Outreach

Your Outreach Librarian can help facilitate evidence-based practise for all ED members of staff, 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.

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For more information, email: katie.barnard@uhbristol.nhs.uk

Books

Books can be searched for using SWIMS our online catalogue at www.swims.nhs.uk. Books and journals that are not available on site or electronically may be requested from other locations. Please email requests to: library@uhbristol.nhs.uk
Contents

1: Tables of Contents from July’s Emergency Medicine journals

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5: Current Awareness database articles
Tables of Contents from Emergency Medicine journals

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

Emergency Medicine Journal
July 2016, Volume 33, Issue 7

Annals of Emergency Medicine
July 2016, Volume 68, Issue 1

Academic Emergency Medicine
July 2016, Volume 23, Issue 7

European Journal of Emergency Medicine
August 2016, Volume 23, Issue 4
**New NICE Guidance**

| Tuberculosis | Reference: NG33 |

**New activity in UpToDate**

**Apneic oxygenation in adults undergoing rapid sequence intubation in the emergency department (June 2016)**

A number of techniques are used to prevent oxygen desaturation during rapid sequence intubation (RSI). One such technique involves giving oxygen passively via nasal cannula during the apneic phase of RSI. The results of a recent observational study of 635 patients being intubated in the emergency department suggest that this technique may have benefits beyond simply preventing hypoxia [10]. According to this study, the rate of first pass successful intubation without hypoxia was greater in patients managed with apneic oxygenation (82 percent) compared with patients managed without this intervention (69 percent). The improvement was due to both an increase in the rate of first pass successful intubation and a decrease in the incidence of hypoxia. While further studies are needed to confirm this finding, apneic oxygenation is a simple, beneficial intervention that should be used whenever RSI is performed in the emergency department. (See "Rapid sequence intubation for adults outside the operating room", section on 'Preoxygenation'.)
Quick Exercise

Sensitivity and Specificity

**Sensitivity:**
If a person has a disease, how often will the test be positive (true positive rate)?

If the test is highly sensitive and the test result is negative you can be nearly certain that they don’t have disease.

**Specificity:**
If a person does not have the disease how often will the test be negative (true negative rate)?

If the test result for a highly specific test is positive you can be nearly certain that they actually have the disease.

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**Quick Quiz:**

1. **A very sensitive test, when negative, helps you:**
   a: Rule-in disease
   b: Rule-out disease
   c: Confuse medical students
   d: Save money

2. **A test which is highly specific, when positive, helps you:**
   a: Rule-in disease
   b: Rule-out disease
   c: Confuse medical students
   d: Save money

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*To find out more about medical statistics, sign up for one of our training sessions. To book a session or for more details, email library@uhbristol.nhs.uk.*
Title: Effect of Aspirin on Development of ARDS in At-Risk Patients Presenting to the Emergency Department: The LIPS-A Randomized Clinical Trial.

Citation: JAMA, Jun 2016, vol. 315, no. 22, p. 2406-2414, 1538-3598 (June 14, 2016)


Abstract: Management of acute respiratory distress syndrome (ARDS) remains largely supportive. Whether early intervention can prevent development of ARDS remains unclear. To evaluate the efficacy and safety of early aspirin administration for the prevention of ARDS. A multicenter, double-blind, placebo-controlled, randomized clinical trial conducted at 16 US academic hospitals. Between January 2, 2012, and November 17, 2014, 7673 patients at risk for ARDS (Lung Injury Prediction Score ≥4) in the emergency department were screened and 400 were randomized. Ten patients were excluded, leaving 390 in the final modified intention-to-treat analysis cohort. Administration of aspirin, 325-mg loading dose followed by 81 mg/d (n = 195) or placebo (n = 195) within 24 hours of emergency department presentation and continued to hospital day 7, discharge, or death. The primary outcome was the development of ARDS by study day 7. Secondary measures included ventilator-free days, hospital and intensive care unit length of stay, 28-day and 1-year survival, and change in serum biomarkers associated with ARDS. A final α level of .0737 (α = .10 overall) was required for statistical significance of the primary outcome. Among 390 analyzed patients (median age, 57 years; 187 [48%] women), the median (IQR) hospital length of stay was 6 3-10) days. Administration of aspirin, compared with placebo, did not significantly reduce the incidence of ARDS at 7 days (10.3% vs 8.7%, respectively; odds ratio, 1.24 [92.6% CI, 0.67 to 2.31], P = .53). No significant differences were seen in secondary outcomes: ventilator-free to day 28, mean (SD), 24.9 (7.4) days vs 25.2 (7.0) days (mean [90% CI] difference, -0.26 [-1.46 to 0.94] days; P = .72); ICU length of stay, mean (SD), 5.2 (7.0) days vs 5.4 (7.0) days (mean [90% CI] difference, -0.16 [-1.75 to 1.43] days; P = .87); hospital length of stay, mean (SD), 8.8 (10.3) days vs 9.0 (9.9) days (mean [90% CI] difference, -0.27 [-1.96 to 1.42] days; P = .79); or 28-day survival, 90% vs 90% (hazard ratio [90% CI], 1.03 [0.60 to 1.79]; P = .92) or 1-year survival, 73% vs 75% (hazard ratio [90% CI], 1.06 [0.75 to 1.50]; P = .79). Bleeding-related adverse events were infrequent in both groups (aspirin vs placebo, 5.6% vs 2.6%; odds ratio [90% CI], 2.27 [0.92 to 5.61]; P = .13). Among 390 analyzed patients (median age, 57 years; 187 [48%] women), median (IQR) hospital length of stay was 6 (3-10) days. Administration of aspirin, compared with placebo, did not significantly reduce the incidence of ARDS at 7 days (OR, 1.24; 92.6%CI, 0.67-2.31). No significant differences were seen in secondary outcomes or adverse events. [table: see text] Among at-risk patients presenting to the ED, the use of aspirin compared with placebo did not reduce the risk of ARDS at 7 days. The findings of this phase 2b trial do not support continuation to a larger phase 3 trial. clinicaltrials.gov Identifier: NCT01504867.

Title: High Single-dose Vancomycin Loading Is Not Associated With Increased Nephrotoxicity in Emergency Department Sepsis Patients.

Citation: Academic emergency medicine : official journal of the Society for Academic Emergency Medicine, Jun 2016, vol. 23, no. 6, p. 744-746, 1553-2712 (June 2016)
Author(s): Rosini, Jamie M, Davis, Joshua J, Muenzer, Jeffrey, Levine, Brian J, Papas, Mia A, Comer, Dominique, Arnold, Ryan

Abstract: Vancomycin loading doses are recommended; however, the risk of nephrotoxicity with these doses is unknown. The primary objective of this study was to compare nephrotoxicity in emergency department (ED) sepsis patients who received vancomycin at high doses (>20 mg/kg) versus lower doses (≤20 mg/kg). A retrospective cohort study was performed in three academic EDs. Inclusion criteria were age ≥ 18 years, intravenous vancomycin order, and hospital admission. Exclusion criteria were no documented weight, hemodialysis-dependent, and inadequate serum creatinine (SCr) values for the measured outcome. Analyses compared the incidence of nephrotoxicity for patients who received vancomycin at high dose (>20 mg/kg) versus low dose (≤20 mg/kg). A total of 2,131 consecutive patients prescribed vancomycin over 6 months were identified. Of these, 1,330 patients had three SCr values assessed for the primary outcome. High-dose initial vancomycin was associated with a significantly lower rate of nephrotoxicity (5.8% vs. 11.1%). After age, sex, and initial SCr were adjusted for, the risk of high-dose vancomycin compared to low-dose was decreased for the development of nephrotoxicity (relative risk = 0.60; 95% confidence interval = 0.44 to 0.82). Initial dosing of vancomycin > 20 mg/kg was not associated with an increased rate of nephrotoxicity compared with lower doses. Findings from this study support compliance with initial weight-based vancomycin loading doses.

Title: Diagnostic packages can be assigned accurately in emergency departments. A multi-centre cohort study.

Citation: Danish medical journal, Jun 2016, vol. 63, no. 6, 2245-1919 (June 2016)

Author(s): Nørgaard, Birgitte, Mogensen, Christian Backer, Teglbjærg, Lars Stubbe, Brabrand, Mikkel, Lassen, Annmarie Touborg

Abstract: In the Region of Southern Denmark, the emergency departments categorise patients based on presenting symptoms and a proposed diagnostic package (n = 40) within each category. The diagnostic packages describe relevant clinical information and standard laboratory and other investigations to be performed. Allocation to the right diagnostic package is assumed to be associated with a higher quality. The aim of this study was to describe to which degree the assigned symptom-based diagnostic packages are related to relevant discharge diagnoses. This was a descriptive cohort study. The analysis was based on data on assigned diagnostic package, patient discharge diagnosis, hospital, gender, age, time of admission and discharge, length of stay, diagnostic package assigned, discharge diagnosis and co-morbidity. An acceptable standard for what would be an appropriate primarily diagnostic package was developed using a modified Delphi method. A total of 16,543 patient contacts were identified. Women constituted 52.2% (n = 8,925) of the patients. The median age was 64 years and the median length of stay was one day. All diagnostic packages were represented. A total of 68% of the included patients had been assigned an acceptable diagnostic package (95% confidence interval: 67.2-68.7). We found an appropriate use of one of 30 diagnostic packages in more than 50% of the cases. We found that 68% of the included patients were assigned an acceptable diagnostic package and that about 80% of all acute pathways were covered by 14 diagnostic packages. The study was funded by Region of Southern Denmark. The study was registered with the Danish Data Protection Agency (No. 2008-58-0035). No further approval was required.
**Title:** Observation Services Linked With an Urgent Care Center in the Absence of an Emergency Department: An Innovative Mechanism to Initiate Efficient Health Care Delivery in the Aftermath of a Natural Disaster.

**Citation:** Disaster medicine and public health preparedness, Jun 2016, vol. 10, no. 3, p. 405-410, 1938-744X (June 2016)

**Author(s):** Caspers, Christopher, Smith, Silas W, Seth, Rishi, Femia, Robert, Goldfrank, Lewis R

**Abstract:** The emergency department (ED) of NYU Langone Medical Center was destroyed by Hurricane Sandy, contributing to a public health disaster in New York City. We evaluated hospital-based acute care provided through the establishment of an urgent care center with an associated ED-run observation service (EDOS) that operated in the absence of an ED during this disaster. We conducted a retrospective cohort study of all patients placed in an EDOS following a visit to an urgent care center during the 18 months of ED closure. We reviewed diagnoses, clinical protocols, selection criteria, and performance metrics. Of 55,723 urgent care center visits, 15,498 patients were hospitalized, and 3167 of all hospitalized patients (20.4%) were placed in the EDOS. A total of 2660 EDOS patients (84%) were discharged from the EDOS. The 8 most frequently utilized clinical protocols accounted for 76% of the EDOS volume. A diverse group of patients presenting to an urgent care center following the destruction of an ED by natural disaster can be cared for in an EDOS, regardless of association with a physical ED. An urgent care center with an associated EDOS can be implemented to provide patient care in a disaster situation. This may be useful when existing ED or hospital resources are compromised.

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**Title:** A pilot randomized clinical trial of an intervention to reduce overdose risk behaviors among emergency department patients at risk for prescription opioid overdose.

**Citation:** Drug and alcohol dependence, Jun 2016, vol. 163, p. 40-47, 1879-0046 (June 1, 2016)

**Author(s):** Bohnert, Amy S B, Bonar, Erin E, Cunningham, Rebecca, Greenwald, Mark K, Thomas, Laura, Chermack, Stephen, Blow, Frederic C, Walton, Maureen

**Abstract:** Prescription opioid overdose is a significant public health problem. Interventions to prevent overdose risk behaviors among high-risk patients are lacking. This study examined the impact of a motivational intervention to reduce opioid misuse and overdose risk behaviors. This study was a pilot randomized controlled trial set in a single emergency department (ED) in which, 204 adult, English-speaking patients seeking care who reported prescription opioid misuse during the prior 3 months were recruited. Patients were randomized to either the intervention, a 30-minute motivational interviewing-based session delivered by a therapist plus educational enhanced usual care (EUC), or EUC alone. Participants completed self-reported surveys at baseline and 6 months post-baseline (87% retention rate) to measure the primary outcomes of overdose risk behaviors and the secondary outcome of non-medical opioid use. Participants in the intervention condition reported significantly lower levels of overdose risk behaviors (incidence rate ratio [IRR]=0.72, 95% CI: 0.59-0.87; 40.5% reduction in mean vs. 14.7%) and lower levels of non-medical opioid use (IRR=0.81, 95% CI: 0.70-0.92; 50.0% reduction in mean vs. 39.5%) at follow-up compared to the EUC condition. This study represents the first clinical trial of a behavioral intervention to reduce overdose risk. Results indicate that this single motivational enhancement session reduced prescription opioid overdose risk behaviors, including opioid misuse, among adult patients in the ED.

**Title:** Outcome at 30 days for low-risk chest pain patients assessed using an accelerated diagnostic pathway in the emergency department.
**Citation:** Emergency medicine Australasia : EMA, Jun 2016, vol. 28, no. 3, p. 279-286, 1742-6723 (June 2016)

**Author(s):** Meek, Robert, Braitberg, George, Cullen, Louise, Than, Martin, Graudins, Andis, Glynn, Deirdre

**Abstract:** Primary: to determine incidence of 30 day major adverse cardiac events (MACE) in patients discharged from the ED following assessment using an accelerated diagnostic pathway (ADP). Secondary: to determine incidence of 30 day MACE for all ADP patients. Monash Health ED patients thought at low risk for acute myocardial infarction (AMI) or hospital admission are assessed using an ADP, based on arrival and 90 min point-of-care (POC) cardiac troponin I and myoglobin concentration. Other patients are assessed using a traditional pathway of arrival and 6 h central lab cardiac troponin I. Choice of pathway is based on the clinical judgement of the attending ED doctor. To investigate the safety of the ADP component, an observational study of all ADP patients presenting from 6 June 2013 to 30 September 2013 was conducted. After 30 days, occurrence of MACE was determined by examination of hospital records or telephone contact with patients who had not returned. Of 1547 eligible patients, 1384 (89.5%) were followed up. Of the 1143 discharged patients with follow-up information, 30 day MACE occurred in one (0.09%, 95% CI 0.002-0.5). Of all 1547 patients, 60 patients had a MACE detected: 56 AMI during the initial attendance, four AMI post-discharge (one from ED, three after hospital admission). In total, of the 1328 patients who did not have AMI during the target admission and were followed up, 30 day post-discharge MACE occurred in four patients (0.3%, 95% CI 0.08-0.8). The ADP supports safe, early discharge of low-risk chest pain patients from the ED.

**Title:** Human factors in the emergency department: Is physician perception of time to intubation and desaturation rate accurate?

**Citation:** Emergency medicine Australasia : EMA, Jun 2016, vol. 28, no. 3, p. 295-299, 1742-6723 (June 2016)

**Author(s):** Cemalovic, Nail, Scoccimarro, Anthony, Arslan, Albert, Fraser, Robert, Kanter, Marc, Caputo, Nicholas

**Abstract:** The main objective of the present study was to examine the perceived versus actual time to intubation (TTI) as an indication to help determine the situational awareness of Emergency Physicians during rapid sequence intubation and, additionally, to determine the physician’s perception of desaturation events. A timed, observation prospective cohort study was conducted. A post-intubation survey was administered to the intubating physician. Each step of the procedure was timed by an observer in order to determine actual TTI. The number of desaturation events was also recorded. One hundred individual intubations were included. The provider perceived TTI was significantly different and underestimated when compared with the actual TTI (23 s, 95% confidence interval (CI) 20.4-25.49 vs 45.5 s, 95% CI 40.2-50.7, P < 0.001, respectively). Pearson correlation coefficient of perceived TTI to actual TTI was r(2) = 0.39 (95% CI 0.21-0.54, P < 0.001). The provider perceived desaturation rate was also significantly different from actual desaturation rate (13, 95% CI 3-12 vs 23, 95% CI 13-29, P = 0.05, respectively). The overall time to desaturation was 65.1 s. Our findings have shown that provider’s perception of TTI occurs sooner than actually observed. Also, the providers were less aware of desaturation during the procedure.

**Title:** Mortality and prognostic factors of patients who have blood cultures performed in the emergency department: a cohort study.
Citation: European journal of emergency medicine : official journal of the European Society for Emergency Medicine, Jun 2016, vol. 23, no. 3, p. 166-172, 1473-5695 (June 2016)

Author(s): Lindvig, Katrine P, Nielsen, Stig L, Henriksen, Daniel P, Jensen, Thøger G, Kolmos, Hans Jørn, Pedersen, Court, Vinholt, Pernille J, Lassen, Annmarie T

Abstract: Early identification and treatment of patients with severe infection improve their prognosis. The aims of this study were to describe the 30-day mortality and to identify prognostic factors among blood-cultured patients in a medical emergency department (MED). This was a hospital-based cohort study including all adult (≥15 years old) blood-cultured patients at the MED at Odense University Hospital between 1 August 2009 and 31 August 2011. During the study period, 5499/11 988 (45.9%) patients had blood cultures performed within 72 h of arrival and were included in the study. Of those included, 2631 (47.8%) were men, median age 69 years (range 15-103), and 418 (7.6%) were diagnosed with bacteraemia. The overall 30-day mortality among blood-cultured patients was 11.0% (10.2-11.9). In a multivariate Cox regression model, age of more than 80 years [hazard ratio (HR) 4.6 (95% CI 3.6-6.0)], at least two organ failure [HR 3.6 (2.9-4.5)], bacteraemia [HR 1.4 (1.1-1.8)], Charlson Comorbidity Index of at least 2 h [HR 1.7 (1.3-2.0)], SIRS [HR 1.5 (1.2-1.7)], a history of alcohol dependency [HR 1.7 (1.3-2.3)] and late drawing of blood cultures 24-48 h after arrival [HR 1.7 (1.3-2.2)] were found to be prognostic factors of mortality among blood-cultured patients in the MED. Among blood-cultured patients in the MED, we found an 11.0% overall 30-day mortality. Factors associated with 30-day mortality were age more than 80 years, at least two organ failure, bacteraemia, Charlson Comorbidity Index of at least 2, SIRS, a history of alcohol dependency and late drawing of blood cultures.


Citation: Headache, Jun 2016, vol. 56, no. 6, p. 911-940, 1526-4610 (June 2016)

Author(s): Orr, Serena L, Friedman, Benjamin W, Christie, Suzanne, Minen, Mia T, Bamford, Cynthia, Kelley, Nancy E, Tepper, Deborah

Abstract: To provide evidence-based treatment recommendations for adults with acute migraine who require treatment with injectable medication in an emergency department (ED). We addressed two clinically relevant questions: (1) Which injectable medications should be considered first-line treatment for adults who present to an ED with acute migraine? (2) Do parenteral corticosteroids prevent recurrence of migraine in adults discharged from an ED? The American Headache Society convened an expert panel of authors who defined a search strategy and then performed a search of Medline, Embase, the Cochrane database and clinical trial registries from inception through 2015. Identified articles were rated using the American Academy of Neurology's risk of bias tool. For each medication, the expert panel determined likelihood of efficacy. Recommendations were created accounting for efficacy, adverse events, availability of alternate therapies, and principles of medication action. The search identified 68 unique randomized controlled trials utilizing 28 injectable medications. Of these, 19 were rated class 1 (low risk of bias), 21 were rated class 2 (higher risk of bias), and 28 were rated class 3 (highest risk of bias). Metoclopramide, prochlorperazine, and sumatriptan each had multiple class 1 studies supporting acute efficacy, as did dexamethasone for prevention of headache recurrence. All other medications had lower levels of evidence. Intravenous metoclopramide and prochlorperazine, and subcutaneous sumatriptan should be offered to eligible adults who present to an ED with acute migraine (Should offer-Level B). Dexamethasone should be offered to these patients to prevent recurrence of headache (Should
Title: Effectiveness of Emergency Department Based Palliative Care for Adults with Advanced Disease: A Systematic Review.

Citation: Journal of palliative medicine, Jun 2016, vol. 19, no. 6, p. 601-609, 1557-7740 (June 2016)

Author(s): da Silva Soares, Duarte, Nunes, Cristina Moura, Gomes, Barbara

Abstract: Emergency departments (EDs) are seeing more patients with palliative care (PC) needs, but evidence on best practice is scarce. To examine the effectiveness of ED-based PC interventions on hospital admissions (primary outcome), length of stay (LOS), symptoms, quality of life, use of other health care services, and PC referrals for adults with advanced disease. We searched five databases until August 2014, checked reference lists/conference abstracts, and contacted experts. Eligible studies were controlled trials, pre-post studies, cohort studies, and case series reporting outcomes of ED-based PC. Five studies with 4374 participants were included: three case series and two cohort studies. Interventions included a screening tool, traditional ED-PC, and integrated ED-PC. Two studies reported on hospital admissions: in one study there was no statistically significant difference in 90-day readmission rates between patients who initiated integrated PC at the ED (11/50 patients, 22%) compared to those who initiated PC after hospital admission (179/1385, 13%); another study showed a high admission rate (90%) in 14 months following ED-PC, but without comparison. One study showed an LOS reduction (mean 4.32 days in ED-initiated PC group versus 8.29 days in postadmission-initiated group; p < 0.01). There was scarce evidence on other outcomes except for conflicting findings on survival: in one study, ED-PC patients were more likely to experience an interval between ED presentation and death >9 hours (OR 2.75, 95% CI 2.21-3.41); another study showed increased mortality risk in the intervention group; and a case series described a higher in-hospital death rate when PC was ED-initiated (62%), compared to ward (16%) or ICU (50%) (unknown p-value). There is yet no evidence that ED-based PC affects patient outcomes except for indication from one study of no association with 90-day hospital readmission but a possible reduction in LOS if integrated PC is introduced early at ED rather than after hospital admission. There is an urgent need for trials to confirm these findings alongside other potential benefits and survival effects.

Title: Patterns of Emergency Department Use Among Long-Stay Nursing Home Residents With Differing Levels of Dementia Severity.

Citation: Journal of the American Medical Directors Association, Jun 2016, vol. 17, no. 6, p. 541-546, 1538-9375 (June 1, 2016)

Author(s): LaMantia, Michael A, Lane, Kathleen A, Tu, Wanzhu, Carnahan, Jennifer L, Messina, Frank, Unroe, Kathleen T

Abstract: To describe emergency department (ED) utilization among long-stay nursing home residents with different levels of dementia severity. Retrospective cohort study. Public Health System. A total of 4491 older adults (age 65 years and older) who were long-stay nursing home residents. Patient demographics, dementia severity, comorbidities, ED visits, ED disposition decisions, and discharge diagnoses. Forty-seven percent of all long-stay nursing home residents experienced at least 1 transfer to the ED over the course of a year. At their first ED transfer, 36.4% of
the participants were admitted to the hospital, whereas 63.1% of those who visited the ED were not. The median time to first ED visit for the participants with advanced stage dementia was 258 days, whereas it was 250 days for the participants with early to moderate stage dementia and 202 days for the participants with no dementia (P = .0034). Multivariate proportional hazard modeling showed that age, race, number of comorbidities, number of hospitalizations in the year prior, and do not resuscitate status all significantly influenced participants' time to first ED visit (P < .05 for all). After accounting for these effects, dementia severity (P = .66), years in nursing home before qualification (P = .46), and gender (P = .36) lost their significance. This study confirms high rates of transfer of long-stay nursing home residents, with nearly one-half of the participants experiencing at least 1 ED visit over the course of a year. Although dementia severity is not a predictor of time to ED use in our analyses, other factors that influence ED use are readily identifiable. Nursing home providers should be aware of these factors when developing strategies that meet patient care goals and avoid transfer from the nursing home to the ED. Copyright © 2016 AMDA – The Society for Post-Acute and Long-Term Care Medicine. Published by Elsevier Inc. All rights reserved.

Title: STARD-compliant article: The utility of red cell distribution width to predict mortality for septic patients visiting the emergency department.

Citation: Medicine, Jun 2016, vol. 95, no. 24, p. e3692., 1536-5964 (June 2016)

Author(s): Chen, Chun-Kuei, Lin, Shen-Che, Wu, Chin-Chieh, Chen, Li-Min, Tzeng, I-Shiang, Chen, Kuan-Fu

Abstract: Sepsis is a common condition in the emergency department that is associated with high mortality. Red blood cell distribution width (RDW) has been used as a simple prognosis predictor for patients with community-acquired pneumonia, gram-negative bacteremia, and severe sepsis or septic shock. To evaluate the performance of RDW to predict in-hospital mortality among septic patients, we conducted a hospital-based retrospective cohort study in an emergency department of a tertiary teaching hospital. RDW was compared with other commonly used clinical prediction scores (Systemic Inflammatory Response Syndrome (SIRS), Mortality in Emergency Department Sepsis (MEDS) and the Confusion, Urea nitrogen, Respiratory rate, Blood pressure, 65 years of age and older (CURB65)). Of 6973 consecutive adult patients with a clinical diagnosis of sepsis and 2 sets of blood culture ordered by physicians, 477 (6.8%) died. The mortality group had higher RDW levels than the survival group (15.7% vs 13.8%). After dividing RDW into quartiles, the patients in the highest RDW quartile (RDW >15.6%; mortality, 16.7%) had more than twice the risk of in-hospital mortality compared with patients in the second highest quartile (RDW >14% and <15.6%; mortality, 7.3%), whereas the mortality rate in the lowest RDW quartile (<13.1%) was only 1.6%. The area under the receiver operating characteristic curve of RDW to predict mortality was 0.75 (95% confidence interval, 0.72-0.77), which is significantly higher than the areas under the curve of clinical prediction rules (SIRS, MEDS, and CURB65). After integrating RDW into these scores, all scores performed better in predicting mortality (0.73, 0.72, and 0.77, for SIRS, MEDS, and CURB65, respectively). RDW could be an independent predictor of mortality among septic patients. Clinicians could classify the septic patients into different risk groups according to RDW quartiles. For more accurate mortality prediction, RDW could be a potential parameter to be incorporated into clinical prediction rules.

Title: Impact of an emergency medicine pharmacist on antibiotic dosing adjustment.

Citation: The American journal of emergency medicine, Jun 2016, vol. 34, no. 6, p. 980-984, 1532-8171 (June 2016)
**Author(s):** DeWitt, Kyle M, Weiss, Steven J, Rankin, Shannon, Ernst, Amy, Sarangarm, Preeyaporn

**Abstract:** Overall medication-related errors in the emergency department (ED) are 13.5 times more likely to occur in the absence of an emergency medicine pharmacist (EMP). Although the effectiveness of pharmacist-driven renal dosing adjustment has been studied in the intensive care unit, data are lacking in the ED setting. The aim of our study was to evaluate the appropriateness of antibiotic dosing when an EMP is physically present in the ED compared to when absent. This was a retrospective cohort study of patients treated in a level I trauma center with 75 adult and 12 pediatric beds and an annual census of 90000 patients. The study period was from March 1 to September 30, 2014. An EMP was physically present in the ED from 11:00 to 01:30 and absent from 01:31 to 10:59. Male and female patients 18 years and older were considered for inclusion if cefazolin, cefepime, ciprofloxacin, piperacillin-tazobactam, or vancomycin was ordered. The primary outcome was the composite rate of correct antibiotic dose and frequency. Statistics included a multivariable logistic regression using age, sex, presence of EMP, and creatinine clearance as independent predictors of correct antibiotic use. A total 210 cases were randomly chosen for evaluation, half during times when EMPs were present and half when they were absent. There were 130 males (62%) with an overall mean age of 54±18 years. Overall, 178 (85%) of 210 of the antibiotic orders were appropriate, with 95% appropriate when an EMP was present compared to 74% when an EMP was absent (odds ratio, 6.9; 95% confidence interval, 2.5-18.8). In a logistic regression model, antibiotic appropriateness was independently associated with the presence of the EMP and creatinine clearance. Antibiotics that require renal and/or weight dosing adjustment are 6.5 times more likely to be appropriate in the ED when an EMP is present. Prevalence of antibiotic dosing error is related to both the presence of EMPs and the degree of renal impairment.

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**Upcoming Lunchtime Drop-in Sessions**

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**July (1pm)**
- Tue 5th: Critical Appraisal
- Wed 13th: Statistics
- Thurs 21st: Information resources
- Fri 29th: Literature Searching

**August (12pm)**
- Tue 2nd: Critical Appraisal
- Wed 10th: Statistics
- Thurs 18th: Information resources
- Fri 26th: Literature Searching
The Library

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University Hospitals Bristol

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Contact the Emergency Medicine Outreach librarian:

katie.barnard@uhbristol.nhs.uk

www.uhbristol.nhs.uk/for-clinicians/

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