards had positive impact on reducing the number of arrests and response to EWS. Timely and appropriate decisions on ceiling of care for deteriorating patients’ needs to be improved.
Ambulatory PE management; can we improve our service?

Lojana Chandrarajan
Basildon Hospital
Sylvia Aneke
Godwin Simon

Aim

"PE" as a possible diagnosis is a frequent attendee on the medical take list in hospitals up and down the country. The majority of these patients are well and clinically stable and it is becoming increasingly common practice to manage such cases as an outpatient, through ambulatory pathways. NICE suggests outpatient management should be considered once radiological diagnosis has been achieved; anecdotally many units discharge low risk patients on heparin pending radiological diagnosis, if same-day imaging cannot be achieved.

The ambulatory emergency care unit at Basildon Hospital opened on July 22, 2014; one of the first pathways to be developed was its suspected PE pathway, in line with NICE guidance.

AIM

Primary endpoints: To assess throughput via AECU, adherence to local protocol, identify delays in the process and suggest methods to streamline the service.

Secondary endpoints: To compare our "hit rate" nationally

Count of hours scanning with protected time slots. Of concern is non-adherence to protocol; the reasons behind this need to be analysed further to see if there is justification for protocol adjustment.

Methods

Retrospective analysis from July to October 2014 of all patients presenting with possible PE requiring imaging diagnosis, either through ambulatory care or via the medical take

Outcomes / Results

147 patients presented to Basildon hospital ?PE from July 22, 2014 – 31 October 2014. 85 of these patients (58%) were seen and managed via AECU; this made up 24% of the new patient burden of AECU (n=356). 29 of these patients needed admission; thus in total just under a third of patients presenting ?PE were managed as outpatients not requiring admission during that patient episode.

Protocol adherence was approximately 70% (n=60). The main deviances were sending patients home prior to imaging diagnosis, followed closely by not calculating PESI scoring.

Less than 50% of patients received diagnostic imaging the same day as presentation; around 20% of patients received their diagnostic imaging two days or more after presenting to hospital. In some cases this was due to the imaging modality of choice being nuclear medicine perfusion scanning.

Our "hit rate" was around 20%. This is similar to other published data, suggesting our pathway is not yet subject to significant abuse.

Conclusion

Although introduction of AECU and a ?PE pathway has certainly reduced admissions (56 patients managed fully as outpatients over a three month period, with a minimum saving of £15,288), there is certainly scope
for improvement. Further sub-analysis to appreciate which processes need streamling (A&E triage, time taken to book scan) needs to be performed to see if a business case can be implemented for out of hours scanning with protected time slots. Of concern is non-adherence to protocol; the reasons behind this need to be analysed further to see if there is justification for protocol adjustment.
Assessing the efficiency and quality of the acute admissions service at the Royal Glamorgan Hospital, the effect of an ambulatory care unit

Richard Thomas
Prince Philip Hospital
Matthew Rose
Leslie Ala
Sally Price

Aim

Guidelines produced by the Society for Acute Medicine (SAM) set standards which acute admissions units should aspire to achieve [1]. Identification and streamlining of patients suitable for rapid, “ambulatory” assessment could help avoid unnecessary admissions to hospital. This audit cycle aimed to determine the effect of this intervention in improving the efficiency of a busy medical take.

Methods

All patients referred to the medical take at the Royal Glamorgan hospital during two, fortnightly periods were included in the audit cycle. Initially, all patients were generically referred to the medical take and were reviewed by a consultant after being clerked by a junior. During the second audit period, all referrals were assigned as either “ambulatory” or “admission” depending on the judgement of the referring doctor. ‘Ambulatory’ patients were reviewed by a designated FY1 and consultant in a designated "Ambulatory Emergency Care" Unit (AECU). Waiting times for initial clerking, senior and consultant review were calculated and this was used to determine the efficacy of the system.

Outcomes / Results

366 and 324 patients were audited in the initial cycle and re-audit cycle respectively. Waiting times were shorter in the re-audit cycle during day-time hours (95.9 vs 63.6 minutes). Mean waiting times for consultant review were 7.15 and 6.08 hours during the 1st and re-audit cycle respectively with 85.9% and 89.0% of patients being seen within SAM guidelines. 25.8% of patients assigned as "admission" were discharged immediately following post-take.

Conclusion

Ambulatory assessment appears to improve the efficiency of the medical take, allowing for rapid discharge of patients not requiring admission. A significant proportion of patients are incorrectly triaged as "for admission" placing a greater burden on the admission team. Greater streamlining of ambulatory patients away from the admission take could help to ensure that the AECU is fully utilised.

References

Assessment of delirium in the Acute Medical Unit, Epsom Hospital

Randeep Sangha
Epsom and St Helier Trust
Mohammed Al-Khaddhour
Raza Syed
Simona Petkovic
Aliya Nazli

Aim

To compare the practice of assessing delirium in the Acute Medical Unit at Epsom Hospital with the national guidance set by the British Geriatric Society.

Methods

We collected the medical clerking notes 24 hours post admission of each patient over 75 years old on the Acute Medical Unit, Epsom Hospital. Studying the medical notes, we searched for documentation with regards to if any of the assessment points were performed. This was done in a 2 week period between the 6th October 2014 and 19th October 2014, collating 50 patients’ notes in total. After the initial audit, the cycle was completed in the time period 26th January 2015 to 9th February 2015, after the implementation of the recommendations.

The inclusion criteria were set as the following:

- Age >65
- Initial AMTS less than 8/10
- Presenting complaint compliant with the aetiology of ‘delirium’
- Notes seen in the first 24 hours of admission

Outcomes / Results

Overall, there was an increase in all of the parameters being assessed.

With regards to the non-blood test investigations, each of the AMTS, blood glucose and urine dip were increased, with a 18%, 14% and 4% increase respectively. Encouragingly, the AMTS was recorded in every one of those patients.

Finally with interest to the blood-test investigations, we also see an improvement in the undertaking of the tests. There was a 14% increase in vitamin B12 and folate; an 8% increase in thyroid function tests; a 10% improvement in the number of bone profiles requestion; and finally a 64% increase in the number of magnesums being requested.

Conclusion

As can be seen by the above results, there was a widespread increase in all of the investigations recommended by the British Geriatrics Society guidelines, and thus the assessment of delirium was being implemented much more efficiently in patients admitted to Epsom Hospital.

References


Audit to evaluate an ambulatory pulmonary embolism investigative pathway

Alistair Green
Norfolk and Norwich Hospital
Akhil Khera
Ashwin Mahtani

Aim
Pulmonary emboli (PE) present with non-specific signs and symptoms, posing a diagnostic challenge. Our hospital protocol uses the D-dimer and two-level Well’s score (WS) to help diagnose PE. This audit aimed to evaluate protocol compliance and evaluate the utility of using Age-adjusted D-dimers (1).

Methods
A retrospective case by case audit was conducted on the 204 patients who were investigated by the outpatient PE pathway (inpatients excluded) between October 2013-2014 documenting the D-dimers, Well’s score and choice of investigation (CTPA or V/Q scan). Age-adjusted D-dimers were calculated those >50years.

Outcomes / Results
The protocol was not followed in 44% (90/204), leading to D-dimers being requested in 35% (72/204) despite a WS≥4 and not requested in 9% (18/204) whose WS<4. PE was diagnosed in 18% (37/204) of patients. Similar numbers of patients were diagnosed with PE in the high risk cohort (WS≥4) 21/204 versus low risk cohort (WS<4) 16/204.

Age-adjusted D-dimers were applicable to 95/204 and would avoided investigation in 6/204 however 3 patients were diagnosed with PE with negative age-adjusted D-dimers of which 2 would have had positive D-dimers by the usual cutoff.

Of the cohort, 12% (n=25) were pregnant and only one was diagnosed with a PE. Of the pregnant, 16/25 had a D-dimer done. It was positive in 14/25 and negative in 2/25. It wasn’t done in 9/25 which included the one patient with PE.

Conclusion
Protocol is not being followed in a large proportion of patients wasting resources. Age-adjusted D-dimer didn’t aid diagnostic efficiency despite being helpful in the Adjust PE trial. WS didn’t change the proportion of patients diagnosed with a PE, suggesting that it’s less helpful in the ambulatory population. Pregnant ladies are commonly assessed for PE but their risk is low (1/25) and D-dimer testing appears unhelpful in this group.

References
Cancer screening in Unprovoked PE

Farique Leet
Queens Medical Centre, Nottingham University Hospitals NHS Trust

Sadia Abdullah
Kate Knowles
Ivan Le Jeune

Aim

VTE is the third cardiovascular disease with an overall annual incidence of 100–200 per 100000. 10% of patients presenting with unprovoked PE will develop cancer within the next 5–10 years, with the majority in the first 1–2 years after diagnosis of PE. The purpose of this project was to evaluate the cancer screening in a cohort of unprovoked PE patient.

Methods

151 consecutive patients with a PE were identified from the Queens Medical Centre (Nottingham) anticoagulation clinic database between January and June 2013. From this group patients with “unprovoked” PE who were over 40 years old were selected and data on cancer screening obtained from electronic records and patients’ notes. Records of cancer screening through history and examination, chest x-ray, full blood count, urea electrolytes, liver function test, calcium, urinalysis, CT abdomen and pelvis and in case of female mammography.

Outcomes / Results

Of 151 patients 53 were identified to have unprovoked PE and among those 48 were over 40 years of age. In over forty group 17 female and 31 male with mean age of 66 years. All patients had FBC and UE but only 60 % LFT, 37 % calcium, 40 % abdominal imaging (CT 78% and 22% ultrasound) and 40% had Urinalysis. 1/17 female had mammogram. We found no cancer in patient who had been screened for cancer but two patients who had not been screened found to have cancers (CUP and HCC) within a year.

Conclusion

The results of this project demonstrate inconsistent application of the national guidelines for the management of VTE. It might be due to having no clear pathway as there is a difference in opinion about screening among clinicians and guideline writers (NICE guideline CG144 vs European society of cardiology), it might be ignorance of the guidelines or clinicians’ scepticism about the utility of screening given the low pick up rates. There is clearly a need for further evaluation of appropriate cancer screening for these patients. As a minimum there should be on-going education of all healthcare professionals involved in their care. Consistent follow up pathways for these patients might help implement appropriate management plans.

References

3. Venous Thromboembolic diseases: NICE guidelines [CG144] Published date: June 2012
COLLECTING DATA ON ACUTE MEDICINE QUALITY INDICATORS IN SCOTLAND: A FIRST YEAR REVIEW

Lindsay Reid

Royal College of Physicians of Edinburgh

Ursula Pretsch
Daniel Beckett
Mike Jones
Acute Medicine Working Group

Aim

To collect regular data on clinical quality indicators across a national network of acute medical units (AMUs) in Scotland. To build a collection and feedback reporting mechanism with the aim of local quality improvement in acute medical care across Scotland.

Methods

The Royal College of Physicians of Edinburgh (RCPE) invited representatives from 29 consultant-led Scottish AMUs to set up a data collection based on the Society for Acute Medicine's clinical quality indicators (QIs)\(^1\) for AMUs.

From July 2013, each unit has aimed to review five randomised cases in each of four weeks every month and on randomly selected, pre-specified days. Data on QI 1, 2 & 3 are submitted to RCPE, individual reports fed back to respective units and progress updates periodically issued to the whole group.

The group meets periodically to exchange experiences of the process and to find ways to improve data quality, collection/analysis and feedback process.

Outcomes / Results

We have representation from all 29 AMUs. Guidance and methodology are continuously developed. 71% of AMUs have submitted data for one month or more. 2156 valid records were submitted in year 1 (Figure 1).

Common themes for barriers to quality of data collection are becoming apparent e.g. lack of resource, tracking of paper-based data or incomplete patient records.

Significant variation in service delivery exists among AMUs with specific regard to patient pathways for GP vs ED referrals and the geographic location where AMU staff see patients.

Conclusion

The process highlights challenges in establishing a quality data set. Further work is required to expand and improve data quality before focusing on active quality improvement.

A more consolidated understanding of QIs and variation in service delivery in AMUs is emerging, based both on a standardised method of data collection and acknowledgement of different systems being in place.

References

Do Not Attempt Cardiopulmonary Resuscitation: has consideration of these decisions improved with the introduction of Treatment Escalation Plans?

Emma Hughes
Princess Royal University Hospital

Harriet Kent
Jithesh Choyi

Aim

Has documentation of ‘Do Not Attempt Cardiopulmonary Resuscitation’ (DNACPR) forms improved since the introduction of the ‘Treatment Escalation Plan’ (TEP)?

Methods

An October 2014 audit (pre-introduction of TEP) documented completion of DNACPR forms on an acute medical unit (AMU). Over an afternoon, the notes of each patient were assessed regarding whether:

- the patient was appropriate for DNACPR discussion (depending on factors such as co-morbidities, National Early Warning Score (NEWS) ≥ 5 and age);
- a discussion with either patient or relative was documented;
- a DNACPR form was completed

This was repeated in March 2015, a month post-introduction of TEPs.

Outcomes / Results

<table>
<thead>
<tr>
<th></th>
<th>October</th>
<th>March</th>
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<tr>
<td>Sample size (N)</td>
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<td>51</td>
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<tr>
<td>Female</td>
<td>23</td>
<td>21</td>
</tr>
<tr>
<td>Male</td>
<td>37</td>
<td>30</td>
</tr>
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</tr>
<tr>
<td>Age range</td>
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<tr>
<td>Appropriate for discussion (%)</td>
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<td>39 (76)</td>
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<td>16 (41)</td>
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<td>DNACPR in place (%)</td>
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</tbody>
</table>

In March 2015, correlation between TEPs and appropriate DNACPR decisions was considered:

<table>
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<th>TEP in place</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>Appropriate for discussion</td>
<td>20</td>
<td>12</td>
</tr>
<tr>
<td>DNACPR in place (%)</td>
<td>17 (85)</td>
<td>3 (25)</td>
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<tr>
<td>No DNACPR (%)</td>
<td>3 (15)</td>
<td>9 (75)</td>
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</table>

Data regarding NEWS and DNACPR, not included in October 2014, were recorded in May 2014, when only 20% of patients with NEWS ≥ 5 had DNACPR consideration. In March, this had risen to 74%.
Conclusion

1. Significant improvement in completion of DNACPR forms;
2. Improvement in the documentation of DNACPR discussions;
3. Apparent correlation between completion of a TEP and appropriate DNACPR decisions;
4. Significant improvement, since May 2014, in the number of patients with high NEWS having a discussion or decision recorded regarding resuscitation.

Areas requiring improvement remain:

1. DNACPR consideration is lacking for many patients;
2. Documentation of DNACPR discussions is poor;
3. Awareness of NEWS and DNACPR guidelines needs to be heightened;
4. TEPs are not being used for every patient. Given the suggested correlation, improvement in TEP completion might improve DNACPR documentation.

References

1. Acute Care Toolkit 6: The medical patient at risk; Royal College of Physicians, May 2013; p2
Does a satellite pharmacy on the Acute Medicine Unit (AMU) facilitate discharge?

Runa Patel-Kumar
St George’s University Hospitals NHS Foundation Trust

Jane Evans
Stephan Brincat
Victoria Bray
Orlagh Flynn

Aim

One of the major contributing factors to delays in discharge is the time take to prescribe, dispense and deliver discharge medicines (TTOs) to the patient. We have evaluated the impact of a satellite pharmacy located on the AMU on TTO turnaround times.

Methods

Data was collected at two different time-points, both over a two-week period. A baseline study was conducted in January 2014 to assess the processing time of our current practice of prescription writing to the dispensing of medicines conducted over two sites: the Trust pharmacy and the clinical treatment room on AMU. The same study was repeated in December 2014 after the implementation of a temporary satellite pharmacy on the AMU together with a pharmacist carrying a dedicated discharge bleep.

Outcomes / Results

In the baseline study, 115 TTOs were processed. 70% were dispensed in the treatment room on AMU and 30% were dispensed in the Trust pharmacy. The median processing time for TTOs dispensed on the AMU was 24 minutes versus 107 minutes for TTOs dispensed in the Trust pharmacy. The pharmacist was informed of the TTO being written in 36% of cases.

In the interventional study, 141 TTOs were processed. 87% were dispensed in the satellite pharmacy on AMU and 13% dispensed in the Trust pharmacy. The median processing time for TTOs dispensed on the AMU was 12 minutes versus 67 minutes for TTOs dispensed in the Trust pharmacy. The pharmacist was informed of the TTO being written in 95% of cases. The median time between decision to discharge and the TTO being written was also reduced by 70 minutes.

Conclusion

Implementation of a satellite pharmacy on the AMU results in an increased capacity for near patient TTO dispensing. Moreover, there is a significant reduction in the time taken from TTOs being written to discharge medication being dispensed, facilitating earlier discharge.
Electronic GRACE scoring: Improving the safety and quality of NSTEMI care  

Daniel Bendel  
The Whittington Hospital  

David Brull  

Aim  

Non-ST Elevation Myocardial Infarction carries varying degrees of risk for in-hospital reinfarction. As such, the National Institute of Health and Care Excellence (NICE) advises assessing all cases of suspected NSTEMI with a GRACE score on admission.

Despite the guidance, we suspected that risk assessment was not happening in our hospital, prompting an initial audit in 2011. We found that our audit standards were not met, as no patients had been GRACE scored.

We implemented an electronic intervention, placing it prior to the electronic request for a troponin assay. This occurs universally at the beginning of each possible admission for NSTEMI. We sought to bring about both risk assessment and improve upon risk-related care.

Methods  

A retrospective review of notes for all cases of suspected NSTEMI was carried out over a two month period. The admission clerking and subsequent admission notes were scoured for evidence of risk assessment. We also looked at other indicators of quality of care, including what investigations were carried out in order to make the diagnosis. We also looked at whether there was evidence of secondary prevention post-angiography, including rationalisation of medicines and lifestyle advice.

Given that risk-assessment fell drastically short of our standards, we devised an electronic intervention with the intention of bringing about risk-focused care. In liaison with the biomedical scientists that administrate the electronic system used in requesting blood tests, we devised a system where the selection of a serum troponin request caused a series of pop-up boxes to occur.

The first pop-up box reminds the clinician of NICE guidance and directs them to an online GRACE score calculator. The following box then asks the clinician to enter the patient's GRACE score in order to proceed with the troponin request.

The audit loop was then closed in 2014 in order to assess the intervention's efficacy.

Outcomes / Results  

We found that almost 90% of patients admitted with a suspected NSTEMI had their risk of in-hospital reinfarction quantified with a GRACE score. We found that there was a risk-related decrease in the time from admission to angioplasty and a correlation between increased risk and the level of care received in our hospital.

Conclusion  

Our loop-completing audit suggests that both the safety and quality of NSTEMI care can be brought about by creating risk-centred management. Electronic GRACE scoring is one way of achieving this, as it can be easily incorporated into the admission process of all cases of suspected NSTEMI.
Have I got NEWS for you? An Audit Cycle on NEWS score documentation and appropriate escalation in a large London Acute Medical Unit

Kar Yee Law
North Middlesex University Hospital NHS Trust
Tahira Chaudhry
Rakshit Kumar
Rohit Raj

Aim

Early detection, timeliness and competency of clinical response are a triad of determinants of clinical outcome in people with acute illness. The National Early Warning Score (NEWS) is devised as a universal track-and-trigger system for assessing and monitoring clinical progress for all patients in hospitals based on six physiological parameters. The audit looks at how promptly and accurately our AMU is recording the parameters and NEWS score, and if NEWS score (particularly in high-score group) has triggered an appropriate response before and after training.

Methods

Data collected from AMU notes and observation charts. A total number of 602 patients from July 2014 and November 2014 cycles.

Outcomes / Results

After regular teaching sessions (including interactive lecture and case studies) over a month’s period for Nursing staff in AMU, Percentage of observations done within an hour of admission increased to 97.9% from 90.0%. Proportion of total NEWS score not calculated reduced from 13% to 9%. There is 100% adequate response to high-score patients compared to 33% previously. However, 100% of patients on Neurological Observations remain without documented NEWS scores.

Conclusion

Teaching sessions for Nursing staff have improved knowledge and compliance to NEWS scoring and an improved response to high-score patients. Common errors such as omitting to add a score of 2 for patients requiring supplemental oxygen are avoided.

Nevertheless, NEWS score are not calculated for patients on Neurological Observations as the chart does not contain prompting for NEWS score. Our recommendations following the audit cycle include: Mandatory NEWS score teaching every year and at induction for all clinical staff, incorporating NEWS score into Neurological Observation Chart with colour-coding and instructions and conducting an Annual Audit across all wards.

References


Implementing the SAFEMEDICS Approach to Ward Rounds on the Acute Medical Unit

Liana Zucco

King's College Hospital NHS Trust, Princess Royal University Hospital

Heather Powell
Emily Delfosse
Aswathiah Srinath
Jithesh Choyi

Aim

To implement the King’s College Hospital SAFEMEDICS\textsuperscript{1} ward round checklist into daily ward rounds on the Acute Medical Unit (AMU) at the Princess Royal University Hospital (PRUH), for the purpose of reducing ward round omissions, improving patient safety and strengthening MDT communication.

Methods

This quality improvement project (QIP) was performed using the Model for Improvement and PDSA methodology\textsuperscript{2}, over the course of 12 weeks, over 7 PDSA cycles. The SAFEMEDICS checklist was introduced to all junior and senior staff on the AMU at the PRUH, initially as a paper format then as a sticker format placed onto the back of each ID badge. Consultants encouraged the team to engage in open dialogue during each ward round, in particular post take ward rounds, to ensure all aspects of the checklist were considered and documented each day for each patient. The use of the checklist and the documentation of the items on the checklist were then recorded. Furthermore, staff surveys were completed to gather the perceived usefulness of the checklist.

Outcomes / Results

Following its initial introduction, usage of the SAFEMEDICS checklist on the AMU achieved 89%. Consideration and documentation of key elements on the checklist during ward rounds increased from 32% to 74%, in particular: escalation plans, antibiotics, fluid balance and DVT prophylaxis. Reinforcing our objective outcomes was a staff survey completed by the wider MDT, which highlighted that the checklist is a useful tool and increases the perceived overall performance during ward rounds from “poor” to “good”. Remaining checklist items were highlighted as in need of further improvement, e.g.: consideration of blood glucose, cannulas and medications.

Conclusion

Adopting the SAFEMEDICS checklist on the AMU helped streamline ward rounds, improve documentation and foster communication within the team. Further PDSA cycles will aim to build upon our initial findings and strengthen the AMU ward round.

References

Improving detection and management of Acute Kidney Injury in medical admissions: a hospital based quality improvement project

Hannah Reed
Yeovil district hospital

Lucy Gains
Suzanne Shandall
Georgina Gullick
Rachel Johns

Aim

The NCEPOD report in 2009 identified failings in clinicians recognising and managing acute kidney injury (AKI) properly with only half of these patients receiving appropriate care.\(^1\) In the NHS the importance of AKI is not only a patient safety issue; the cost of AKI-related inpatient care in England is estimated at £1.02 billion per annum, just over 1% of the NHS budget.\(^2\) Our aim is to improve detection, investigation and management of AKI in medical admissions in our hospital.

Methods

An initial cycle was performed in December 2014, 140 medical case notes were reviewed for AKI on admission using the RIFLE\(^3\), AKIN or KDIGO\(^4\) definitions. We had 14 patients who had AKI on admission; we retrospectively reviewed the notes for the recognition, investigation and management of AKI. In our first PDSA cycle we created a lanyard listing the risk factors for AKI, common causes and initial management steps, which were distributed to junior doctors. Following this intervention we repeated our data collection, this time we had 18 patients from 140 notes reviewed.

Outcomes / Results

We found a significant increase in the clerking doctor’s recognition in AKI from 6/14 (43%) to (14/18 (78%) and mostly small improvements in investigation and management of AKI as in table.

<table>
<thead>
<tr>
<th>Number patients with AKI</th>
<th>Recognition AKI by clerking doctor</th>
<th>Baseline U&amp;E recorded</th>
<th>Urine dipstick</th>
<th>Bicarbonate measured</th>
<th>IV fluids</th>
<th>Stop Nephrotoxics</th>
<th>Input/output monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 14</td>
<td>43%</td>
<td>46%</td>
<td>36%</td>
<td>36%</td>
<td>64%</td>
<td>63%</td>
<td>29%</td>
</tr>
<tr>
<td>N = 18</td>
<td>78%</td>
<td>67%</td>
<td>56%</td>
<td>75%</td>
<td>72%</td>
<td>38%</td>
<td>55%</td>
</tr>
</tbody>
</table>

Conclusion

Our first cycle has shown improvement with particular respect to management of AKI but there are many further improvements to be made. We are currently in progress in our second PDSA cycle and are educating juniors about AKI and raising awareness with posters. For our third cycle we plan to implement a care bundle. We have shown even through a small intervention you can raise awareness of AKI and improve management and are hoping by further cycles we can further the quality of AKI management in our hospital.

References

1. Acute Kidney Injury: Adding insult to injury, National Confidential Enquiry into Patient Outcome and Death (NCEPOD-2009)
Improving the door-to-needle compliance for patients with suspected neutropaenic sepsis

Nicolai Wennike
Musgrove Park Hospital

Joanne Botten
Andrew Thompson

Aim

Staff working on AMU’s should be familiar with the significant morbidity and mortality associated with sepsis. This is a time sensitive condition and the key is early identification and management. Patients undergoing chemotherapy are at risk of neutropaenic sepsis and at Musgrove Park Hospital are admitted via AMU or ED and as per NICE guidelines antibiotics must be administered within 60 minutes of arrival. This has been a challenge and has only been achievable in 36% of cases.

To address this a 09:00 – 17:00 Monday – Friday Acute Oncology Team was established providing support and extensive education, which improved our compliance to 67% over a 9 month period, but still below the 90% CQUIN target. To improve further an innovative idea was developed; the patient would carry the prescription for antibiotics with them, so they would not wait to see a doctor before a prescription for antibiotics was written.

Methods

A credit card sized Neutropaenic Sepsis Alert Card was created with a pre-written antibiotic prescription signed by the Oncology/Haematology Consultant, at the time of starting chemotherapy (figure1). This acts as a Patient Specific Directive and allows the Nursing Staff to administer the antibiotics used for neutropaenic sepsis on the patient’s arrival. The card complies with MRHA, NICE and local guidelines and patients are educated on the use of the card.

Patients are advised that if they have a temperature of >38.0°C or <36.0°C they must attend ED or AMU and present their Neutropaenic Sepsis Alert Card. There has also been extensive training for Nursing, Reception and Medical Staff.

Outcomes / Results

The cards have been in use for 6 months

During this time

- 143 patients have presented with suspected neutropaenic sepsis. (87% had antibiotics within 60 minutes)
- Of these, 111 patients presented their card and 93% had antibiotics within 60 minutes.
- 32 patients did not use a card and 66% had antibiotics within 60 minutes.

Conclusion

Feedback from patients and staff has been positive. This development has allowed a significant improvement in the management of patients with neutropaenic sepsis. This model has been beneficial for our Trust and may be transferrable to other centres with minimal cost implications.

References

- National Chemotherapy Advisory Group – ensuring quality and safety; Department of Health 2009
- NICE Guidance CG151
Increasing the uptake of HIV testing for clinical indicator conditions: An AMU Quality Improvement Project

Rachel Penfold
St Helens and Knowsley Hospital

Ragit Varia
Robert Hewson
Kalani Mortimer

Aim

In 2013 42% of new HIV diagnoses were late (CD4 count < 350 cells/mm$^3$) and over half of these patients were severely immunocompromised with death reported as ten times more likely in the first year of diagnosis when the diagnosis is delayed. It is known that early diagnosis improves patient outcome and reduces spread of disease through reduced viral load and safer patterns of behaviour. All patients admitted to hospitals in regions with background HIV prevalence of ≥ 2/1000 are automatically offered an HIV test. Regional prevalence in St Helens is 0.7/1000 and therefore HIV testing is only performed at clinicians request. We aimed to increase appropriate HIV testing based on clinical indicator conditions on our unit.

Methods

We reviewed 100 consecutive admissions to our trust’s GP assessment area of our AMU over one week and derived the number of patients presenting with an HIV indicator condition based on the British HIV Association (BHIVA) guidelines. We developed an online survey which showed that our trainees felt confident taking consent but were not aware of all the indicator conditions. Along with departmental education we implemented an easily accessible visual aide memoire representing the indicator conditions by clinical system. We then measured the impact on mean number of requests per month as a result of our intervention.

Outcomes / Results

The initial snapshot showed 11/100 patients presented with clinical indicator conditions but no test performed. Laboratory records demonstrated HIV requests from AMU averaged 10 per month in 9 months leading up to the intervention increasing to 22 requests in the first month post-intervention.

Conclusion

A visual aide memoire listing all indicator conditions for HIV testing displayed in prominent areas on AMU can successfully increase the uptake of HIV testing. Further PDSA cycles to show sustainability are ongoing.

References


Inefficiencies in cellulitis clinical pathways - How to avoid waste

Harith Altemimi
Queen Elizabeth Hospital Kings Lynn NHS Foundation Trust
Zaheer Babar
Yuan Hui Wang-Koh

Aim

Inspite of existence of OPAT and ambulatory pathways for management of cellulitis and national guidelines, patients with cellulitis are still admitted to hospital, inappropriate antibiotics used and OPAT and ambulatory services under utilized. Therefore, we developed a care bundle to assess whether development of clinical care pathways helps in appropriate use of antibiotics, reduce need for hospital admissions and length of stay and increase use of OPAT.

Methods

We developed a care bundle to aid doctors and nurses to choose correct antibiotics according to trust guidelines, criteria for admission to hospital and referral to ambulatory and OPAT services. We audited 50 case notes, 25 each of pre and post care bundle introduction.

Outcomes / Results

Our findings were that the use of care-bundles (clinical pathway) increases appropriateness of choice of antibiotics, OPAT referral and avoidance of unnecessary admissions. We found that adherence to antibiotics guidelines improved from 75% to 95% where correct antibiotics were given as per trust guidelines. Appropriate investigations were done in 100% of patients post care bundle compared with 56% pre care bundle. 30 % (8) unnecessary admissions were avoided by following admission and referral criteria. There were 7 admissions which did not fulfill admission criteria but were admitted due to unavailability of OPAT services and lack of social support. Length of stay reduced by 1.3 days by early referral to OPAT and switching to oral antibiotics following guidelines. By specifically designing criteria for referral to OPAT, it increased OPAT referral by 33%.

Conclusion

Cellulitis can be managed as an outpatient or ambulatory condition in absence of systemic illness. This needs development and adherence to admission criteria, integrating primary and secondary care services and improving capacity and quality of OPAT services locally following national guidelines. This can be done by promoting and advertising usage of OPAT and Ambulatory services. Education of both primary and secondary care doctors about cellulitis being an outpatient condition with high burden on hospital admission and being low risk ambulatory condition in absence of systemic symptoms, social and mobility issues. In Norfolk the OPAT service is not available in all geographical areas. Our audit findings suggest the need of advocating local commissioners to extend services to all areas to promote concept of treating cellulitis in community. This will result in cost saving and improving patient flow in acute trusts dealing with capacity issues.

References

Intervention audit of pharmacist contributions on the Acute Medicine Unit (AMU) post take ward rounds (PTWRs)

Runa Patel-Kumar
St George's University Hospitals NHS Foundation Trust
Victoria Bray
Jane Evans

Aim

As stated in the London Quality Standards published in February 2013, ‘Prompt screening of all complex needs inpatients to take place by a multi-professional team including physiotherapy, occupational therapy, nursing, pharmacy and medical staff. A clear multi-disciplinary assessment to be undertaken within 14 hours and a treatment or management plan to be in place within 24 hours.’ Having a pharmacist on the PTWR establishes close liaison with the medical staff and interventions can be actioned and errors can be quickly rectified. The aim of this audit was to assess the impact on clinical interventions made on the evening PTWRs by senior AMU pharmacists versus senior non-AMU pharmacists.

Methods

Baseline data on the number and type of clinical interventions made by senior non-AMU pharmacists on all evening PTWRs was collected over a four week period in July 2014. The audit was repeated over a four week period in October 2014 to assess the impact of senior AMU pharmacists on the PTWRs. Data was collected using a Trust intervention collection tool and assessed using the National Patient Safety Agency impact assessment matrix.

Outcomes / Results

A similar number of patients were reviewed by the PTWR pharmacist in July and October 2014 (181 in July, 174 in October). Interventions per patient increased three-fold when reviewed by an AMU pharmacist. High impact interventions increased by 11.3% (12.4% July, 23.7% October) and interventions involving high risk drugs increased by almost six-fold per patient (0.3 July, 1.7 October).

<table>
<thead>
<tr>
<th></th>
<th>July 2014</th>
<th>October 2014</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients reviewed</td>
<td>181</td>
<td>174</td>
<td></td>
</tr>
<tr>
<td>Total number of interventions</td>
<td>178</td>
<td>709</td>
<td>+398%</td>
</tr>
<tr>
<td>Number of interventions per patient</td>
<td>1.0</td>
<td>4.1</td>
<td>+300%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>July 2014</th>
<th>October 2014</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low impact interventions (%)</td>
<td>59.6</td>
<td>26.1</td>
<td>-33.5</td>
</tr>
<tr>
<td>Medium impact interventions (%)</td>
<td>14.6</td>
<td>50.4</td>
<td>+35.8</td>
</tr>
<tr>
<td>High impact interventions (%)</td>
<td>12.4</td>
<td>23.7</td>
<td>+11.3</td>
</tr>
<tr>
<td>Number of interventions – high risk drugs</td>
<td>61</td>
<td>299</td>
<td>+490%</td>
</tr>
<tr>
<td>Number of interventions per patient – high risk drugs</td>
<td>0.3</td>
<td>1.7</td>
<td>+567%</td>
</tr>
</tbody>
</table>

Conclusion
The presence of an AMU pharmacist on PTWRs has a positive impact on patient care by increasing: the number of interventions per patient, interventions on high risk drugs per patient and the percentage of high impact interventions. The multi-disciplinary team ward round provides an ideal platform for AMU pharmacists to intervene on key clinical issues and enhance patient care.
Kings College Hospital Acute Medical Unit Patient Experience Study: What Patients’ Value Most on the Frontline

Shairana Naleem
Kings College Hospital
Josephine Murray
Alexandra Wyszkowska
Alice Snell
Yasmin Hakim

Aim

The future of the NHS is in adding value for the patient and ultimately moving towards a patient-centred service. To seek how we could therefore improve the frontline patient experience we carried out an extensive evaluation across our Acute Medical Unit (AMU), asking patients their views on the interactions with AMU medical staff. Our aim was to produce an internal set of standards for AMU doctors.

Methods

Between November 2014 and January 2015, seventy-one Likert-scale surveys encompassing ten questions each, were distributed to consenting inpatients on the AMU and a further five semi-structured focus groups of consenting inpatients were carried out and audio recorded. The data was held on an encrypted secure database in confidentiality and thematic analysis was subsequently performed.

Outcomes / Results

Clarity was a strong theme reflected in both the focus groups and surveys. Patients highlighted that of most importance they valued a clear diagnosis, follow-up details and feeling fully informed on their inpatient journey and prognosis. Patients demonstrated that they valued good communication, listening and knowledge over efficiency and availability. Of note CPR discussions in the acute setting were considered as important but inevitably raised considerable anxiety. Most anxieties stemmed from concerns that the conversations were indicative of a poor prognosis rather than acknowledging this as part of routine advance planning which is fast becoming standard medical practice.

Conclusion

This project has enabled us to focus on what patients’ value most during their acute admission. We are using the rich output to create a set of standards for our junior doctors who rotate through AMU, which can be delivered at our local induction including for example, instructing junior doctors to personally give a copy of the discharge letter to patients and clarify the patient’s understanding of their diagnosis and follow-up before they leave the AMU. As part of the actionable outcomes we have already produced a patient information leaflet supporting our Medical Assessment Centre attendees so they understand what to expect within our ambulatory service. We are now producing a patient information leaflet for our AMU ward base, outlining what to typically expect, including the possibility of being moved to another ward bed. This will also advise that routine CPR discussions may be held on the AMU and are not necessarily a reflection of prognosis. Additionally we are establishing a junior doctor-led AMU Patient Experience Committee to audit standards and serve as advocates of frontline patient experience in the longer term.
Level 1 monitored beds on the Acute Medical Unit

Tala Andoni
City Hospital
A Jain
M Al-Obaidi
S Clare

Background

The AMU at City Hospital houses 8 monitored beds designated for patients who require level 1 care and NIV as ceiling of care. These beds are 29% of our capacity and historically used inappropriately. An audit in 2013 revealed that 20% of patients in these level 1 beds were transferred to ITU not because of deterioration but due to ITU not accepting after initial assessment in ED Resuscitation. This raised concerns that AMU was being kept as a “holding bay” for ITU.

To solve this issue, engagement with ITU teams as well as education and a clear directive to the medical registrars with “out of hours” escalation to Consultants was embedded. This led to a significant decrease in number of inappropriate Level 2 patients on the AMU.

Aim

The aim of this audit is to ensure that patients have been assigned the right level of care, and decisions regarding monitor were made by the appropriate team member and escalated. Results were compared to previous audit in 2013.

Methods

Data was collected over a 4-week period in 2015 on all patients who were admitted to a monitored bed.

Outcomes / Results

The 2013 audit revealed 26% of admissions were inappropriate, and were subsequently transferred to ITU. This figure was 3.9% in the 2015 audit revealing significant improvement.

Further results showed 60% of monitoring decisions were made by appropriate members (SpRs and Consultants). 79% of decisions to de-monitor were made by Consultants, and 95% of the time this decision was made between 0800-2100.

Conclusion

The results reveal a significant improvement in patients being inappropriately assigned level 1 beds within AMU. This is an improvement for patient safety and more appropriate use of AMU resources. AMUs must have clear guidance and pathways and to avoid being used as an ITU spillover.
Aim

An estimated 21,900 people living with HIV in the UK are unaware of their diagnosis. Late diagnosis is the most important factor associated with HIV-related morbidity and mortality. The British HIV Association (BHIVA) published guidelines in 2008 to highlight a number of clinical presentations for which HIV testing should be routinely recommended in order to improve routine testing & follow up.

Acute Medical Units are an ideal opportunity to detect patients with undiagnosed HIV as it forms part of the differential in many commonly presenting syndromes. This complete audit loop looked at our pre- & post- testing rates following the launch of the BHIVA guidelines and the campaign with our local Blood Bourne Viruses team to educate & change local requesting.

Methods

Patient notes were retrospectively analysed using a proforma based on the 2008 guidelines (see image 1). The initial phase of the audit in 2012 reviewed 261 patient notes. Following this, staff education was delivered to increase awareness of clinical indicators, improve consenting & make accessing HIV testing & follow up easier. The authors created a poster (see image 2) which was adopted by our local BBV team & used as the campaign poster throughout NHS Tayside. Re-audit of 100 case notes was performed early 2015.

Outcomes / Results

Our initial audit demonstrated failure to test in 100% of appropriate patients.

The repeat audit demonstrated failure to test in only 40% of appropriate patients.

Number of tests performed in AMU increased by 100% in the year following education & changes leading to a 2-fold increase in early diagnosis of HIV.

Conclusion

The results of this audit demonstrates that education of staff on the clinical spectrum of HIV rather than risk factors & improving access to testing increases both testing & diagnostic rates of HIV. This early detection is vital in improving outcomes for patients in HIV.

References

Patient satisfaction with the St Thomas’ Acute Medicine Model

Kevin O’Kane
St Thomas'
William Turner
Roshan Navin

Introduction

The Acute Assessment Unit (AAU) at St Thomas’ Hospital is unique, receiving patients in parallel to the Accident and Emergency Department & subject to the “A&E 4-Hour Target.

The unit has undergone several geographical changes since its inception & now resides beside A&E. Patients are accepted directly from Walk-in Triage, from Ambulance Triage & by primary care referral.

The department currently discharges approximately 80% of its patients [1], greatly reducing the burden on the acute medical service at the hospital, while offering affordable front of house medical care [2]. AAU is also unusual in having a traditional professional dress code for clinicians.

Aim

To evaluate patient experience opinion of the model following previous service improvements & to elicit their opinion on the dress code.

Methods

A patient questionnaire based on previous evaluation processes and the national patient satisfaction survey [3].

108 consecutive patients attending the unit between September & November 2014 completed anonymous questionnaires which were analysed by standard statistical models.

Outcomes / Results

Table 1: Patient satisfaction (n=108)

- 93% of patients rated their care as “excellent” or “very good”.
- 81% rated their experience as “much better” or “better” than previous acute medical care.

Figure 1: Dress code (n=108)

- 73% of patients preferred their doctors to wear formal professional dress.

Conclusion

We conclude that the model of acute medical care at St Thomas’ is well received by patients with levels of satisfaction similar to previous work [3].

84% of patients were aware of warning signs and 98% had contact details for communication after discharge compared with 63% in 2013, highlighting the success of subsequent staff education.

73% of patients prefer doctors to be dressed in formal attire, in contrast to the current ethos of NHS national dress code but in keeping with an improved patient experience [3].

Patients rate highly the standard and mode of delivery of acute medical care at St Thomas’.
References

2. Masterton-Smith et al, 2014, (I), SAM.
Patients’ satisfaction in a newly established Acute Medical Assessment Unit (AMAU) at an Irish Hospital

Sawsan Elhadi Ahmed Elsheikh
Connolly Hospital, Blanchardstown

Aoife Clare
Mairead Crowley
Eamon Dolan
Liam Cormican
Sinead Maguire

Aim

Background:
Our AMAU opened in 2012 and moved from the Old Unit (OU) to the New Unit (NU) in 2014 with a better location and increased capacity.

Aims:
• Primary aim: To conduct a novel study in Connolly Hospital exploring the patients’ insight, the impact of the NU on patients’ satisfaction and predictors of satisfaction.
• Secondary aim: To address the dissatisfaction points and shortfalls in the service in order to improve the quality and fulfil the overarching aim of the national Acute Medicine Programme [AMP] (1).

Methods

An observational, retrospective study using a validated questionnaire (2,3) was conducted by sending randomised pre-paid letters to 50% of the AMAU population (200 patients) assessed over two months in 2014 (one month from the OU versus one month from the NU). The questionnaire covered five aspects of satisfaction using a five point Likert scale (table one below). Multivariate analysis using linear regression was conducted (the overall score as the dependent variable) to predict satisfaction factors using the stepwise method.

Outcomes / Results

• Respondents (63 patients) gave ‘courtesy and politeness of the staff’ the highest rating in both units.
• Lack of confidentiality in the cubicles scored the lowest satisfaction, followed by ‘the explanation of advice’ in both units.
• Cleanliness and comfort ratings improved markedly in the NU (p <0.09).
• All five aspects were significant predictors of satisfaction.
• Re-assessment after addressing the short-falls (figure one below) over a period of one month (20 patients responded) showed a ≥ 90% score of satisfaction for all aspects with significant improvement in confidentiality (p< 0.001 and p< 0.004) and ‘the explanation of advice’ (p<0.3 and p<0.12) in comparison to the OU and NU respectively.

Conclusion

The survey succeeded in identifying the patients’ views, predictors of satisfaction and the short-falls in the service. Simple measures improved satisfaction level to ≥ 90% on all the parameters and hence fulfilling the AMP aim. Regular re-assessment will be carried out to ensure that the unit’s service is meeting the patients’ needs and therefore the AMP aim.

References


Perfecting Patient Flow: AMU and ACS

Javed Iqbal

Dorset County Hospital

Ben Sieniewicz
Jodie Sage
Charlotte Hine

Aim

Cardiac conditions account for 5% of A&E attendances and 40% of emergency hospital admissions. One of the challenges facing acute medicine is identifying patients in need of admission and specialist input.

NICE recommends that all patients diagnosed with unstable coronary syndrome should receive a mortality risk assessment (GRACE score). Patients classified as intermediate or high (>3%) should receive an inpatient coronary angiogram within 96 hours. Low risk patients (<3%) should be offered conservative management without early coronary angiography unless ischemia is demonstrated.

An initial audit at Dorset County Hospital (DCH) identified that only 57% of inpatient coronary angiograms occurred within 96 hours. In addition, no patient with a GRACE score of <2% required revascularisation after catheterisation and yet, this low risk group frequently waited the longest for their angiogram. In response, DCH altered its management of low risk patients and employed a chest pain nurse specialist (CPNS) tasked with the early identification of patients requiring specialist cardiology input.

We wanted to discern whether our recommendations had resulted in an improved performance and enhanced patient flow.

Methods

A retrospective study was carried out on 50 consecutive patients who underwent cardiac catheterisation.

Outcomes / Results

86% of patients received an inpatient angiogram within 96 hours. The inpatient wait for catheterisation reduced by 50% (4 days to 2 days) and total length of stay by 20% (5 days to 4 days). In addition, the yield of revascularisation following angiography increased by 30%.

Conclusion

Our CPNS has expediting the management of patients with ACS, facilitating earlier diagnostic testing. In addition, our new management approach has reduced the waiting time and total length of stay of patients admitted for specialist cardiovascular testing. Not only is our approach helping us towards achieving NICE targets; the improvement in patient flow has reduced pressure on the AMU.

References

Practical uses of high flow nasal oxygen as an alternative to CPAP in a medical high dependency unit

Sara Conroy

Imperial College Healthcare NHS Trust

Ambreen Qayum
Shelley Srivastava

Aim

The medical High Dependency Unit at Charing Cross Hospital is run by an acute medical team and admits patients for treatment of respiratory failure or inotrope requirement.

‘Optiflow’ is a relatively new way of giving heated, humidified high flow oxygen nasally and has been introduced to and used by the unit over the last year. Literature shows that it improves outcomes in type 1 respiratory failure for surgical and transplant patients in an intensive critical care environment\textsuperscript{1} and is tolerated well\textsuperscript{2} but there is little about its use in medical patients.

The aim of this audit was to evaluate our use of the device in the medical environment and consider its efficacy, accessibility and practical use.

None of the authors have any connections with the company producing optiflow and write as unbiased reviewers of the device.

Methods

An audit was undertaken of 100 consecutive admissions to the unit between August and October 2014. Data was collected from each patient relating to their admission and treatment.

Outcomes / Results

Of the 100 consecutive patients, 38 were in respiratory failure, 24 of whom were in type 1 respiratory failure. Of these, 46% used optiflow during their admission. Figure 1 shows the causes of the respiratory failure and the treatment required.

Conclusion

These results reflect our experience that optiflow is a useful and effective way of delivering oxygen to those people who need higher concentrations of oxygen but not high end expiratory pressures. Additionally, it was useful in a variety of clinical scenarios, including in palliative care, elderly delirious patients, septic patients and during weaning from higher pressure oxygen delivery. We also identified issues with the device that we have experienced.

By sharing our experiences (both positive and negative) we hope to inform colleagues in other hospitals who may benefit from the use of the device.

References

1. Roca O, de Acilu MG, Caralt B, Sacanell J, Masicans JR. Humidified high flow nasal cannula supportive therapy improves outcomes in lung transplant recipients readmitted to the intensive care unit because of acute respiratory failure. Transplantation 2014 Oct 21
Reducing registration-to-ECG times for patients presenting to the emergency unit with acute chest pain

Sophie Jenkins

Department of Acute Medicine, Hammersmith Hospital, Imperial College Healthcare NHS Trust

Elin Powell
Florian Wernig
Humera Shaikh

Aim

Acute coronary syndromes require rapid assessment and treatment to reduce morbidity and mortality. Patients with acute chest pain need prompt electrocardiogram (ECG) recording to aid diagnosis and reduce treatment delays.

A moderate clinical incident occurred in our tertiary centre emergency unit (EU) in 2014: a delay in ECG recording led to a substantial delay in diagnosis of ST-elevation myocardial infarction and therefore percutaneous coronary intervention. This incident prompted a quality improvement project to analyse acute chest pain assessment, with the objective to reduce registration-to-ECG recording times.

Methods

The assessment of patients presenting to the EU with acute chest pain was audited against European Society of Cardiology (ESC) guidelines, which set a standard of ECG recording within 10 minutes of registration. Baseline data were collected over a seven day period in February 2014 (n=60). Waiting times and lack of space and staff to record an ECG were identified as factors contributing to ECG recording delays. A two-stage intervention was implemented: (1) a dedicated clinical area for ECG recording was created; and (2) emails sent to clinical staff highlighted the need to prioritise ECG recording. The assessment of acute chest pain in the EU was re-audited three months post-intervention (seven day period in May 2014; n=46). Registration-to-ECG recording times were compared between the pre-intervention and post-intervention groups.

Outcomes / Results

The median registration-to-ECG time for the pre-intervention group was 42 minutes versus 14 minutes post-intervention, with the proportion of patients reaching the ESC standard for ECG recording time increasing from 18% to 50%.

Conclusion

In this quality improvement project, a clinical incident prompted an analysis of acute chest pain assessment in our emergency unit. The implementation of a simple intervention led to a significant reduction in registration-to-ECG recording times.

References

Reporting Tissue Viability Incidents in AMU: A Nurse Led Quality Improvement Project

Sara Rhodes
University Hospital of South Manchester

Leanne McEachan
Kate Targett
Julie Mullings
Rebecca Golden
Tim Cooksley
Matt Thornber
Mark Holland

Aim

The acquisition of pressure sores during hospital admission is a marker of poor care. At our hospital any pressure sore not documented within six hours of arriving on AMU is attributed to AMU care, irrespective of whether it was present prior to admission. We undertook a quality improvement project to increase documentation and reporting of pressure sores on admission to AMU.

The aim of this study is to evaluate the success of the project.

Methods

Traditionally we only used the Waterlow score to record skin condition. Deemed inadequate, a new system was devised and implemented by three AMU nurses. The new system augments the Waterlow score with a body diagram and simple tick box approach. The new system started on 13/8/2014 supported by a Band 6 tissue viability champion and a comprehensive education programme. The project was also supported by the Trust's tissue viability team.

We obtained data from the hospital incident report system (HIRS) to look at reporting of tissue viability problems.

Outcomes / Results

In the 12-months starting 1/2/2014 our AMU logged 550 HIRS related to tissue viability.

As data is reported by month, we have excluded August 2014.

In the 6-months prior to the new system there were 177 incidents (29.5/month) and in the 5-months after the new system 320 incidents (64/month), a 116.9% increase in reporting.

In the same timeframe the rate of total new (hospital attributed) episodes increased by 66.7%, from 6/month to 10/month. However, the relative rate of hospital attributed episodes fell from 20.3% to 15.6% per month.

Figures 1 and 2 show the categories of tissue viability incidents.

Conclusion

Our changes have improved the reporting rate of all tissue viability incidents with a relative fall in the number of hospital attributed episodes. Further work is required to reduce the total AMU attributed incidents; in particular continuing to emphasise the importance of assessing and reporting skin related incidents as soon as patients are admitted to AMU. This study shows that a collaborative approach by AMU nurses and the tissue viability team can improve tissue viability care.
Side rooms on the Medical Assessment Unit - “Safety versus Privacy and Dignity”

Wasim Mir
Sandwell & West Birmingham Hospitals NHS Trust

Neelesh Mohan
Sarbjit Clare

Aim

The DOH mandates that 50-100% of rooms in newly built hospitals should be single occupancy[1]. Our current AMU houses 25% of capacity as side rooms impacting on safety, visibility as well as capacity and flow. As assessment units, AMU’s should not be included on this mandate. Due to the adverse impact (see below) we have designed our new Midland Metropolitan hospital, due to open in 2018, with 18% side rooms and 6 bedded bays for visibility and safety. We strongly encourage that the Society of Acute Medicine guides DOH on the number of side rooms within AMU's.

- To assess patients were appropriately allocated to side rooms on the AMU.
- To analyse the impact of side rooms on the workings of an AMU.

Standards for the audit were for 100% of patients to be allocated appropriately

Methods

A sequential audit over a 5 year period was completed with 4 side room criteria;

1. Appropriate and required.
2. Appropriate but not required.
3. Inappropriate but required.
4. Inappropriate and not required.

*Patients deemed inappropriate with certain criteria e.g. chest pain, reduced GCS, physiological instability

Outcomes / Results

(See attached table (fig1) for result breakdown

A trend throughout the audit revealed more than one third of patients were still being placed in side rooms despite being classed as inappropriate and not required.

Conclusion

Our data clearly demonstrates that despite recommendations made in previous years, patients were still not correctly allocated to side rooms, leading to potentially adverse outcomes. Some patients deteriorated and needed higher levels of care. However, allocation is most likely due to capacity pressures and impacts on flow.

We strongly recommend that AMU’s have a smaller configuration of side rooms as we have designed for our new hospital.

References

Telemetry use within the Acute Medical Unit

Michael MacPherson
NHS Scotland
Hannah Simpson
Michael McDermot
Daniel Beckett

Aim

Monitoring appropriate patients with telemetry is a valuable and often lifesaving intervention. Local telemetry guidelines exist for use in the Acute Medical Unit within Forth Valley Royal Hospital, Scotland. Practical and clinical challenges arise when all units are in use. The aim of this project was to formally assess staff knowledge and audit the use of telemetry.

Methods

A questionnaire and quiz were created for all multidisciplinary staff working in AMU. A two week data collection followed on consecutive cases during June 2014. Audit results were presented at the departmental safety meeting and a period of intervention followed. Re-audit was carried out in November 2014.

Outcomes / Results

Results of the initial audit demonstrated that 34% (n=23) of staff were familiar with telemetry guidelines. The mean number of patients on telemetry at any one time was 4.2 of 5 available units. 27% of cases (n=26) did not meet a guideline indication. Explanation at handover as to why patient was on telemetry occurred in 54% of cases. Interventions over a four month period included raising awareness with posters, formal teaching sessions for staff, and re-arranging the unit so that the six AMU priority beds were beside the central telemetry monitoring system. The issue became a key component of handover and was actively encouraged by senior medical staff. Re-audit showed that staff familiarity with guidelines had improved to 95% versus 34%. There were less inappropriate (10% vs 27%) use of telemetry units. Communication also improved with 90% (n=10) being discussed at handover.

Conclusion

Telemetry is a valuable resource which should be used only where indicated by local guidelines. This quality improvement project has shown that staff education and practical solutions can increase efficacy and ultimately patient safety when managing what is a limited resource.
Transforming medical reviews and handover on the Acute Medical Unit and medical wards

Jonathan Drayson
Wessex Deanery
Edward Hewertson
Juliane Kause

Aim

Handovers and provision of care at weekends on acute medical units (AMU) and medical wards and key areas for improvement within the NHS. A team at University Hospitals Southampton (UHS) felt their current system did not adequately identify the patients transferred from AMU most in need of early reviews. We aimed to improve inconsistent medical handovers from AMU to the wards and improve awareness of downstream medical teams of the patients most in need of early clinical reviews, especially at weekends.

Methods

We designed and implemented a ‘traffic light handover system’ to triage medical patients. This system has 4 acuity scores: Red (very unwell/unstable), Amber (unwell but stable), Green (medically well awaiting tests/social care) and Blue (dischargeable). This now allows the on call teams in AMU to easily identify unwell patients, guides handover on AMU and triggers a medical handover for unwell patients being transferred off AMU. We incorporated our system into our existing IT system, designed posters and notified all stakeholders. The software also helped staff prioritise medical reviews for patients transferred from AMU to wards at weekends; the most unwell patients and dischargeable patients are now highlighted for early senior review.

Outcomes / Results

Audit data showed an improvement of proportion of 'red' patients seen before midday on a weekend from 43% - 100%, and 'blue' from 22% - 66%. Although numbers were small, it indicates that early senior reviews could thereby potentially improve patient safety and reduce length of stay. There is also anecdotal evidence that handover of the sicker patients from AMU to the wards is more robust.

Conclusion

The new traffic light handover system appears to be a useful way of prioritising patient reviews so that the right patients are seen at the right time. We propose that this system could easily be incorporated into other hospitals’ working practices.

References

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Using Technology to Improve Handover from the Acnute Medical Unit (AMU) at Night

Katherine Eloise Mellor
Plymouth Hospitals NHS Trust

David Morris
Jamie Read
Sarah Stoneman
Peter Murphy

Aim

INTRODUCTION
Transferring care of a patient from AMU to a ward is recognised as a high risk step where errors frequently occur and can lead to serious harm. Handover documentation and bleep system have been sequentially introduced in our hospital with subsequent improved rates of handover, but out of hours has remained problematic. We have developed a culture in our AMU in which handover is mandatory, however junior doctors have previously found the process of handover time consuming and inefficient.

AIMS
Firstly to implement an electronic handover system to improve quality of patient handover when transferred from AMU to a ward at night. Secondly improving efficiency of the process to increase junior doctor satisfaction

Methods
We introduced compulsory electronic handover of any patient transferred from AMU from 9pm to 8am using an electronic handover system which was already existent within the Trust. We retrospectively collected data over a month period from direct interrogation of the electronic system and notes audit. We compared this to data from an audit six months previously. To assess junior doctor attitudes to handover we carried out a survey of junior doctors involved in handover from AMU.

Outcomes / Results

An audit in our hospital in 2010 showed that only 30% of patients who were transferred out of hours were handed over, introducing handover documentation and a bleep system improved this to 73%. However junior doctors found this system time consuming to use and they were unsuccessful in handover via bleep 13% of the time. Introducing electronic handover resulted in 93% of patients handed over at night. Junior doctor feedback was positive with 100% finding it an improvement on the bleep system

Conclusion

The introduction of an electronic handover system has greatly improved rates of handover. We plan to roll this out during daylight hours once investment in required technology occurs. Ongoing barriers to handover include the issues of patients transferred to non medical wards as outliers and time pressures on junior doctor working.

References

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Would using the pulmonary embolism severity index (PESI) or simplified pulmonary embolism severity index (SPESI) lead to increased inpatient hospital admissions

Matthew Cole
Queen Alexandra Hospital
Abubakar Khan

Aim

The pulmonary embolism severity Index (PESI) and simplified pulmonary embolism severity index (SPESI) are prognostic models used to stratify 30 day mortality in patients with pulmonary embolism varying from very low to very high risk. Currently at the Queen Alexandra Hospital (QAH), clinical acumen of the senior clinician is used to decide which patients are suitable for the outpatient PE pathway as opposed to receiving inpatient investigation and treatment. The aim of this project is to ascertain how implementing the SPESI/PESI model could affect decision making and hospital admissions.

Methods

This was a retrospective study collecting data to calculate the PESI and SPESI of 55 patients with suspected PE in the outpatient pathway that currently exists. The data was collected between December 2013 and March 2014.

Outcomes / Results

Using the PESI scoring system 7 out of 55 patients (13 %) had a score which put them at intermediate risk. No patients on the outpatient pathway were deemed as being high or very high risk. Using the SPESI scoring system 22 patients (40%) had a score of 1 or more placing them in the high risk strata. Of the 55 patients, 8 were shown to have a PE. Of those with PE, 25% were from the intermediate risk and above group using PESI and 88% in the high risk group using SPESI.

Conclusion

Using the SPESI would dramatically increase the number of patients admitted to hospital for further investigation as 40% of patients currently being tested and treated on the outpatient PE pathway would be high risk. The PESI correlates better with current decision making at the QAH. No high risk or above patients were treated as outpatients. Consequently, using the PESI wouldn’t significantly change hospital admissions; it could be used to help decide in those borderline cases.

References