The testing of 505 Greek health care professionals on pulse oximetry resulted in a mean test score of only 62%.

**Background:** Pulse oximetry, as a simplified, noninvasive method to gauge a patient's oxygenation, has become the standard of care in multiple clinical settings. In fact, $\text{SpO}_2$ (oxygen saturation) has, arguably, become the 5th vital sign. However, do health care professionals know its principles of operation, limitations, and indications?

**Objective:** To assess pediatric health care professionals' knowledge about pulse oximetry.

**Design:** Prospective analysis.

**Participants:** 505 pediatric health care professionals ensconced in 19 hospitals and other health care centers (pediatricians, 37%; family practitioners, 28.3%; and RNs, 34.7%).

**Methods:** A multiple choice questionnaire was developed and validated by 5 clinical experts to assess the participant's knowledge of $\text{SpO}_2$, principles of operation, limitations, and indications in pediatric medicine.

**Results:** Of the 330 physicians studied, 42.7% were specialists and 57.3% were residents. Work experience for the entire group was a mean of 9.5 years (median, 7 years). The majority of those studied believed that their knowledge about pulse oximetry was good enough to guarantee patient safety. The questionnaire was divided into 2 parts. Part 1 was "practical knowledge" about asthma exacerbation, motion artifact, hypoxemia, shock, cardiac rhythm, and nail polish. Part 2 was involved with "theoretical knowledge" (carboxyhemoglobinemia, hyperoxemia, jaundice, anemia, pulse recognition, methemoglobinemia, and laryngitis). The mean test score was 61.9%. The mean test score on "practical knowledge" was 82.7%. However, the mean test score evaluating "theoretical knowledge" was 44.2%. Both pediatricians and family practitioners scored better than registered nurses. Similarly, those working in an ICU setting and a level 3 hospital also scored better.

**Conclusions:** Pediatric health care professionals have significant deficiencies with regard to the principles and limitations surrounding pulse oximetry, and specific educational strategies are suggested to remediate the situation.

**Reviewer's Comments:** Since this study emanates from Greece, one could argue about its applicability in the United States. However, we must consider that if there are educational deficiencies in the land of Aristotle and Socrates, how arrogant can we be? Nevertheless, a similar study in this country would be instructive. (Reviewer-Paul P. Rega, MD).

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Keywords: Pulse Oximetry, Physician Knowledge, Pediatrics

Print Tag: Refer to original journal article
Conscientious Management Decreases Hospital Door-to-ICU Time

Hospitalist Bed Management Effecting Throughput From the Emergency Department to the Intensive Care Unit.

Howell E, Bessman E, et al:

J Crit Care 2010; 25 (June): 184-189

A hospitalist team focused on bed management can dramatically reduce emergency department-to-unit times.

**Background:** Patients in the emergency department (ED) who require ICU admission are in critical conditions. Increasing the speed in which these critical patients are transferred to the ICU improves their outcome.

**Objective:** The authors implement the "active bed management" (ABM) intervention to try and reduce ED length of stay for patients requiring medical or coronary ICU admission.

**Design:** Pre-post study design.

**Methods:** The authors compared data from the same 4 consecutive months before and after implementing ABM. Hospitalists were in charge of executing the ABM. They worked in 12 hour shifts, 24/7. Three additional physicians were added full time to devote time to implement the ABM process. The group made triage decisions and facilitated patient transfers from the ED; they had a proactive department that frequently analyzed flow and bed management in the ED and ICU. A senior level hospital bed director was created. Continuous assessment was performed by attending physicians, nursing supervisors, and charge nurses. The bed situation was assessed in real time, and patients could be transferred and downgraded when identified to free beds. The hospitalist would also regularly visit the ED to assess congestion and flow. The expectation was that an ICU patient would be transferred to the unit within 90 minutes. Throughput time from ED presentation to ICU admission was analyzed. ICU bounce backs, transfer rated, and death rates were calculated.

**Results:** The implementation of ABM reduced time to ICU bed by 99 ±14 minutes (353 minutes in the control group to 254 minutes in the post-intervention; \( P <0.0001 \)). Length of stay, staffing, case mix index, ICU death, and transfer rates were stable across the 2 periods (all \( P = ns \)). Subsequently, there was a significant reduction in the hours the ED spent on diversion after the implementation of ABM.

**Conclusions:** The conscientious management of critical care beds can have a substantial impact on the throughput of critical patients from the ED to the ICU. Patient satisfaction and safety is likely positively impacted by this efficiency.

**Reviewer's Comments:** With ED overcrowding and ED inpatient boarding, it is no wonder critical patients do worse when subjected to a prolonged ED stay. While this is not a randomized controlled trial, it is not a stretch to believe that increased effort and manpower can actually make a change. As for the nitty-gritty though, does the increased time and cost make such efforts worthwhile? There was no change in death rates or length of stay for the critical patients. But the benefits? Patient satisfaction, ED physician satisfaction, and the gains made by reduced ambulance diversion are likely substantial. (Reviewer-Gretchen S. Lent, MD).

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Keywords: Bed Control, Emergency Department Crowding, Intensive Care Unit, Hospitalist

Print Tag: Refer to original journal article
Scabies May Be an Overlooked Fellow Traveler Presenting to Your ED
Factors Related to Missed Diagnosis of Incidental Scabies Infestations in Patients Admitted Through The Emergency Department to Inpatient Services.
Hong M-Y, Lee C-C, et al:

Acad Emerg Med 2010; 17 (September): 958-964

Incidental scabies is easily overlooked in a busy emergency department environment.

**Background:** Scabies is a huge worldwide problem; at any given moment, approximately 300 million people are affected worldwide. Scabies is especially prevalent among debilitated and vulnerable individuals living in crowded conditions, such as long-term care facilities, prisons, group homes, and others. It is a highly contagious condition that requires prompt recognition and aggressive infection control measures to prevent further transmission and outbreaks. Emergency department (ED) patient populations represent a vulnerable target group and a potential transmission reservoir.

**Objective:** To evaluate clinical and administrative correlates associated with missed diagnosis of scabies in an ED.

**Participants/Methods:** A retrospective study was made of patients with incidental scabies infestations admitted to a university hospital via the ED during a 4-year period. Patients referred to the ED specifically for treatment of scabies were excluded as were patients whose chief complaint and findings at triage were suggestive of the condition. Cases were identified through a review of electronic orders specifying gamma-benzene hexachloride treatment or infection control orders.

**Results:** Over the 48-month review period, 135 inpatients were identified as having incidental scabies; of these, 111 (82%) had presented to the ED. The average ED length of stay for admitted patients was 14 hours at this institution during the study interval. Incidental scabies were diagnosed during their ED stay in 39 of the 111 patients (35%) and missed in 72 patients (65%). No geographic clusters suggestive of nosocomial scabies transmission were registered, but 160 medical workers and 1 hospitalized patient received prophylactic treatment due to direct skin-to-skin contact with inpatient scabies cases during the study period. Overcrowding (odds ratio [OR], 8.4; 95% CI, 1.9 to 38.0) and time constraints (OR, 8.2; 95% CI, 1.9 to 34.7) in the ED were associated with a missed diagnosis of scabies during ED stay. Patients who presented with lower illness severity scores were at higher risk for missed incidental scabies prior to hospital admission (OR, 5.7; 95% CI, 1.6 to 20.9).

**Conclusions:** ED overcrowding, time constraints, and less severe illness compromise recognition of scabies in the ED.

**Reviewer's Comments:** As we enter a new era of commensalism between overcrowded humanity and the world of tiny animals (as per our evolving bedbug conflict), remember that many patients we see in EDs are precisely the ones especially susceptible to infestations, and are (at least theoretically) vectors for hospital-wide contamination and the consequent expenses of prophylactic antibiotic treatment and infection control measures. ED staff should be especially alert for signs of scabies infestations. This study only evaluated cases that happened to be diagnosed during the course of hospitalization; how many inpatients were missed is unknown. Therefore, these findings, ominous as they are, may very well understate the dimensions of the problem. (Reviewer—Steven B. Abrams, MD).

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Keywords: Scabies, Diagnosis, Crowding, Emergency Department

Print Tag: Refer to original journal article
Dosing of propofol for induction may be more effective based on actual, rather than adjusted, body weight in the morbidly obese.

**Background:** Induction of anesthesia in the morbidly obese patient usually centers on airway concerns, positioning, and associated comorbid conditions. The induction drugs are often less a focus despite the fact that there are few studies that specifically examine the effect of morbid obesity on drug requirements for induction.  

**Objective:** To evaluate the efficacy and safety of 350 mg versus 200 mg of propofol for induction of anesthesia in morbidly obese patients undergoing bariatric surgery. The authors chose 350 mg based on the fact that the median weight in their bariatric clinic is 140 kg, and 2.5 mg/kg is a commonly used induction dose.  

**Design:** Prospective, blinded, randomized study.  

**Participants:** 20 morbidly obese ASA II or III adult patients undergoing bariatric surgery were included. The patients also had to have normal renal and hepatic function. Weight ranged from 98 to 167 kg, and all patients had a body mass index (BMI) >35 kg/m².  

**Methods:** All patients had routine monitors plus an arterial line and a bispectral index (BIS) electrode placed for the induction of anesthesia. The induction dose was given over 60 seconds via a TIVA pump. Anesthesia was maintained with propofol, atracurium, and remifentanil. If induction was felt to be inadequate, a second bolus dose of 100 mg of propofol could be given. Hemodynamic parameters were recorded. Patients were instructed to count at the beginning of the induction injection. The induction time was defined as the interval from the start of injection until the patient quit counting. Ease of laryngoscopy was also recorded.  

**Results:** Predictably, BIS values decreased in all patients but were lower in the group that received the higher dose of propofol between 2.5 and 5 minutes after injection. Induction time was not significantly different between the 2 groups, however. Hemodynamic profiles demonstrated a trend toward a higher systolic blood pressure in the lower dose group in the first 10 minutes after induction. Only 1 patient in the 350-mg group had a systolic blood pressure <60 mm Hg. Quality of laryngoscopy was equivalent. All of the patients in the 350-mg group had an adequate induction, but 2 individuals in the 200-mg group required an additional bolus of propofol. Almost two-thirds of the patients in the lower dose group had blood pressures that were considered high and possibly harmful.  

**Conclusions:** The authors conclude that 200 mg of propofol in un-premedicated morbidly obese patients is inadequate in terms of efficacy of induction. They suggest that a dose cap of 350 mg seems more appropriate with further studies being needed using weight-based dosing without a dose cap.  

**Reviewer’s Comments:** The effective blood volume and volume of distribution of many drugs, not just anesthesia induction drugs, in the morbidly obese is a topic that needs continued research. (Reviewer-Allen Miranda, MD).
The induction of bronchospasm in an infant receiving nebulized 3% hypertonic saline is extremely low.

**Background:** Viral bronchiolitis accounts for 20% of hospitalizations for infants <1 year of age, and there is no consensus as to therapy. However, several studies indicate that a nebulized 3% saline solution may be beneficial. The rationale is that the solution promotes mucociliary clearance. However, because of the perceived risk that the solution may exacerbate bronchospasm, most studies administer the solution with a bronchodilator.

**Objective:** To determine the rate of adverse events for nebulized 3% hypertonic saline without bronchodilators in the treatment of infants with bronchiolitis.

**Design:** Retrospective cohort analysis.

**Participants:** 154 patients met inclusion criteria; their mean was 5.2 months.

**Methods:** The participants were hospitalized, and their medical records were analyzed. In addition to receiving nebulized hypertonic saline, the patients also received standard bronchiolitic therapy, such as steroids, bronchodilators, etc. Therapy was individualized based on patient and treating physician. The main outcome measure was any adverse reaction associated with the administration of nebulized 3% saline solution. Other evaluated measures included respiratory distress scores, timing of bronchodilators in relation to the hypertonic saline administration, transfer to a higher level of care, and readmission within 3 days of discharge.

**Results:** Within the study population, 444 doses of nebulized 3% saline solution were administered of which 377 (85%) were given without bronchodilators. There was a 1.0% adverse event rate (4/377; 95% CI, 0.3% to 2.8%). Three of the 4 consisted of excessive coughing. One 6-week-old infant developed bronchospasm (decreased oxygenation and increased respiratory rate; 0.3%; 95% CI, <0.01% to 1.6%). Of the 4, only 2 had reactions that prompted discontinuation of the nebulized 3% saline solution for the duration of the hospitalization. Because of the myriad interventions on these patients, the efficacy of nebulized 3% saline solution alone was not studied. However, respiratory scores improved for 89% and worsened for 1% of 211 doses administered. Rates of other therapies, transfer to a higher level of care, readmissions, etc were equivalent between those who received nebulized 3% saline solution and those who did not.

**Conclusions:** Nebulized 3% saline solution without bronchodilators has a low rate of adverse events in the treatment of infants with bronchiolitis.

**Reviewer's Comments:** From the perspective of Emergency Medicine, the issue is not whether nebulized 3% saline solution by itself can be administered safely without a bronchodilator. The issue is whether nebulized 3% saline solution is at least as therapeutic as other bronchiolitic modalities (unproven as they may be). That is the next question that requires study. (Reviewer-Paul P. Rega, MD).

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Keywords: Nebulized Hypertonic Saline, Bronchodilators, Bronchitis, Children

Print Tag: Refer to original journal article
Increasing age, immobility, surgery, and pregnancy are associated with a positive D-dimer.

**Background/Objective:** Because of their low specificity, plasma D-dimer assays can increase radiographic testing for pulmonary embolism (PE). This study aims to determine what factors may be associated with a positive D-dimer to aid clinicians to better target test for PE.

**Design:** Multicenter, prospective, observational study.

**Participants:** All emergency department (ED) patients who had D-dimer testing for evaluation of a PE.

**Methods:** D-dimers used for other evaluations, such as deep venous thromboembolism (DVT) alone, were not included. Twelve EDs throughout the U.S. participated. Potential predictors were collected prospectively at the time of PE evaluation. These included demographics, medical history, medications etc. A positive D-dimer was the main outcome measure. Both true- and false-positive results were included. D-dimer assays differed between participating institutions, and the cutoff values were defined by the institution. Odds ratios, confidence intervals, and relative risk were calculated.

**Results:** D-dimer testing was evaluated in 4,346 patients. The mean age of participants was 48 years; 67% were women, 34% were black, 57% were white, and 6% were Hispanic. D-dimers were positive 44% of the time. The predictors that were significant for a positive D-dimer were increasing age, female sex, black race, immobility, cocaine use, hemodialysis, hemoptysis, active malignancy, lupus, rheumatoid arthritis, sickle cell disease, prior thromboembolism not undergoing treatment, pregnancy, postpartum state, and recent surgery (within 4 weeks). The use of warfarin was protective. Interestingly, the following were not associated with a positive D-dimer: elevated body mass index, family history of PE, inactive malignancy, estrogen use, thrombophilia, recent trauma (within 4 weeks and requiring hospitalization), travel (>6 hours within 4 weeks), and prior thromboembolism under treatment. Results were similar when including only false-positive D-dimers.

**Conclusions:** A positive D-dimer is associated with many factors. The usefulness of ordering this test based on these factors should be considered.

**Reviewer's Comments:** The very complicated decision tree for the diagnosis of PE just got more complicated. Hopefully, this information will someday fit into a neat and simple algorithm, but until then, the easy diagnosis of the elusive PE is still somewhere far out there. (Reviewer-Gretchen S. Lent, MD).

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Keywords: D-dimer, Pulmonary Embolism, False Positive, Venous Thromboembolism, Testing

Print Tag: Refer to original journal article
Timeliness Outweighs Type of Treatment in STEMI Patients

Association Between Timeliness of Reperfusion Therapy and Clinical Outcomes in ST-Elevation Myocardial Infarction.

Lambert L, Brown K, et al:

JAMA 2010; 303 (June 2): 2148-2155

In the current day management of STEMI patients, far too few patients are treated within the recommended time windows.

Background: Reperfusion therapy is the standard for ST-segment elevation myocardial infarction (STEMI), and the earlier the treatment in STEMI patients, the better the survival. In STEMI patients receiving thrombolytic therapy, the arrival time (door) to treatment time (needle) should be ≤30 minutes. In patients receiving primary percutaneous coronary intervention (PCI), the door-to-treatment time (balloon in vessel) should be ≤90 minutes. The relevance of timeliness of reperfusion therapy in the real world is uncertain.

Objective: To assess the impact of the timeliness of reperfusion therapy in a province-wide evaluation of STEMI care.

Methods: Between October 2006 and March 2007, all 80 acute care hospitals in Quebec prospectively collected STEMI data including timing of reperfusion (thrombolytics or PCI) and 30-day outcomes. Over 95% of STEMI patients were included. The primary outcome was the impact of timeliness of reperfusion on 30-day mortality.

Results: Of the 1832 STEMI patients, 78.6% received PCI and 21.4% received thrombolytics. Among PCI patients, only 32% had a door-to-balloon time <90 minutes. Among patients admitted to a PCI center, 57% were treated within 90 minutes. Among transferred STEMI patients, only 19% had a door-to-balloon time <90 minutes. For thrombolytic patients, 46% had a door-to-needle time within 30 minutes. Among STEMI patients treated with thrombolytics, the odds ratio (OR) for 30-day death was 2.75 for those with a door-to-needle time >30 minutes compared with those with <30 minutes. Among STEMI patients treated with PCI, the OR for 30-day death was 1.87 for those with a door-to-balloon time >90 minutes compared to those with <90 minutes. Untimely thrombolytics was associated with a higher death risk than timely PCI. Untimely PCI was associated with a higher death risk than timely thrombolytics. Timeliness of reperfusion had a greater impact on 30-day mortality than the type of reperfusion received.

Conclusions: In current day management of STEMI patients, far too few are treated within the recommended time windows.

Reviewer's Comments: This study shows the importance of salvaging myocardium as expeditiously as possible. In current day practice, far too few patients receive timely reperfusion therapy. Although PCI has become the predominant treatment for STEMI patients, practitioners should not forget the life-saving benefits of thrombolytics since <1 in 5 STEMI patients transferred from the community to a PCI center has a door to balloon time <90 minutes. These patients should be receiving thrombolytic therapy in the community, and then transferred to a PCI center in case the patient has not clinically reperfused. Alternatively, we should set up PCI centers for the treatment of STEMI patients where suspected STEMI patients are brought directly to these sites. (Reviewer-Steven P. Schulman, MD).

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Keywords: Thrombolytic Therapy, ST-Segment Elevation MI, Percutaneous Coronary Intervention

Print Tag: Refer to original journal article
**Background:** Acute gastroenteritis (AGE) is a common malady within the emergency department (ED) patient population, especially the pediatric subset. The question remains how best to measure the severity of disease in a manner that can be validated, objective, and used for follow-up assessment. One scale, a 20-point scale described by Ruuska and Vesikari, has become a popular instrument but has not been rigorously tested.

**Objective:** To develop and evaluate an AGE scoring instrument for ease of use, that allows for prospective evaluation, and meets validation criteria.

**Design:** Prospective analysis.

**Participants:** 415 children (age range, 3 to 48 months) with AGE who were seen in a pediatric ED were included.

**Methods:** The modified Vesikari Score (MVS) was developed and replaced the variable “percent of dehydration” with “future health care visits” (less subjective). The components of the MVS are: diarrhea duration, days: 0 days (0 points), 1 to 4 days (1 point), 5 days (2 points), >5 days (3 points); most stools in 24 hours: 0 stools (0 point), 1 to 3 stools (1 point), 4 to 5 stools (2 points), and >5 stools (3 points); vomiting duration, days: 0 (0 points), 1 day (1 point), 2 days (2 points), and >2 days (3 points); most vomit episodes (24 hours): 0 episodes (0 points), 1 episode (1 point), 2 to 4 episodes (2 points), and >4 episodes (3 points); highest rectal temperature, °C: <37.0 °C (0 points), 37.1 to 38.4 °C (1 point), 38.5 to 38.9 °C (2 points), and >38.9 °C (3 points); and health-care provider visits: 0 (0 points), outpatient visits (2 points), and ED visits (3 points). The subjects had been evaluated in 1 of 11 pediatric EDs. The caregivers recorded pertinent findings relative to the MVS in a diary, and they and their diaries were re-evaluated at follow-up 2 weeks later. Validity of the instrument was done by correlating total MVS score with other proxy outcomes (eg, missed days of work or day care) and consistency between and among ED sites.

**Results:** Evaluating the 415 subjects who were available for follow-up, it was determined that based upon a Cronbach alpha of 0.59, the internal reliability of the MVS was acceptable. The disease severity correlated with day and work absenteeism, and the MVS scores were evenly distributed among the 11 EDs; there was no difference in scores from site to site.

**Conclusions:** The MVS appears to be an adequate tool to evaluate severity of AGE and should undergo more rigorous testing in future studies.

**Reviewer's Comments:** This paper's principal objective was to validate the MVS. However, once we accept that validation, it is fairly obvious to see that it can be used in triage to provide an objective adjunct as to what has been happening to the baby in the past few days. It also allows the ED the ability to do a telephone follow-up on these patients when they are discharged. Good public relations and good patient care at the same time. What a concept! (Reviewer-Paul P. Rega, MD).

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Keywords: Acute Gastroenteritis, Evaluation, Outpatients, Modified Vesikari Score

Print Tag: Refer to original journal article
Five percent of American physicians manage >25% of all acute care visits and 50% of acute care visits by the uninsured.

**Background:** For generations, general practitioners provided first-contact care in the United States. While there is wide agreement that the delivery of acute care for newly arising health problems has changed dramatically over the past decades, modern patterns of care have not been formally analyzed.

**Objective:** To determine where, when, and why Americans seek treatment for an acute health problem.

**Methods:** An analysis was conducted of 3 federal retrospective ambulatory care surveys: the National Ambulatory Medical Care Survey (NAMCS) of office visits; the National Hospital Ambulatory Medical Care Survey outpatient department subsample; and the National Hospital Ambulatory Medical Care Survey emergency department subsample. These are stratified, multistage, probability samples of outpatient encounters in the United States. Each assigns a weight to sampled observations to generate nationally representative estimates. Results were aggregated for all surveys, with most data from 2001 to 2004.

**Results:** Records for 387,746 visits were evaluated. Extrapolation suggested that only 42% of 354 million annual visits for acute care of a newly arising health condition are made to a personal care physician (PCP). Nationally, <5% of doctors are emergency physicians, yet we handle >25% of all acute care encounters (28%) and >50% of such visits by the uninsured. Specialists (20%) and outpatient departments (7%) account for the remainder. The most common ED complaint is stomach/abdominal pain, followed by chest pain, fever, cough, headache, and respiratory issues. The most common general/family practice complaints are coughs, throat problems, and rashes. Most ED visits occur on weekends or on a weekday after office hours. Overall, approximately 52% of patients presenting to EDs have private insurance or Medicare and presumably have no fiscal impediment precluding care at an alternative site; including Medicaid brings this proportion to >70%.

**Conclusions:** A minority of all acute care visits involve a patient's PCP.

**Reviewer's Comments:** There it is; <50% of acute care visits are managed by a patient's PCP, with the lion's share managed by a relative handful of doctors, namely us. Even people who theoretically could afford to go elsewhere come to us. Emergency medicine will own the franchise for the evaluation of complex undifferentiated complaints, since we turn no person away, offer unscheduled visits, and frequently own the technology anyway that outpatients are otherwise waiting months to obtain by referral. The internal medical culture of today regards an unscheduled office visit as an irritant and potentially time-consuming workday disruption. The Patient Protection and Affordable Care Act has several provisions intended to improve access to primary care. We'll see. Our behavior is ethically pure – all are welcome. Whether primary care doctors, clinics, and so-called patient-centered medical "homes" will step up to our standard remains to be seen. (Reviewer-Steven B. Abrams, MD).

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Keywords: Emergency Department Use, Acute Care

Print Tag: Refer to original journal article
The e-Imaging Coalition is a broadly representative assemblage of companies, each having a stake in the commercialization and co-modification of decision support. The coalition has succeeded in convincing the federal government, after passage of the Omnibus health care act, that diagnostic evaluations can be programmed through interactive computer prompts that will not just guide but also compel primary care physicians to follow the supposedly most efficacious imaging paradigm. These prescriptions will be based on set decisions as derived from Appropriateness Criteria directives. The benefit, it is presumed, will be quicker and more decisive, and incisive workups will save discomfort, time, and money while reducing cost and risk. However, by this reductive approach, heedless of patient and physician predilection, detailed history, and other intangibles that often inform good and humane practice, e-Imaging has with it the prospect of doing at least as much harm as good. (Reviewer-).

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Keywords: Decision Making, Support

Print Tag: Refer to original journal article
Acute bacterial meningitis is a rare etiologic factor in pediatric complex febrile seizures.

**Background:** Complex febrile seizures (CFS) account for 25% to 30% of febrile seizures in the pediatric population. The features typically associated with CFS may include duration >15 minutes, serial seizure episodes within a limited time span, recurrences within 24 hours, focal seizures (including tonic-clonic movements, loss of muscle tone, unilateral, head/eye deviation, and seizures with transient unilateral paralysis). While there has been a growing body of research linking CFS with genetic, metabolic, and/or structural abnormalities, the concern remains that CFS may be the only manifestation of acute bacterial meningitis (ABM) despite the development of vaccines for common etiologies like *Haemophilus influenza* and streptococci.

**Objective:** To determine the likelihood of an ABM in previously healthy children who present to the emergency department (ED) with their first CFS.

**Design:** Retrospective cohort analysis.

**Participants:** 526 children aged 6 to 60 months who presented to the ED between 1995 and 2008 with CFS were included; their median age was 17 months, and 44% were female.

**Methods:** Computer and manual chart reviews were initiated for the 13-year period of all children presenting with their first CFS. Patients with a specific nonfebrile seizure history or immunosuppressed or with trauma were among those excluded. Apart from the usual demographics, data collected included history of simple febrile seizures (SFS), temperature, family history, physical examination, and laboratory/imaging results.

**Results:** 90 patients (17%) had a history of SFS. Of the 526 patients, 340 (64%) had a lumbar puncture (LP). In the CFS group, 227, 90, and 67 had predominantly multiple seizures, laterality, and prolonged duration, respectively. Some had 2 or 3 manifestations. For the study group, the median corrected CSF white blood cell (WBC) count was 1 cell/µL. Fourteen patients had documented CSF pleocytosis (2.7%; 95% CI, 1.5 to 4.5). Three patients had ABM (0.9%; 95% CI, 0.2 to 2.8). Two grew out *Streptococcus pneumoniae* from the CSF. One, a 4-year-old, presented as nonresponsive. Another, an 11-month-old, presented with a bulging fontanel and was apneic. The LP in the third, a 7-month-old, was unsuccessful, but blood cultures grew out *S. pneumoniae*. For the other infants with CFS and who had no LP, none returned to the ED with a subsequent diagnosis of ABM (0%; 95% CI, 0 to 0.9)

**Conclusions:** It is extremely rare to have a child with CFS to have ABM as an explanation in the absence of other signs and symptoms.

**Reviewer's Comments:** What does this study do for the emergency physician? While the risk of ABM in patients with CFS is low and while the study may hand you a legal life-jacket and while the vaccines are making ABM obsolete, one should wait for more studies that support this one (Reviewer-Paul P. Rega, MD).

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Keywords: Complex Febrile Seizures, Acute Bacterial Meningitis, Children, Lumbar Puncture

Print Tag: Refer to original journal article
Save coagulation studies for difficult-to-control epistaxis or for patients with risk factors.

**Background:** The role of routine assessment of the coagulation profile in patients with epistaxis is controversial.

**Objective:** To investigate the extent to which a clotting screen obtained in adult patients presenting with epistaxis alters management.

**Design:** Prospective case series set in an academic medical center in the United Kingdom.

**Methods:** Clinical data were evaluated for 100 consecutive patients with epistaxis admitted directly by otolaryngologists over a 1-year period. These findings were compared with a retrospective audit of epistaxis patients presenting to the emergency department (ED) during the same period. The clotting screen included prothrombin time (PT), international normalized ratio (INR), and activated partial thromboplastin time (aPTT).

**Results:** 45 male and 55 female epistaxis patients were admitted by otolaryngologists to their specialty floor. Most admitted patients had ≥2 comorbidities including hypertension, ischemic heart disease, and atrial fibrillation. Forty-seven of the admitted patients were on aspirin, 19 were on warfarin, and 12 were on clopidogrel. Even though only 19 were on warfarin, a clotting screen was done for 80 patients, of whom only 2 (2.5%) had an abnormal INR per guidelines, described as "mildly elevated" by the authors. No treatment decisions were altered by these results. In the ED, a total of 356 patients presented with epistaxis during the study period, of whom 138 (39%) had their clotting screen checked. Of these 138 patients, only 42 (30%) were on warfarin. Of all tested patients, only 6 patients (4%) had an abnormal result outside the normal or expected range, and 3 of these patients were not on any anticoagulants. Overall, 200/356 ED patients were discharged, of whom 16% had a screen performed.

**Conclusions:** A routine clotting profile does not alter epistaxis management in patients with no risk factors or with a stable warfarin dosage.

**Reviewer's Comments:** Now if we can just get the epistaxis/high blood pressure sacred cow on to the grill, we can eat for a year. Note that this is not specifically a warfarin and epistaxis investigation, so in that case, sure, a routine screen rarely alters management. The real issue is when, not why, although there are education issues for doctors ordering INRs for patients not on warfarin. An uncomplicated patient responding to local measures and packing does not need testing to guide acute management. Intractable bleeds get evaluated more fully. Warfarin changes the equation; acute management may be perfectly successful without labs, but the INR may be useful for subsequent pharmacologic management of the patient. Warfarin is a commonly implicated drugs in adverse drug events, and problematic for many reasons. Its’ pharmacokinetics are tricky, since the INR you see today is the warfarin taken days ago. (Reviewer- Steven B. Abrams, MD).

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**Keywords:** Anticoagulation, Complications, Epistaxis, Warfarin, Adverse Effects

**Print Tag:** Refer to original journal article