University Hospitals Bristol NHS
NHS Foundation Trust

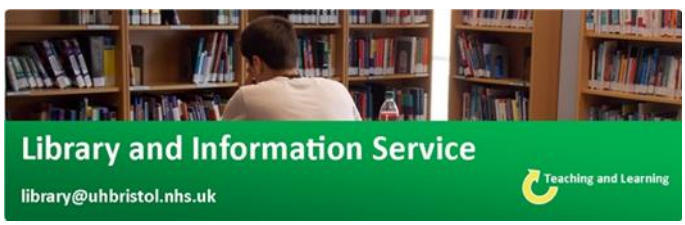
Adult Emergency Medicine

Evidence Update

AUGUST 2017

(Quarterly)

Respecting everyone
Embracing change
Recognising success
Working together
Our hospitals.



Lunchtime Drop-in Sessions

All sessions last one hour

August (12.00-13.00)

24th (Thurs)	Critical Appraisal

September (13.00-14.00)

Fri 1st	Literature Searching
Mon 4th	Critical Appraisal
Tue 12th	Interpreting Statistics
Wed 20th	Literature Searching
Thu 28th	Critical Appraisal

October (12.00-13.00)

Fri 6th	Interpreting Statistics
Mon 9th	Literature Searching
Tue 17th	Critical Appraisal
Wed 25th	Interpreting Statistics

Your Outreach Librarian- Jo Hooper

Whatever your information needs, the library is here to help. As your Outreach Librarian I offer **literature searching services** as well as training and guidance in **searching the evidence** and **critical appraisal** – just email me at library@uhbristol.nhs.uk

Outreach: Your Outreach Librarian can help facilitate evidence-based practise for all in the oral and maxillofacial surgery team, as well as assisting with academic study and research. We can help with **literature searching, obtaining journal articles and books**, and setting up individual **current awareness alerts**. We also offer one-to-one or small group training in **literature searching, accessing electronic journals, and critical appraisal**. Get in touch: library@uhbristol.nhs.uk

Literature searching: We provide a literature searching service for any library member. For those embarking on their own research it is advisable to book some time with one of the librarians for a one-to-one session where we can guide you through the process of creating a well-focused literature research and introduce you to the health databases access via NHS Evidence. Please email requests to library@uhbristol.nhs.uk

Contents

Tables of Contents from Emergency Medicine journals 4

Emergency Medicine Journal 4

Annals of Emergency Medicine 5

Academic Emergency Medicine 7

European Journal of Emergency Medicine 8

UpToDate® 11

Cochrane Library 12

NICE National Institute for Health and Care Excellence 12

Recent Database Articles 14-42

Exercise: Research Designs 43

Tables of Contents from Emergency Medicine journals

Click on the hyperlinked title (+ Ctrl) for contents. If you require any of the articles in full please email: library@uhbristol.nhs.uk

Emergency Medicine Journal

August 2017 - Volume 34 - 8

Highlights from this issue Free

Commentaries

Emergency medicine pharmacists on an international scale

'Major trauma': now two separate diseases?

Original articles

Clinical relevance of pharmacist intervention in an emergency department

Developing a decision rule to optimise clinical pharmacist resources for medication reconciliation in the emergency department

Traumatic brain injuries in older adults—6 years of data for one UK trauma centre: retrospective analysis of prospectively collected data Free

Validating the Manchester Acute Coronary Syndromes (MACS) and Troponin-only Manchester Acute Coronary Syndromes (T-MACS) rules for the prediction of acute myocardial infarction in patients presenting to the emergency department with chest pain Free

Prehospital care

'The year of first aid': effectiveness of a 3-day first aid programme for 7-14-year-old primary school children

Can the prehospital National Early Warning Score identify patients most at risk from subsequent deterioration?

Concepts

A practical approach to Events Medicine provision

Review

Emergency Department care of childhood epistaxis

Global Emergency Medicine Highlights

Abstracts from international Emergency Medicine journals

Best evidence topic reports

Towards evidence based emergency medicine: Best BETs from the Manchester Royal Infirmary

BET 1: Lidocaine with propofol to reduce pain on injection

BET 2: Poor evidence on whether teaching cognitive debiasing, or cognitive forcing strategies, lead to a reduction in errors attributable to cognition in emergency medicine students or doctors

PostScript

Letter: Are final year medical students ready to save lives in Italy? Not yet

Letter: Authors' response: Extracorporeal cardiopulmonary resuscitation probably good, but adoption should not be too fast and furious!

Letter: Authors' response: overcautious adoption of extracorporeal cardiopulmonary resuscitation

In perspective

Prognosis of undiagnosed chest pain: do emergency physicians need to rethink current practice?

Image challenges

The answer is not always in black and white: a frequently missed diagnosis in a child presenting with elbow pain

A 7-month-old with 'loss of muscle control'

Annals of Emergency Medicine

August 2017 Volume 70, Issue 2

Trauma

Out-of-Hospital Triage of Older Adults With Head Injury: A Retrospective Study of the Effect of Adding "Anticoagulation or Antiplatelet Medication Use" as a Criterion

Can an Out-of-Hospital Medication History Save Lives for Injured Older Adults?

Images in Emergency Medicine

Elderly Female With Elbow Pain

Trauma

Predictive Utility of the Total Glasgow Coma Scale Versus the Motor Component of the Glasgow Coma Scale for Identification of Patients With Serious Traumatic Injuries

How to Measure the Glasgow Coma Scale

Patient Outcomes at Urban and Suburban Level I Versus Level II Trauma Centers

Pain Management and Sedation

Diazepam Is No Better Than Placebo When Added to Naproxen for Acute Low Back Pain

Comparison of Intravenous Ketorolac at Three Single-Dose Regimens for Treating Acute Pain in the Emergency Department: A Randomized Controlled Trial

Education

Modeling Hourly Resident Productivity in the Emergency Department

Coming Fast out of the Gate: Pacing and Productivity From a Resident Perspective

The Practice of Emergency Medicine

Analysis of Emergency Department Length of Stay for Mental Health Patients at Ten Massachusetts Emergency Departments

When to Pick the Nose: Out-of-Hospital and Emergency Department Intranasal Administration of Medications

EM:RAP Commentary

Does the Intranasal Route Pass the Sniff Test?

Health Policy

Effect of the Affordable Care Act Medicaid Expansion on Emergency Department Visits: Evidence From State-Level Emergency Department Databases

The Uncertain Economics of Insurance Enabling More Emergency Department Visits

Hospital Emergency Care as a Public Good and Community Health Benefit

Toxicology

The Efficacy of Crotalidae Polyvalent Immune Fab (Ovine) Antivenom Versus Placebo Plus Optional Rescue Therapy on Recovery From Copperhead Snake Envenomation: A Randomized, Double-Blind, Placebo-Controlled, Clinical Trial

Clinical Review: Loperamide Toxicity

Change of Shift

The Best Day

My Story

Falling Back in Love With Emergency Medicine

Annals of Emergency Medicine Journal Club

Pulmonary Embolism Prevalence in Admitted Syncope Patients: 1 in 6 Really?: Answers to the March 2017 Journal Club Questions

Images in Emergency Medicine

Young Girl With Swollen Wrists and Ankles

Young Male With Severe Ankle Pain

Woman with right upper quadrant pain

Correspondence

Words Matter: Researchers Should Avoid Implying Causation in Studies of Association

In reply:

News and Perspective

Finding a Balance on Balance Billing

Global Research Highlights

Global Research Highlights

Academic Emergency Medicine

July 2017; Volume 24, Issue 7

Editor's pick

Is It Okay To Ask: Transgender Patient Perspectives on Sexual Orientation and Gender Identity Collection in Healthcare (pages 655–667)

Original contributions

Emergency Physician Knowledge, Attitudes, and Behavior Regarding ACEP's Choosing Wisely Recommendations: A Survey Study (pages 668–675)

Ketamine as an Adjunct to Opioids for Acute Pain in the Emergency Department: A Randomized Controlled Trial (pages 676–685)

Risk, Benefit, and Cost Thresholds for Emergency Department Testing: A Cross-sectional, Scenario-based Study (pages 686–690)

Identifying Low-risk Patients for Early Discharge From Emergency Department Without Using Subjective Descriptions of Chest Pain: Insights From Providing Rapid Out of Hospital Acute Cardiovascular Treatment (PROACT) 3 and 4 Trials (pages 691–700)

Acute Coronary Syndrome Screening and Diagnostic Practice Variation (pages 701–709)

Utility of Serum Biomarkers in the Diagnosis and Stratification of Mild Traumatic Brain Injury (pages 710–720)

A Novel Emergency Department-based Community Notification Method for Clinical Research Without Consent (pages 721–731)

H1-antihistamines Reduce Progression to Anaphylaxis Among Emergency Department Patients With Allergic Reactions (pages 733–741)

Special contribution

Global Health and Emergency Care: Defining Clinical Research Priorities (pages 742–753)

Research methods & statistics

Cost-effectiveness Analysis Appraisal and Application: An Emergency Medicine Perspective (pages 754–768)

Commentary

Keeping Up With the Kids: Diffusion of Innovation in Pediatric Emergency Medicine Among Emergency Physicians (pages 769–775)

Media reviews

Managing Obstetric Emergencies and Trauma: The Moet Course Manual (pages 776–777)

Sex and Gender in Acute Care Medicine (pages 778–779)

Reflections

Telephone Call Follow-up: A Missed Educational Opportunity (page 780)

European Journal of Emergency Medicine

August 2017; Volume 24, Issue 4

Editorial

Emergency care in the face of terrorism

Abstracts

Best Abstracts of the Second European Paediatric Resuscitation and Emergency Medicine Congress, Ghent, Belgium, 18-19 May 2017.

Review Article

The De Winter ECG pattern: morphology and accuracy for diagnosing acute coronary occlusion: systematic review

Original Articles

Prehospital rapid sequence induction following trauma in the era of regional networks for major trauma

Impact of in or out of office hours at admission time on outcome in out-of-hospital cardiac arrest patients

Out-of-hospital cardiopulmonary resuscitation strategies using one-handed chest compression technique for children suffering a cardiac arrest

Chest compression using the foot or hand method: a prospective, randomized, controlled manikin study with school children

Predicted VO2max and effectiveness of external chest compression by Chinese nurses

Telemetry-assisted early detection of STEMI in patients with atypical symptoms by paramedic-performed 12-lead ECG with subsequent cardiological analysis

Emergency physician sex and emergency department resource use

Patient and organizational characteristics predict a long length of stay in the emergency department – a Swedish cohort study

Time delay to surgery for appendicitis: no difference between surgical assessment unit and emergency department

Acute respiratory failure after drowning: a retrospective multicenter survey

The role of emergency physicians in the institutionalization of emergency medicine

Correspondence

Management of pediatric head injury: a survey of EuSEM pediatric emergency section

KnowledgeShare

What is KnowledgeShare?

Provides regular, targeted, personalised evidence updates to staff, based on their specific professional interests. Subject-specific bulletins can also be produced.

Targeted evidence updates

These are individualised, based on a staff member's interest in particular conditions or lifestyle factors, age groups, settings of care, interventions and management topics.

Collaboration and knowledge sharing

As more library and knowledge services join KnowledgeShare it becomes more powerful for sharing evidence and generating communities of practice.

To register, click the logo

Or email library@uhbristol.nhs.uk

UpToDate®

OpenAthens login required. Register here: https://openathens.nice.org.uk/

What's new in emergency medicine

- Treatment of nonpurulent cellulitis (June 2017)
- Time to treatment and mortality in sepsis (May 2017)

Anaphylaxis: Emergency treatment

- Other vasopressors
- Airway management
- Summary and recommendations

Advanced emergency airway management in adults

- Summary and recommendations

Assessment and emergency management of the acutely agitated or violent adult

- Violence prevention in the emergency department
- Summary and recommendations

Supraglottic devices (including laryngeal mask airways) for airway management for anesthesia in adults

- Summary and recommendations

Devices for difficult emergency airway management outside the operating room in adults

- Surgical airway devices
- Evidence and use of video laryngoscopes in emergency settings
- Summary and recommendations

Emergency airway management in the adult with direct airway trauma

- Time available and difficult airway anticipated
- Summary and recommendations

Cochrane Library

Interventions for preventing high altitude illness: Part 1. Commonly-used classes of drugs

Víctor H Nieto Estrada, Daniel Molano Franco, Roger David Medina, Alejandro G Gonzalez Garay, Arturo J Martí-Carvajal, Ingrid Arevalo-Rodriguez

Online Publication Date: June 2017

Editorial Group: Cochrane Anaesthesia, Critical and Emergency Care Group

NICE National Institute for Health and Care Excellence

Assessing sensitivity and specificity of the Manchester Triage System in the evaluation of acute coronary syndrome in adult patients in emergency care: a systematic review

Source: Joanna Briggs Institute - 01 June 2017

Systematic review of the use of low-dose ketamine for analgesia in the emergency department

Source: PubMed - 28 June 2017 - Publisher: Cjem Read Summary

Beconase Hayfever Relief for Adults 0.05% Nasal Spray - Summary of Product Characteristics (SPC) - (eMC)

Source: electronic Medicines Compendium - eMC - 14 June 2017

This is just the first eMC Summary of Product Characteristics from your search. See all

British Society for Rheumatology guideline for the management of adults with primary Sjögren's Syndrome

Source: British Society for Rheumatology - BSR - 28 June 2017 - Publisher: British Society for Rheumatology (BSR) Read Summary

BNF **Medical emergencies in the community | Treatment summary**

Source: British National Formulary - BNF - 14 July 2017

BNF **Antihistamines, allergen immunotherapy and allergic emergencies | Treatment summary**

Source: British National Formulary - BNF - 14 July 2017

Emergency treatment of poisoning | Treatment summary

Source: British National Formulary - BNF - 14 July 2017

BVM (Bag-Valve-Mask) manual resuscitation systems – risk of delay to emergency treatment

Source: Medicines and Healthcare products Regulatory Agency - MHRA - Source: GOV UK - 21 June 2017 - Publisher: Medicines and Healthcare products Regulatory Agency Read Summary

Impact of hemodynamic goal-directed resuscitation on mortality in adult critically ill patients: a systematic review and meta-analysis

Source: PubMed - 08 June 2017 - Publisher: Journal Of Clinical Monitoring And Computing Read Summary

Guidance for the use of propofol sedation for adult patients undergoing Endoscopic Retrograde Cholangiopancreatography (ERCP) and other complex upper GI endoscopic procedures [PDF]

Source: Royal College of Anaesthetists - 16 June 2017

Prophylactic Antibiotics for Cat, Dog and Human Bites in the Emergency Department

Source: BestBETS - 30 June 2017

Can Procalcitonin accurately diagnose serious bacterial infection in the Emergency Department Setting?

Source: BestBETS - 07 July 2017

Recent Database Articles

If you require full articles please email: library@uhbristol.nhs.uk

Emergency Medicine Myths: Computed Tomography of the Head Prior to Lumbar Puncture in Adults with Suspected Bacterial Meningitis - Due Diligence or Antiquated Practice?

Author(s): April M.D.; Long B.; Koyfman A.

Source: Journal of Emergency Medicine; 2017

Publication Type(s): Article In Press

Abstract: Background: Various sources purport an association between lumbar puncture and brainstem herniation in patients with intracranial mass effect lesions. Several organizations and texts recommend head computed tomography (CT) prior to lumbar puncture in selected patients. Objective: To review the evidence regarding the utility of obtaining head CT prior to lumbar puncture in adults with suspected bacterial meningitis. Discussion: Observational studies report a risk of post-lumbar puncture brainstem herniation in the presence of intracranial mass effect (1.5%) that is significantly lower than that reported among all patients with bacterial meningitis (up to 13.3%). It is unclear from existing literature whether identifying patients with intracranial mass effect decreases herniation risk. Up to 80% of patients with bacterial meningitis experiencing herniation have no CT abnormalities, and approximately half of patients with intracranial mass effect not undergoing lumbar puncture herniate. Decision rules to selectively perform CT on only those individuals most likely to have intracranial mass effect lesions have not undergone validation. Despite recommendations for immediate antimicrobial therapy prior to imaging, data indicate an association between pre-lumbar puncture CT and antibiotic delays. Recent data demonstrate shortened door-to-antibiotic times and lower mortality from bacterial meningitis after implementation of new national guidelines, which restricted generally accepted CT indications by removing impaired mental status as imaging criterion. Conclusions: Data supporting routine head CT prior to lumbar puncture are limited. Physicians should consider selective CT for those patients at risk for intracranial mass effect lesions based on decision rules or clinical gestalt. Patients undergoing head CT must receive immediate antibiotic therapy.

Low Accuracy of Positive qSOFA Criteria for Predicting 28-Day Mortality in Critically Ill Septic Patients During the Early Period After Emergency Department Presentation

Author(s): Hwang S.Y.; Jo I.J.; Lee S.U.; Lee T.R.; Yoon H.; Cha W.C.; Sim M.S.; Shin T.G.

Source: Annals of Emergency Medicine; 2017

Publication Type(s): Article In Press

Abstract: Study objective: We determine the diagnostic performance of positive Quick Sequential Organ Failure Assessment (qSOFA) scores for predicting 28-day mortality among critically ill septic patients during the early period after emergency department (ED) presentation. Methods: This was a retrospective cohort study at a tertiary care academic center. We reviewed a registry of adult (>=18 years) patients who received a diagnosis of severe sepsis or septic shock during an ED stay from August 2008 through September 2014. We identified the point at which patients met 2 or more of the 3 qSOFA criteria (indicating a positive qSOFA score) simultaneously during the initial 24 hours. The diagnostic performance of positive qSOFA score for predicting 28-day mortality was assessed

(on ED arrival and within 3, 6, and 24 hours after ED presentation). Results: A total of 1,395 patients were included, and the overall 28-day mortality was 15%. For patients with positive qSOFA score, 28-day mortality was 23% (95% confidence interval [CI] 19% to 28%) on ED arrival, 20% (95% CI 17% to 23%) at 3 hours, 20% (95% CI 17% to 22%) at 6 hours, and 17% (95% CI 15% to 20%) at 24 hours. Positive qSOFA score for predicting 28-day mortality had a sensitivity, specificity, and area under the receiver operating curve, respectively, of 39% (95% CI 32% to 46%), 77% (95% CI 75% to 80%), and 0.58 (95% CI 0.55 to 0.62) on ED arrival; 68% (95% CI 62% to 75%), 52% (95% CI 49% to 55%), and 0.60 (95% CI 0.57 to 0.63) within 3 hours; 82% (95% CI 76% to 87%), 41% (95% CI 38% to 44%), and 0.61 (95% CI 0.58 to 0.64) within 6 hours; and 91% (95% CI 86% to 94%), 23% (95% CI 21% to 25%), and 0.57 (95% CI 0.54 to 0.59) within 24 hours. Conclusion: The diagnostic performance of positive qSOFA score for predicting 28-day mortality was low in critically ill septic patients, particularly during the early period after ED presentation. The study requires further prospective validation because of limitations with its retrospective design and use of single-center data.

Association Between Maternal Comorbidities and Emergency Department Use Among a National Sample of Commercially Insured Pregnant Women

Author(s): Cunningham S.D.; Thomas J.L.; Shebl F.M.; Ickovics J.R.; Magriples U.; Kozhimannil K.B.

Source: Academic Emergency Medicine; 2017

Publication Type(s): Article In Press

Abstract: Objectives: Evidence suggests that, despite routine engagement with the health system, pregnant women commonly seek emergency care. The objectives of this study were to examine the association between maternal comorbidities and emergency department (ED) use among a national sample of commercially insured pregnant women. Methods: We conducted a retrospective cohort study using multipayer medical claims data maintained by the Health Care Cost Institute for women ages 18 to 44 years with a live singleton birth in 2011 (N = 157,786). The association between common maternal comorbidities (e.g., hypertension, gestational diabetes) and ED use during pregnancy was examined using multilevel models, while controlling for age, region, and residential zip code. Results: Twenty percent (n = 31,413) of pregnant women had one or more ED visit (mean +/- SD = 1.52 +/- 1.15). Among those who used the ED, 29% had two or more visits, and 11% had three or more visits. Emergency care seekers were significantly more likely to have one or more comorbid condition compared to those with no emergency care: 30% versus 21%, respectively (p

Physician variation in time to antimicrobial treatment for septic patients presenting to the emergency department

Author(s): Peltan I.D.; Brown S.M.; Mitchell K.H.; Rudd K.E.; Mann B.A.; Carlbom D.J.; Hough C.L.

Source: Critical Care Medicine; 2017; vol. 45 (no. 6); p. 1011-1018

Publication Type(s): Article

Abstract: Objectives: Delayed initiation of appropriate antimicrobials is linked to higher sepsis mortality. We investigated interphysician variation in septic patients' door-to-antimicrobial time. Design: Retrospective cohort study. Setting: Emergency department of an academic medical center. Subjects: Adult patients treated with antimicrobials in the emergency department between 2009 and 2015 for fluid-refractory severe sepsis or septic shock. Patients who were transferred, received antimicrobials prior to emergency department arrival, or were treated by an attending physician who cared for less than five study patients were excluded. Interventions: None. Measurements and Main Results: We employed multivariable linear regression to evaluate the association between

treating attending physician and door-to-antimicrobial time after adjustment for illness severity (Acute Physiology and Chronic Health Evaluation II score), patient age, prehospital or arrival hypotension, admission from a long-term care facility, mode of arrival, weekend or nighttime admission, source of infection, and trainee involvement in care. Among 421 eligible patients, 74% received antimicrobials within 3 hours of emergency department arrival. After covariate adjustment, attending physicians' (n = 40) median door-to-antimicrobial times varied significantly, ranging from 71 to 359 minutes (p = 0.002). The percentage of each physician's patients whose antimicrobials began within 3 hours of emergency department arrival ranged from 0% to 100%. Overall, 12% of variability in antimicrobial timing was explained by the attending physician compared with 4% attributable to illness severity as measured by the Acute Physiology and Chronic Health Evaluation II score (p

The absence of fever is associated with higher mortality and decreased antibiotic and IV fluid administration in emergency department patients with suspected septic shock

Author(s): Henning D.J.; Carey J.R.; Oedorf K.; Day D.E.; Redfield C.S.; Huguenel C.J.; Roberts J.C.

Source: Critical Care Medicine; 2017; vol. 45 (no. 6)

Publication Type(s): Article

Available in full text at Critical Care Medicine - from Ovid

Abstract: Objective: This study evaluates whether emergency department septic shock patients without a fever (reported or measured) receive less IV fluids, have decreased antibiotic administration, and suffer increased in-hospital mortality. Design: This was a secondary analysis of a prospective, observational study of patients with shock. Setting: The study was conducted in an urban, academic emergency department. Patients: The original study enrolled consecutive adult (aged 18 yr or older) emergency department patients from November 11, 2012, to September 23, 2013, who met one of the following shock criteria: 1) systolic blood pressure less than 90 mm Hg after at least 1L IV fluids, 2) new vasopressor requirement, or 3) systolic blood pressure less than 90 mm Hg and IV fluids held for concern of fluid overload. The current study is limited to patients with septic shock. Patients were grouped as febrile if they had a subjective fever or a measured temperature >100.4degreeF documented in the emergency department; afebrile patients lacked both. Measurements and Main Results: Among 378 patients with septic shock, 207 of 378 (55%; 50-60%) were febrile by history or measurement. Afebrile patients had lower rates of antibiotic administration in the emergency department (81% vs 94%; p

Effect of continuity of care on emergency department visits in elderly patients with asthma in Taiwan

Author(s): Kao Y.-H.; Wu S.-C.

Source: Journal of the American Board of Family Medicine; 2017; vol. 30 (no. 3); p. 384-395

Publication Type(s): Article

Available in full text at Journal of the American Board of Family Medicine, The - from Highwire Press

Abstract: Background: Continuity of care (COC) is positively associated with health care outcomes. However, the effect of COC on the reduction of asthma-related emergency department (ED) visits among older asthmatic patients is not clearly understood. Methods: We conducted a retrospective cohort study using the Taiwan nationwide health insurance claims database between 2004 and 2013. Patients aged 65 years with asthma during 2005 to 2011 were selected. The COC index (COCI) is used to measure the number of individual physicians a patient sees in the first year and we

identified asthma-related ED visit in the subsequent year. Cox model was used to examine the hazard ratio (HR) between COC and an ED visit for asthma. Results: Among a total of 3395 subjects, the overall mean COC was 0.73, and 48.5% of subjects had perfect COC (COCI = 1). After controlling for covariables, in the group of patients with low COC, the risk of having an asthma-related ED visit was higher compared with those with perfect COC (Adjusted HR, 2.11; 95% CI, 1.37-3.25). Conclusions: Elderly asthmatic patients with lower COC had a significantly higher likelihood of having asthma-related ED visits.

A Randomized Controlled Trial of a Citywide Emergency Department Care-Coordination Program to Reduce Prescription Opioid-Related Visits: An Economic Evaluation

Author(s): Murphy S.M.; Howell D.; McPherson S.; Grohs R.; Roll J.; Neven D.

Source: Journal of Emergency Medicine; Aug 2017

Publication Type(s): Article In Press

Abstract: Background: Care provided in the emergency department (ED) can cost up to five times as much as care received for comparable diagnoses in alternative settings. Small groups of patients, many of whom suffer from an opioid use disorder, often account for a large proportion of total ED visits. We recently conducted, and demonstrated the effectiveness of, the first randomized controlled trial of a citywide ED care-coordination program intending to reduce prescription-opioid-related ED visits. All EDs in the metropolitan study area were connected to a Web-based information exchange system. Objective: The objective of this article was to perform an economic evaluation of the 12-month trial from a third-party-payer perspective. Methods: We modeled the person-period monthly for the 12-month observation period, and estimated total treatment costs and return on investment (ROI) with regard to cost offsets, over time, for all visits where the patient was admitted to and discharged from the ED. Results: By the end of month 4, the mean cumulative cost differential was significantly lower for intervention relative to treatment-as-usual participants (-$1370; p = 0.03); this figure climbed to -$3200 (p = 0.02) by the end of month 12. The ROI trended upward throughout the observation period, but failed to reach statistical significance by the end of month 12 (ROI = 3.39, p = 0.07). Conclusion: The intervention produced significant cost offsets by the end of month 4, which continued to accumulate throughout the trial; however, ROI was not significant. Because the per-patient administrative costs of the program are incurred at the time of enrollment, our results highlight the importance of future studies that are able to follow participants for a period beyond 12 months to more accurately estimate the program's ROI.

Do Slow and Steady Residents Win the Race? Modeling the Effects of Peak and Overall Resident Productivity in the Emergency Department

Author(s): Joseph J.W.; Wong M.L.; Nathanson L.A.; Sanchez L.D.; Novack V.

Source: Journal of Emergency Medicine; Aug 2017

Publication Type(s): Article In Press

Abstract: Background: Emergency medicine residents need to be staffed in a way that balances operational needs with their educational experience. Key to developing an optimal schedule is knowing a resident's expected productivity, a poorly understood metric. Objective: We sought to measure how a resident's busiest (peak) workload affects their overall productivity for the shift. Methods: We conducted a retrospective, observational study of resident productivity at an urban, tertiary care center with a 3-year Accreditation Council for Graduate Medical Education-approved emergency medicine training program, with 55,000 visits annually. We abstracted resident productivity data from a database of patient assignments from July 1, 2010 to June 20, 2015, utilizing a generalized estimation equation method to evaluate physician shifts. Our primary

outcome measure was the total number of patients seen by a resident over a shift. The secondary outcome was the number of patients seen excluding those in the peak hour. Results: A total of 14,361 shifts were evaluated. Multivariate analysis showed that the total number of patients seen was significantly associated with the number of patients seen during the peak hour, level of training, the timing of the shift, but most prominently, lower variance in patients seen per hour (coefficient of variation < 0.10). Conclusions: A resident's peak productivity can be a strong predictor of their overall productivity, but the substantial negative effect of variability favors a steadier pace. This suggests that resident staffing and patient assignments should generally be oriented toward a more consistent workload, an effect that should be further investigated with attending physicians.

Validating the Manchester Acute Coronary Syndromes (MACS) and Troponin-only Manchester Acute Coronary Syndromes (T-MACS) rules for the prediction of acute myocardial infarction in patients presenting to the emergency department with chest pain

Author(s): Greenslade J.H.; Doig S.; Cullen L.; Nayer R.; Parsonage W.; Hammett C.; Young J.; Pickering J.W.; Than M.

Source: Emergency Medicine Journal; Aug 2017; vol. 34 (no. 8); p. 517-523

Publication Type(s): Article

Abstract: Background The Manchester Acute Coronary Syndromes (MACS) rule and the Troponin-only MACS (T-MACS) rule risk stratify patients with suspected acute coronary syndrome (ACS). This observational study sought to validate and compare the MACS and T-MACS rules for assessment of acute myocardial infarction (AMI). Methods Prospectively collected data from twoEDs in Australia and New Zealand were analysed. Patients were assigned a probability of ACS based on the MACS and T-MACS rules, incorporating high-sensitivity troponin T, heart-type fatty acid-binding protein, ECG results and clinical symptoms. Patients were then deemed very low risk, low risk, intermediate or high risk if their MACS probability was less than 2%, between 2% and 5%, between 5% and 95% and greater than 95%, respectively. The primary endpoint was 30-day diagnosis of AMI. The secondary endpoint was 30-day major adverse cardiac event (MACE) including AMI, revascularisation or coronary stenosis (>70%). Sensitivity, specificity and predictive values were calculated to assess the accuracy of the MACS and T-MACS rules. Results Of the 1244 patients, 114 (9.2%) were diagnosed with AMI and 163 (13.1%) with MACE. The MACS and T-MACS rules categorised 133 (10.7%) and 246 (19.8%) patients, respectively, as very low risk and potentially suitable for early discharge from the ED. There was one false negative case for both rules making sensitivity 99.1% (95.2%-100%). Conclusions MACS and T-MACS accurately risk stratify very low risk patients. The T-MACS rule would allow for more patients to be discharged early. The potential for missed MACE events means that further outpatient testing for coronary artery disease may be required for patients identified as very low risk.

Modeling Hourly Resident Productivity in the Emergency Department

Author(s): Joseph J.W.; Strouse C.S.; Chiu D.T.; Nathanson L.A.; Sanchez L.D.; Henning D.J.

Source: Annals of Emergency Medicine; Aug 2017; vol. 70 (no. 2); p. 185

Publication Type(s): Conference Paper

Abstract: Study objective Resident productivity, defined as new patients per hour, carries important implications for emergency department operations. In high-volume academic centers, essential staffing decisions can be made on the assumption that residents see patients at a static rate. However, it is unclear whether this model mirrors reality; previous studies have not rigorously

examined whether productivity changes over time. We examine residents' productivity across shifts to determine whether it remained consistent. Methods This was a retrospective cohort study conducted in an urban academic hospital with a 3-year emergency medicine training program in which residents acquire patients ad libitum throughout their shift. Time stamps of all patient encounters were automatically logged. A linear mixed model was constructed to predict productivity per shift hour. Results A total of 14,364 8- and 9-hour shifts were worked by 75 residents between July 1, 2010, and June 20, 2015. This comprised 6,127 (42.7%) postgraduate year (PGY) 1 shifts, 7,236 (50.4%) PGY-2 shifts, and 998 (6.9%) PGY-3 nonsupervisory shifts (Table 1). Overall, residents treated a mean of 10.1 patients per shift (SD 3.2), with most patients at Emergency Severity Index level 3 or more acute (93.8%). In the initial hour, residents treated a mean of 2.14 patients (SD 1.2), and every subsequent hour was associated with a significant decrease, with the largest in the second, third, and final hours. Conclusion Emergency medicine resident productivity during a single shift follows a reliable pattern that decreases significantly hourly, a pattern preserved across PGY years and types of shifts. This suggests that resident productivity is a dynamic process, which should be considered in staffing decisions and studied further.

Analysis of Emergency Department Length of Stay for Mental Health Patients at Ten Massachusetts Emergency Departments

Author(s): Pearlmutter M.D.; Dwyer K.H.; Burke L.G.; Rathlev N.; Maranda L.; Volturo G.

Source: Annals of Emergency Medicine; Aug 2017; vol. 70 (no. 2); p. 193

Publication Type(s): Conference Paper

Abstract: Study objective Prolonged boarding times in the emergency department (ED) disproportionately affect mental health patients, resulting in patient and provider dissatisfaction and increased patient morbidity and mortality. Our objective is to quantify the burden of mental health boarding and to elucidate the effect of insurance together with demographic, social, and comorbid factors on length of stay. Methods We conducted a cross-sectional observational study of 871 consecutive patients requiring an ED mental health evaluation at one of 10 unaffiliated Massachusetts hospitals. Demographics; insurance; length of stay; medical, psychiatric, and social history; and disposition data were collected. We evaluated the effect of these characteristics on boarding time. Results ED median length of stay varied greatly by disposition, driven primarily by ED boarding time. Admitted and transferred patients had longer delays than discharged patients (5.63, 9.32, and 1.23 hours, respectively). Medical clearance time (1.40 hours) composed only 10.5% of total ED length of stay and varied little by insurance. In our multivariate analyses, patients with Medicaid and the uninsured had significantly longer total lengths of stay and were more than twice as likely to remain in the ED for 24 hours or greater compared with privately insured patients. Conclusion Mental health patients in Massachusetts have lengthy ED visits, particularly those requiring inpatient admission. Boarding time accounts for the majority of total ED length of stay and varies by insurance, even when other factors known to affect ED length of stay are controlled. Efforts to improve timeliness of care for mental health emergencies should focus on reducing ED boarding and eliminating disparities in care by insurance status.

Comparison of Intravenous Ketorolac at Three Single-Dose Regimens for Treating Acute Pain in the Emergency Department: A Randomized Controlled Trial

Author(s): Motov S.; Yasavolian M.; Likourezos A.; Pushkar I.; Hossain R.; Drapkin J.; Huang F.

Source: Annals of Emergency Medicine; Aug 2017; vol. 70 (no. 2); p. 177-184

Publication Type(s): Conference Paper

Abstract: Study objective Nonsteroidal anti-inflammatory drugs are used extensively for the management of acute and chronic pain, with ketorolac tromethamine being one of the most frequently used parenteral analgesics in the emergency department (ED). The drugs may commonly be used at doses above their analgesic ceiling, offering no incremental analgesic advantage while potentially adding risk of harm. We evaluate the analgesic efficacy of 3 doses of intravenous ketorolac in ED patients with acute pain. Methods We conducted a randomized, double-blind trial to assess the analgesic efficacy of 3 doses of intravenous ketorolac (10, 15, and 30 mg) in patients aged 18 to 65 years and presenting to the ED with moderate to severe acute pain, defined by a numeric rating scale score greater than or equal to 5. We excluded patients with peptic ulcer disease, gastrointestinal hemorrhage, renal or hepatic insufficiency, allergies to nonsteroidal anti-inflammatory drugs, pregnancy or breastfeeding, systolic blood pressure less than 90 or greater than 180 mm Hg, and pulse rate less than 50 or greater than 150 beats/min. Primary outcome was pain reduction at 30 minutes. We recorded pain scores at baseline and up to 120 minutes. Intravenous morphine 0.1 mg/kg was administered as a rescue analgesic if subjects still desired additional pain medication at 30 minutes after the study drug was administered. Data analyses included mixed-model regression and ANOVA. Results We enrolled 240 subjects (80 in each dose group). At 30 minutes, substantial pain reduction was demonstrated without any differences between the groups (95% confidence intervals 4.5 to 5.7 for the 10-mg group, 4.5 to 5.6 for the 15-mg group, and 4.2 to 5.4 for the 30-mg group). The mean numeric rating scale pain scores at baseline were 7.7, 7.5, and 7.8 and improved to 5.1, 5.0, and 4.8, respectively, at 30 minutes. Rates of rescue analgesia were similar, and there were no serious adverse events. Secondary outcomes showed similar rates of adverse effects per group, of which the most common were dizziness, nausea, and headache. Conclusion Ketorolac has similar analgesic efficacy at intravenous doses of 10, 15, and 30 mg, showing that intravenous ketorolac administered at the analgesic ceiling dose (10 mg) provided effective pain relief to ED patients with moderate to severe pain without increased adverse effects.

Arrival by ambulance explains variation in mortality by time of admission: Retrospective study of admissions to hospital following emergency department attendance in England

Author(s): Anselmi L.; Meacock R.; Kristensen So.R.; Sutton M.; Doran T.

Source: BMJ Quality and Safety; Aug 2017; vol. 26 (no. 8); p. 613-621

Publication Type(s): Article

Available in full text at BMJ Quality and Safety - from Highwire Press

Abstract: Background Studies finding higher mortality rates for patients admitted to hospital at weekends rely on routine administrative data to adjust for risk of death, but these data may not adequately capture severity of illness. We examined how rates of patient arrival at accident and emergency (A&E) departments by ambulance - a marker of illness severity - were associated with in-hospital mortality by day and time of attendance. Methods Retrospective observational study of 3 027 946 admissions to 140 non-specialist hospital trusts in England between April 2013 and February 2014. Patient admissions were linked with A&E records containing mode of arrival and date and time of attendance. We classified arrival times by day of the week and daytime (07:00 to 18:59) versus night (19:00 to 06:59 the following day). We examined the association with in-hospital mortality within 30 days using multivariate logistic regression. Results Over the week, 20.9% of daytime arrivals were in the highest risk quintile compared with 18.5% for night arrivals. Daytime arrivals on Sundays contained the highest proportion of patients in the highest risk quintile at 21.6%. Proportions of admitted patients brought in by ambulance were substantially higher at night and higher on Saturday (61.1%) and Sunday (60.1%) daytimes compared with other daytimes in the week (57.0%). Without adjusting for arrival by ambulance, risk-adjusted mortality for patients arriving at night was higher than for daytime attendances on Wednesday (0.16 percentage points). Compared

with Wednesday daytime, risk-adjusted mortality was also higher on Thursday night (0.15 percentage points) and increased throughout the weekend from Saturday daytime (0.16 percentage points) to Sunday night (0.26 percentage points). After adjusting for arrival by ambulance, the raised mortality only reached statistical significance for patients arriving at A&E on Sunday daytime (0.17 percentage points). Conclusion Using conventional risk-adjustment methods, there appears to be a higher risk of mortality following emergency admission to hospital at nights and at weekends. After accounting for mode of arrival at hospital, this pattern changes substantially, with no increased risk of mortality following admission at night or for any period of the weekend apart from Sunday daytime. This suggests that risk-adjustment based on inpatient administrative data does not adequately account for illness severity and that elevated mortality at weekends and at night reflects a higher proportion of more severely ill patients arriving by ambulance at these times.

A randomized trial of a 1-hour troponin T protocol in suspected acute coronary syndromes: Design of the Rapid Assessment of Possible ACS In the emergency Department with high sensitivity Troponin T (RAPID-TnT) study

Author(s): Papendick C.; Karnon J.; Nelson A.J.; Seshadri A.; Chuang A.; Morton E.; Chew D.P.

Source: American Heart Journal; Aug 2017; vol. 190 ; p. 25-33

Publication Type(s): Article

Abstract: Background Protocols incorporating high-sensitivity troponin to guide decision making in the disposition of patients with suspected acute coronary syndromes (ACS) in the emergency department have received a lot of attention. Traditionally, patients with chest pain have required long periods of observation in emergency department before being deemed safe for discharge. In an era of limited health service resources, a protocol that could discharge patients safely within an hour of presentation is extremely attractive. Unfortunately, despite incorporation into some guidelines, these protocols have not been subjected to randomized comparisons evaluating safety, effectiveness, and cost-effectiveness. Objective This study is designed to provide the evidence required to allow key decision makers to implement these protocols: specifically, to provide evidence that a decision rule based on 0- and 1-hour high-sensitivity troponin T (hs-TnT) is safe, provides noninferior outcomes in all patients with suspected ACS, and that implementation of a rapid troponin protocol leads to efficient care. Design This prospective pragmatic trial (n = 5,400, 5 hospitals) randomly allocates patients with suspected ACS to either a 0/1-hour hs-TnT protocol as advocated in clinical guidelines, versus usual care of standard troponin reporting evaluated at 3 and 6 hours. The primary effectiveness composite end points of this study are all-cause death and new/recurrent ACS within 30 days. To evaluate cost-effectiveness, follow-up will determine clinical events, quality of life, and resource utilization within 12 months. Summary Demonstrating that a 0/1-hour hs-TnT protocol improves the effectiveness and efficiency of care within a robust comparative study will fill an evidence gap that currently limits the translation of more precise hs-TnT testing into better patient and health service outcomes.

Electronic medication complete communication strategy for opioid prescriptions in the emergency department: Rationale and design for a three-arm provider randomized trial

Author(s): McCarthy D.M.; Courtney D.M.; Lank P.M.; Gravenor S.J.; Cameron K.A.; Russell A.M.

Source: Contemporary Clinical Trials; Aug 2017; vol. 59 ; p. 22-29

Publication Type(s): Article

Abstract: Background Thousands of people die annually from prescription opioid overdoses; however there are few strategies to ensure patients receive medication risk information at the time of prescribing. Objectives To compare the effectiveness of the Emergency Department (ED) Electronic

Medication Complete Communication (EMC2) Opioid Strategy (with and without text messaging) to promote safe medication use and improved patient knowledge as compared to usual care. Methods The ED EMC2 Opioid Strategy consists of 5 automated components to promote safe medication use: 1) physician reminder to counsel, 2) inbox message sent on to the patient's primary care physician, 3) pharmacist message on the prescription to counsel, 4) MedSheet supporting prescription information, and 5) patient-centered Take-Wait-Stop wording of prescription instructions. This strategy will be assessed both with and without the addition of text messages via a three-arm randomized trial. The study will take place at an urban academic ED (annual volume > 85,000) in Chicago, IL. Patients being discharged with a new prescription for hydrocodone-acetaminophen will be enrolled and randomized (based on their prescribing physician). The primary outcome of the study is medication safe use as measured by a demonstrated dosing task. Additionally actual safe use, patient knowledge and provider counseling will be measured. Implementation fidelity as well as costs will be reported. Conclusions The ED EMC2 Opioid Strategy embeds a risk communication strategy into the electronic health record and promotes medication counseling with minimal workflow disruption. This trial will evaluate the strategy's effectiveness and implementation fidelity as compared to usual care. Trial registration This trial is registered on clinicaltrials.gov with identifier NCT02431793.

Soft tissue oxygen saturation to predict admission from the emergency department: A prospective observational study.

Author(s): Davis, William T; Lospinso, Josh; Barnwell, Robert M; Hughes, John; Schauer, Steven G; Smith, Thomas B; April, Michael D

Source: The American journal of emergency medicine; Aug 2017; vol. 35 (no. 8); p. 1111-1117

Publication Type(s): Journal Article

Abstract:OBJECTIVEWe evaluated a soft tissue oxygen saturation (Sto2) measurement at triage for predicting admission to the hospital in adults presenting to the emergency department (ED) in addition to data routinely gathered at triage.METHODSThis was a prospective, observational, single center study of adults presenting to the ED for evaluation. Research assistants obtained thenar eminence Sto2 measurements on subjects in ED triage. ED providers not involved in the study then made all management and disposition decisions. We prospectively collected data on each subject's final ED disposition (admission versus discharge). We identified the optimal Sto2 cutoff value for predicting admission. We then used logistic regression modeling to describe the added predictive value of Sto2 beyond routinely collected triage data including Emergency Severity Index level, age, and vital signs.RESULTSWe analyzed 2588 adult (>17years) subjects with 743 subjects (28.7%) admitted to the hospital. Sto2<76% was the optimal diagnostic cutoff for predicting admission. Of subjects with Sto2<76%, 158 of 384 (41.1%) underwent admission versus 585 of 2204 (26.5%) subjects with Sto2≥76. After controlling for age, vital signs, and ESI level in the logistic regression analysis, Sto2<76% had an odds ratio of 1.54 (95% confidence interval (CI), 1.19 to 1.98) for predicting admission.CONCLUSIONSSto2 may provide additional prognostic data to routine triage assessment regarding the disposition for undifferentiated adult patients presenting to the ED.

Medical expulsive therapy use in emergency department patients diagnosed with ureteral stones.

Author(s): Wang, Ralph C; Addo, Newton; Chi, Thomas; Moore, Christopher; Mallin, Michael; Shiboski, Stephen; Stoller, Marshall; Smith-Bindman, Rebecca

Source: The American journal of emergency medicine; Aug 2017; vol. 35 (no. 8); p. 1069-1074

Publication Type(s): Journal Article

Abstract:OBJECTIVERecent studies have clarified the role of alpha-blockers, such as tamsulosin, for patients diagnosed with ureteral stones <10mm not requiring an urgent intervention. Prior studies

have reported low rates of use of MET by emergency physicians. We sought to describe patterns of alpha-blocker use and to determine factors associated with utilization in patients diagnosed with ureterolithiasis in the ED.METHODSWe used data from a randomized trial of CT scan vs. ultrasound in participants with suspected urolithiasis enrolled at 15 EDs between October 2011 and February 2013. The use of medical expulsive therapy was identified by the prescription of an alpha-blocker, calcium channel blocker, or steroid at the ED visit. The prevalence of alpha-blocker use in participants with ureteral stones on imaging was calculated, and multivariable models were used to examine risk factors for utilization.RESULTSOf the 524 participants who were identified with a ureteral stone on CT scan and discharged from the ED, 375 (71.4%) received an alpha-blocker, and 2 (<1%) received a steroid. There was no significant difference in alpha-blocker use for participants based on stone size or location. However, there was a 3.6-fold difference in alpha-blocker use between the lowest and highest use ED sites. In the multivariable analysis, ED site was independently associated with utilization of alpha-blockers.CONCLUSIONSAlpha-blockers were prescribed in more than two-thirds of patients with a distal ureteral stone on imaging, a much higher prevalence than previously reported. There was substantial variability in alpha-blocker use based on ED site.

Emergency department interpretation of CT of the brain: a systematic review.

Author(s): Evans, Lachlan R; Fitzgerald, Mark C; Mitra, Biswadev; Varma, Dinesh

Source: Postgraduate medical journal; Aug 2017; vol. 93 (no. 1102); p. 454-459

Publication Type(s): Journal Article

Available in full text at Postgraduate medical journal - from Highwire Press

Abstract:BACKGROUND AND OBJECTIVESCT of the brain (CTB) is one of the most common radiological investigations performed in the emergency department (ED). Emergency clinicians rely upon this imaging modality to aid diagnosis and guide management. However, their capacity to accurately interpret CTB is unclear. This systematic review aims to determine this capacity and identify the potential need for interventions directed towards improving the ability of emergency clinicians in this important area.METHODSA systematic review of the literature was conducted without date restrictions. We searched MEDLINE, EMBASE and Cochrane databases and studies reporting the primary outcome of concordance of CTB interpretation between a non-radiologist and a radiology specialist were identified. Studies were assessed for heterogeneity and a subgroup analysis of pooled data based on medical specialty was carried out to specifically identify the concordance of ED clinicians. The quality of evidence was assessed using the GRADE criteria.RESULTSThere were 21 studies included in this review. Among the included studies, 12 reported on the concordance of emergency clinicians, 5 reported on radiology trainees and 4 on surgeons. Clinical and statistical heterogeneity between studies was high (I^2=97.8%, $p<0.01$). The concordance in the emergency subgroup was the lowest among all subgroups with a range of 0.63-0.95 and a clinically significant error rate ranging from 0.02 to 0.24.CONCLUSIONSHeterogeneity and the presence of bias limit our confidence in these findings. However, the variance in the interpretation of CTB between emergency clinicians and radiologists suggests that interventions towards improving accuracy may be useful.

Mortality in Nursing Homes Following Emergency Evacuation: A Systematic Review.

Author(s): Willoughby, Melissa; Kipsaina, Chebiwot; Ferrah, Noha; Blau, Soren; Bugeja, Lyndal; Ranson, David; Ibrahim, Joseph Elias

Source: Journal of the American Medical Directors Association; Aug 2017; vol. 18 (no. 8); p. 664-670

Publication Type(s): Journal Article Review

Abstract:OBJECTIVESTo determine the risk associated with mortality among nursing home residents within 6 months following an evacuation because of man-made or natural disasters.DESIGNA systematic review conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) Statement.SETTINGAll peer-reviewed studies published in English, French, German, or Spanish between January 1, 2000 and December 31, 2015, examining mortality within 6 months of disaster evacuation from a nursing home.MEASUREMENTSExtracted information included study and population characteristics, mortality measures, and risk factors. Studies were examined using the disaster management cycle that considers preparedness, response, recovery, and mitigation.RESULTSThe 10 included studies were published between 2010 and 2015 with one-half conducted in the United States. Only 3 studies detailed the preparedness stage, and 4 detailed the response stage of the disaster management cycle. Mortality was measured as an indicator of recovery and was found to be elevated at 1 month [from 0.03% (n = 1088) to 10.5% (n = 75)] 3 months [from 0.08% (n = 3091) to 15.2% (n = 197)], and 6 months [from 14.9% (n = 263) and 16.8% (n = 22)] postevacuation compared with pre-evacuation and sheltering-in-place. Studies identified vulnerable residents as being over 80 years of age, frail, dependent, male residents with multiple comorbidities and, made recommendations on disaster preparedness.CONCLUSIONSThere is little research on the effects of evacuation on nursing home residents, which is surprising considering the elevated risk of mortality postevacuation. Evacuation seems to have a negative effect on the survival of nursing home residents independent of the effect of the disaster. Standard evacuation procedures may be less applicable to this vulnerable population because of extra challenges they face in disasters.

A randomized controlled trial of brief interventions to reduce drug use among adults in a low-income urban emergency department: the HealthiER You study.

Author(s): Blow, Frederic C; Walton, Maureen A; Bohnert, Amy S B; Ignacio, Rosalinda V; Chermack, Stephen; Cunningham, Rebecca M; Booth, Brenda M; Ilgen, Mark; Barry, Kristen L

Source: Addiction (Abingdon, England); Aug 2017; vol. 112 (no. 8); p. 1395-1405

Publication Type(s): Journal Article

Abstract:AIMSTo examine efficacy of drug brief interventions (BIs) among adults presenting to a low-income urban emergency department (ED).DESIGNRandomized controlled trial on drug use outcomes at 3, 6 and 12 months. Participants were assigned to (1) computer-delivered BI (Computer BI), (2) therapist-delivered, computer-guided BI (Therapist BI) or (3) enhanced usual care (EUC-ED) for drug-using adults. Participants were re-randomized after the 3-month assessment to either adapted motivational enhancement therapy (AMET) booster or enhanced usual care booster (EUC-B).SETTINGPatients recruited from low-income urban emergency departments (ED) in Flint, Michigan, USA.PARTICIPANTSA total of 780 ED patients reporting recent drug use, 44% males, mean age = 31 years.INTERVENTIONSComputer BI consisted of an interactive program guided by a virtual health counselor. Therapist BI included computer guidance. The EUC-ED conditions included review of community health and HIV prevention resources. The BIs and boosters were based on motivational interviewing, focusing on reduction of drug use and HIV risk behaviors.MEASUREMENTSPrimary outcome was past 90 days using drugs at 6 and 12 months and secondary outcomes were weighted drug-days and days of marijuana use.FINDINGSPercentage changes in mean days used any drug from baseline to 12 months were: Computer BI + EUC-B: -10.9%, P = 0.0844; Therapist BI + EUC-B: -26.7%, P = 0.0041, for EUC-ED + EUC-B: -20.9, P = 0.0011. In adjusted analyses, there was no significant interaction between ED intervention and booster AMET for primary and secondary outcomes. Compared with EUC-ED, Therapist BI reduced number of days using any drug [95% confidence interval (CI) = -0.41, -0.07, P = 0.0422] and weighted drug-days (95% CI = -0.41, -0.08, P = 0.0283). Both Therapist and Computer BI had significantly fewer number of days using marijuana compared to EUC-ED (Therapist BI: 95% CI = -0.42, -0.06, P = 0.0104, Computer BI: 95% CI = -0.34, -0.01, P = 0.0406). Booster effects were not significant.CONCLUSIONSAn emergency

department-based motivational brief intervention, delivered by a therapist and guided by computer, appears to reduce drug use among adults seeking emergency department care compared with enhanced usual care.

Elderly patients with an atypical presentation of illness in the emergency department

Author(s): Hofman M.R.; Van Den Hanenberg F.; Sierevelt I.N.; Tulner C.R.

Source: Netherlands Journal of Medicine; Jul 2017; vol. 75 (no. 6); p. 241-246

Publication Type(s): Article

Abstract: Background: Very little information is available on the prevalence and clinical outcome of elderly patients with atypical presentations of illness in the emergency department. The objective was to determine the prevalence and clinical outcome of elderly patients seen in the emergency department with an atypical presentation. Methods: A monocentric retrospective observational study on 355 elderly patients presenting to the emergency department. Patients of 80 years and older were included. Data were extracted from the electronic medical file. Results: A total of 355 patients were included, with a mean age of 86 years; 53% of these elderly patients had an atypical presentation of illness. Mostly this was due to a fall (71%). A total of 15% of the patients with an atypical presentation reported no specific symptoms of the underlying disease. Patients with atypical presentation were more likely to have a longer stay in hospital (p

PREDICTing Mortality in the Emergency Department: External Validation and Derivation of a Clinical Prediction Tool

Author(s): Moman R.N.; Loprinzi Brauer C.E.; Kelsey K.M.; Bellolio M.F.; Havyer R.D.; Lohse C.M.

Source: Academic Emergency Medicine; Jul 2017; vol. 24 (no. 7); p. 822-831

Publication Type(s): Article

Abstract: Background: The Choosing Wisely campaign has called for better engagement of palliative and hospice care services for patients in the emergency department (ED). PREDICT is a clinical prediction tool that was derived in an Australian ED cohort. It assesses a patient's risk of mortality at 1 year to select those who would benefit from advanced care planning. Such goals-of-care discussion can improve patients' ability to communicate what they want out of their healthcare and, in cases of end of life, potentially reduce the number of futile interventions. Using a cutoff of 13 points, PREDICT had a reported 95.3% specificity and 53.9% sensitivity for 1-year mortality. We externally validated PREDICT and derived a simpler modified PREDICT tool to systematically identify high-risk patients eligible for goals-of-care discussions and palliative care consultation in the ED. Methods: This was an observational cohort study of a random sample of 927 patients aged 55+ seen in the ED in 2014. We identified advance healthcare directives (AHDs) on file. We summarized diagnostic accuracy of the clinical tool to predict 1-year mortality using sensitivity, specificity, and area under the curve (AUC). We refined PREDICT using multivariable modeling. We followed reporting guidelines including STrengthening the Reporting of OBservational studies in Epidemiology (STROBE) for cohort studies and Standards for Reporting of Diagnostic Accuracy (STARD). Results: A total of 927 patients were included: 55.0% were male, 63 (7.0%) were nursing home residents, 389 (42.0%) patients had an AHD in their medical record at the time of ED visit, and 245 (26.4%) were deceased at 1 year. Of the 780 patients with PREDICT scores = 13, a total of 81 (55.1%; 95% CI = 46.7-63.2) were deceased at 1 year. The AUC of the PREDICT score was 0.717 (95% CI = 0.680-0.754), sensitivity was 33.1% (95% CI = 27.3-39.4), and specificity was 90.3% (95% CI = 87.8-92.4) to predict 1-year mortality. The modified PREDICT tool resulted in an AUC of 0.709 (95% CI = 0.671-0.747). We decided to select this model as the preferred model, as the variable of intensive care unit (ICU) admission with multiorgan failure can be difficult to assess in the ED and may delay advanced care

planning. Reweighting the score did not improve fit or the AUC, so points assigned to each variable were not adjusted. Conclusion: PREDICT is an easy tool to administer to be able to identify patients who are at high risk of 1-year mortality and who could benefit from AHDs, goals-of-care discussion, and when appropriate in the context of an end-of-life setting, palliative medicine consultation. External validation of PREDICT was successful in our population. We simplified PREDICT and derived a new tool, the modified PREDICT minus ICU tool, without significantly altering the sensitivity, specificity, and AUC for death at 1 year. The next steps include external validation of the newly derived rule and prospective implementation.

Emergency Department Vital Signs and Outcomes After Discharge

Author(s): Gabayan G.Z.; Sarkisian C.A.; Gould M.K.; Derose S.F.; Chiu V.Y.; Weiss R.E.

Source: Academic Emergency Medicine; Jul 2017; vol. 24 (no. 7); p. 846-854

Publication Type(s): Article

Abstract: Objective: Vital signs are critical markers of illness severity in the emergency department (ED). Providers need to understand the abnormal vital signs in older adults that are problematic. We hypothesized that in patients age > 65 years discharged from the ED, there are abnormal vital signs that are associated with an admission to an inpatient bed within 7 days of discharge. Methods: We conducted a retrospective cohort study using data from a regional integrated health system of members age > 65 years during the years 2009 to 2010. We used univariate contingency tables to assess the relationship between hospital admission within 7 days of discharge and vital sign (including systolic blood pressure [sBP], heart rate [HR], body temperature, and pulse oximetry [SpO2] values measured closest to discharge) using standard thresholds for abnormal and thresholds derived from the study data. Results: Of 104,025 ED discharges, 4,638 (4.5%) were followed by inpatient admission within 7 days. Vital signs had a greater odds of admission beyond a single cutoff. The vital signs with at least twice the odds of admission were sBP 101 beats/min (OR = 2.00 95% CI = 1.75-2.29), body temperature > 37.3degreeC (OR = 2.14, 95% CI = 1.90-2.41), and pulse oximetry 2 (OR = 2.04, 95% CI = 1.55-2.68). Patients with two vital sign abnormalities per the analysis had the highest odds of admission. A majority of patients discharged with abnormal vital signs per the analysis were not admitted within 7 days of ED discharge. Conclusion: While we found a majority of patients discharged with abnormal vital signs as defined by the analysis, not to be admitted after discharge, we identified vital signs associated with at least twice the odds of admission.

Predictors of emergency department use by adolescents and adults with autism spectrum disorder: A prospective cohort study

Author(s): Lunsky Y.; Durbin A.; Tint A.; Palucka A.M.; Bradley E.; Weiss J.A.; Paquette-Smith M.

Source: BMJ Open; Jul 2017; vol. 7 (no. 7)

Publication Type(s): Article

Abstract: Objectives To determine predictors of emergency department (ED) visits in a cohort of adolescents and adults with autism spectrum disorder (ASD). Design Prospective cohort study. Setting Community-based study from Ontario, Canada. Participants Parents reported on their adult sons and daughters with ASD living in the community (n=284). Main outcome measures ED visits for any reason, ED visits for medical reasons and ED visits for psychiatric reasons over 1 year. Results Among individuals with ASD, those with ED visits for any reason were reported to have greater family distress at baseline (p

Alcohol-related mild traumatic brain injury and outcome in elderly patients at the Emergency Department

Author(s): Van Den Broeke-Vos M.; Coffeng S.; Jacobs B.; DeKoning M.; Van Der Horn H.; Van Der Naalt J.; Scheenen M.; Spikman J.

Source: European Journal of Neurology; Jul 2017; vol. 24 ; p. 221

Publication Type(s): Conference Abstract

Abstract: Background and aims: Acute alcohol intoxication (AAI) is associated with a higher risk of mild traumatic brain injury (mTBI) in the overall population. However, the incidence and impact of mTBI due to AAI in elderly patients is unknown. The aim of this study was to describe the characteristics of alcohol related mTBI in elderly patients and to determine the mechanism of trauma and outcome. Methods: We analyzed data from 388 mTBI patients with an age of 55 years or older (84 AAI vs. 304 non-intoxicated patients) from a prospective cohort study in three Dutch level 1 trauma centers (UPFRONT-study). Injury mechanism and outcome were compared between groups. Posttraumatic complaints and functional outcome were evaluated after 2 weeks and 6 months using standardized questionnaires. Results: 22% of the elderly mTBI patients was intoxicated with alcohol. There was no significant difference in intracranial traumatic CT findings, Glasgow Coma Scale at admission, frequency of hospital admission and Glasgow Outcome Scale Extended compared to controls. Injury Severity Score was higher in the non-intoxicated group (8.5 vs 6.6 p=0.036). Falls were the most common trauma mechanism and even more common in the AAI group (94% vs. 72% p=0.000). Patients with AAI mTBI reported less posttraumatic complaints after 2 weeks (p=0.010) and 6 months (p=0.044). Conclusion: One in five injuries in our aged mTBI patients was alcohol related and most injuries were due to falls. For clinical practice, it might be necessary to focus more on alcohol and fall prevention strategies in the older population to reduce the incidence of mTBI.

Injury prevention in the emergency department: An ongoing challenge Reference to: Emergency Physicians as human billboards for injury prevention: A randomized controlled trial by Emily Sullivan et al

Author(s): Snider C.

Source: Canadian Journal of Emergency Medicine; Jul 2017; vol. 19 (no. 4); p. 321-323

Publication Type(s): Note

Drug misuse in adolescents presenting to the emergency department

Author(s): Finkelstein Y.; Armstrong J.; Hutson J.R.; Goel G.; Baum C.R.; Wax P.; Brent J.

Source: Pediatric Emergency Care; Jul 2017; vol. 33 (no. 7); p. 451-456

Publication Type(s): Article

Abstract: Objectives Drug misuse is a disturbing, common practice among youth. One in 4 American adolescents reports consuming prescription medications without a clinical indication. We sought to explore current trends of drug misuse in adolescents. Methods Using the 37 participating sites of the ToxIC (Toxicology Investigators Consortium) Case Registry, a cross-country surveillance tool, we conducted an observational cohort study of all adolescents (aged 13-18 years) who presented to emergency departments with drug misuse and required a bedside medical toxicology consultation between January 2010 and June 2013. Results Of 3043 poisonings, 202 (7%) involved drug misuse (139 [69%] were males). Illicit drugs (primarily synthetic cannabinoids and "bath salts") were encountered in 101 (50%), followed by prescription medications (56 [28%]) and over-the-counter (OTC) drugs (51 [25%]). Dextromethorphan was the most commonly misused legal medication (24 [12%]). Polypharmacy exposure was documented in 74 (37%). One hundred sixty-three adolescents (81%) were symptomatic; of these, 81% had central nervous system impairments: psychosis (38%),

agitation (30%), coma (26%), myoclonus (11%), and seizures (10%); and 66 (41%) displayed a specific toxidrome, most commonly sedative-hypnotic. Benzodiazepines were the most frequently administered medications (46%). Antidotes were administered to 28% of adolescents, primarily naloxone, physostigmine, N-acetyl-cysteine, and flumazenil. No deaths were recorded. Conclusions Adolescents presenting with drug misuse may be exposed to a wide range and combinations of therapeutics or illicit substances and frequently display central nervous system abnormalities, compromising the ability to obtain a reliable history. Frontline clinicians should maintain a high index of suspicion, as routine toxicology screenings fail to detect most contemporary misused legal and designer drugs.

A determination of emergency department pre-Triage times in patients not arriving by ambulance compared to widely used guideline recommendations

Author(s): Betz M.; Stempien J.; Trevidi S.; Bryce R.

Source: Canadian Journal of Emergency Medicine; Jul 2017; vol. 19 (no. 4); p. 265-270

Publication Type(s): Article

Abstract: Objectives Emergency department (ED) lengths of stay are measured from the time of patient registration or triage. The time that patients wait in line prior to registration and triage has not been well described. We sought to characterize pre-Triage wait times and compare them to recommended physician response times, as per the Canadian Triage and Acuity Scale (CTAS). Methods This observational study documented the time that consenting patients entered the ED and the time that they were formally registered and triaged. Participants' CTAS scores were collected from the electronic record. Patients arriving to the ED by ambulance were excluded. Results A total of 536 participants were timed over 13 separate intervals. Of these, 11 left without being triaged. Participants who scored either CTAS 1 or 2 (n=53) waited a median time of 3.1 (interquartile range [IQR]: 0.43, 11.1) minutes. Patients triaged as CTAS 3 (n=187) waited a median of 11.4 (IQR: 1.6, 24.9) minutes, CTAS 4 (n=139) a median of 16.6 (IQR: 6.0, 29.7) minutes, and CTAS 5 (n=146) a median of 17.5 (IQR: 6.8, 37.3) minutes. Of patients subsequently categorized as CTAS 1 or 2, 20.8% waited longer than the recommended time-To-physician of 15 minutes to be triaged. Conclusions All urban EDs closely follow patients' wait times, often stratified according to triage category, which are assumed to be time-stamped upon a patient's arrival in the ED. We note that pre-Triage times exceed the CTAS recommended time-To-physician in a possibly significant proportion of patients. EDs should consider documenting times to treatment from the moment of patient arrival rather than registration.

Acute decompensated heart failure in the emergency department

Author(s): Castello L.M.; Molinari L.; Avanzi G.C.; Pirisi M.; Renghi A.; Capponi A.; Peruzzi E.

Source: Medicine (United States); Jul 2017; vol. 96 (no. 27)

Publication Type(s): Article

Abstract: Identification of clinical factors that can predict mortality and hospital early readmission in acute decompensated heart failure (ADHF) patients can help emergency department (ED) physician optimize the care-path and resource utilization. We conducted a retrospective observational study of 530 ADHF patients evaluated in the ED of an Italian academic hospital in 2013. Median age was 82 years, females were 55%; 31.1% of patients were discharged directly from the ED (12.5% after short staying in the observation unit), while 68.9% were admitted to a hospital ward (58.3% directly from the ED and 10.6% after a short observation). At 30 days, readmission rate was 17.7% while crude mortality rate was 9.4%; this latter was higher in patients admitted to a hospital ward in comparison to those who were discharged directly from the ED (12.6% vs. 2.4%, P 104 mm Hg, POS > 94%, may

guide the ED physician to identify low-risk patients who can be safely discharged directly from the emergency room or after observation unit stay.

Presumptive Treatment of Chlamydia and Gonorrhea Infections in a Canadian Ambulatory Emergency Department Setting: Determination of Overtreatment and Undertreatment Rates

Author(s): Friedland S.N.; Slapcoff B.; Dylewski J.

Source: Infectious Diseases in Clinical Practice; Jul 2017

Publication Type(s): Article In Press

Abstract:OBJECTIVES: Presumptive antibiotic treatment may be given for Chlamydia trachomatis (CT) and Neisseria gonorrhoeae (GC) infections before a laboratory diagnosis is established, but overtreatment can increase resistance rates. We sought to determine the presumptive treatment prevalence in our emergency department (ED) setting, as well as the number of overtreated and undertreated patients. METHODS: We performed a retrospective cohort study of all patients tested for CT/GC in an urban academic ED during a 6-month period in 2015. Presumptive treatment prevalence, overtreatment and undertreatment proportions, and CT- and GC-positive test proportions were calculated with 95% Wald confidence interval (CI) and compared across age and sex. RESULTS: Of 209 included cases (male n = 3, female n = 206), 27 (13%; CI, 8%-18%) received presumptive treatment for CT and 19 (9%; CI, 5%-14%) for GC. Seven cases (3%; CI, 1%-6%) were positive for CT and 0 for GC. Of the 7 CT-positive cases, 2 (29%) received presumptive treatment in the ED, and 5 (71%) were treated after the positive test results were obtained. There was no loss to follow-up. Mean delay to treatment was 10 days, including a mean of 3 days for laboratory analysis. Overtreatment and undertreatment proportions were 93% (CI, 83%-100%) and 3% (CI, 0%-5%) for CT and 100% and 0% for GC, respectively. Positive test result, presumptive treatment, overtreatment, and undertreatment were not associated with age or sex. CONCLUSIONS: Given the low CT/GC incidence and good follow-up, at our institution, it would be reasonable to wait for a laboratory diagnosis rather than give presumptive treatment.

Effect of a brief motivational intervention in reducing alcohol consumption in the emergency department: a randomized controlled trial

Author(s): Diaz Gomez C.; Ngantcha M.; Le Garjean N.; Brouard N.; Lasbleiz M.; Perennes M.

Source: European Journal of Emergency Medicine; Jul 2017

Publication Type(s): Article In Press

Abstract:BACKGROUND: Introduction to alcohol consumption early in life increases the risk of alcohol dependency and hence motivational interventions are needed in young patients visiting the emergency department (ED). AIM: This study aims to investigate the efficacy of a brief motivational intervention in reducing alcohol consumption among young ED patients. PATIENTS AND METHODS: This was a blind randomized controlled trial with follow-up at 3 months. Patients were stratified on the basis of age and blood alcohol level of 0.5 g/l or more. A total of 263 patients aged 16-24 were randomized, with 132 patients in the brief motivational intervention group and 131 in the control group, with data collection at 3 months. From September 2011 to July 2012, a psychologist performed the brief motivational intervention 5 days after the patients' discharge. A phone call was made at 1 and 2 months. The control group received a self-assessment leaflet. The reduction in consumption was determined on the basis of the number of drinks consumed in the last week prior to the survey. RESULTS: The mean reduction between number of drinks at baseline and number of drinks at 3 months in the control group was 0.3 and that in the intervention group was 0.9. This reduction in alcohol use in the brief motivational intervention group was not significant. The study did not show an association between brief motivational intervention and repeated drunkenness

[relative risk (RR): 0.99, 95% confidence interval (CI): 0.79-1.24], alcohol consumption at least once a month (RR: 0.81, 95% CI: 0.31-2.10) and alcohol consumption at least 10 times during the month (RR: 1.1, 95% CI: 0.96-1.26). CONCLUSION: We did not observe a significant decrease in alcohol consumption among the youth. Further studies are needed to confirm the positive impact of a brief motivational intervention in the ED.

Erratum to: A cohort study examining emergency department visits and hospital admissions among people who use drugs in Ottawa, Canada. [Harm Reduction Journal. 14, (2017) (16)] DOI: 10.1186/s12954-017-0143-4

Author(s): Kendall C.E.; Boucher L.M.; Mark A.E.; Bayoumi A.M.; Martin A.; Marshall Z.; Boyd R

Source: Harm Reduction Journal; Jul 2017; vol. 14 (no. 1)

Publication Type(s): Erratum

Available in full text at Harm Reduction Journal - from BioMed Central

Abstract: Upon publication of the original article [1], it was noticed that an error occurred at the beginning of the Methods section. This originally appeared as: "Among the 3500 to 600 people who use drugs in Ottawa, rates of Hepatitis C and HIV are among the highest of any major Canadian city Among Ottawa's the 3500 to 6000 people who use drugs in Ottawa, rates of Hepatitis C and HIV are among the highest of any major Canadian city [3]" This has now been updated to: "Among the 3500 to 6000 people who use drugs in Ottawa, rates of Hepatitis C and HIV are among the highest of any major Canadian city [3]."

Ketamine as a first-line treatment for severely agitated emergency department patients

Author(s): Riddell J.; Tran A.; Bengiamin R.; Armenian P.; Hendey G.W.

Source: American Journal of Emergency Medicine; Jul 2017; vol. 35 (no. 7); p. 1000-1004

Publication Type(s): Article

Abstract: Objective Emergency physicians often need to control agitated patients who present a danger to themselves and hospital personnel. Commonly used medications have limitations. Our primary objective was to compare the time to a defined reduction in agitation scores for ketamine versus benzodiazepines and haloperidol, alone or in combination. Our secondary objectives were to compare rates of medication redosing, vital sign changes, and adverse events in the different treatment groups. Methods We conducted a single-center, prospective, observational study examining agitation levels in acutely agitated emergency department patients between the ages of 18 and 65 who required sedation medication for acute agitation. Providers measured agitation levels on a previously validated 6-point sedation scale at 0-, 5-, 10-, and 15-min after receiving sedation. We also assessed the incidence of adverse events, repeat or rescue medication dosing, and changes in vital signs. Results 106 patients were enrolled and 98 met eligibility criteria. There was no significant difference between groups in initial agitation scores. Based on agitation scores, more patients in the ketamine group were no longer agitated than the other medication groups at 5-, 10-, and 15-min after receiving medication. Patients receiving ketamine had similar rates of redosing, changes in vital signs, and adverse events to the other groups. Conclusion In highly agitated and violent emergency department patients, significantly fewer patients receiving ketamine as a first line sedating agent were agitated at 5-, 10-, and 15-min. Ketamine appears to be faster at controlling agitation than standard emergency department medications.

Hypokalemia in women and methadone therapy are the strongest non-cardiologic factors associated with QT prolongation in an emergency department setting

Author(s): Marill K.A.; Miller E.S.

Source: Journal of Electrocardiology; Jul 2017; vol. 50 (no. 4); p. 416-423

Publication Type(s): Article

Abstract: Background Our primary objective was to determine the adjusted quantitative associations of clinical predictors with QT prolongation, a defining cause of Torsades de Pointes (TdP). Methods A retrospective cohort study was performed on consecutive emergency department patients identified by ECG acquisition date, and heart rate corrected QT (QTc) and QRS durations. QTc was modeled as a function of clinical predictors with multiple linear regression. Results 1010 patients were included. The strongest predictors of QTc and their coefficients were: antidysrhythmic (26.1 ms, 95% CI 15.6-36.6) and methadone (43.6 ms, 95% CI 28.1-59.2) therapies, and genetic long QT syndrome diagnosis (32.6 ms, 95% CI -4.7-70.0). The association of QTc with serum potassium was approximated by a two piecewise linear function that differed by sex. For potassium below 3.9 mmol/L, QTc increased by 43.0 ms (95% CI 26.2-59.7) and 29.5 ms (95% CI 19.1-40.0) for every 1 mmol/L decrease in potassium in women and men, respectively. TdP occurred in only 4/686 (0.6%) of patients with QTc >= 500 and QRS 500 with normal QRS often signifies profound illness and substantial mortality risk, though not necessarily imminent TdP.Copyright © 2017 Elsevier Inc.

Development and Implementation of a Comprehensive, Multidisciplinary Emergency Department Extracorporeal Membrane Oxygenation Program

Author(s): Tonna J.E.; Selzman C.H.; Koliopoulou A.; McKellar S.; Mallin M.P.; Youngquist S.T.

Source: Annals of Emergency Medicine; Jul 2017; vol. 70 (no. 1); p. 32-40

Publication Type(s): Article

Abstract: Despite advances in the medical and surgical management of cardiovascular disease, greater than 350,000 patients experience out-of-hospital cardiac arrest in the United States annually, with only a 12% neurologically favorable survival rate. Of these patients, 23% have an initial shockable rhythm of ventricular fibrillation/pulseless ventricular tachycardia (VF/VT), a marker of high probability of acute coronary ischemia (80%) as the precipitating factor. However, few patients (22%) will experience return of spontaneous circulation and sufficient hemodynamic stability to undergo cardiac catheterization and revascularization. Previous case series and observational studies have demonstrated the successful application of intra-arrest extracorporeal life support, including to out-of-hospital cardiac arrest victims, with a neurologically favorable survival rate of up to 53%. For patients with refractory cardiac arrest, strategies are needed to bridge them from out-of-hospital cardiac arrest to the catheterization laboratory and revascularization. To address this gap, we expanded our ICU and perioperative extracorporeal membrane oxygenation (ECMO) program to the emergency department (ED) to reach this cohort of patients to improve survival. In this report, we illustrate our process and initial experience of developing a multidisciplinary team for rapid deployment of ED ECMO as a template for institutions interested in building their own ED ECMO programs.Copyright © 2016 American College of Emergency Physicians

Clostridium difficile Infection Among US Emergency Department Patients With Diarrhea and No Vomiting

Author(s): Abrahamian F.M.; Talan D.A.; Krishnadasan A.; Moran G.J.; Goldstein E.J.C.; Citron D.M

Source: Annals of Emergency Medicine; Jul 2017; vol. 70 (no. 1); p. 19

Publication Type(s): Article

Abstract: Study objective The incidence of Clostridium difficile infection has increased and has been observed among persons from the community who have not been exposed to antibiotics or health care settings. Our aims are to determine prevalence of C difficile infection among emergency department (ED) patients with diarrhea and the prevalence among patients without traditional risk

factors. Methods We conducted a prospective observational study of patients aged 2 years or older with diarrhea (>=3 episodes/24 hours) and no vomiting in 10 US EDs (2010 to 2013). We confirmed C difficile infection by positive stool culture result and toxin assay. C difficile infection risk factors were antibiotic use or overnight health care stay in the previous 3 months or previous C difficile infection. We typed strains with pulsed-field gel electrophoresis. Results Of 422 participants, median age was 46 years (range 2 to 94 years), with median illness duration of 3.0 days and 43.4% having greater than or equal to 10 episodes of diarrhea during the previous 24 hours. At least one risk factor for C difficile infection was present in 40.8% of participants; 25.9% were receiving antibiotics, 26.9% had health care stay within the previous 3 months, and 3.3% had previous C difficile infection. Forty-three participants (10.2%) had C difficile infection; among these, 24 (55.8%) received antibiotics and 19 (44.2%) had health care exposure; 17 of 43 (39.5%) lacked any risk factor. Among participants without risk factors, C difficile infection prevalence was 6.9%. The most commonly identified North American pulsed-field gel electrophoresis (NAP) strains were NAP type 1 (23.3%) and NAP type 4 (16.3%). Conclusion Among mostly adults presenting to US EDs with diarrhea and no vomiting, C difficile infection accounted for approximately 10%. More than one third of patients with C difficile infection lacked traditional risk factors for the disease. Among participants without traditional risk factors, prevalence of C difficile infection was approximately 7%.

Coronary CT angiography in the emergency department utilizing second and third generation dual source CT

Author(s): Meyersohn N.M.; Szilveszter B.; Staziaki P.V.; Scholtz J.-E.; Takx R.A.P.; Hoffmann U

Source: Journal of Cardiovascular Computed Tomography; Jul 2017; vol. 11 (no. 4); p. 249-257

Publication Type(s): Article

Abstract: Background Coronary computed tomography angiography (coronary CTA) allows efficient triage of low to intermediate risk patients with suspected acute coronary syndrome (ACS) in the emergency department (ED). Techniques for coronary CTA acquisition in the ED continue to evolve with the establishment of standardized scan protocols and the introduction of newer generations of CT hardware. Objectives To evaluate qualitative and quantitative image quality and radiation dose exposure of coronary CTA acquired on 2nd versus 3rd generation dual source CT (DSCT) scanners using a standardized institutional scan protocol designed for the ED. Methods A retrospective observational case-control study was performed of 246 ED patients referred to coronary CTA with suspicion of ACS (56.5% male; mean age 53.3 +/- 11.6 years) between October 2013 and August 2015.123 consecutive patients were scanned on 3rd generation DSCT, and a cohort of 123 patients matched by age, BMI and heart rate were identified who had undergone 2nd generation DSCT imaging utilizing the same standard clinical protocol. Qualitative and quantitative image quality parameters and radiation exposures were evaluated. Results Qualitative image quality was significantly higher using 3rd generation DSCT as compared to 2nd generation (p

Syncytial Virus (RSV) in adult emergency department patients: Do emergency providers consider RSV as an admission diagnosis?. A retrospective, observational study carried out at Massachusetts General Hospital, Boston, MA

Author(s): Binder W.; Thorsen J.; Borczuk P.

Source: American Journal of Emergency Medicine; Jul 2017

Publication Type(s): Article In Press

Abstract: Background: Respiratory Syncytial Virus (RSV) has been recognized for over half a century as a cause of morbidity in infants and children. Over the past 20. years, data has emerged linking RSV

as a cause of illness in adults resulting in 177,000 annual hospitalizations and up to 14,000 deaths among older adults. Objective: Characterize clinical variables in a cohort of adult RSV patients. We hypothesize that emergency physicians do not routinely consider RSV in the differential diagnosis (DDx) of influenza like illness. Methods: Observational study of all adult inpatients, age. >=. 19, with a positive RSV swab ordered within 48. h of their hospital visit, including their emergency department (ED) visit, and who initially presented to a university affiliated urban 100,000 annual visit emergency department from 2007 to 2014. A data collection form was created, and a single trained clinical research assistant abstracted demographic, clinical variables. ED providers were given credit for RSV DDx if an RSV swab was ordered as part of the diagnostic ED workup. Results: 295 consecutive inpatients (mean age = 66.5. years, range, 19-97, 53% male) were RSV positive during the 7-year study period. 207 cases (70%) were age. >=. 60. 76 (26%) had fever, 86 (29%) had O2sat =. 60 was associated with overall mortality (p = 0.09). There were 106 (36%) immunocompromised patients (23% transplant, 40% cancer, 33% steroid use) in the cohort. A diagnosis of RSV was considered in the ED in 105 (36%) of patients. Being immunocompromised, having COPD/asthma, O2sat Copyright © 2017.

A systematic review and meta-analysis comparing mortality in pre-hospital tracheal intubation to emergency department intubation in trauma patients.

Author(s): Fevang, Espen; Perkins, Zane; Lockey, David; Jeppesen, Elisabeth; Lossius, Hans Morten

Source: Critical care (London, England); Jul 2017; vol. 21 (no. 1); p. 192

Publication Type(s): Journal Article

Available in full text at Critical care: the official journal of the Critical Care Forum [Crit Care] NLMUID: 9801902 - from EBSCOhost

Abstract:BACKGROUNDPre-hospital endotracheal intubation is frequently used for trauma patients in many emergency medical systems. Despite a wide range of publications in the field, it is debated whether the intervention is associated with a favourable outcome, when compared to more conservative airway measures.METHODSA systematic literature search was conducted to identify interventional and observational studies where the mortality rates of adult trauma patients undergoing pre-hospital endotracheal intubation were compared to those undergoing emergency department intubation.RESULTSTwenty-one studies examining 35,838 patients were included. The median mortality rate in patients undergoing pre-hospital intubation was 48% (range 8-94%), compared to 29% (range 6-67%) in patients undergoing intubation in the emergency department. Odds ratios were in favour of emergency department intubation both in crude and adjusted mortality, with 2.56 (95% CI: 2.06, 3.18) and 2.59 (95% CI: 1.97, 3.39), respectively. The overall quality of evidence is very low. Twelve of the twenty-one studies found a significantly higher mortality rate after pre-hospital intubation, seven found no significant differences, one found a positive effect, and for one study an analysis of the mortality rate was beyond the scope of the article.CONCLUSIONSThe rationale for wide and unspecific indications for pre-hospital intubation seems to lack support in the literature, despite several publications involving a relatively large number of patients. Pre-hospital intubation is a complex intervention where guidelines and research findings should be approached cautiously. The association between pre-hospital intubation and a higher mortality rate does not necessarily contradict the importance of the intervention, but it does call for a thorough investigation by clinicians and researchers into possible causes for this finding.

Quality indicators in the care of older persons in the emergency department: A systematic review of the literature.

Author(s): Burkett, Ellen; Martin-Khan, Melinda G; Gray, Leonard C

Source: Australasian journal on ageing; Jul 2017

Publication Type(s): Journal Article Review

Abstract:OBJECTIVEA systematic review of the literature was undertaken to assess the methodological quality of existing quality indicators (QIs) for the emergency department (ED) care of older persons.METHODSMEDLINE, CINAHL, EMBASE and grey literature were searched. Articles were included if they addressed ED care of persons aged ≥65 years and defined a QI amenable to influence by ED providers. The methodological quality of QIs was assessed using relevant items from the Appraisal of Indicators through Research and Evaluation and the QUALIFY tools.RESULTSSixty-one articles were included in the review, with identification of 50 QIs meeting predefined inclusion criteria. Thirty-six of fifty ED QIs for older persons were process indicators. The appraisal instruments' total ratings ranged from 39 to 67%, with only 18 QIs scoring 50% or more for all five domains.CONCLUSIONThere is a need for a balanced, methodologically robust set of QIs for care of older persons in the ED.

Prognostic accuracy of SIRS criteria, qSOFA score and GYM score for 30-day-mortality in older non-severely dependent infected patients attended in the emergency department.

Author(s): González Del Castillo, J; Julian-Jiménez, A; González-Martínez, F; Álvarez-Manzanares, J

Source: European journal of clinical microbiology & infectious diseases : official publication of the European Society of Clinical Microbiology; Jul 2017

Publication Type(s): Journal Article

Abstract: The aim of this study was to determine the accuracy of systemic inflammatory response syndrome (SIRS), quick Sepsis-related Organ Failure Assessment (qSOFA) score and GYM score to predict 30-day mortality in older non-severely dependent patients attended for an episode of infection in the emergency department (ED). We performed an analytical, observational, prospective cohort study including patients 75 years of age or older, without severe functional dependence, attended for an infectious process in 69 Spanish EDs for 2-day three-seasonal periods. Demographic, clinical and analytical data were collected. The primary outcome was 30-day mortality after the index event. We included 1071 patients, with a mean age of 83.6 [standard deviation (SD) 5.6] years; 544 (50.8%) were men. Seventy-two patients (6.5%) died within 30 days. SIRS criteria ≥ 2 had a sensitivity of 65% [95% confidence interval (CI) 53.1-75.9] and a specificity of 49% (95% CI 46.0-52.3), a qSOFA score ≥ 2 had a sensitivity of 28% (95% CI 18.2-39.8) and a specificity of 94% (95% CI 91.9-95.1), and a GYM score ≥ 1 had a sensitivity of 81% (95% CI 69.2-88.6) and a specificity of 45% (95% CI 41.6-47.9). A GYM score ≥ 1 and a qSOFA score ≥ 2 were the cut-offs with the highest sensitivity ($p < 0.001$) and specificity ($p < 0.001$), respectively. The area under the curve (AUC) was 0.73 (95% CI 0.66-0.79; $p < 0.001$) for the GYM score, 0.69 (95% CI 0.61-0.76; $p < 0.001$) for the qSOFA score and 0.65 (95% CI 0.59-0.72; $p < 0.001$) for SIRS. A GYM score ≥ 1 may be the most sensitive score and a qSOFA score ≥ 2 the most specific score to predict 30-day mortality in non-severely dependent older patients attended for acute infection in EDs.

Capsule Commentary on Klein et al., Categorical Risk Perception Drives Variability in Antibiotic Prescribing in the Emergency Department: a Mixed Methods Observational Study.

Author(s): Linder, Jeffrey A

Source: Journal of general internal medicine; Jul 2017

Publication Type(s): Journal Article

Available in full text at Journal of General Internal Medicine - from National Library of Medicine

Emergency department visits after lumbar spine surgery are associated with lower HCAHPS scores.

Author(s): Levin, Jay M; Winkelman, Robert D; Smith, Gabriel A; Tanenbaum, Joseph E; Xiao, Roy

Source: The spine journal : official journal of the North American Spine Society; Jul 2017

Publication Type(s): Journal Article

Abstract:BACKGROUNDHospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) surveys are used to assess the quality of the patient experience following an inpatient stay. HCAHPS scores are used to determine reimbursement for hospital systems and incentivize spine surgeons nationwide. There are conflicting data detailing whether early readmission or other post-discharge complications are associated with patient responses on the HCAHPS survey. Currently, the association between post-discharge ED visits and HCAHPS scores following lumbar spine surgery is unknown.PURPOSETo determine whether emergency department (ED) visits within 30 days of discharge are associated with HCAHPS scores for lumbar spine surgery patients.STUDY DESIGNRetrospective cohort study.PATIENT SAMPLE453 lumbar spine surgery patients who completed the HCAHPS survey between 2013 and 2015 at a single tertiary care center.OUTCOME MEASURESThe HCAHPS survey - the Centers for Medicare and Medicaid Services' official measure of patient experience - results for each patient were analyzed as the primary outcome of this study.METHODSAll patients undergoing lumbar spine surgery between 2013 and 2015 who completed an HCAHPS survey were studied. Patients were excluded from the study if they had been diagnosed with spinal malignancy or scoliosis. Patients who had an ED visit at our institution within 30 days of discharge were included in the ED visit cohort. The primary outcomes of this study include 21 measures of patient experience on the HCAHPS survey. Statistical analysis included Pearson chi-square for categorical variables, student t-test for normally distributed continuous variables, and Mann Whitney U test for non-parametric variables. Additionally, log-binomial regression models were used to analyze the association between ED visits within 30 days after discharge and odds of top-box HCAHPS scores. No funds were received in support of this study and the authors report no conflict of interest-associated biases.RESULTSAfter adjusting for patient-level covariates using log-binomial regression models, we found post-discharge ED visits were independently associated with lower likelihood of top-box score for several individual questions on HCAHPS. ED visits within 30 days of discharge were negatively associated with perceiving your doctor as "always" treating you with courtesy and respect (Risk Ratio (RR) 0.26, p<0.001) as well as perceiving your doctor as "always" listening carefully to you (RR 0.40, p=0.003). Also, patients with an ED visit were less likely to feel as if their preferences were taken into account when leaving the hospital (RR 0.61, p=0.008), less likely to recommend the hospital to family/friends (RR 0.46, p=0.020) and less likely to rate the hospital as a 9 or 10 out of 10, the top-box score (RR 0.43, p=0.005).CONCLUSIONSOur results demonstrate a strong association between post-discharge ED visits and low HCAHPS scores for doctor communication, discharge information and global measures of hospital satisfaction in a lumbar spine surgery population.

Telemedicine Use Decreases Rural Emergency Department Length of Stay for Transferred North Dakota Trauma Patients.

Author(s): Mohr, Nicholas M; Vakkalanka, J Priyanka; Harland, Karisa K; Bell, Amanda; Skow, Brian

Publication Date: Jul 2017

Publication Type(s): Journal Article

Abstract:BACKGROUNDTelemedicine has been proposed as one strategy to improve local trauma care and decrease disparities between rural and urban trauma outcomes.OBJECTIVESThis study was conducted to describe the effect of telemedicine on management and clinical outcomes for trauma patients in North Dakota.METHODSCohort study of adult (age ≥18 years) trauma patients treated in North Dakota Critical Access Hospital (CAH) Emergency Departments (EDs) from 2008 to 2014. Records were linked to a telemedicine network's call records, indicating whether telemedicine was available and/or used at the institution at the time of the care. Multivariable generalized estimating equations were developed to identify associations between telemedicine consultation and availability and outcomes such as transfer, timeliness of care, trauma imaging, and

mortality.RESULTSOf the 7,500 North Dakota trauma patients seen in CAH, telemedicine was consulted for 11% of patients in telemedicine-capable EDs and 4% of total trauma patients. Telemedicine utilization was independently associated with decreased initial ED length of stay (LOS) (30 min, 95% confidence interval [CI] 14-45 min) for transferred patients. Telemedicine availability was associated with an increase in the probability of interhospital transfer (adjusted odds ratio [aOR] 1.2, 95% CI 1.1-1.4). Telemedicine availability was associated with increased total ED LOS (15 min, 95% CI 10-21 min), and computed tomography scans (aOR 1.6, 95% CI 1.3-1.9).CONCLUSIONSED-based telemedicine consultation is requested for the most severely injured rural trauma patients. Telemedicine consultation was associated with more rapid interhospital transfer, and telemedicine availability is associated with increased radiography use and transfer. Future work should evaluate how telemedicine could target patients likely to benefit from telemedicine consultation.

Identifying emergency department patients with chest pain who are at low risk for acute coronary syndromes [digest].

Author(s): Markel, David; Kim, Jeremy

Source: Emergency medicine practice; Jul 2017; vol. 19 (no. 7)

Publication Type(s): Journal Article

Abstract: Though a minority of patients presenting to the emergency department with chest pain have acute coronary syndromes,identifying the patients who may be safely discharged and determining whether further testing is needed remains challenging. From the prehospital care setting to disposition and follow-up, this systematic review addresses the fundamentals of the emergency department evaluation of patients determined to be at low risk for acute coronary syndromes or adverse outcomes. Clinical risk scores are discussed, as well as the evidence and indications for confirmatory testing. The emerging role of new technologies, such as high-sensitivity troponin assays and advanced imaging techniques, are also presented. [Points & Pearls is a digest of Emergency Medicine Practice].

Characteristics and Outcomes of Patients Discharged Home from an Emergency Department with AKI.

Author(s): Acedillo, Rey R; Wald, Ron; McArthur, Eric; Nash, Danielle Marie; Silver, Samuel A

Source: Clinical journal of the American Society of Nephrology : CJASN; Jul 2017

Publication Type(s): Journal Article

Abstract:BACKGROUND AND OBJECTIVESPatients discharged home from an emergency department with AKI are not well described. This study describes their characteristics and outcomes and compares these outcomes to two referent groups.DESIGN, SETTING, PARTICIPANTS, & MEASUREMENTSWe conducted a population-based retrospective cohort study in Ontario, Canada from 2003 to 2012 of 6346 patients aged ≥40 years who were discharged from the emergency department with AKI (defined using serum creatinine values). We analyzed the risk of all-cause mortality, receipt of acute dialysis, and hospitalization within 30 days after discharge. We used propensity score methods to compare all-cause mortality to two referent groups. We matched 4379 discharged patients to 4379 patients who were hospitalized from the emergency department with similar AKI stage. We also matched 6188 discharged patients to 6188 patients who were discharged home from the emergency department with no AKI.RESULTSThere were 6346 emergency department discharges with AKI. The mean age was 69 years and 6012 (95%) had stage 1, 290 (5%) had stage 2, and 44 (0.7%) had stage 3 AKI. Within 30 days, 149 (2%) (AKI stage 1: 127 [2%]; stage 2: 15 [5%]; stage 3: seven [16%]) died, 22 (0.3%) received acute dialysis, and 1032 (16%) were hospitalized. An emergency department discharge versus hospitalization with AKI was associated with lower mortality (3% versus 12%; relative risk, 0.3; 95% confidence interval, 0.2 to 0.3). An

emergency department discharge with AKI versus no AKI was associated with higher mortality (2% versus 1%; relative risk, 1.6; 95% confidence interval, 1.2 to 2.0).CONCLUSIONSPatients discharged home from the emergency department with AKI are at risk of poor 30-day outcomes. A better understanding of care in this at-risk population is warranted, as are testing strategies to improve care.

Comparison of prehospital triage and five-level triage system at the emergency department.

Author(s): Tsai, Li-Heng; Huang, Chien-Hsiung; Su, Yi-Chia; Weng, Yi-Ming; Chaou, Chung-Hsien;

Source: Emergency medicine journal : EMJ; Jul 2017

Publication Type(s): Journal Article

Available in full text at Emergency Medicine Journal - from Highwire Press

Abstract:OBJECTIVEThere is lack of scientific evidence regarding the effectiveness of prehospital triage systems. This study compared the two-level Taiwan Prehospital Triage System (TPTS) with the five-level Taiwan Triage and Acuity Scale (TTAS) at ED arrival regarding the prediction of patient outcomes and the utilisation of medical resources.DESIGNThis was a retrospective cohort study. Adult patients transported via the emergency medical service (EMS), who arrived at the ED of a medical centre in northern Taiwan during the study period were enrolled. TTAS acuity levels 1-2 were considered comparable to the designation of 'emergent' by the prehospital TPTS system. The outcomes were analysed by comparing TPTS and TTAS by acuity levels.RESULTSAmong 4430 enrolled patients, 25.2% and 74.8% were classified as emergent and non-emergent by TPTS; 44.1% and 55.9% were classified as levels 1-2 and levels 3-5 by TTAS. Of the TPTS emergent patients, 15.2% were classified as TTAS levels 3-5, whereas 30.4% of TPTS non-emergent transports were classified as TTAS levels 1-2 at the ED. TTAS levels 1-2 showed better predictability than TPTS emergent level for hospitalisation rate with a sensitivity of 70.3% (95% CI 68.3% to 72.2%) versus 41.1% (95% CI 39.0% to 43.2%), and a negative predictive value of 74.8% (95% CI 73.4% to 76.0%) versus 62.6% (95% CI 61.7% to 63.5%).CONCLUSIONThe current prehospital triage system is insufficient and inappropriate in classifying patients transported to the ED. The present study offers supporting evidence for the introduction of a five-level triage system to prehospital EMS systems.

Evaluation of Emergency Department Management of Opioid-Tolerant Cancer Patients with Acute Pain.

Author(s): Patel, Pina M; Goodman, Lauren F; Knepel, Sheri A; Miller, Charles C; Azimi, Asma

Source: Journal of pain and symptom management; Jul 2017

Publication Type(s): Journal Article

Abstract:CONTEXTThere are no previously published studies examining opioid doses administered to opioid-tolerant cancer patients during Emergency Department (ED) encounters.OBJECTIVETo determine if opioid-tolerant cancer patients presenting with acute pain exacerbations receive adequate initial doses of PRN opioids during ED encounters based on home Oral Morphine Equivalents (OME) use.METHODSWe performed a retrospective cohort study of opioid-tolerant cancer patients who received opioids in our ED over a 2-year period. The percentage of patients that received an adequate initial dose of PRN opioid (defined as ≥10% of total 24-hour ambulatory OME) was evaluated. Logistic regression was used to establish the relationship between 24-hour ambulatory OME and initial ED OME to assess whether higher home usage was associated with higher likelihood of being undertreated.RESULTSOut of 216 patients, 61.1% of patients received an adequate initial PRN dose of opioids in the ED. Of patients taking 400 OME per day at home received an adequate dose. Patients with ambulatory 24-hour OME greater than 400 had 99% lower odds of receiving an adequate initial dose of PRN opioid in the ED compared to patients with ambulatory 24-hour OME less than 100 (OR <0.01, CI 0.00-0.02, p <0.001).CONCLUSIONSPatients with daily home

use less than 200 OME generally received adequate initial PRN opioid doses during their ED visit. However, patients with higher home opioid usage were at increased likelihood of being undertreated.

A simulation-based approach to measuring team situational awareness in emergency medicine: A multicenter, observational study.

Author(s): Rosenman, Elizabeth D; Dixon, Aurora J; Webb, Jessica M; Brolliar, Sarah;

Source: Academic emergency medicine : official journal of the Society for Academic Emergency Medicine; Jul 2017

Publication Type(s): Journal Article

Abstract:OBJECTIVESTeam situational awareness (TSA) is critical for effective teamwork and supports dynamic decision-making in unpredictable, time-pressured situations. Simulation provides a platform for developing and assessing TSA; but these efforts are limited by suboptimal measurement approaches. The objective of this study was to develop and evaluate a novel approach to TSA measurement in interprofessional emergency medicine teams.METHODSWe performed a multicenter, prospective, simulation-based observational study to evaluate an approach to TSA measurement. Interprofessional emergency medical teams, consisting of emergency medicine resident physicians, nurses, and medical student, were recruited from the University of Washington (Seattle, WA) and Wayne State University (Detroit, MI). Each team completed a simulated emergency resuscitation scenario. Immediately following the simulation, team members completed a TSA measure, a team perception of shared understanding item, and a team leader effectiveness measure. Subject matter expert reviews and pilot testing of the TSA measure provided evidence of content and response process validity. Simulations were recorded and independently coded for team performance using a previously validated measure. The relationships between the TSA measure other variables (team clinical performance, team perception of shared understanding, team leader effectiveness, and team experience) were explored. The TSA agreement metric was indexed by averaging the pairwise agreement for each dyad on a team, and then averaging across dyads to yield agreement at the team level. For the team perception of shared understanding and team leadership effectiveness measures, individual team member scores were aggregated within a team to create a single team score. We computed descriptive statistics for all outcomes. We calculated Pearson's Product-Moment Correlations to determine bivariate correlations between outcome variables with two-tailed significance testing ($p < 0.05$).RESULTSA total of 123 participants were recruited and formed 3-person teams (n = 41 teams). All teams completed the assessment scenario and post-simulation measures. Team situational awareness agreement ranged from 0.19 to 0.9 and had a mean (SD) of 0.61 (0.17). Team situational awareness correlated with team clinical performance ($p<0.05$) but did not correlate with team perception of shared understanding, team leader effectiveness, or team experience.CONCLUSIONSTeam situational awareness supports adaptive teams and is critical for high reliability organizations such as healthcare systems. Simulation can provide a platform for research aimed at understanding and measuring TSA. This study provides a feasible method for simulation-based assessment of TSA in interdisciplinary teams that addresses prior measure limitations and is appropriate for use in highly dynamic, uncertain situations commonly encountered in emergency department systems. Future research is needed to understand the development of and interactions between individual -, team -, and system (distributed) - level cognitive processes.

Hospital admission rates and emergency department use in relation to glycated hemoglobin in people with diabetes mellitus: a linkage study using electronic medical record and administrative data in Ontario.

Author(s): Birtwhistle, Richard; Green, Michael E; Frymire, Eliot; Dahrouge, Simone;

Source: CMAJ open; Jul 2017; vol. 5 (no. 3); p. E557

Publication Type(s): Journal Article

Abstract:BACKGROUNDThe Canadian Primary Care Sentinel Surveillance Network (CPCSSN) collects extensive data on primary care patients but it currently does not gather reliable information on outcomes in other settings. The objectives of this study were to link electronic medical record (EMR) data from Ontario patients in the CPCSSN with administrative data from the Institute for Clinical Evaluative Sciences (ICES), to assess the representativeness of the CPCSSN population, and to identify people with diabetes in the CPCSSN data and describe their emergency department (ED) visits and hospital admissions over a 2-year period (2010-2012) by HbA1c level.METHODSWe conducted a cross-sectional study linking 2014 Ontario CPCSSN data with ICES administrative data and a retrospective cohort study using the 2014 data extraction linked with data from the Ontario health care registry, hospital discharge abstracts and a database of emergency department visits. Demographics of CPCSSN patients were compared with those of the Ontario population. Patients with a CPCSSN diagnosis of diabetes were compared by HbA1c category for ED visits, hospital admissions and diagnosis of diabetes-related complications.RESULTSThe linkage rate was 99%. We identified 12 358 patients with diabetes, 2356 of whom were missing data on HbAIc, for a final sample of 10 002. Patients with diabetes had a mean age of 64 years. Those with a higher HbA1c were younger, more likely to be male, had a lower income, had more comorbidities and were more likely to live in rural or suburban areas than patients with a lower HbA1c. Over the study period 31.8% of patients had 1 or more ED visits and 13.7% had a hospital admission for a diabetes-related complication. Patients with HbA1c greater than 8 had significantly more hospital admissions, ED visits and diabetes-related complications than patients with a lower HbA1c .INTERPRETATIONThe linkage between EMR and administrative data was successful. In this study population, higher HbA1c values were associated with increased ED visits and hospital admissions, with an increasing gradient as HbA1c increased from less than 7% to greater than 8%.

Randomized controlled trial of emergency department initiated smoking cessation counselling and referral to a community counselling service.

Author(s): Cheung, Ka Wai; Wong, Ian Wh; Fingrut, Warren; Tsai, Amy Po Yu; Ke, Sally R

Source: CJEM; Jul 2017 ; p. 1-9

Publication Type(s): Journal Article

Abstract:OBJECTIVEWorldwide, tobacco smoke is still the leading cause of preventable morbidity and mortality. Many smokers develop chronic smoking-related conditions that require emergency department (ED) visits. However, best practices for ED smoking cessation counselling are still unclear.METHODSA randomized controlled trial was conducted to determine whether an "ask, advise, and refer" approach increases 12-month, 30-day quit rates in the stable adult ED smoking population compared to usual care. Patients in the intervention group were referred to a community counselling service that offers a quitline, a text-based program, and a Web-based program. Longitudinal intention-to-treat analyses were performed.RESULTSFrom November 2011 to March 2013, 1,295 patients were enrolled from one academic tertiary care ED. Six hundred thirty-five were allocated to usual care, and 660 were allocated to intervention. Follow-up data were available for 70% of all patients at 12 months. There was no statistically significant difference in 12-month, 30-day quit rates between the two groups. However, there was a trend towards higher 7-day quit attempts, 7-day quit rates, and 30-day quit rates at 3, 6, and 12 months in the intervention group.CONCLUSIONIn this study, there was a trend towards increased smoking cessation following referral to a community counselling service. There was no statistically significant difference. However, if ED smoking cessation efforts were to provide even a small positive effect, such an intervention may have a significant public health impact given the extensive reach of emergency physicians.

Postpartum Emergency Department Visits and Inpatient Readmissions in a Medicaid Population of Mothers.

Author(s): Ehrenthal, Deborah B; Gelinas, Katie; Paul, David A; Agiro, Abiy; Denemark, Cynthia

Source: Journal of women's health (2002); Jul 2017

Publication Type(s): Journal Article

Abstract:BACKGROUNDLittle comprehensive literature exists to broadly examine risk factors for emergency department (ED) utilization or inpatient admission after obstetrical delivery.MATERIALS AND METHODSWe conducted a retrospective cohort study of Medicaid-insured women from 2009 to 2012 who delivered at a regional perinatal center in the Mid-Atlantic. Women were included if Medicaid was the primary payer of record for the delivery and there was continuous 9-month predelivery Medicaid eligibility. Electronic obstetrical data were linked to Medicaid claims for 9-month prenatal and 6-month postpartum care following delivery. Negative binomial regression was used to examine factors associated with an ED visit; multivariable logistic regression was used to examine factors associated with hospital admission.RESULTSFollowing 4484 births, 1564 (34.9%) mothers had an ED visit, and 298 (6.6%) a hospital admission, within 6 months of delivery. Mother's race was significantly associated with both ED visits and inpatient admissions, whereas age and marital status were associated with ED use. Medical comorbidities, tobacco and substance use, cesarean delivery, and severe obstetrical morbidity were associated with both ED visits and hospital admission. In addition, both prenatal opioid use and bipolar disorder increased the odds of ED use and hospital admission.CONCLUSIONSMedical, social, and behavioral characteristics of women, as well as cesarean delivery, were associated with increased medical utilization in the postpartum.

A "Code ICU" expedited review of critically ill patients is associated with reduced emergency department length of stay and duration of mechanical ventilation.

Author(s): Durie, Matthew L; Darvall, Jai N; Hadley, Daniel A; Tacey, Mark A

Source: Journal of critical care; Jul 2017; vol. 42 ; p. 123-128

Publication Type(s): Journal Article

Abstract:PURPOSETo examine the effect of a system of expedited review of critically ill patients in the Emergency Department (ED) on ED length of stay (LOS) and Intensive Care Unit (ICU) outcomes.MATERIALS AND METHODSRetrospective cohort study at a tertiary hospital comparing two 12-month periods before and after implementation of a 'Code ICU' system of expedited review of critically ill patients in the ED. All adult ED to ICU admissions were included. Separate analyses were performed for patients intubated prior to ICU admission.RESULTS622 and 629 patients were included in each time period. During the intervention period more patients had ED LOS<240min in both the total [199 (32.0%) vs. 243 (38.6%), P=0.014; adjusted OR 1.60, 95% CI 1.14-2.25] and intubated cohorts [145 (51.2%) vs. 172 (61.9%), P=0.011; adjusted OR 1.65, 95% CI 1.16-2.36]. 'Code ICU' intubated patients had a shorter duration of mechanical ventilation, ICU LOS and hospital LOS compared to non-'Code ICU' intubated patients.CONCLUSIONSA system of rapid review of critically ill patients in the ED was associated with reduced ED LOS and improved ICU outcomes.

Effectiveness assessment of a guideline based protocol for ventilatory support management of COPD exacerbations in an emergency department.

Author(s): Plachi, Franciele; Vieira, Fernando Nataniel; Berton, Danilo Cortozi; Knorst, Marli;

Source: Brazilian journal of physical therapy; Jul 2017

Publication Type(s): Journal Article

Available in full text at Brazilian journal of physical therapy [Braz J Phys Ther] NLMUID: 101615124 - from EBSCOhost

Abstract:OBJECTIVESTo investigate clinical outcomes according to ventilatory support indication in subjects with chronic obstructive pulmonary disease exacerbation in a "real-life" Emergency Department and to analyze potential predictors of successful noninvasive positive pressure ventilation.METHODSRetrospective cohort performed over an 18-month period, comparing the following patient groups with chronic obstructive pulmonary disease exacerbation: Group A composed of patients initially selected to receive noninvasive positive pressure ventilation without the subsequent need for invasive mechanical ventilation (successful-noninvasive positive pressure ventilation); Group B composed of patients transitioning from noninvasive positive pressure ventilation to invasive mechanical ventilation (failed-noninvasive positive pressure ventilation); and Group C composed of patients who presented with immediate need for invasive mechanical ventilation (without prior noninvasive positive pressure ventilation).RESULTS117 consecutive chronic obstructive pulmonary disease exacerbation admissions (Group A=96; Group B=13; Group C=8) of candidates for ventilatory support were reviewed. No differences in baseline disease severity and physiological parameters were found between the groups at Emergency Department admission. Nevertheless, Group B had higher intensive care unit admission, length of hospital stay, length of intensive care unit stay, and higher in-hospital mortality compared to Group A. Group C also had worse outcomes when compared to Group A. The only independent variable associated with the successful use of noninvasive positive pressure ventilation were improvement in arterial carbon dioxide pressure after 1h of noninvasive positive pressure ventilation use and its tolerance.CONCLUSIONOur data confirmed in a "real life" Emergency Department cohort that successful management of chronic obstructive pulmonary disease exacerbation with noninvasive positive pressure ventilation showed lower in-hospital mortality and Intensive Care Unit stay when compared to patients transitioning from noninvasive positive pressure ventilation to invasive mechanical ventilation or patients who presented an immediate need for invasive mechanical ventilation. noninvasive positive pressure ventilation tolerance and higher arterial carbon dioxide pressure reduction after 1-h of noninvasive positive pressure ventilation were predictors of successful treatment. These results should be confirmed in a prospective randomized controlled trial.

Examining motor vehicle crash involvement and readiness to change on drinking and driving behaviors among injured emergency department patients.

Author(s): Baird, Janette; Yang, Eunice; Strezsak, Valerie; Mello, Michael J

Source: Traffic injury prevention; Jul 2017; vol. 18 (no. 5); p. 463-469

Publication Type(s): Journal Article

Abstract:OBJECTIVETo measure the effect of motor vehicle crash (MVC) involvement and readiness to change drinking and driving behaviors on subsequent driving and drinking behaviors among injured emergency department (ED) patients who use alcohol at harmful levels.METHODSThis was a secondary analysis of a randomized controlled trial of injured ED patients who screened positive for harmful alcohol use, who at recruitment reported driving in the past 12 months and received at least one of the intended intervention sessions (brief behavioral intervention versus attention placebo control; N = 407). Outcome variables were as follows: (1) change in 6 impaired driving behaviors and (2) report of MVCs and traffic violations in the 12 months following recruitment; predictor variables were as follows: (1) treatment assignment, (2) MVC involvement at recruitment, and (3) baseline readiness to change alcohol use and drinking and driving.RESULTSModeling of change in the 6 impaired driving variables indicated that neither the recruitment visits being MVC related nor baseline readiness to change alcohol use and drinking and driving behaviors predicted greater changes in impaired driving over time. Baseline reports of past moving traffic violations and the ED

visit being MVC related predicted a greater likelihood of each behavior at 12 months following study recruitment.CONCLUSIONSThis study and others have demonstrated that ED patients with harmful alcohol use are willing to engage in behavioral interventions directed at changing risky behaviors. However, this study did not demonstrate that patients considered having the potential to be more engaged with the intervention because their ED visit was MVC related and/or they had expressed intent to change their risky alcohol use and drinking and driving behaviors were more likely to change these risky behaviors.

Erratum to: A cohort study examining emergency department visits and hospital admissions among people who use drugs in Ottawa, Canada.

Author(s): Kendall, Claire E; Boucher, Lisa M; Mark, Amy E; Martin, Alana; Marshall, Zack; Boyd, Rob

Source: Harm reduction journal; Jul 2017; vol. 14 (no. 1); p. 42

Publication Type(s): Published Erratum

Available in full text at Harm Reduction Journal - from BioMed Central

Identifying Emergency Department Patients With Chest Pain who are at Low Risk for Acute Coronary Syndromes

Author(s): Markel, David

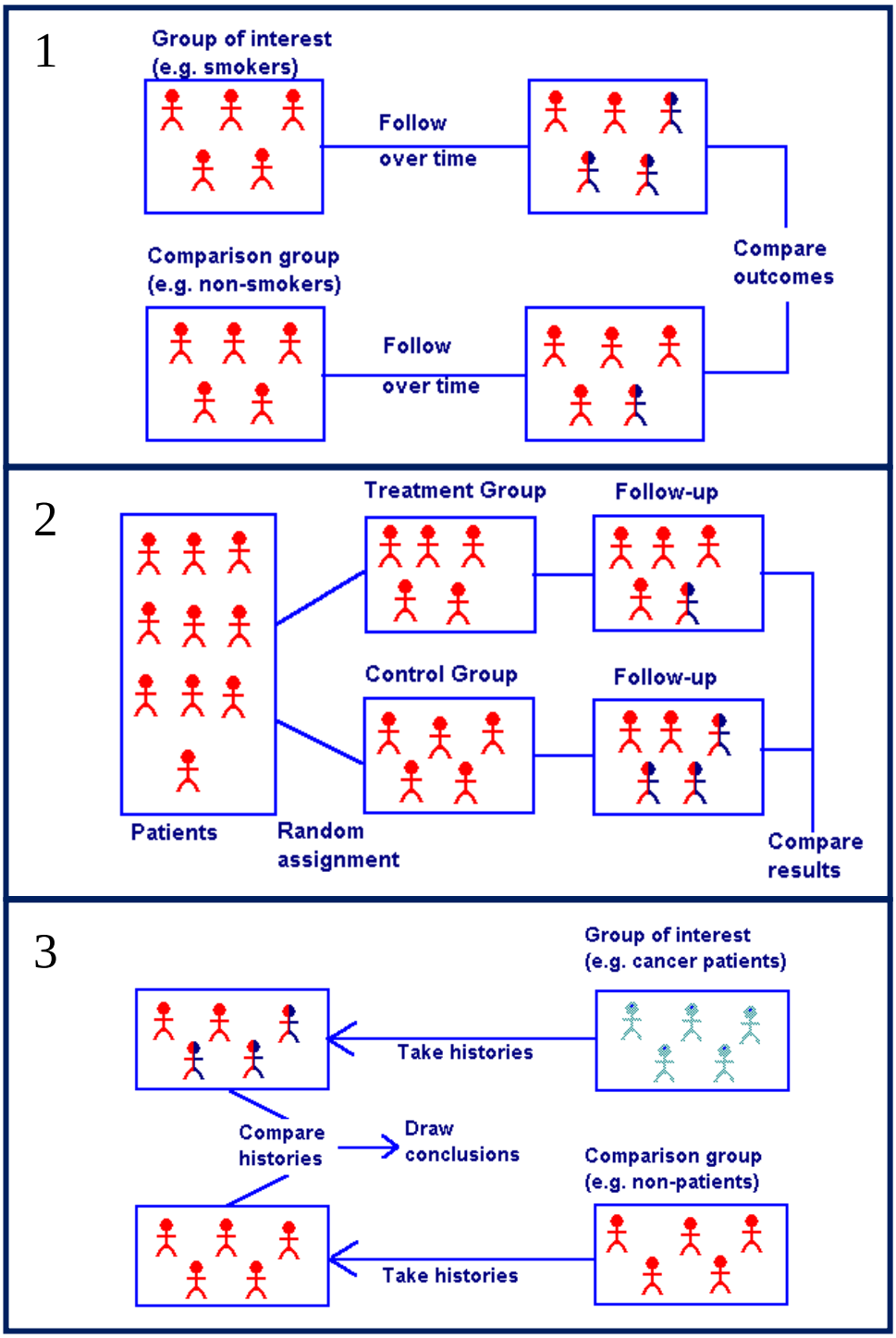
Source: Emergency medicine practice; Jul 2017; vol. 19 (no. 7); p. 1-24

Publication Type(s): Journal Article

Abstract: Though a minority of patients presenting to the emergency department with chest pain have acute coronary syndromes, identifying the patients who may be safely discharged and determining whether further testing is needed remains challenging. From the prehospital care setting to disposition and follow-up, this systematic review addresses the fundamentals of the emergency department evaluation of patients determined to be at low risk for acute coronary syndromes or adverse outcomes. Clinical risk scores are discussed, as well as the evidence and indications for confirmatory testing. The emerging role of new technologies, such as high-sensitivity troponin assays and advanced imaging techniques, are also presented.

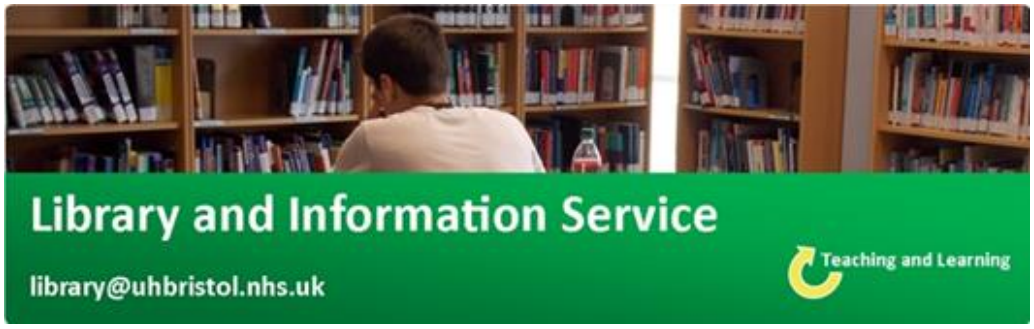
Exercise: Research Designs

Match the diagrams to the corresponding research designs.



A: Randomised Controlled Trial
B: Cohort Study
C: Case-control Study

Answers: 1B; 2A; 3C



The Library

Level 5
Education Centre
University Hospitals Bristol

Staffed: 08.00—17.00, Monday to Friday

Swipe Access: 07.00—23.00, seven days a week

Contact your Outreach Librarian:

Jo Hooper

library@uhbristol.nhs.uk

Ext. 20105