Aim:

Patients that recurrently attend Medical Assessment Units (MAU’s) have a massive financial implication for the trust. Little work has been done to identify who these patients are and if anything can be done to reduce the number of hospital visits.

Method:

We selected a 12 month period between 2007 and 2008 and identified patients who had been admitted to the medical assessment unit of The Royal Liverpool Hospital on four or more occasions.

From hospital coding we identified basic demographics. We reviewed 20% of patients’ notes to get a qualitative descriptive analysis.

Outcomes/Results

We identified 297 patients (53% male) who recurrently attended taking up a total of 12786 bed days. The average age was 66 (SD 17). Mortality at 6 months was 27%.

Detailed analysis revealed the main cause for admissions. See figure 1

Other factors noted were that 48% were current smokers (23% North West population[1]), 41% had excessive alcohol consumption (Liverpool population 25%[2]). Most patients had unnecessary repetition of tests and specialty referral at significant cost to the trust. They also repeatedly failed to attend clinic appointments. 55% of patients had recognised mental health problems.

Review of social circumstances is illustrated in figure 2.
Conclusion

Recurrent attenders contribute a large burden to acute medical services. Poor social circumstances have a big impact in recurrent admissions. We feel that this data is likely to represent a national problem. We feel that recognising and targeting these patients with a multidisciplinary team and integrated care service is important.


Title: 10mg or 5mg daily for warfarin loading in ambulatory DVT patients? A retrospective study.

Author: Ben Chadwick

Co-Authors: Jackie Matthews

Topic: Research

Aims

Following guidance issued by the British Committee for Standards in Haematology¹ the loading regimen for warfarin in our department changed from two daily doses of 10mg to two daily doses of 5mg. We designed a retrospective study to determine whether this had led to ambulatory DVT patients requiring more prolonged treatment with enoxaparin before a therapeutic INR was achieved.

Methods

Data for 50 consecutive ambulatory DVT patients who had been loaded with 10 and 10mg were compared retrospectively with those for 50 consecutive patients loaded with 5 and 5mg. The number of days taken to achieve an INR between 2 and 3 on two consecutive days, the number of patients who recorded an INR of >3, and the number of patients who required >6 days of Enoxaparin prescribed were recorded.

Results

Patients in the 10mg group required fewer days to load with warfarin (mean 7.26 days vs 8.66 days, p=0.014). Fewer patients in this group required further >6 days of enoxaparin (10 vs 18 patients). Fewer patients in this group experienced an INR > 3 (7 patients vs 15 patients). Patient demographics were comparable between the two groups.

Conclusion

Loading with a 10 and 10mg regimen resulted in a shorter time to discharge back to the GP and fewer doses of enoxaparin in our ambulatory DVT population. This could result in significant cost savings. Although numbers
were small there was no evidence of an adverse impact on patient safety from a 10mg dosing regimen in our ambulatory population.

References


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Aims:

Stroke is a common major medical emergency. We describe its outcome, when managed integral to an Acute Medical Unit, from the database of all emergency admissions to St James’ Hospital, Dublin, over a five year period (2005-2010).

Methods:

The respective 30-day in hospital mortalities for stroke and non-stroke admissions was determined. We used univariate (unadjusted) and a predictive multivariate logistic model of 30-day in hospital mortality, to investigate the extent to which the high mortality could be explained by co-morbidity and acute illness severity.

Outcomes/Results:

Of 20848 unique patients admitted between 2005 and 2010, 5.5% (95% CI: 5.2, 5.8) had a stroke diagnosis; there was a significant inter-year variation with a range between 4.4% and 6.8% of total emergency admissions. The 30 day mortality for stroke was 20.1% was significantly worse than mortality for all other diagnoses (7.2%; p < 0.001).

Stroke was predictive of a 30 day death – the univariate unadjusted OR was 3.07 (95% CI: 2.62, 3.59). Some of this risk was attributable to co-morbidity and illness severity as in the fully adjusted model, this independently predictive (p<0.001) increased risk of death by day 30 was modified (OR 2.33 - 95% CI: 1.78, 3.05).

The integrated AMAU Stroke model of care appeared robust and effective; the 30 day mortality for stroke patients declined from 28.7% in 2005 to 11.1% in 2010 (p < 0.001); this represented a relative risk reduction (RRR) of 61.2% and a numbers to treat (NNT) to prevent one death of 5.7.

Conclusion:

Stroke is a common medical emergency admission; a model is described with an evidence based outcome where care acute care is delivered in an AMAU setting with highly satisfactory outcomes.
Title: An Evaluation of an alternative model of Acute Medical Admissions

Author: Nicholas Jones

Co-Authors:

Topic: Research

An Evaluation of an alternative model of Acute Medical Admissions

Aims: To assess the impact of a new medical tracking system for acute admissions at a District General Hospital, introduced in July 2010. The system has been designed to move away from generalised AMU and medical firms by delivering early senior specialist input and rapidly allocating patients to specialist firms in contrast to standard national practise (1,2).

Methods: Mixed quantitative and qualitative approach to compare outcomes before and after the introduction of the track system. Measures included average length of stay, mortality rates and length of stay for the 9 top acute medical presentations (fig.1). We also evaluated the impact of the track system on patient numbers per medical firm. Both outcomes are triangulated with qualitative semi-structured interviews and survey data.

Results: The total number of admissions at Ealing has increased, but we have also seen a decreased length of stay and decreased Mortality (fig.2). There has also been a significant reduction in length of stay for 7 of the 9 top conditions (fig.1). Qualitative data suggests these results may be due to quicker access to a Consultant/Senior Specialist opinion and a more consistent number of patients per firm.

Conclusions: The study makes the assumption that a reduced length of stay and decreasing mortality reflect improved quality of care as a result of the track system, however correlation with the qualitative results confirms the positive impact from the new system. The evaluation supports further improvement through a rebalancing of junior staff to reflect patient numbers, new roles for specialist discharge facilitators and direct access to on-call daytime speciality registrars.

References:


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Title: AMU admission - A fly on the wall

Author: Jan Basey

Co-Authors: Basey A J† *, Kennedy T D*, Krska J† and Mackridge A J†, †School of Pharmacy and Biomolecular Sciences, Liverpool John Moores University, Liverpool UK *Royal Liverpool University Hospital, Liverpool UK

Topic: Research

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Aim

Complex healthcare systems, such as admission processes are associated with increased patient risk (1). Interruptions and delays may result in tasks being incomplete (2) leading to errors and/or omissions in prescribing. This study explored the nature and extent of interruptions and delays in a teaching hospital Acute Medical Unit (AMU).

Methods

NHS research governance procedures were followed. The admission process was directly observed for patients admitted to the AMU over four one-week periods. Consent was obtained from staff involved; patients could refuse permission for observation at any time.

Results

35 doctors and one nurse practitioner were observed admitting 71 medical patients. The mean duration of admission was 75 minutes (range 30 to 180 minutes). The admission process was subject to a delay and/or interruption for 49 of the 71 patients (69%).

66 interruptions were observed in 36 of the 71 admissions (51%); of these 19 (53%) were interrupted more than once. The most common interruptions; (13/ 66; 20%) involved queries about previously admitted patients.

31 of the 71 admissions (44%) were subject to a delay, 14 (45%) of these delays involved either an X-ray or an ECG. In five cases the patient was in radiology when the doctor needed them; on nine occasions the need for an ECG interrupted the admission process.

Conclusion

The AMU admission process involved a high percentage of interruptions and delays, resulting in considerable potential for errors and omissions in prescribing. Work is ongoing to evaluate the impact of such problems on clinical outcomes.

Title: Selecting potential ambulatory care patients from the unselected general medical take using the Amb Score: A verification and validation study.

Author: Les Ala

Co-Authors: Emma Cogbill
Rose Marion
Rasha Rahman
Francesca Deibel
Nia Rathbone

Topic: Research

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Aim

Knowing the likelihood of same day discharge could be useful in directing ? of the medical take1,2,3 to an ambulatory care unit, and could assist with bed management. Previously, we identified 7 independent factors which collectively form an ambulatory care score (The Amb score) that may select potential ambulatory care patients from the unselected general medical take.4 A high score was associated with being discharged within 12 hours of hospital assessment, indicating a potential ambulatory care problem. This study was to verify and validate the Amb score.

Methods

The Amb scores of emergency medical patients referred by GPs and A&E who were discharged within 12 hours of assessment (Ambulatory group) were compared with those who were admitted for > 48 hours (Admission group). The Amb score parameters were verified by chi-square analysis. AUROC was used to assess the score’s performance and to identify an appropriate cut off level.

Results

One third of the 343 patients studied fell into the ambulatory group. All factors used in calculating the Amb score showed statistical significance (Table 1). The AUROC of the Amb score was 0.88 (Figure 1). An Amb score of ≥ 5 had a sensitivity of 92.2% in predicting potential ambulatory care patients (specificity 64%).

Conclusion

The AUROC for the Amb score confirms its potential as a clinical scoring system. A score of ≥ 5 is sensitive at selecting potential ambulatory care patients without significantly compromising its ability to correctly identify those requiring admission for > 48 hours.

Reference

Abstract

Contrast Induced Nephropathy (CIN) is a common complication of CT-contrast studies. Measures undertaken to minimise the risk of CIN in patients undergoing elective investigations are not possible in the acute setting. Acute medical patients frequently have CT pulmonary angiograms (CTPA) to investigate for pulmonary embolism (PE). We performed a study to establish the incidence of CIN in these patients.

Method

Electronic patient’s records of acute medical patients who underwent a CTPA between 01/01/2010-01/05/2010 were analysed. Renal function was recorded before and after the investigation. CIN was defined biochemically as a 25% rise in serum creatinine within two weeks of the CTPA without another obvious cause being established.

Results

Paired serum creatinine was available in 234 from a total of 277 patients (133 women, 101 men). Mean baseline creatinine was 74.6μmol/L. 51/234 (22%) patients had a rise in creatinine following CTPA, (baseline 122.6μmol/L, mean rise 47.8μmol/L). 11 patients had AKI recognised as being part of their reason for admission. 38/51 had an infective process (elevated WCC/CRP) and 8/51 were diabetic. 62 patients had a finding of PE. However, the majority of patients who had CIN (41/51) did not have a PE (p NS).

Conclusions

Acute medical patients present a significant risk for contrast induced injury after CTPA. Patients who have a negative CTPA appeared to be at increased risk of deterioration in renal function from possible additional contrast injury (23%) than those who had a positive CTPA (16%). These patients also had a higher baseline renal function and raised inflammatory markers.
A comparative study between a trichotomised and a dichotomised Wells score in the clinical decision algorithm for the evaluation of query pulmonary embolism.

Author: Simon Murphy

Co-Authors: Hira Ahmed, Juliana Barla

Topic: Research

Aim:

To evaluate the safety of adopting a dichotomous Wells score in combination with a negative quantitative D-dimer test in the assessment of query PE referrals.

Method:

A five year prospective observational study of 722 query PE referrals using a proforma with a trichotomised Wells score (<2 = low, 2-6 = moderate, >6 = high) in whom a low score and negative quantitative D-dimer excluded the need for further PE imaging, was retrospectively analysed using a dichotomised Wells score model (0-4 = unlikely, >4 = likely).

Result:

In the trichotomised model, 343 patients had a low Wells score of whom 168 had a negative D-dimer. Of these, 29 had a CTPA or nuclear imaging and no PE were diagnosed, equating to a Negative Predictive Value of 100%. Those who did not have imaging had a PE excluded on clinical grounds with standard baseline investigations and did not subsequently present with a PE within the next 3 months. In the dichotomised model, 509 patients were PE unlikely of whom 201 also had a negative D-dimer. Of these, 58 had a CTPA or nuclear imaging and 3 cases of PE were diagnosed, equating to a NPV of 98.5%.

Conclusion:

Our study showed that the dichotomised Wells score model in combination with a negative quantitative D-dimer test had a high sensitivity, reflecting international publications on the subject. It recognises that 1.5% of PE would then be missed but this is balanced by a potential reduction in PE imaging of 11%.

References:

Aim

Cellulitis of the leg is a common, painful infection of the skin and underlying tissue. Repeat episodes of cellulitis are frequent (30-50%) and cause significant morbidity. This trial assessed whether prophylactic antibiotics could prevent further episodes.

Methods

This was a double-blind, randomised controlled trial which enrolled 123 participants in 23 centres in the UK. Participants received either penicillin V (250 mg, bd) or placebo for 6 months, and were followed-up for up to 3 years in total. The primary outcome for PATCH II was time to recurrence of cellulitis analysed using a Cox proportional hazards model.

Results

For the majority of participants (79%), the index episode at baseline was their first episode. In the penicillin V group 12/60 (20%) had a repeat episode compared with 21/63 (33%) in the placebo control group. The hazard ratio showed a 47%, non-significant (P = 0.08), reduction in the risk of further episodes (HR 0.53, 95% CI 0.26 – 1.07).

Conclusion

This trial is the largest study to date to examine whether medium-term antibiotic prophylaxis for patients with previous cellulitis of the leg is beneficial. Whilst this trial was limited due to slow recruitment, and the results did not achieve statistical significance, the study provides some evidence of a potentially large effect. Current clinical guidelines are based on very limited trial evidence and suggest that prophylaxis may be appropriate for people with recurrent cellulitis. Further research is required to confirm whether or not 6 months of prophylaxis should be offered to all patients.