within 24 hours Process Measure Time from availability of culture results from lab to completion of patient follow-up Balancing Measure Number of positive culture results not displayed in ED server Change Idea Electronically push positive culture results to an ED server that is periodically checked daily and acted upon. An electronic interface was created to capture positive results from the microbiology lab in real time. **Results:** There was a 45 hour reduction in the mean time to complete a patients follow-up of culture results (59 hours pre vs. 14 hours post, p = 0.03). We surpassed our aim of >80% follow-up within 24 hours. **Conclusion:** A significant reduction to completing a patients follow-up of microbiology culture results was achieved by automating the availability of results and eliminating the manual process previously used in relaying results from the microbiology lab to ED. This new process has the following benefits: 1) Improves timely reporting of culture results to patients, that may require initiation or change in antibiotics 2) Enhanced patient safety due to elimination of human error 3) Decreased workload due to elimination of batching of results and data entry 4) Entire process is streamlined, since only positive culture results are transmitted for follow-up.

Keywords: quality improvement and patient safety, microbiology culture results, follow-up

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Using electronic health record data to assess emergency medicine trainees independent and interdependent performance: a qualitative perspective on measuring what matters

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Introduction: Competency-based medical education (CBME) affirms that trainees will receive timely assessments and effective feedback about their clinical performance, which has inevitably raised concerns about assessment burden. Therefore, we need ways of generating assessments that do not rely exclusively on faculty-produced reports. The main object of this research is to investigate how data already collected in the electronic health record (EHR) might be meaningfully and appropriately used for assessing emergency medicine (EM) trainees independent and interdependent clinical performance. This study represents the first step in exploring what EHR data might be utilized to monitor and assess trainees clinical performance **Methods:** Following constructivist grounded theory, individual semi-structured interviews were conducted with 10 EM faculty and 11 EM trainees, across all postgraduate years, to identify EHR performance indicators that represent EM trainees independent and interdependent clinical actions and decisions. Participants were presented with a list of performance indicators and asked to comment on how valuable each would be in assessing trainee performance. Data analysis employed constant comparative inductive methods and occured throughout data collection. **Results:** Participants created, refined, and eliminated performance indicators. Our main result is a catalogue of clinical performance indicators, described by our participants, as reflecting independent and/or interdependent EM trainee performance that are believed to be captured within the EHR. Such independent indicators include: number of patients seen (according to CTAS levels), turnaround time between when a patient is signed up for and first orders are made, number of narcotics prescribed. Meanwhile, interdependent indicators include, but are not limited to, length of stay, bounce-back rates, ordering practices, and time to fluids. **Conclusion:** Our findings document a process for developing EM trainee report cards that incorporate the perspectives of clinical faculty and trainees. Our work has important implications for distinguishing between independent and interdependent clinical performance indicators.

Keywords: electronic health records, postgraduate education, performance indicators

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How available is availability bias? Examining factors that influence diagnostic error

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Introduction: Cognitive bias is often cited as an explanation for diagnostic errors. Of the numerous cognitive biases currently discussed in the literature, availability bias, defined as the current case reminds you of a recent similar example is most well-known. Despite the ubiquity of cognitive biases in medical and popular literature, there is surprisingly little evidence to substantiate these claims. The present study sought to measure the influence of availability bias and identify contributing factors that may increase susceptibility to the influence of a recent similar case. **Methods:** To investigate the role of prior examples and category priming on diagnostic error at different levels of expertise, we devised a 2 phase experiment. The experimental intervention was in a validation phase preceding the test, where participants were asked to verify a diagnosis which was either i) representative of Diagnosis A, and similar to a test case, ii) representative of Diagnosis A and dissimilar to a test case, iii) representative of Diagnosis B and similar to a test case. The test phase consisted of 8 written cases, each with two approximately equally likely diagnoses (A or B). Each participant verified 2 cases from each condition, for a total of 6. They then diagnosed all 8 test cases; the remaining 2 test cases had no prior example. All cases were counterbalanced across conditions. Comparison between Condition i) and ii) and no prior showed effect of prior exemplar; comparison between iii) and no prior showed effect of category priming. Because cases were designed so that both Diagnosis A and B were likely, overall accuracy was measured as the sum of proportion of cases in which either was selected. Subjects were emergency medicine staff (n = 40), residents (n = 39) and medical students (n = 32) from McMaster University, University of Washington, and Harvard Medical School. **Results:** Overall, staff had an accuracy (A + B) of 98%, residents 98% and students 85% (F = 35.6, p < 0.0001). For residents and staff there was no effect of condition (all mean accuracies 97% to 100%); for students there was a clear effect of category priming, with accuracy of 84% for i), 87% for ii) and 94% for iii) but only 73% for the no prime condition (Interaction F = 3.54, p < 0.002) **Conclusion:** Although prior research has shown substantial biasing effects of availability, primarily in cases requiring visual diagnosis, the present study has shown such effects only for novices (medical students). Possible explanations need to be explored. Nevertheless, our study shows that with increasing expertise, availability may not be a source of error.

Keywords: diagnosis, availability bias

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Risk factors for adverse outcomes in hyperglycemic patients presenting to the emergency department: a systematic review

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Introduction: Hyperglycemia is a significant cause of morbidity and mortality, often resulting in adverse outcomes such as recurrent ED