Please find below the results of your literature search request.

If you would like the full text of any of the abstracts included, or would like a further search completed on this topic, please let us know.

We’d appreciate feedback on your satisfaction with this literature search. Please visit http://www.hello.nhs.uk/literature_search_feedback.asp and complete the form.

Thank you

**Literature search results**

<table>
<thead>
<tr>
<th>Search completed for:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Search required by:</td>
<td>15th November 2013</td>
</tr>
<tr>
<td>Search completed on:</td>
<td>15th November 2013</td>
</tr>
<tr>
<td>Search completed by:</td>
<td>Richard Bridgen</td>
</tr>
</tbody>
</table>

**Search details**

Emergency patients and rapid assessment and treatment (RAT) as compared to triage. Nurse-led or physician-led in terms of effectiveness, efficiency, reduction in waiting times, reduced time-to-treatment, patient safety, and patient experience and satisfaction.

**Resources searched**

NHS Evidence; TRIP Database; Cochrane Library; BNI; CINAHL; EMBASE; HMIC; MEDLINE; Google Scholar

**Database search terms:** “rapid assessment and treatment”; rapid adj1 treatment*; rapid adj1 assessment*; emergency; exp EMERGENCY CARE; exp EMERGENCY SERVICE; exp PHYSICIANS, EMERGENCY; “A and E”; trauma*; exp TRAUMA; acute*; nurse-led; doctor-led; physician-led; medic* adj1 led; doctor* adj1 led; physician* adj1 led; triage; exp TRIAGE

**Evidence search string(s):** “rapid assessment and treatment” OR “rapid assessment” OR “rapid treatment” OR "rapid patient assessment" OR "rapid patient treatment"

**Google search string(s):** ("rapid assessment and treatment" OR "rapid assessment" OR "rapid treatment" OR "rapid patient assessment" OR "rapid patient treatment") (emergency OR trauma)

**Summary**

There is quite a lot of research in this area. I have not included anything to do with rapid response teams or medical emergency teams, but if you want me to include them, please let me know.
### Guidelines and Policy

**College of Emergency Medicine**
- *Crowding in Emergency Departments* 2012
  - Senior doctors should be involved with rapid assessment and treatment. *Level 3 Recommendation*

**Emergency Medicine Operational Handbook: the way ahead** 2011
- Every ED should have the following estate:
  - Rapid assessment and treatment area

**NHS England**
- *Improving A&E Performance* 2013
  - Implement Rapid Assessment and Treatment (RAT) for “majors” patients. Early senior review is likely to increase the number of people able to be managed at home and to prevent adverse outcomes.

**New South Wales Health**
- *Emergency Department Senior Assessment and Streaming Model of Care and Toolkit* 2012

**NHS Interim Management and Support**
- *Rapid Assessment and Treatment Models in Emergency Departments* 2012

**Royal College of Physicians**
- *Future hospital: caring for medical patients* 2013
  - In hospital, develop systems that support a single initial point of assessment and ongoing care by a single team.
  - Develop clinical criteria that define which patients require specialty consultation, advice or management on a specific pathway. This will be supported by clearly defined specialist services available to provide rapid assessment in ‘front door’ areas to facilitate fast-track referral to specialty pathways.

### Evidence-based reviews

**Birmingham and Solihull NHS Mental Health NHS Foundation Trust**
- *Rapid Assessment Interface Discharge (RAID)* 2009

**Database of Abstracts of Reviews of Effects**
- *The role of a rapid assessment zone/pod on reducing overcrowding in emergency departments: a systematic review* 2012
  - Although the results appeared to suggest a positive effect of rapid assessment zone/pod in mitigating emergency department overcrowding, the available evidence to support its implementation was limited and weak.

**Effects of rapid response systems on clinical outcomes: systematic review and meta-analysis** 2007
  - The effectiveness of the rapid response system concept remained unproven.
Unplanned hospital admissions of older people: exploring the issues 2011

What is the optimum model of service delivery for transient ischaemic attack? 2008

Daily rapid access clinics were more cost-effective than current practice. If a referral threshold was set at an ABCD2 score of 4 or more, then this would on average lead to 4 referrals per week, and prevent 4 strokes per year at an average cost of £27,000 per stroke. Referring all patients (approximately 16 per week) with possible TIAs was also cost-effective, with an ICER of £50,000 per major stroke prevented compared to the refer at ABCD2 score of 4 strategy. Admitting patients with high ABCD2 scores for three days observation was not cost-effective, with an ICER of over £1,000,000 per major stroke prevented as compared to referring all suspected cases to a daily rapid access clinic. Twice weekly and weekly clinics were less effective and less cost effective than daily clinics, but were cost effective compared to current practice. For example, referring to a twice weekly clinic with a threshold of ABCD2 score of 4 or more prevents 3.3 additional major strokes per year as compared to current practice at an ICER of £33,000 per stroke prevented. The conclusions of the model were unchanged if greater use was made of emergency ambulance services. However, it was not cost effective to encourage use of emergency ambulances to expedite rapid treatment of TIAs. If GPs initiated optimal medical management on seeing the patient, then it is only cost effective to use rapid access clinics if all patients are referred (regardless of whether the GP has made a diagnosis of TIA, or what the patient’s ABCD2 score is). If GPs were better at diagnosis of TIA than suggested by the literature then the option of referring all suspected TIAs is no longer cost effective.

What are the organisational factors that influence waiting times in emergency departments? 2006

Are rapid access chest pain clinics effective and fair? Characteristics and outcomes of patients from six centres 2005

Patients with previously undiagnosed angina, uncomplicated by prior myocardial infarction, are at higher coronary risk compared with both the general population and the participants in recent clinical trials. RACPCs effectively identify patients at increased risk but fail to correctly diagnose all patients. We need to improve the diagnosis and treatment of ambulatory patients when they first present with chest pain in order to reduce mortality rates in this high risk but neglected group.

PedCCM Evidence-Based Journal Club

Effect of a Rapid Response Team on Hospital-wide Mortality and Code Rates Outside the ICU in a Children 2008

Published research – Databases

1. Team reduces ED wait times, improves safety.
   Author(s)
   Citation: Case Management Advisor, 01 August 2013, vol./is. 24/8(92-93), 10535500
   Publication Date: 01 August 2013
   Source: CINAHL
   Available in fulltext from Case Management Advisor at EBSCOhost

2. Triage assessment of registered nurses in the emergency department.
   Author(s) VatnÅ, y, Torunn Kitty, Fossum, Mariann, Smith, Nina, SlettebÅ, Åshild
   Citation: International Emergency Nursing, 01 April 2013, vol./is. 21/2(89-96), 1755599X
   Publication Date: 01 April 2013
   Abstract: Abstract: Standardised triage systems have been implemented in emergency
departments (EDs) to improve the efficacy of assessment strategies as performed by registered nurses (RNs). However, the exact effect the standardised triage systems have on the decision-making process remains unclear. **Aim:** To evaluate decision making in the triage setting before and after implementation of the Medical Emergency Triage and Treatment System Adult in one hospital's ED. **Methods:** A descriptive intervention design with a quantitative approach. A total of 655 patients before and 413 patients after the intervention were included. A questionnaire was used to evaluate how the RNs assessed the patients before intervention while the emergency patient records were used for data collection after intervention. **Results:** Before the intervention, a majority of the assessments were founded on signs and symptoms and medical diagnoses, whereas vital parameters were rarely used. After the intervention, nearly two thirds of the patients were assessed according to a triage system with vital parameters and standardised algorithm for symptoms and signs included in the assessment procedure. **Conclusion:** Implementing a standardised triage system, including vital parameters and standardised algorithms for signs and symptoms, increased the use of vital parameters and signs and symptoms for decision making and acuity assignment.

**Source:** CINAHL
Available in print at Lincoln County Hospital Professional Library

---

**3. Differences in outcomes between ICU attending and senior resident physician led medical emergency team responses.**

**Author(s)** Morris DS, Schweickert W, Holena D, Handzel R, Sims C, Pascual JL, Sarani B

**Citation:** Resuscitation, December 2012, vol./is. 83/12(1434-7), 0300-9572;1873-1570 (2012 Dec)

**Publication Date:** December 2012

**Abstract:** **INTRODUCTION:** Although rapid response systems (RRS) have been shown to decrease the incidence of cardiac arrest (CA), there are no studies evaluating optimal staffing. We hypothesize that there are no outcome differences between ICU physician and senior resident led events. **METHODS:** A retrospective study of the RRS database at a single, academic hospital was performed from July 1, 2006 to May 31, 2010. Surgical patients and those in the ICU were excluded. Daytime (D) was defined as 7 am-5 pm Monday through Friday, and weekends were defined as 5 pm on Friday to 6:59 am on Monday. The nurse to patient ratio is constant during all shifts. An ICU physician leads daytime events on weekdays whereas night/weekend (NW) events are led by residents. NW events were compared against D events using chi square or Fischer's exact test. Significance was defined as p<0.05. **RESULTS:** A total of 1404 events were reviewed with 534 (38%) D and 870 (62%) NW events. Respiratory and staff concerns were more likely during NW compared to D (50% vs. 39% and 46% vs. 34%, p<0.001, respectively). Following RRS activation, no difference was noted between D and NW periods in the incidence of progression to CA, transfer to ICU, or hospital mortality. Invasive procedures were more common in the NW period. **CONCLUSION:** Resident-led RRS may have similar outcomes to attending intensivist led events. Prospective studies are needed to determine the ideal team composition. Copyright 2012 Elsevier Ireland Ltd. All rights reserved.

**Source:** Medline
Available in fulltext from Resuscitation at the ULHT Library and Knowledge Services' eJournal collection

---

**4. Evaluating the quality of care delivered by an emergency department fast track unit with both nurse practitioners and doctors.**

**Author(s)** Dinh, Michael, Walker, Andrew, Parameswaran, Ahilan, Enright, Nicholas

**Citation:** Australasian Emergency Nursing Journal, 01 November 2012, vol./is. 15/4(188-194), 15746267

**Publication Date:** 01 November 2012

**Abstract:** **Summary:** **Aims:** This paper is a report of a study of quality of care delivered by an emergency department fast track unit where both doctors and an emergency nurse...
practitioner treated patients. Background: Fast track units were established in Australian emergency departments to meet the needs of low complexity emergency department patients. Few studies have reported on the overall quality of care delivered by these units. Methods: A convenience sample of adult patients triaged to an Australian emergency department fast track unit between April 2010 and April 2011 were randomised to care by a doctor or an emergency nurse practitioner. Quality of care was measured using patient satisfaction, follow up health status using Short Form 12 and adverse event rate (missed fractures or unplanned representations). Results: A total of 320 patients were enrolled into the study. Of the 236 patients who submitted completed survey forms, median satisfaction scores were 22 out of 25 with 84% of patients rating care as “excellent” or “very good”. At two week follow up, health status score was comparable to normal healthy populations. When comparing study groups, patient satisfaction scores were significantly higher in the ENP group compared to DR group. Conclusions: Patients received high quality of care in this fast track unit where both nurse practitioner and doctors treated patients. Emergency nurse practitioners were associated with higher patient satisfaction.

Source: CINAHL

5. The usefulness of physician-led helicopter emergency medical services for cardiac arrest patients

Author(s) Shimizu T., Takahashi I., Nara S., Morishita Y., Oonishi S., Naito Y., Ooshiro A., Aisaka W., Takeda K., Mori K., Gando S., Makise H.

Citation: Resuscitation, October 2012, vol./is. 83/(e28), 0300-9572 (15 Oct 2012)

Publication Date: October 2012

Abstract: Objective: This study aims to evaluate the usefulness of physician-led helicopter emergency medical services (HEMS) for cardiac arrest (CA) patients. Methods: Between January 4, 2005, and March 31, 2011, the hospital's HEMS responded to 325 CA patients from the central area of the prefecture of Hokkaido. 197 patients who were transferred to the tertiary emergency medical center were included in this study and analyzed retrospectively. Patients who were diagnosed with an irresuscitable condition at the scene were excluded from the study. The neurological outcome was assessed at hospital discharge according to the Glasgow outcome scale (GOS). GOS1-2 was defined as the fair outcome group while GOS3-5 as the poor outcome group. Mann-Whitney U test and -2 test were performed to analyze the differences between the two groups. Results: The median age was 64 years; 67.5% were male. The average distance from the base hospital to the scene was 25.7 km, and no significant differences exist between the two groups. 17 (8.6%) patients had a fair neurological outcome. The factors statistically associated with a fair outcome were the presence of a witness at the arrest, bystander CPR, the initial cardiac rhythm, and return of spontaneous circulation (ROSC) prior to HEMS. After transfer to the emergency medical center, 3 of 10 patients underwent resuscitation with percutaneous cardiopulmonary support (PCPS) while 10 of 23 patients underwent therapeutic hypothermia; these patients had a fair neurological outcome. Conclusion: Physician-led HEMS can be useful for CA patients because these unstable patients can be transferred quickly to the emergency medical center under the guidance of physicians.

Source: EMBASE

Available in fulltext from Resuscitation at the ULHT Library and Knowledge Services’ eJournal collection

7. A comparison of three emergency departments with different triage models

Author(s) Burstrom L.

Citation: Academic Emergency Medicine, June 2012, vol./is. 19/6(725), 1069-6563 (June 2012)

Publication Date: June 2012

Abstract: Objectives: A goal for the management of emergency departments (ED) is effective patient flow and safe care. EDs are under high pressure with increasing numbers of patient visits. The aim of this study was to compare performance, in terms of efficiency
and quality indicators at three Swedish EDs with different triage models-physician-led, nurse first/ emergency physician second and nurse first/junior physician second. Methods: All data of patients, arriving to the EDs between 08.00-21.00 during 2008, were collected and merged into a data base. The following efficiency indicators were measured: total length of stay (including subsets), and four hour turnover rate. The following quality indicators were measured: rate of patients left before treatment was completed, 24/72 hours unscheduled return, and mortality rate within 7 and 30 days. Results: Data from 157,652 patients were analysed. The median of length of stay was 158 minutes with physician triage, compared with 243 and 197 minutes with nurse/emergency physician and nurse triage, respectively (P<0.001). The rate of patients left before treatment was completed was 3.1, 5.5, and 10.3% respectively (same order as above) (P<0.001). Also, the rates of unscheduled return were significantly lower with physician-led triage, 1.4%, compared with 2.1, and 2.4% (24 hrs) (P<0.001). The mortality rate within seven days was with physician triage 0.8%, compared with 0.9% with the other models. Conclusion: This study indicated that physician-led triage seemed advantageous, both expressed as efficiency and quality indicators.

Source: EMBASE
Available in fulltext from Academic Emergency Medicine at EBSCOhost

8. Rapid Response Team composition, resourcing and calling criteria in Australia

Author(s) Jones D., Drennan K., Hart G.K., Bellomo R., Steven A.R.

Citation: Resuscitation, May 2012, vol./is. 83/5(563-567), 0300-9572;1873-1570 (May 2012)

Publication Date: May 2012

Abstract: Introduction: Rapid Response Teams (RRTs) have been introduced into at least 60% of Intensive Care Unit (ICU) -equipped Australian hospitals to review deteriorating ward patients. Most studies have assessed their impact on patient outcome and less information exists on team composition or aspects of their calling criteria. Methods: We obtained information on team composition, resourcing and details of activation criteria from 39 of 108 (36.1%) RRT-equipped Australian hospitals. Results: We found that all 39 teams operated 24/7 (h/days), but only 10 (25.6%) had received additional funding for the service. Although 38/39 teams, were physician-led medical emergency teams, in 7 (17.9%) sites the most senior member would be unlikely to have advanced airway skills. Three quarters of calling criteria were structured into " ABCD", and approximately 40% included cardiac and/or respiratory arrest as a calling criterion. Thresholds for calling criteria varied widely (particularly for respiratory rate and heart rate), as did the wording of the worried/concerned criterion. There was also wide variation in the number and nature of additional activation criteria. Conclusions: Our findings imply the likelihood of significant practice variation in relation to RRT composition, staff skill set and activation criteria between hospitals. We recommend improved resourcing of RRTs, training of the team members, and consideration for improved standardisation of calling criteria across institutions. 2011 Elsevier Ireland Ltd.

Source: EMBASE
Available in fulltext from Resuscitation at the ULHT Library and Knowledge Services' eJournal collection

9. "RAPID" Team Triage: One Hospital's Approach to Patient-Centered Team Triage.

Author(s) Sannina Shea, Sheila, Hoyt, K. Sue

Citation: Advanced Emergency Nursing Journal, 01 April 2012, vol./is. 34/2(177-189), 19314485

Publication Date: 01 April 2012

Source: CINAHL

10. Reducing ED length of stay for dischargeable patients: Advanced triage and now
advanced disposition

**Author(s)** Dubin J., Joseph Blumenthal H., Roseman D., Milzman D.

**Citation:** Academic Emergency Medicine, April 2012, vol./is. 19/(S27-S28), 1069-6563 (April 2012)

**Publication Date:** April 2012

**Abstract:** Background: Advanced triage by a physician/nurse team reduces left without being seen rates and door to (Table presented) physician times. However, during peak ED census times, many patients with completed tests and treatment initiated by triage await discharge by the next assigned physician. Objectives: Determine if a physician-led discharge disposition (DD) team can reduce the ED length of stay (LOS) for patients of similar acuity who are ultimately discharged compared to standard physician team assignment. Methods: This prospective observational study was performed from 10/2010 to 10/2011 at an urban tertiary referral academic hospital with an annual ED volume of 87,000 visits. Only Emergency Severity Index Level 3 patients were evaluated. The DD team was scheduled weekdays from 14:00 until 23:00. Several ED beds were allocated to this team. The team was comprised of one attending physician and either one nurse and a tech or two nurses. Comparisons were made between LOS for discharged patients originally triaged to the main ED side who were seen by the DD team versus the main side teams. Time from triage physician to team physician, team physician to discharge decision time, and patient age were compared by unpaired t-test. Differences were studied for number of patients receiving x-rays, CT scan, labs, and medications. Results: DD team mean LOS in hours for discharged patients was shorter at 3.4 (95% CI: 3.3-3.6, n = 1451) compared to 6.4 (95% CI: 6.3-6.5, n = 4601) on the main side, p < 0.01. The mean time from triage physician to DD team physician was 1.4 hours (95% CI: 1.4-1.5, n = 1447) versus to 2.7 hours (95% CI: 2.7-2.8, n = 4568) to main side physician, p < 0.01. The DD team physician mean time to discharge decision was 1.0 hour (95% CI: 1.0-1.1, n = 1432) compared to 2.5 hours (95% CI: 2.4-2.6, n = 4590) for main side physician, p < 0.01. The DD team patients' mean age was 42.6 years (95% CI: 41.9-43.6, n = 1454) compared to main side patients' mean age of 49.1 years (95% CI: 48.5-49.6, n = 4621.) The DD team patients (n = 1454) received fewer x-rays (40% vs. 59%), CT scans (13% vs. 23%), labs (64% vs. 85%), and medications (63% vs. 68%) than main side patients (n = 4621), p < 0.01 for all compared. Conclusion: The DD team complements the advanced triage process to further reduce LOS for patients who do not require extended ED treatment or observation. The DD team was able to work more efficiently because its patients tended to be younger and had fewer lab and imaging tests ordered by the triage physician compared to patients who were later seen on the ED main side.

**Source:** EMBASE

Available in fulltext from Academic Emergency Medicine at EBSCOhost


**Author(s)** Leach, Linda Searle, Kagawa, Frank, Mayo, Ann, Pugh, Connie

**Citation:** Journal for Healthcare Quality: Promoting Excellence in Healthcare, 01 March 2012, vol./is. 34/2(64-76), 10622551

**Publication Date:** 01 March 2012

**Abstract:** Preventable deaths occur when signs and symptoms of risk and decline are not detected yet are present many hours prior to a deteriorating course. Rapid responses teams (RRTs), also referred to as medical emergency teams (METs) were introduced to improve patient safety by preventing code arrests and death. This research using a case study methodology describes a nurse-led RRT, developed at a large, safety net, teaching hospital in California. Safety-net hospitals are challenged to deliver care and meet the complex needs of vulnerable patient populations. This hospital is a mission driven organization that is focused on the patient and the needs of underserved populations. To respond to the call for reform for patient safety and reduce adverse events, the organization adopted RRTs, early recognition rounds by RRT registered nurses (RNs) and the use of trigger alerts by nursing assistants (NAs) to expand the surveillance and identification of patients most at risk of clinical deterioration. Collaboration with interns and residents
(house staff) facilitated their involvement and response to RRT calls. Using quality data from 2005 to 2010, findings from this patient safety innovation address RRT utilization, frequency of non-ICU code arrests, hospital mortality, and post-arrest survival outcomes.

**Source:** CINAHL

Available in fulltext from *Journal for Healthcare Quality: Promoting Excellence in Healthcare at EBSCOhost*

### 13. Association between implementation of an intensivist-led medical emergency team and mortality.

**Author(s)** Karvellas, Constantine J., de Souza, Ivens A. O., Gibney, R. T. Noel

**Citation:** BMJ Quality and Safety, 2012, vol./is. 21/2(152-159), 2044-5415

**Publication Date:** 2012

**Abstract:** PURPOSE: To evaluate the impact of implementation of a dedicated intensivist-led medical emergency team (IL-MET) on mortality in patients admitted to the intensive care unit (ICU). METHODS: All adult ward admissions to the ICU between July 2002 and December 2009 were reviewed (n=1920) after excluding readmissions and admissions for <24 h. IL-MET hours were defined as 8:00-15:59 (Monday to Friday). The following periods were analysed: period 1: 1 July 2002-31 August 2004 (control); period 2: 1 September 2004-11 February 2007 (partial MET without dedicated intensivist); and period 3: 12 February 2007-31 December 2009 (hospital-wide IL-MET). RESULTS: During all three periods, there were no significant differences in length of stay or mortality (IL-MET vs non-IL-MET hours, p>0.1 for all). On multivariate analysis, Acute Physiology and Chronic Health Evaluation (APACHE) II score and age were independently associated with mortality in all three periods (p<0.05 for all). During period 3, there was a non-significant trend towards decreased mortality if admitted during IL-MET hours (OR 0.73, 95 per cent CI 0.51 to 1.03, p=0.08). During period 3, there was a non-significant trend towards decreased mortality if admitted during IL-MET hours (OR 0.73, 95 per cent CI 0.51 to 1.03, p=0.08). However, this result likely reflects the observed increase in mortality during non-IL MET hours rather than improved mortality during IL-MET hours. CONCLUSION: In a single centre experience, implementation of an IL-MET did not reduce the rate of in-hospital death or lengths of stay. [Abstract]

**Source:** HMIC

Available in fulltext from BMJ Quality and Safety at *Highwire Press*

### 14. Physician-led team triage based on lean principles may be superior for efficiency and quality? A comparison of three emergency departments with different triage models.

**Author(s)** Burstrom L, Nordberg M, Ornung G, Castren M, Wiklund T, Engstrom ML, Enlund M

**Citation:** Scandinavian Journal of Trauma, Resuscitation & Emergency Medicine, 2012, vol./is. 20/(57), 1757-7241;1757-7241 (2012)

**Publication Date:** 2012

**Abstract:** BACKGROUND: The management of emergency departments (EDs) principally involves maintaining effective patient flow and care. Different triage models are used today to achieve these two goals. The aim of this study was to compare the performance of different triage models used in three Swedish EDs. Using efficiency and quality indicators, we compared the following triage models: physician-led team triage, nurse first/emergency physician second, and nurse first/junior physician second.METHODS: All data of patients arriving at the three EDs between 08:00- and 21:00 throughout 2008 were collected and merged into a database. The following efficiency indicators were measured: length of stay (LOS) including time to physician, time from physician to discharge, and 4-hour turnover rate. The following quality indicators were measured: rate of patients left before treatment was completed, unscheduled return within 24 and 72hours, and mortality rate within 7 and 30days.RESULTS: Data from 147,579 patients were analysed. The median length of stay was 158minutes for physician-led team triage, compared with 243 and 197minutes for
nurse/emergency physician and nurse/junior physician triage, respectively (p<0.001). The rate of patients left before treatment was completed was 3.1% for physician-led team triage, 5.3% for nurse/emergency physician, and 9.6% for nurse/junior physician triage (p<0.001). Further, the rates of unscheduled return within 24 hours were significantly lower for physician-led team triage, 1.0%, compared with 2.1%, and 2.5% for nurse/emergency physician, and nurse/junior physician, respectively (p<0.001). The mortality rate within 7 days was 0.8% for physician-led team triage and 1.0% for the two other triage models (p<0.001). CONCLUSIONS: Physician-led team triage seemed advantageous, both expressed as efficiency and quality indicators, compared with the two other models.

Source: Medline

Available in fulltext from Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine at National Library of Medicine

Available in fulltext from Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine at BioMedCentral

15. Reorganisation of hospital emergency services: A business case for quality improvement

Author(s): Eichler K., Senn O., Ruthemann I., Bogli K., Sidler P., Brugger U.

Citation: Value in Health, November 2011, vol./is. 14/7(A344-A345), 1098-3015 (November 2011)

Publication Date: November 2011

Abstract: OBJECTIVES: In Switzerland, emergency care has no gatekeeping system and emergency wards are increasingly overcrowded by walk-in patients. This leads to inefficient use of specialised resources. Treatment costs are paid by public sources and, beyond some co-payment, reimbursed by health care insurances via tariffs. Given the problems above, a public hospital (Stadtspital Waid; Zurich; catchment population 180'000 people) reorganised its emergency service in 2008. A nurse led triage system and a General Practitioner-led emergency service was implemented beside the conventional emergency ward. To better understand the impact, we assessed quality of service provision and total treatment costs. METHODS: From the public payer perspective, we compared annual treatment costs for ambulatory emergency care in 2007 with 2009. In a pre-post study, all consecutive ambulatory emergency patients were included during one month in each year. Treatment costs (CHF) were calculated (e.g. nursing time multiplied with wages) and extrapolated to one year. Waiting times and patient satisfaction were used as indicators for service quality. Clinical outcome was not directly measured. RESULTS: The annual number of ambulatory patients increased from n=10'440 (2007) to n=16'035 (2009). Service provision improved with reduced waiting times (mean: 120 min vs. 60 min), persistently high patient satisfaction and more efficient resource use (additional diagnostic testing: 71% vs. 56%). Comparison of the annual local budget spent for treatment of 16,035 patients in 2009 (7,150,000 CHF; new service) with 2007 (7,184,000 CHF; old service, adjusted to 16,035 patients) showed slightly reduced costs (-34,000 CHF; 95%-CI: +60,000 to -127,000). CONCLUSIONS: The cost reduction of 0.5% is a conservative estimate as wages have increased since 2007. The reorganisation has the potential to be a dominant intervention: While quality of service provision improved, treatment costs slightly decreased against the secular trend of increase. Data has to be confirmed in follow-up measurements for decision makers.

Source: EMBASE

16. 117 A long term evaluation study of the impact of a nurse-led early triage service for chest pain patients, aimed at improving the management of those with non ST-elevation acute coronary syndromes.

Author(s): O’Neill, L., Currie, P.F., Lang, C.C.

Citation: European Journal of Cardiovascular Nursing, 02 April 2011, vol./is. 10/s(0-), 14745151

Publication Date: 02 April 2011
18. The role of triage liaison physicians on mitigating overcrowding in emergency departments: a systematic review.

Author(s) Rowe BH, Guo X, Villa-Roel C, Schull M, Holroyd B, Bullard M, Vandermeer B, Ospina M, Innes G

Citation: Academic Emergency Medicine, February 2011, vol./is. 18/2(111-20), 1069-6563;1553-2712 (2011 Feb)

Publication Date: February 2011

Abstract: OBJECTIVES: The objective was to examine the effectiveness of triage liaison physicians (TLPs) on mitigating the effects of emergency department (ED) overcrowding.METHODS: Electronic databases (Cochrane Central Register of Controlled Trials, MEDLINE, EMBASE, Web of Science, HealthSTAR, Dissertation Abstracts, and ABI/INFORM Global), controlled trial registry websites, conference proceedings, study references, contact with experts in the field, and correspondence with authors were used to identify potentially relevant TLP studies. Intervention studies in which a TLP was used to influence ED overcrowding metrics (length of stay [LOS] in minutes, physician initial assessment [PIA], and left without being seen [LWBS]) were included in the review. Two reviewers independently conducted data extraction and assessed the citation relevance, inclusion, and study quality. For continuous outcomes, weighted mean differences (WMD) were calculated and reported with corresponding 95% confidence intervals (CIs). For dichotomous variables, individual and pooled statistics were calculated as relative risk (RR) with 95% CI.RESULTS: From 14,446 potentially relevant studies, 28 were included in the systematic review. Thirteen were journal publications, 12 were abstracts, and three were Web-based articles. Most studies employed before-after designs; 23 of the 28 studies were considered of weak quality. Based on the statistical pooling of data from two randomized controlled trials (RCTs), TLP resulted in shorter ED LOS compared to nurse-led triage (WMD = -36.85 min; 95% CI = -51.11 to -22.58). One of these RCTs showed a significant reduction in the PIA associated to TLP presence (WMD = -30.00 min; 95% CI = -56.91 to -3.09); the other RCT showed no change in LWBS due to a CI that included unity (RR = 0.82; 95% CI = 0.67 to 1.00).CONCLUSIONS: While the evidence summarized here suggests that to have a TLP is an effective intervention to mitigate the effects of ED overcrowding, due to the weak research methods identified, more research is required before its widespread implementation. 2011 by the Society for Academic Emergency Medicine.

Source: Medline

Available in fulltext from Academic Emergency Medicine at EBSCOhost

20. Retrospective Audit of Triage of Acute Traumatic Shoulder Dislocation by Emergency Nurses

Author(s) McQueen C.P., Gay K.J.

Citation: Journal of Emergency Nursing, January 2010, vol./is. 36/1(21-25), 0099-1767;1527-2966 (January 2010)

Publication Date: January 2010

Abstract: Introduction: Acute traumatic shoulder dislocation (ATSD) is a relatively common presentation to the emergency department. Research into nurse-led triage shows emergency nurses to be accurate at identifying patients with bony injuries and follow protocols to expedite appropriate care. The aim of this study was to assess the quality of triage decisions made by emergency nursing staff in cases of confirmed ATSD, in an emergency department in the United Kingdom. Methods: A retrospective audit was undertaken on patients with ATSD for 12 months (August 2006-August 2007). The nursing triage sheet and the clinical record forms were used to obtain data detailing the entire patient journey from arrival in the department to discharge. Results: Emergency nurses were less likely to identify ATSD at triage than their physician colleagues during their initial clinical assessment (OR 0.06; 99% CI 0.014-0.272). Failure to identify ATSD at triage affected the efficiency of the remaining patient journey. Discussion: A learning need for
nursing staff in the initial assessment and identification of ATSD has been identified. The King's Mill Hospital's integrated care pathway for ATSD has been developed in response to the findings of this study, designed to aid diagnosis at triage and expedite patients through the stages of their ED journey. Conclusion: Significant areas for improvement have been identified in the initial assessment and management of patients with ATSD presenting at triage in the emergency department. The impact of the King's Mill Hospital's integrated care pathway on the quality of triage in ATSD requires further assessment. 2010 Emergency Nurses Association.

Source: EMBASE

21. Cardiac event rates in patients discharged from nurse-led rapid access chest pain clinic as having non-cardiac chest pain following initial triage

Author(s) Khan M.M., Mahida S., Watson V., Preston C., Bulugahapitiya D.S.

Citation: European Journal of Cardiovascular Nursing, 2010, vol./is. 9/(S1), 1474-5151 (2010)

Publication Date: 2010

Abstract: Aim: To assess one year cardiac event rates of patients discharged from a nurse-led Rapid Access Chest Pain Clinic (RACPC) as having non-cardiac chest pain following initial triage. Background: Nurse-led RACPC evolved to triage patients with chest pain quickly and effectively to undergo evaluation for cardiac ischemia. Based on history and 12-lead electrocardiogram a patient is initially distinguished as having non-cardiac chest pain or possible cardiac chest pain. Those with possible cardiac chest pain subsequently follow the pathway outlined in Figure 1. Those labelled as having non-cardiac chest pain are discharged without further assessment. The one year cardiac event rate in this population was assessed at our institution which serves an ethnically diverse population. (Figure presented). Results: Total number presenting to RACPC n = 941. Possible cardiac chest pain (undergoing further investigation) n = 522. In the investigated group n = 522, 11(2.1%) had further admission with Troponin I +ve chest pain with no deaths reported. Non-cardiac chest pain (Discharged after initial review + 12 lead ECG) n = 419. Of this group, 5 patients (1.19%) had hospital admission with TNI +ve chest pain, 1 patient (0.23%) had out of hospital death. Of the 5 admissions, 4 patients were from the Asian subcontinent. Conclusion: Patients discharged from a nurse led RACPC following assessment with history and ECG have low cardiac event rate and mortality rate of 0.23% per annum. It is a safe and effective screening method for identifying non-cardiac from cardiac chest pain in patients presenting to RACPC. In patients from the Asian subcontinent, accurate history taking because of language difficulties may prove more problematic possibly accounting for the documented event rates seen.

Source: EMBASE

23. Supplemented triage and rapid treatment in the emergency department


Citation: Annals of Emergency Medicine, September 2009, vol./is. 54/3 SUPPL. 1(S74), 0196-0644 (September 2009)

Publication Date: September 2009

Abstract: Background: Emergency department (ED) crowding is a well-recognized problem locally and nationally, and the burden of capacity constraints is predicted to worsen in the future. Multiple studies have demonstrated the negative effect of hospital and ED crowding on patient care metrics, including delayed care, increased diversion rates, and increasing numbers of patients who leave the ED without complete assessment. In 2006, the Institute of Medicine called for improved operations management tools to be employed as a part of the solution, although it is not yet clear which solutions will be most effective. Study Objective: The study's main goal was to assess the effect of a single intervention, namely a physician-led screening program (START) on standard performance measures of an urban, academic tertiary care emergency department. The START program complemented a triage nurse with an ED attending physician who initiated a diagnostic workup within one hour of patient arrival and selectively triaged patients to the most
appropriate areas of the ED. These performance measures were quantified using standard operational metrics. Methods: This before-and-after cohort study compared performance measures over two 3-month periods (September-November 2007 and September-November 2008). The 3-month identical blocks were chosen to avoid any seasonal effect. Data from an electronic patient tracking system (EDIS) were queried over 12982 patients in the pre-intervention period, and 14254 patients in the post-intervention period. The primary outcomes included: 1) the overall patient length of stay, 2) the length of stay for discharged patients (ie, not admitted to inpatient service), and 3) the percentage of patients who left without complete assessment (LWCA). Wilcoxon rank sum tests and Chi-squared tests were used to compare the differences between the two groups. Results: In the post-intervention period, median overall ED LOS was decreased by 28 minutes (8%, 360 minutes pre-intervention, 332 minutes post-intervention, p<0.001). Median length of stay for patients discharged from the ED decreased by 23 minutes (7%, 318 minutes pre-intervention, 295 minutes post intervention, p<0.001). LWCA was decreased by 1.7% (4.1% pre-intervention, 2.4 % post intervention, p<0.001). Conclusions: In this before-and-after study, a physician-led screening program was associated with a 28-minute decrease in overall ED length of stay, despite an increase in ED patient volume. Over the period studied, this equates to an increased ED bed capacity of 73 bed-hours per day. In addition, ED LOS for discharged patients was decreased by 7%. Finally, the proportion of patients who LWCA was reduced by 1.7 %, or almost half. Since there were no other significant and identifiable operation changes in the ED between these two intake periods, it appears that this START intervention effected these improvements.

Source: EMBASE

Available in print at Pilgrim Hospital Staff Library

Available in fulltext from Annals of Emergency Medicine at the ULHT Library and Knowledge Services’ eJournal collection


Author(s) Göransson KE

Citation: Australasian Emergency Nursing Journal, 01 November 2007, vol./is. 10/4(202-202), 15746267

Publication Date: 01 November 2007

Source: CINAHL


Author(s) Wennike N, Williams E, Frost S, Masding M

Citation: British Journal of Nursing, July 2007, vol./is. 16/13(824-7), 0966-0461;0966-0461 (2007 Jul 12-25)

Publication Date: July 2007

Abstract: In many hospitals a variety of triage systems are used by senior medical staff to identify likely length of stay (LOS) of acute medical admissions and thus facilitate a streamlined admission under either acute medicine or general internal medicine (GIM). The authors evaluated if senior nursing staff on the medical assessment unit could triage patients depending on their predicted LOS as accurately as consultant acute physicians. Each of 193 medical admissions were independently triaged by both groups to either acute medicine (<48 hours) or GIM (>48 hours) depending on predicted LOS. The accuracy of patient triage was identical for senior nursing staff and consultants (80.8% vs 81.9%), when 95% confidence intervals are taken into account. Nursing staff triaged patients a mean of 8.5 hours earlier than consultants. This study demonstrates that triage of acute medical admissions is a practical extension of the senior nursing role and has been successfully implemented, with accuracy of nursing triage (83.5%) being maintained in a repeat study 6 months later.
29. Nurse-led chest pain triage—meeting the challenge of acute coronary syndromes...

Author(s) O’Neill L, Currie PF

Citation: European Journal of Cardiovascular Nursing, 02 March 2007, vol./is. 6/(0-), 14745151

Publication Date: 02 March 2007

30. Innovative solutions: leading the way: an innovative approach to support nurses on general care units with an early nursing intervention team.

Author(s) Daly ML, Powers J, Orto V, Rogers M, Dickinson T, Fabris M, Honan M

Citation: DCCN - Dimensions of Critical Care Nursing, January 2007, vol./is. 26/1(15-20), 0730-4625;0730-4625 (2007 Jan-Feb)

Publication Date: January 2007

Abstract: In an effort to improve patient outcomes, there has been a global initiative to prevent avoidable adverse events. The rapid response team or medical emergency team concept has been in existence for the past several years and there has been a significant improvement in patient outcomes. This article will describe one institution’s success in taking this concept even further by rounding on general care units before patient problems are evident. The focus of this discussion will be on the remarkably positive nursing staff outcomes that have been achieved as a result of a program called the Early Nursing Intervention Team, a totally nurse-led program.

Source: Medline

31. Trauma rapid review process: efficient out-patient fracture management.

Author(s) Beiri A, Alani A, Ibrahim T, Taylor GJ

Citation: Annals of the Royal College of Surgeons of England, July 2006, vol./is. 88/4(408-11), 0035-8843;1478-7083 (2006 Jul)

Publication Date: July 2006

Abstract: INTRODUCTION: Our hospital operates a consultant-led, rapid review process of X-rays and case notes of all musculoskeletal injury patients on a daily basis. This compares with other centres where patients are reviewed in out-patient fracture clinics soon after injury. The aim of this study was to evaluate the effectiveness of this consultant-led, rapid review process compared to standard consultant fracture clinics.PATIENTS AND METHODS: A prospective study of the rapid review process over 4 weeks of all musculoskeletal injury patients was conducted. The total number of patients referred per day, time taken to review these patients X-rays and case notes, number of recalls and reason for recall were documented. This was compared to consultant-led fracture clinics, which included time taken to review patients.RESULTS: A total of 797 patients were processed through the rapid review over 4 weeks: 53 (6%) patients were recalled, 32 (4%) for a change of management and 21 (2.6%) because of lack of information. The mean number of patients referred per day was 28 taking a mean of 28 min; thus the mean time to
review one patient was 1.0 min. The mean number of patients recalled per day was two. The mean time taken to review a patient in a standard fracture clinic was 11 min. Therefore, the total time that would have taken to review 28 patients in a standard fracture clinic would be 308 min.

CONCLUSIONS: A consultant-led, rapid review process of all patients with musculoskeletal injury is a very efficient process. The rapid review process saves clinic time and resources, minimises delays in clinical decision-making and saves the patient an unnecessary visit to the outpatient department.

Source: Medline
Available in fulltext from Annals of The Royal College of Surgeons of England at National Library of Medicine
Available in print at Lincoln County Hospital Professional Library

32. Team triage improves emergency department efficiency.

Author(s) Subash F, Dunn F, McNicholl B, Marlow J

Citation: Emergency Medicine Journal, September 2004, vol./is. 21/5(542-4), 1472-0205;1472-0213 (2004 Sep)

Publication Date: September 2004

Abstract: OBJECTIVE: To see whether three hours of combined doctor and nurse triage would lead to earlier medical assessment and treatment and whether this benefit would carry on for the rest of the day when normal triage had resumed. METHOD: Eight days were randomly selected; four for team triage and four for the normal nurse led triage. Team triage was coordinated by a middle grade or consultant from 9 am to 12 noon. Times to triage, to see a doctor, radiology, admission, and discharge were recorded. No additional medical or nursing staff were used and staffing levels were similar each day. All patients including blue light emergencies and minor injuries were included. RESULTS: Median times were significantly reduced (p<0.05) during the intervention to triage (2 min v 7 min, p = 0.029), to see a doctor (2 min v 32 min, p = 0.029), and to radiology (11.5 min v 44.5 min, p = 0.029). Waiting times at midday were longer for patients in the non-intervention group. More patients were seen and discharged within 20 minutes in the intervention group (18 of 95 (19%) v 2 of 69 (3%) p = 0.0043). No significant knock on effect was demonstrable for the remaining 21 hours after the intervention ceased. CONCLUSION: Three hours of combined doctor and nurse triage significantly reduces the time to medical assessment, radiology, and to discharge during the intervention period. Waiting times at midday were shorter in the triage group. There was no significant knock on effect the rest of the day.

Source: Medline
Available in fulltext from Emergency Medicine Journal at Highwire Press
Available in fulltext from Emergency Medicine Journal at Highwire Press
Available in fulltext from Emergency Medicine Journal: EMJ at National Library of Medicine

33. Emergency nurse practitioners: A three part study in clinical and cost effectiveness

Author(s) Sakr M., Rendall R., Angus J., Saunders A., Nicholl J., Wardrope J.

Citation: Emergency Medicine Journal, March 2003, vol./is. 20/2(158-163), 1351-0622 (March 2003)

Publication Date: March 2003

Abstract: Aims: To compare the clinical effectiveness and costs of minor injury services provided by nurse practitioners with minor injury care provided by an accident and emergency (A&E) department. Methods: A three part prospective study in a city where an A&E department was closing and being replaced by a nurse led minor injury unit (MIU). The first part of the study took a sample of patients attending the A&E department. The second part of the study was a sample of patients from a nurse led MIU that had replaced the A&E department. In each of these samples the clinical effectiveness was judged by comparing the "gold standard" of a research assessment with the clinical assessment.
Primary outcome measures were the number of errors in clinical assessment, treatment, and disposal. The third part of the study used routine data whose collection had been prospectively configured to assess the costs and cost consequences of both models of care. Results: The minor injury unit produced a safe service where the total package of care was equal to or in some cases better than the A&E care. Significant process errors were made in 191 of 1447 (13.2%) patients treated by medical staff in the A&E department and 126 of 1313 (9.6%) of patients treated by nurse practitioners in the MIU. Very significant errors were rare (one error). Waiting times were much better at the MIU (mean MIU 19 minutes, A&E department 56.4 minutes). The revenue costs were greater in the MIU (MIU 41.1, A&E department 40.01) and there was a great difference in the rates of follow up and with the nurses referring 47% of patients for follow up and the A&E department referring only 27%. Thus the costs and cost consequences were greater for MIU care compared with A&E care (MIU 12.7 per minor injury case, A&E department 9.66 per minor injury case). Conclusion: A nurse practitioner minor injury service can provide a safe and effective service for the treatment of minor injury. However, the costs of such a service are greater and there seems to be an increased use of outpatient services.

Source: EMBASE

34. Nurse-led triage will help streamline A&E services.

Author(s) Parish C
Citation: Nursing Standard, 14 June 2000, vol./is. 14/39(6-6), 00296570
Publication Date: 14 June 2000
Source: CINAHL

35. What's wrong with triage?

Author(s) Edwards B
Citation: Emergency Nurse, 01 July 1999, vol./is. 7/4(19-23), 13545752
Publication Date: 01 July 1999
Abstract: Bernie Edwards argues the initial concept of triage, one that was designed to reduce patient waiting times and ensure therapeutic gains in the A&E setting, has since become little more than a nurse-led queuing system.
Source: CINAHL

Additional Research

1. Implementation of a rapid assessment unit (intake team): Impact on emergency department length of stay

Citation: Annals of Emergency Medicine, October 2013, vol./is. 62/4 SUPPL. 1(S12-S13), 0196-0644 (October 2013)
Publication Date: October 2013
Abstract: Study Objective: Emergency department (ED) crowding is an on-going formidable issue for many EDs. A Rapid Assessment Unit (RAU) is a potential solution. This process involves the use of a team approach to convert the current "series" type evaluation to a more "parallel" evaluation and treatment of patients. The RAU concept of evaluating and treating ED patients radically changes the current methods utilized in today's standard emergency care area. The RAU concept offers a process in which the patient walks into the ED and is seen in a unit by an intake team composed of a nurse, registrar, and provider (physician assistant, nurse practitioner, or physician) that provides evaluation and emergent treatment. This removes the redundancy of a patient giving the same information several times before they are treated. Simultaneously, the team decides whether the patient would be better served by remaining seated or requires a recumbent
position. This is referred to as allowing "vertical flow" versus the default "horizontal flow" where all patients recline on a stretcher whether they need it or not. Certainly, having construction that specifically supports these processes is an innovation as well (having an area where patients can be seated and remain "vertical"). The team structure itself is unique. The nurses and providers are not assigned geographically by room but rather are defined by their function. We set out to determine if the addition of the RAU process would decreases the LOS of the discharged ambulatory arrival patient. Methods: After IRB approval, this retrospective, pre- and post intervention, observational comparison study was conducted from August 2011-March 2012 at a suburban teaching hospital in eastern Pennsylvania with an annual ED census of approximately 54,000. All ambulatory discharged patients were included in this analysis. Patients who arrived by ambulance and admitted patients were excluded. Data points captured included: time from arrival to being seen in triage, time in triage to ED entry, time of ED entry until seen by a provider, time from ED entry to discharge, total length of stay (LOS). The data were uploaded to Horizon Business InsightTM (HBI), a cumulative data manager and subsequently analyzed using SPSS 21.0. Mann-Whitney U tests were used to assess differences in Median LOS. All statistical tests were 2-sided; p<0.05 significance level was set priori. Results: 11,994 pre and 10,814 post-RAU patients were included in analysis. Median LOS was shorter during the post-RAU period in each subcategory of LOS with the exception of the interval from being seen in the ED to discharge which is a result of provider seeing the patient earlier in the ED encounter. Results, Table 1. Conclusions: The RAU process decreases the LOS of the discharged ambulatory arrival patient and deserves further exploration as an innovative model in the ED that improves flow. (Table Presented).

Source: EMBASE

Available in fulltext from Annals of Emergency Medicine at the ULHT Library and Knowledge Services’ eJournal collection

2. Development of a rapid assessment tia service

Author(s) Brewer L., Weekes L., Moroney J., Williams D.

Citation: Irish Journal of Medical Science, September 2013, vol./is. 182/(S239), 0021-1265 (September 2013)

Publication Date: September 2013

Abstract: Background: Transient ischaemic attack (TIA) is associated with high risk of early recurrent stroke. Urgent clinical assessment of all TIA patients is essential but the addition of brain imaging, cardiac investigations and neurovascular imaging can optimise risk stratification of patients. This allows physicians to individualise the management of patients. There is no international consensus on where and how this rapid evaluation should take place. Beaumont Hospital is a large tertiary referral centre with a well-established stroke service. In January 2012 a TIA service was established in conjunction with the appointment of a TIA nurse specialist. We established a local protocol (outlining the pathway of care for all patients presenting acutely with TIA) and an education programme for physicians within the emergency department (ED) outlining the urgency of assessment of these patients to the stroke team. There is a strong admission policy at BH for patients who cannot be urgently investigated as outpatients, regardless of the ABCD2 score. Methods: 105 patients with TIA were assessed in the year commencing January 2012 with just over half subsequently diagnosed with a TIA. Mean age was 70 years (range 48-93). 92.5 % were referred through the ED, the remainder received their initial assessment in the stroke outpatient clinic. The most prevalent risk factors were hypercholesterolaemia (79 %) and hypertension (68 %). Eleven patients (20 %) had an acute cerebral infarct on diffusion-weighted MRI. Results: The mean length of hospital stay has reduced by 4 days over the course of the year. Conclusions: A significant number of TIA patients had an ischaemic infarct on neuroimaging, emphasising the need for rapid assessment and management of these high risk patients. Lack of availability of urgent outpatient investigations necessitates the admission of many TIA patients. With careful service, coordination and planning, waiting times for such investigations (and length of stay) can be effectively reduced.

Source: EMBASE
3. A long-term analysis of physician triage screening in the emergency department

Author(s) Rogg J.G., White B.A., Biddinger P.D., Chang Y., Brown D.F.M.

Citation: Academic Emergency Medicine, April 2013, vol./is. 20/4(374-380), 1069-6563;1553-2712 (April 2013)

Publication Date: April 2013

Abstract: Objectives The problem of emergency department (ED) crowding is well recognized; however, little data exist on the sustainability of potential solutions, including physician triage and screening. The authors hypothesized that a physician triage screening program (Supplemented Triage and Rapid Treatment [START]) sustainably improves standard ED performance metrics. Methods This retrospective, observational, before-and-after study compared performance measures over 4 years in a tertiary care urban academic medical center with approximately 90,000 annual ED visits. Patients seen between December 2006 and November 2010 were included. Outcome measures included length of stay (LOS) for ED patients, percentage of patients who left without completing assessment (LWC\textsubscript{A}), percentage of patients treated and dispositioned by START without using monitored beds, and door-to-room time. Descriptive statistics were used. Results Median LOS for START patients was 56 minutes/patient lower when comparing 2010 to 2007 (p < 0.0001) and for non-START patients 22 minutes/patient lower (p < 0.0001). The percentage of patients who LWCA decreased from 4.8% to 2.9% (p < 0.0001) during the same time period. In START’s first half-year, 18% of patients were discharged without using monitored beds. This increased to 29% by year 3. In addition, median door-to-room time decreased from 18.4 to 9.9 minutes during the same 3-year interval. Conclusions Physician screening appears to provide sustainable improvements in ED performance metrics including ED LOS, percentage of patients who LWCA, door-to-room time, and percentage of patients treated without using a monitored bed, despite increasing ED volume. Physician screening delivers additional incremental benefits for several years after implementation and can effectively increase ED capacity by allowing emergency physicians to more efficiently use monitored beds. 2013 by the Society for Academic Emergency Medicine.

Source: EMBASE

4. Comparison of traditional triage scores and CTAS methods with a quick-look triage approach

Author(s) Betz M., Stempien J., Wilde A.

Citation: Canadian Journal of Emergency Medicine, 2013, vol./is. 15/(S72), 1481-8035 (2013)

Publication Date: 2013

Abstract: Introduction: In an attempt to address long wait times for patients seeking medical attention in the emergency department, we investigated the possibility of introducing a rapid triage process based solely on chief complaint and the nurse's first impression of the patient. If implemented, it would minimize time spent at the triage desk and reduce patient line-ups. Methods: The student investigator was near the triage nurse as patients were being assessed. The nurse would give a rapid score to the investigator based on meeting the patient and hearing the chief complaint. Then a comprehensive CTAS score was assigned to the patient as usual. The analysis compared the accuracy of the rapid score the CTAS score. Results: In total, 496 patients were observed. Weighted kappa values could be individually calculated for 24 nurses. "Good" or "very good" measures of kappa agreement were achieved in 83.3%. This indicates that the rapid score they gave after the chief complaint closely matched the CTAS score arrived at after a longer and more comprehensive process. Of the 496 pairs of observations, 419 (84.5%) agreed. Concerning mismatches occurred in 13 patients (2.6%). Of these 13, 2 patients rated rapidly as 4 initially were subsequently given a CTAS level 2, while 11 were assessed as 3 on rapid scoring and then also upgraded to 2. Further analysis revealed that triage experience had no effect on the degree of agreement. Conclusion: Triage nurses have the ability to triage patients based on a rapid assessment composed of a quick observation of the patient and chief complaint with little loss of accuracy compared to a complete triage
nursing assessment. This may have implications for improving patient waiting times.

Source: EMBASE

5. Successful "front-loading" intervention in an overcrowded emergency department

Author(s) Richardson D.B., Smallbane S., Christie J., Lewis S.

Citation: Academic Emergency Medicine, June 2012, vol./is. 19/6(757), 1069-6563 (June 2012)

Publication Date: June 2012

Abstract: Objectives: In overcrowded EDs conventional models of care, when patients may be seen sequentially by nursing then junior then senior medical staff, are not suitable for a 4-hour access target. "Rapid assessment" models using senior doctors early risk brevity. This study describes the effects of a "front loading" model of care which seeks to provide high quality early senior involvement. Methods: Prospective quasi-experimental before-after study of a structured targeted intervention in a mixed tertiary ED seeing 62000 per year. Measures were proportion starting treatment within triage threshold time (SOT), proportion who did not wait (DNW), mean patient care time (PCT), mean ward admission bed delay time (ADT), and number waiting and occupancy figures comparing 20 weeks baseline and 4 weeks of intervention. The primary hypothesis was that there would be an improvement in waiting time and DNW, the secondary hypothesis that there would be an improvement in time taken to assess and treat. Intervention: For 10 hours 5 days per week, senior medical and nursing staff were assigned to six designated "front-load" beds. Adult patients were "pulled" into front-load, diagnostic, and management strategies implemented by senior staff and then patients were "decanted" to other areas of ED for care by general staff. Results: There was a highly significant improvement in SOT from 62.0% [95%CI 61.4-62.5] to 68.3% [67.0-69.6] and DNW from 8.9% [8.6-9.3] to 6.9% [6.3-7.7] with no change in daily presentations (170.7 to 171.6) or ward admissions (39.3, 39.1). There was a borderline improvement in ADT from 3:33 [3:25-3:41] to 3:10 [2:52-3:37] but no overall change in PCT from 4:17 [4:13-4:20] to 4:11 [4:02-4:19]. The mean number waiting to be seen at 17:00 fell from 10.5 [9.6-11.3] to 7.1 [5.8-8.4] with a corresponding fall in total occupancy. Subgroup analysis showed 4-hour performance improved in patients not admitted to inpatient wards (62% to 69% P<10E-12) but not in ward admissions (19.0 to 19.6% P=NS), and that the beneficial effects extended beyond the hours of front-loading. Conclusion: This front-loading model offers major improvement in waiting time and total flow with less benefit on time taken to assess and treat.

Source: EMBASE

Available in fulltext from Academic Emergency Medicine at EBSCOhost

6. The role of a rapid assessment zone/pod on reducing overcrowding in emergency departments: A systematic review

Author(s) Bullard M.J., Villa-Roel C., Guo X., Holroyd B.R., Innes G., Schull M.J., Vandermeer B., Ospina M., Rowe B.H.

Citation: Emergency Medicine Journal, May 2012, vol./is. 29/5(372-378), 1472-0205;1472-0213 (May 2012)

Publication Date: May 2012

Abstract: Objective: To evaluate the effectiveness of a rapid assessment zone (RAZ) to mitigate emergency department (ED) overcrowding. Methods: Electronic databases, controlled trial registries, conference proceedings, study references, experts in the field and correspondence with authors were used to identify potentially relevant studies. Intervention studies, in which a RAZ was used to influence length of stay, physician initial assessment and patients left without being seen, were included. Mean differences were calculated and reported with corresponding 95% CIs; individual statistics are presented as RR with associated 95% CI. Results: From 14 446 potentially relevant studies, four studies were included in the review. The quality of one study was appraised as moderately high; others were rated as weak. Two studies showed that a RAZ was associated with a reduction of 20 min (95% CI: -47.2 to 7.2) in the ED length of stay; in one non-randomised clinical trial
(RCT), a 192 min reduction was reported (95% CI: -211.6 to -172.4). Physician initial assessment showed a reduction of 8.0 min; 95% CI: -13.8 to -2.2 in the RCT and a reduction of 33 min (95% CI: -42.3 to -23.6) and 18 min (95% CI: -22.2 to -13.8) respectively were found in two non-RCTs. There was a reduction in the risk of patient leaving without being seen (RCT: RR=0.93, 95% CI: 0.77 to 1.12; non-RCT: RR =0.68, 95% CI: 0.63 to 0.73). Conclusions: Although the results are consistent, and low acuity patients seem to benefit the most from a RAZ, the available evidence to support its implementation is limited.

Source: EMBASE
Available in fulltext from Emergency Medicine Journal at Highwire Press

7. What is the impact of a rapid assessment zone on wait times to care for the acute care unit of the emergency department?

Author(s) Guttman A., Afilalo M., Colacone A., Xue X., Soucy N., Segal E., Unger B.
Citation: Academic Emergency Medicine, April 2012, vol./is. 19/(S197), 1069-6563 (April 2012)
Publication Date: April 2012
Abstract: Background: Timely access to ED care is a serious and persistent problem that continues to challenge health care providers to identify new management strategies that optimize patient flow. Objectives: Evaluate the effect of a Rapid Assessment Zone (RAZ) on wait times to cubicle access and nurse and physician assessment for patients directed to the Acute Care Unit (ACU) of the ED. Methods: A pre-post intervention study was conducted in the ED of an adult university teaching hospital in Montreal (annual visits = 69 000). The RAZ unit (intervention), created to offload the ACU of the main ED, started operating in January, 2011. Using a split flow management strategy, patients were directed to the RAZ unit based on patient acuity level (CTAS code 3 and certain code 2), likelihood to be discharged within 12 hours, and not requiring an ED bed for continued care. Data were collected weekdays from 9:00 to 21:00 for 4 months (September - December 2008) (pre-RAZ) and for 1.5 months (February - March 2011) (post-RAZ). In the ACU of the main ED, research assistants observed and recorded cubicle access time, and nurse and physician assessment times. Databases were used to extract socio-demographics, ambulance arrival, triage code, chief complaint, triage and registration time, length of stay, and ED occupancy. Multiple linear regression analysis was used to compare the wait times (calculated from Triage-End Time) between pre-RAZ and post-RAZ periods with adjustment of potential confounding factors: age, triage code and ED occupancy (at Triage-End Time of a new patient). Results: During the pre-RAZ and post-RAZ periods, the ACU received 1692 and 876 visits respectively, with mean age (+/-SD) 68 (+/-18) vs. 70 (+/-17); Triage code 1-2: 30% vs. 35%; ambulance arrival 36% vs. 46%; and % ED occupancy 115% vs. 159%. ED staffing was re-distributed but not increased during the post-RAZ period and hospital admission policy remained unchanged. Compared to pre-RAZ, the post-RAZ period wait times (in minutes) to cubicle access, nurse assessment, and physician assessment had decreased on average by 50 (95% CI: 41-60), 46 (95% CI: 38-55), and 22 (95% CI: 13-31) respectively. Other factors associated with these wait times are ED occupancy, age, and triage code. Conclusion: Implementation of the RAZ unit resulted in a significant reduction in wait time to cubicle access, nurse and physician assessment for patients directed to the ACU of the main ED.

Source: EMBASE
Available in fulltext from Academic Emergency Medicine at EBSCOhost

8. How rapid assessment at triage can improve care outcomes

Author(s) Edwards T.
Citation: Emergency nurse : the journal of the RCN Accident and Emergency Nursing Association, October 2011, vol./is. 19/6(27-30), 1354-5752 (Oct 2011)
Publication Date: October 2011
Abstract: As the number of patients who present at emergency departments (EDs)
increases (Australian College for Emergency Medicine 2005), ED staff are coming under greater pressure to assess, treat and discharge patients within time limits. This article describes the introduction of a rapid assessment team in an ED in Adelaide, Australia, which assesses patients at triage and treats them until space is available in the main department, thereby improving access and patient flow.

Source: EMBASE
Available in fulltext from Emergency Nurse at EBSCOhost
Available in print at Pilgrim Hospital Staff Library

9. An integrated intake and rapid assessment zone initiative improves throughput for lower-acuity patients

Author(s) Taylor K., Koonar H., Mercuur L., Wang D., Dowling S., Innes G., Lang E.

Citation: Academic Emergency Medicine, May 2011, vol./is. 18/5 SUPPL. 1(S182-S183), 1069-6563 (May 2011)

Publication Date: May 2011

Abstract: Background: The evaluation of lower-acuity patients who present to the emergency department (ED) is often hampered by a lack of physical space and inefficient care. The intake / rapid assessment zone (IRAZ) initiative is a multidisciplinary re-engineering of processes of care for ambulatory patients. It involves cycling waiting room patients into touchdown spaces for rapid medical assessments (intake) at which point some will move on to treatment chairs (RAZ) whereas others either return to the waiting room awaiting lab or imaging results, or are discharged. Objectives: The goal of this study was to determine IRAZ impact on measures of throughput and quality for the Canadian Triage and Acuity Scale (CTAS) Level 3 and 4 patients. Methods: Using administrative databases, measures of efficiency and accessibility were compared during a 5-month period when IRAZ was in place against equal lengths of time immediately prior (IP) to IRAZ implementation and during the same period one year earlier (1YE). All registered patients were eligible. Confounding variables including total volume and admission rates were incorporated into the analysis; nursing staffing levels were noted as well. Primary outcomes were length of stay (LOS), unplanned revisits, and left without being seen (LWBS). Results: 29.3% of all CTAS 3 and 4 patients (n = 25,090) were treated in IRAZ during the intervention period. CTAS 3 and 4 patients who presented to the ED while IRAZ was operational experienced a mean LOS of 3.95 hours while the IP and 1YE patients experienced LOS of 4.47 and 4.27 hours respectively, (P < 0.0001 for both comparisons). The improvements in throughput yielded a reduction in LWBS (8.5% during IRAZ; 11.1% in IP and 11.6% in 1YE time periods; P <0.0001). Unplanned revisits within 72 hours were unaffected by IRAZ: 7.4% vs. 7.3% and 7.6% for IP and 1YE, respectively; P = NS. Potential confounders did not influence the observed differences, and overall volume of CTAS 3 and 4 patients actually increased during IRAZ as did nurse staffing by 5.6%. Conclusion: Intake / rapid assessment zone implementation has led to significant improvements in throughput without compromising quality of care for CTAS 3 and 4 patients. The IRAZ model merits study in other centers to determine if its impact is institution-specific.

Source: EMBASE
Available in fulltext from Academic Emergency Medicine at EBSCOhost

10. A prospective study of rapid specialist assessment and endoscopy in the emergency department

Author(s) Dunne C., Marshall R., Ryan J., O'Donoghue D.P., Doherty G.A., Mulcahy H.

Citation: Gastroenterology, May 2011, vol./is. 140/5 SUPPL. 1(S556), 0016-5085 (May 2011)

Publication Date: May 2011

Abstract: Introduction: Emergency Department (ED) admissions could be avoided by rapidly assessing and treating acute gastroenterological conditions. However, the effects of
immediate specialist care have not been assessed in ED patients. Aims: To assess the feasibility of providing immediate assessment and endoscopic diagnosis to acutely ill patients with gastroenterological conditions attending the ED. Methods: Gastroenterological patients attending the ED between July 2008 to June 2009 were assessed by a single physician who determined need for immediate endoscopy. The primary endpoint was need for subsequent admission. Secondary endpoints included time from ED registration to endoscopy and time from endoscopy to discharge

Results: 324 patients were assessed and transferred for endoscopy. Presenting symptoms included melaena or rectal bleeding (n=112), abdominal pain (n=48), diarrhoea (n=46), haematemesis (n=51), dysphagia including food bolus obstruction (n=25), nausea or vomiting (n=45), anaemia (n=26), heartburn (n=22), jaundice or abnormal liver blood tests (n=18), chest pain/epigastric pain (n=27), weight loss (n=7), other (n=22) Overall 353 procedures were performed: OGD (n = 245), lower GI endoscopy (n=105), other (n=3) and ERCP (n=9). Many had either no organic disease or minor conditions. However, a minority had more severe disease including inflammatory bowel disease, oesophageal carcinoma and colorectal cancer. Endoscopy resulted in admission avoidance for 190 patients during the 12 months. Median time from registration to referral was 5.5hrs. Median time from referral to endoscopy was 3.6 hours. Median time from referral to discharge was 8hrs and from endoscopy to discharge was 3.5 hrs. For the 134 admitted to a 7 day bed, median time from referral to discharge was 152.1 hours. The median time from referral to discharge was higher in the admitted group than the facilitated discharge group at 13.5hrs, while the median time from referral to endoscopy was only 5.0 hours. Conclusion: ED admissions can be avoided in a substantial proportion of patients with gastrointestinal conditions by providing rapid assessment and endoscopy as part of ED services. This study illustrates the effectiveness of specialty led services in the ED.

Source: EMBASE

Available in fulltext from Gastroenterology at the ULHT Library and Knowledge Services’ eJournal collection

11. Effect of a rapid assessment program on total length of stay in a pediatric emergency department.

Author(s) Sethuraman U, Kannikeswaran N, Chen X, Mahajan PV

Citation: Pediatric Emergency Care, 01 April 2011, vol./is. 27/4(295-300), 07495161

Publication Date: 01 April 2011

Abstract: OBJECTIVES: : Wait times and length of stay (LOS) measure efficiency of care in pediatric emergency departments (PEDs). Our hospital introduced a rapid assessment program (RAP) wherein patients will be seen by a physician within 29 minutes of arrival to the PED. Our primary objective was to evaluate the impact of this RAP on total LOS and compare it with the pre-RAP period. The secondary objective was to compare door-to-physician times and admission frequencies. METHODS: : We conducted an observational study of randomly selected visits before (in 2004) and after (in 2005) RAP in a PED. Data were acquired retrospectively from charts. We compared total LOS (time from arrival at triage to discharge), boarding time (time from the decision to admit to transfer to inpatient bed), door-to-physician time (arrival at triage to first evaluation by physician), and admission frequencies. RESULTS: : Data from 990 visits (in 2004) and 1010 visits (in 2005) indicated similar age, sex, seasonal distribution, and weekday distribution. The total median LOS decreased by 37 minutes with RAP (103 [interquartile range {IQR}, 57-187] minutes in 2005 vs 140 [IQR, 78-234] minutes in 2004, P < 0.001) but only among lower triage categories. Median door-to-physician time decreased by 20 minutes with RAP (15 [IQR, 7-29] minutes in 2005 vs 35 [IQR, 18-72] minutes in 2004, P < 0.001) among lower triage categories. The LOS was reduced both in admitted and discharged patients with no difference in the boarding times or admission frequencies. CONCLUSIONS: : In our PED, a RAP reduced the total LOS of patients with lower acuity of illness.

Source: CINAHL

12. Rapid Assessment Team – Innovation in service at triage; improving access flow... 8th International Conference for Emergency Nurses, The National Convention
13. THE IMPACT of Rapid Assessment Zones/Pods (RAZ/RAP) on ED overcrowding: A systematic review


Citation: Canadian Journal of Emergency Medicine, May 2010, vol./is. 12/3(267), 1481-8035 (May 2010)

Abstract: Introduction: Rapid assessment zones (RAZ) or pods (RAP) are interventions designed to reduce emergency department (ED) overcrowding by improving patient throughput. The aim of this study was to determine the available evidence for RAZ/RAP and summarize their influence on ED overcrowding metrics. Methods: Electronic databases (Cochrane Central Register of Controlled Trials, MEDLINE, Embase, Web of Science, HealthSTAR, Dissertation Abstracts, ABI/INFORM Global), controlled trial registry websites, conference proceedings, study references, experts in the field and correspondence with authors were used to identify potentially relevant RAZ/RAP studies. Intervenational studies in which RAZ/RAP was used to influence ED overcrowding metrics (length of stay [LOS], left without being seen [LWBS]) were included in the review. 2 reviewers independently assessed the citation relevance inclusion and study quality. Weighted mean differences were calculated and reported with corresponding 95% confidence intervals. Results: From 14 716 potential relevant studies, 4 were included in the systematic review. Two projects were published as abstracts; 1 was a journal publication and 1 was a report. All studies were single-centred ED studies and targeted throughput processes. Two studies were controlled trials; the overall quality of the research was moderately strong due to the presence of high quality designs. Overall, 3 studies reported data on ED LOS and demonstrated a significant reduction in ED LOS compared with the control group. One study found decreased ED LOS in triage category 4 patients while no change in triage category 2, 3 or 5. There was a small reduction in LWBS for this intervention group. Conclusion: While RAZ/RAP intervention may be a promising alternative for overcrowded EDs, the available evidence required to implement it is limited and weak. Additional efforts are required to report RAZ/RAP interventions using high quality research methods.

Source: EMBASE

14. AN INTEGRATED rapid assessment zone and waiting room care initiative improves throughput for CTAS-ITI and CTAS-IV patients

Author(s) Koonar H., Kathy T.K., Lang E., Mercuur L., Wang D., Dowling S., Innes G.

Citation: Canadian Journal of Emergency Medicine, May 2010, vol./is. 12/3(231), 1481-8035 (May 2010)

Abstract: Introduction: The evaluation of lower acuity patients who present to the emergency department (ED) is often hampered by a lack of physical space and inefficient care. The waiting room care (WRC)/rapid assessment zone (RAZ) initiative is a multidisciplinary re-engineering of processes of care for ambulatory patients. The goal of this study was to determine its impact on measures of throughput and quality for CTAS level II and IV patients. Methods: Using administrative databases, measures of efficiency and accessibility were compared during a 5-month period when WRC/RAZ was in place against equal lengths of time immediately prior (IP) to WRC/RAZ implementation and
during the same period 1 year earlier (1YE). All registered patients were eligible. Confounding variables including total volume and admission rates were incorporated into the analysis; nursing staffing levels were noted as well. Primary outcomes were length of stay (LOS), unplanned revisits and left without being seen (LWBS). Results: Of all CTAS-III and -IV patients, 29.3% were treated in WRC/RAD during the intervention period. CTAS-III and -IV patients who presented to the ED while WRC/RAD was operational experienced a mean LOS of 3.95 hours while the IP and 1YE patients experienced LOS of 4.47 and 4.27 hours, respectively (p < 0.0001 for both comparisons). The improvements in throughput yielded a reduction in LWBS (8.5% during WRC/RAD, 11.1% in IP and 11.6% in 1YE time periods, p < 0.0001). Unplanned revisits within 72 hours were unaffected by WRC/RAD (7.4% v. 7.3% and 7.6% for IP and 1YE, respectively, p = NS). Potential confounders did not influence the observed differences, and overall volume of CTAS-III and -IV actually increased during WRC/RAD as did nurse staffing by 5.6%. Conclusion: WRC/RAD implementation has led to significant improvements in throughput without compromising quality of care for CTAS-III and -IV patients. The WRC/RAD model merits study in other centres to determine if its impact is institution-specific.

Source: EMBASE

15. Rapid medical assessment: Improved patient flow and left without being seen rates

Author(s) Tsai V., Harley J., Sharieff G., Carlson L.A., Kanegaye J.

Citation: Pediatric Emergency Care, October 2009, vol./is. 25/10(706), 0749-5161 (October 2009)

Publication Date: October 2009

Abstract: Purpose: To study the impact of implementation of a rapid medical assessment (RMA) program on patient flow and left without being seen rates in an urban pediatric emergency department. A rapid assessment program was designed to see uncomplicated patients and discharge them or initiate orders for lab tests, radiographs, and treatments before they were place in a room. Before initiation of our RMA program, all patients were triaged, then seen on the basis of the time of arrival and their triage acuity on a 1-5 scale, with 1 being of highest acuity. Methods: A RMA program was initiated in January 1, 2008, active for 16 hours each day. A specialty trained nurse practitioner or physician's assistant was assigned to the RMA area (immediately adjacent to triage) from 1000 to 0200. We compared 6 months of data from January 1 to June 30 2007 (before RMA) to January 1 to June 30, 2008 (after RMA). We compared the total length of stay in minutes, the time to see a provider, and the left without being seen rate. The data was entered into SPSS and the t-test was used to compare time results and a chi-square was used to compare the left without being seen rates. No other significant changes in staffing or operations occurred during this period. The data was obtained from a tracking board system where times of triage, room placement, provider evaluation, and discharge are recorded in real time. Results: There were 28360 patients seen in 2007 and 32053 in 2008. During the study period in 2008, 23% of all patients were seen in RMA. The mean triage to discharge time in 2007 was 239 (median = 220) minutes compared to 181 (median = 162) minutes in 2008. The t-test comparison showed a difference of 58 minutes (95% confidence interval 56 to 60 minutes). Door to provider mean time was 80 (median = 57) minutes in 2007 and 53 (median = 39) minutes in 2008. The t-test comparison showed a difference of 27 minutes (95% confidence interval 25 to 28 minutes). The most dramatic improvements were seen in the level 4 and 5 patients (lowest acuity). There were 2.5 times as many level 4 and 5 acuity patients triaged and discharged in less than 90 minutes in 2008 (30%) compared to 2007 (12%). The left with out being seen rate decreased from 9% in 2007 to 3% in 2008 (chi square p<.001). Conclusion: RMA is an effective way to improve patient flow and reduce patients leaving without being seen. By seeing patients at both ends of the waiting queue (patients with chief complaints that are quickly resolved and those with more complicated chief complaints), patient flow and left without being seen rates can be improved.

Source: EMBASE
16. Supplemented triage and rapid treatment in the emergency department

**Author(s)** White B.A., Brown D.F., Sinclair J., Chang Y., Carignan S., McIntyre J.A., Biddinger P.D.

**Citation:** Annals of Emergency Medicine, September 2009, vol./is. 54/3 SUPPL. 1(S74), 0196-0644 (September 2009)

**Publication Date:** September 2009

**Abstract:** Background: Emergency department (ED) crowding is a well-recognized problem locally and nationally, and the burden of capacity constraints is predicted to worsen in the future. Multiple studies have demonstrated the negative effect of hospital and ED crowding on patient care metrics, including delayed care, increased diversion rates, and increasing numbers of patients who leave the ED without complete assessment. In 2006, the Institute of Medicine called for improved operations management tools to be employed as a part of the solution, although it is not yet clear which solutions will be most effective.

**Study Objective:** The study's main goal was to assess the effect of a single intervention, namely a physician-led screening program (START) on standard performance measures of an urban, academic tertiary care emergency department. The START program complemented a triage nurse with an ED attending physician who initiated a diagnostic workup within one hour of patient arrival and selectively triaged patients to the most appropriate areas of the ED. These performance measures were quantified using standard operational metrics.

**Methods:** This before-and-after cohort study compared performance measures over two 3-month periods (September-November 2007 and September-November 2008). The 3-month identical blocks were chosen to avoid any seasonal effect. Data from an electronic patient tracking system (EDIS) were queried over 12982 patients in the pre-intervention period, and 14254 patients in the post-intervention period. The primary outcomes included: 1) the overall patient length of stay, 2) the length of stay for discharged patients (ie, not admitted to inpatient service), and 3) the percentage of patients who left without complete assessment (LWCA). Wilcoxon rank sum tests and Chi-squared tests were used to compare the differences between the two groups.

**Results:** In the post-intervention period, median overall ED LOS was decreased by 28 minutes (8%, 360 minutes pre-intervention, 332 minutes post-intervention, p<0.001). Median length of stay for patients discharged from the ED decreased by 23 minutes (7%, 318 minutes pre-intervention, 295 minutes post intervention, p<0.001). LWCA was decreased by 1.7% (4.1% pre-intervention, 2.4 % post intervention, p<0.001). Conclusions: In this before-and-after study, a physician-led screening program was associated with a 28-minute decrease in overall ED length of stay, despite an increase in ED patient volume. Over the period studied, this equates to an increased ED bed capacity of 73 bed-hours per day. In addition, ED LOS for discharged patients was decreased by 7%. Finally, the proportion of patients who LWCA was reduced by 1.7 %, or almost half. Since there were no other significant and identifiable operation changes in the ED between these two intake periods, it appears that this START intervention effected these improvements.

**Source:** EMBASE

Available in **print** at *Pilgrim Hospital Staff Library*

Available in **fulltext** from *Annals of Emergency Medicine* at the **ULHT Library and Knowledge Services’ eJournal collection**

17. Emergency department operational improvements’ impact on volume, quality core measures, patient stay and satisfaction

**Author(s)** Sayah A., Lobon L., Rivard L., Skura S.

**Citation:** Annals of Emergency Medicine, September 2009, vol./is. 54/3 SUPPL. 1(S51), 0196-0644 (September 2009)

**Publication Date:** September 2009

**Abstract:** Study Objectives: Emergency department (ED) crowding and the resulting ambulance diversion, long patient waits, and many patients leaving without being evaluated have been major issues that have affected the satisfaction of patients with their emergency visits. This is an observational, descriptive, retrospective study in a community teaching hospital that looks at the impact of a series of ED changes on volume, quality core
measures, patient flow and satisfaction. Methods: Between August 2006 and July 2008, multiple ED changes were implemented in the areas of personnel and leadership, culture, technologies, communication, policies and procedures, and flow. The ED leadership team in collaboration with many hospital services reengineered the patient ED experience from arrival to departure. Implemented changes included rapid assessment protocol with bedside registration, electronic triage and patient tracking. Various ED metrics were followed including diversion rates, ED volume, ED patient length of stay, ED patient left before treatment complete (LWOT) rates, Press Ganey patient satisfaction scores, and ED-specific quality core measures. Results: Ambulance diversion decreased from a historical 3.6% of time in FY05 and FY 06 to zero since September 2006. ED length of stay decreased from a mean of 187 minutes in August 2006 to 150 minutes during Q2 FY09. Patient satisfaction Press Ganey scores rose from 76.1 (5th percentile) in Q4 FY06 to 85.6 (64th percentile) in Q2FY09. ED patient volume is growing by a projected 7.2% between FY06 and FY09 (28,481 to 30,500) resulting in a 30% increase in inpatient admissions from the ED for the same period (2,905 to 3,781). ED-specific quality core measures increased from 82% in Q4 FY06 to 98% in Q4FY08. The rate of ED patients who left before treatment was completed dropped from 3.7% in FY06 to 0.80% during Q2 FY09. Conclusion: The ED operational changes have had a significant positive impact on all measured metrics. While the volume of ED visits and resulting inpatient admissions have increased, ambulance diversion was eliminated, patient length of stay was reduced, the rate of patients who left without evaluation was reduced, and patient satisfaction and quality measures increased to a record high. Improving ED operational efficiency has provided our department with the ability to accommodate increasing volume and acuity and improve the quality of care and the experience of patients who visit our ED.

Source: EMBASE

Available in print at Pilgrim Hospital Staff Library

Available in fulltext from Annals of Emergency Medicine at the ULHT Library and Knowledge Services' eJournal collection


Author(s) Eller A

Citation: Journal for Healthcare Quality: Promoting Excellence in Healthcare, 01 May 2009, vol./is. 31/3(17-22), 10622551

Publication Date: 01 May 2009

Abstract: The nation’s emergency rooms are overflowing with patients who endure increasingly long waits to be examined and treated. When our large metropolitan adult acute care hospital adopted LEAN as its standard operating procedure, we began to examine our processes from the customers’ perspective and identified a significant opportunity to reduce the emergency department length of stay. Using LEAN tools we designed and implemented a Rapid Assessment and Disposition process to decrease the amount of time patients waited in the emergency department, reduce diversion time, and reduce the number of patients who left without being seen. We have succeeded in reducing the average length of stay for all emergency department patients by 45 minutes, diversion by 55%, and patients who left without being seen by 28%.

Source: CINAHL

Available in fulltext from Journal for Healthcare Quality: Promoting Excellence in Healthcare at EBSCOhost

19. Speeding up the emergency department: the RADIT emergency program at St. Joseph Hospital of Orange.

Author(s) Vega V, McGuire SJ

Citation: Hospital Topics, 01 October 2007, vol./is. 85/4(17-24), 00185868

Publication Date: 01 October 2007

Abstract: St. Joseph Hospital of Orange implemented a new emergency department (ED)
program, the Rapid Assessment and Discharge in Triage (RADIT) program, designed to reduce patient waiting time and improve overall patient satisfaction. ED visitors presenting nonurgent problems were served by a roving RADIT team. The hospital established a goal of 90 min average time in RADIT and sought to reduce overall time in ED. After 6 months, results indicated that RADIT patients were discharged on average in 97 min; however, there was a slight increase in average time in ED. A patient satisfaction survey indicated that about 96% of RADIT patients rated the quality of service received as either good or excellent. The authors provide the background and context that resulted in the decision to implement RADIT. Copyright © 2007 Heldref Publications

Source: CINAHL
Available in fulltext from Hospital Topics at EBSCOhost

Author(s) Sethuraman U, Kannikeswaran N, Mahajan P, Saidinejad M, Duffy E, Compton S, Yu S, Knazik S
Citation: Academic Emergency Medicine, 01 May 2007, vol./is. 14/5(0-0), 10696563
Publication Date: 01 May 2007
Source: CINAHL

21. The culture of a trauma team in relation to human factors.
Author(s) Cole E, Crichton N
Citation: Journal of Clinical Nursing, 01 October 2006, vol./is. 15/10(1257-1266), 09621067
Publication Date: 01 October 2006
Abstract: AIM: The aim of this ethnographic study was to explore the culture of a trauma team in relation to human factors. BACKGROUND: Traumatic injury is the leading cause of death in the first four decades of life in the western world. Evidence suggests that the initial assessment and resuscitation of trauma victims is most successfully carried out by an organized trauma team. Most trauma teams use Advanced Trauma Life Support principles which focus on rapid assessment and management of the patient's injuries. Similarly, most trauma education focuses on Advanced Trauma Life Support principles, concentrating firmly on the patient's physical status. Nevertheless, contemporary literature about emergency teams suggests that human factors, such as communication and interprofessional relationships, can affect the team's performance regardless of how clinically skilled the team members are. METHOD: Focused ethnography was used to explore the culture of a trauma team in one teaching hospital. Six periods of observation were undertaken followed by 11 semi-structured interviews with purposively chosen key personnel. Data from transcripts of the observation field notes and interviews were analysed using open coding, followed by formation of categories resulting in the emergence of six central categories. RESULTS: Findings suggest that leadership, role competence, conflict, communication, the environment and the status of the patient all influence the culture of the trauma team. Interpretation of these categories suggests that trauma team education should include human factor considerations such as leadership skills, team management, interprofessional teamwork, conflict resolution and communication strategies. RELEVANCE FOR CLINICAL PRACTICE: The findings suggest that support systems for role development of junior team leaders should be formalized. The proven airline industry techniques of Crew Resource Management, focusing on teamwork and effective communication, could be implemented into continuing professional development for trauma teams to engender collaboration and interprofessional practice.
Source: CINAHL
22. Rapid assessment and initial patient treatment team -- a way forward for emergency care.

**Author(s)** Cronin JG, Wright J

**Citation:** Accident & Emergency Nursing, 01 April 2005, vol./is. 13/2(87-92), 09652302

**Publication Date:** 01 April 2005

**Abstract:** As a consequence of the UK Department of Health drive to introduce the 4-h emergency care target acute trusts have attempted to initialize a myriad of programmes to improve the patients' experience in this sector. Changes to how patients are managed and the flow that they enter within the emergency care system have become a popular option.

**Source:** CINAHL

Available in print at Pilgrim Hospital Staff Library

Available in print at Lincoln County Hospital Professional Library

23. Immediate assessment and management of acute medical emergencies

**Author(s)** Mackenzie R., Sutcliffe R.C.

**Citation:** Journal of the Royal Army Medical Corps, September 2002, vol./is. 148/3(276-287), 0035-8665 (Sep 2002)

**Publication Date:** September 2002

**Abstract:** The pre-hospital management of acute medical emergencies can be difficult. Critically ill patients must be evaluated quickly and accurately to ensure that immediately life-threatening problems are identified and treated. Figure 1 and Box 2 provide a structured method for rapid assessment in the pre-hospital phase. Although the majority of medically unwell patients will not require an aggressive resuscitation phase during the primary survey, the use of the structured approach in all patients will ensure that 'time critical' pre-hospital medical emergencies are identified. This approach also emphasizes that once immediately correctable problems have been treated, the priority is transfer the patient to the nearest resuscitation facility.

**Source:** EMBASE

24. Effect of a rapid assessment clinic on the waiting time to be seen by a doctor and the time spent in the department, for patients presenting to an urban emergency department: a controlled prospective trial

**Author(s)** Ardagh M.W., Wells J.E., Cooper K., Lyons R., Patterson R., O'Donovan P.

**Citation:** The New Zealand medical journal, July 2002, vol./is. 115/1157(U28), 1175-8716 (2 Jul 2002)

**Publication Date:** July 2002

**Abstract:** AIMS: To test the hypothesis that triaging certain emergency department (ED) patients through a rapid assessment clinic (RAC) improves the waiting times, and times in the department, for all patients presenting to the emergency department. METHODS: For ten weeks an additional nurse and doctor were rostered. On the odd weeks, these two staff ran a RAC and on even weeks, they did not, but simply joined the other medical and nursing staff, managing patients in the traditional way. Patients suitable for triage to the RAC were those for whom disposal was readily apparent, interventions required were quickly undertaken, and lengthy investigations or assessment were not required. After the ten-week period data from the five weeks of the RAC and the five weeks with no RAC, but the same staffing level, were analysed and compared. RESULTS: During the five weeks of the RAC clinic a total of 2263 patients attended the ED, and 361 of these were referred to

Author(s) Bowers, Alexis, Aldouri, Elham

Citation: Mental Health Review Journal, 2011, vol./is. 16/2(50-55), 1361-9322

Publication Date: 2011

Abstract: PURPOSE: Despite contemporary mental health services shifting to a community-based model of care, acute inpatient care is still necessary for many patients experiencing an acute psychological crisis. As inpatient services cost the National Health Service nearly 600 million a year, initiatives to reduce time spent in hospital, whilst maintaining safety and quality, are being actively promoted on a national level. Mental health patients in Hertfordshire spend on average two weeks in hospital during their acute crisis. The aim of this study is to reduce bed occupancy rates by implementing a novel approach to inpatient management. DESIGN/METHODOLOGY/APPROACH: A pragmatic controlled clinical trial design was used to address the aim of this study. FINDINGS: The results demonstrate that, compared to a functionalized inpatient ward (one with a designated inpatient consultant psychiatrist conducting a weekly ward round), it is possible to reduce bed occupancy rates without increasing demand on other wards. Furthermore, 28-day readmission rates and total admissions over seven days were reduced. RESEARCH LIMITATIONS/IMPLICATIONATIONS: Limitations relating to the study design and potential generalisability to similar services are discussed. Further studies to triangulate the data are suggested. PRACTICAL IMPLICATIONS: This novel approach to inpatient management provides exciting data that suggest patients can be moved along the acute pathway more efficiently. Recommendations for further studies are made in light of the findings. ORIGINALITY/VALUE: This paper will appeal to acute care clinicians, service managers, and commissioners of mental health services. It provides an evidence base for making efficiencies within the acute service whilst maintaining quality of care for patients.

Source: HMIC

26. SAFETY of assessment of patients with potential ischemic chest pain in an emergency department waiting room: A prospective comparative cohort study

Author(s) Scheuermeyer F., Christenson J., Innes G., Grafstein E., Boychuk B., Yu E.

Citation: Canadian Journal of Emergency Medicine, May 2010, vol./is. 12/3(256), 1481-8035 (May 2010)

Publication Date: May 2010

Abstract: Introduction: Emergency department (ED) crowding has been associated with a variety of adverse outcomes. Current guidelines suggest that patients with potentially ischemic chest pain should undergo rapid assessment and treatment in a monitored setting to optimize the diagnosis of acute coronary syndrome (ACS). These patients may be at high risk of misdiagnosis and adverse events when evaluation is delayed because of ED crowding. In order to mitigate crowding-related delays, we developed processes that enabled emergency physicians to evaluate chest pain patients in the waiting room (WR) when all nurse-staffed stretchers are occupied. The objective of this study was to investigate the safety of WR chest pain evaluation. Methods: This prospective comparative cohort study was conducted in a tertiary care ED. Explicit triage and waiting room...
Evaluation processes were introduced. A total of 1107 patients with chest pain of potential cardiac origin were triaged either to a monitored bed (MB) or a WR chair, depending upon bed availability and triage judgment. After diagnostic evaluation, patients were followed for 30 days to identify the proportion of missed cases of ACS and other prespecified adverse events. Analysis was based on intention-to-treat.

Results: A total of 804 patients were triaged to MB and 303 to WR evaluation. The WR had less cardiovascular risk factors than the MB group, although initial vital signs were similar. The rate of ACS was 11.7% in the MB group and 7.6% in WR patients. There were no missed ACS cases in either the MB group (0%, 95% CI 0.0%-0.4%) or the WR group (0%, 95% CI 0.0%-1.0%). There were 32 adverse events in the MB group (4.0%, 95% CI 2.6%-5.3%) and 2 in the WR group (0.7%, 95% CI 0.0%-1.6%). Conclusion: An organized approach to triage and waiting room evaluation for stable chest pain patients is safe. Although waiting room evaluation is not ideal, it may be a viable contingency strategy for periods when ED crowding compromises access to care.

Source: EMBASE

27. An emergency department tackles bed management and home-based care.

Author(s) Brierley S, King D

Citation: Australian Health Review, 1998, vol./is. 21/4(127-42), 0156-5788;0156-5788 (1998)

Publication Date: 1998

Abstract: Ipswich Hospital Emergency Department played a vital role in the Post Acute Treatment in the Home Program (PATH) of West Moreton District Health Service. PATH used two strategies to reduce the district reliance on acute hospital beds: a short-stay unit for rapid assessment, treatment and early discharge of patients with simple conditions; and a hospital-in-the-home program utilising community health services to treat acute conditions. The program enhanced existing services to create a new treatment stream for acute patients and to promote a cultural shift from fragmented care to district responsibility for total episode of patient care.

Source: Medline

Published Research - Google Scholar

From 1st fifty results:

Does the simple triage and rapid treatment method appropriately triage patients based on trauma injury severity score?

R Hong, PR Sierzenski, M Bollinger... - American journal of ..., 2008 - ncbi.nlm.nih.gov

OBJECTIVES: To correlate the simple triage and rapid treatment (START) colors to trauma injury severity scores (ISS). DESIGN: Six volunteer healthcare providers unfamiliar with START were trained to triage. Each chart was designated a START color by a volunteer ...

Cited by 12 Related articles All 3 versions Cite

Rapid assessment and initial patient treatment team--a way forward for emergency care

JG Cronin, J Wright - Accident and emergency nursing, 2005 - Elsevier

As a consequence of the UK Department of Health drive to introduce the 4-h emergency care target acute trusts have attempted to initialize a myriad of programmes to improve the patients' experience in this sector. Changes to how patients are managed and the flow ...

Cited by 12 Related articles All 5 versions Cite

Supplemented Triage and Rapid Treatment (START) improves performance measures in the emergency department

BA White, DFM Brown, J Sinclair, Y Chang... - ... Journal of Emergency ..., 2012 - Elsevier

Background: Emergency Department (ED) crowding is well recognized, and multiple studies have demonstrated its negative effect on patient care. Study Objectives: This study
aimed to assess the effect of an intervention, Supplemented Triage and Rapid Treatment (START), ...

Cited by 14 Related articles All 3 versions Cite

**Development of trauma systems and effect on outcomes after injury**

AB Nathens, FP Brunet, RV Maier - The Lancet, 2004 - Elsevier

... in France has been greatly improved lately by the organisation of prehospital medical triage and care, development of regionalised trauma systems, and rapid assessment of trauma patients by modern imaging techniques in emergency departments and trauma shock centres. ...

Cited by 136 Related articles All 10 versions Cite

**Rapid assessment teams and early discharge of the elderly from ED; vulnerable in the current financial climate?**

G Hughes - Emergency Medicine Journal, 2006 - emj.bmj.com

The demographics are clear; the UK, like most of the ‘western’world, is an ageing society. Since the 1930s in England alone, the number of people aged over 65 has more than doubled and today a fifth of the population is over 60. In 30 years from 1995 to 2025, the ...

Cited by 1 Related articles All 6 versions Cite

**Improving stable patient flow through the emergency department by utilizing evidence-based practice: one hospital’s journey**

MA Popovich, C Boyd, T Dachenhaus... - Journal of Emergency ..., 2012 - Elsevier

... that could be used to determine when to staff a satellite area of the emergency department to promote early intervention and rapid treatment of stable patients ... 9 The emergency department is accredited by the American College of Surgeons as a level I trauma center with ...

Cited by 1 Related articles All 3 versions Cite