

Methods: A comprehensive review of the literature was conducted surrounding decision-making for incapacitated and unrepresented patients in the hospital setting. Articles were identified using MEDLINE (1946–October 2015) and Embase (1974–October 2015). The reference lists of relevant articles were hand searched. Articles describing decision-making processes that have been proposed, tested or applied in practice were chosen for full review. The aim of this review was to outline recognized medical decision-making processes for incapacitated and unrepresented patients, and to identify areas for future research. **Results:** The search yielded 20 articles addressing decision-making for incapacitated and unrepresented patients in the hospital setting. All of these articles focus on the intensive care unit and other hospital wards; no literature on the ED setting was found. Five types of formal consulting bodies exist to assist physicians in applying the best interest standard for this patient cohort: internal hospital ethics committees, external ethics committees, public guardians, court-appointed guardians, or judges. The majority of decisions for these patients, however, are made informally by a single physician or by a healthcare team, although it is well recognized that this approach lacks appropriate safeguards. There is no consensus surrounding the optimal approach to decision-making in these cases, and as such there is significant inconsistency in how medical decisions are made for these patients. **Conclusion:** There are several articles describing decision-making processes for incapacitated and unrepresented patients, none of which focus on the ED. These processes are not practical for use in the ED. Further inquiry is needed into the most ethical and respectful method of decision-making for this patient cohort in the ED.

Keywords: ethics, geriatrics

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Limited variation in diagnostic imaging use among emergency department physicians

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Introduction: Use of diagnostic imaging in the emergency department (ED) has significantly increased over time. The decision to use a certain type of imaging, if any at all, is not always clear. Accordingly, concerns of appropriateness are justified. A starting point to assess imaging appropriateness is to measure variation in its use. It has been suggested that where large variation exists, there may be inappropriate use. **Methods:** We retrospectively studied consecutive ED visits at North York General Hospital between April 1, 2009 and March 31, 2013 ($n = 316,251$), and developed a two-level hierarchical logistic regression model to quantify inter-physician variation in imaging use (high-cost imaging: computed tomography (CT), magnetic resonance (MR), nuclear medicine; low-cost: plain radiography, ultrasound) in the ED after adjusting for patient-, visit- and physician-level factors. **Results:** Plain radiography or ultrasound examinations were performed during 36.3% of ED visits; CT, MR, or nuclear medicine examinations were performed during 10.6% of ED visits; 4.1% of ED visits had both high- and low-cost imaging. After adjusting for patient-, visit- and physician-specific factors, only 2.4% and 2.2% of the variation regarding whether or not an ED visit resulted in at least one high-cost and low-cost imaging test, respectively, was attributable to individual physician practice patterns. Physicians who had a tendency to obtain more low-cost imaging also obtained more high-cost imaging, and those who obtained less low-cost imaging also obtained less high-cost imaging. **Conclusion:** Only a small portion of the variation in imaging use was attributed to differences in ED physician ordering patterns,

however, these findings may still help promote discussion among clinicians, and improve imaging utilization.

Keywords: variation, case-mix adjustment, hierarchical logistic regression

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The anticoagulated trauma patient: a Canadian experience in the era of direct oral anticoagulants

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Introduction: The anticoagulated trauma patient is a particularly vulnerable population. Our current practice is guided by experience with patients taking vitamin K dependent antagonists (VKA, like warfarin). It is currently unknown how the increasing use of direct oral anticoagulants (DOACs) will change our trauma population. We collected data about this new subset of patients to compare their clinical characteristics to patients on pre-injury VKA therapy. **Methods:** Retrospective review of anticoagulated trauma patients presenting to Toronto's two adult trauma centres, Saint Michael's Hospital and Sunnybrook Health Sciences Centre, from June 2014–June 2015 was undertaken. Patients were recruited through the institutions' trauma registries and were eligible if they suffered a traumatic injury and taking an oral anticoagulant pre-injury. Clinical and demographic data were extracted by a trained reviewer and analysed with descriptive statistics. **Results:** Our study recruited 85 patients, 33% were taking DOACs and 67% VKAs. Trauma patients on DOACs & VKAs respectively had similar baseline characteristics such as age (75.9 vs 77.4), initial injury severity score (ISS (16.9 vs 20.6)) and concomitant antiplatelet use (7.1% vs 5.4%). Both groups' most common mechanism for injury was falls and the most common indication for anticoagulation was atrial fibrillation. Patients on DOACs tended to have lower average INR (1.25 vs 2.3) and serum creatinine (94.9 vs 127.4). **Conclusion:** Patients on DOACs pre-injury now account for a significant proportion of orally anticoagulated trauma patients. Patients on DOACs tended to have less derangement of basic hematological parameters complicating diagnosis and management of coagulopathy.

Keywords: direct oral anticoagulants, bleeding

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Retrospective review of microbiology results in adult patients presenting to the emergency department with acute epididymitis

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Introduction: North American practice guidelines for empiric antibiotic selection in the treatment of epididymitis are based on very small studies. These guidelines recommend antibiotic selection based on age. This study's objective was to determine if culture results in a Canadian emergency department population with acute epididymitis support these guidelines. **Methods:** We conducted an electronic health records review ED patients with a discharge diagnosis of epididymitis. All patients who presented to two emergency department sites of the Ottawa Hospital from 2012 through 2014 were included. Data collected were patient age, urine culture results, results of urine or urethral swab nucleic acid amplification test (NAAT) for gonorrhoea or chlamydia, and results of scrotal ultrasound. Ultrasound radiology reports were independently reviewed by two authors and classified as positive, negative, or indeterminate. **Results:** We identified 379 cases of epididymitis. There were