Can Doctors Predict Patient Outcome from a First Impression?

Take Home Point: In this systematic review, the first impressions of "sick versus not sick" and appropriate patient disposition had reasonable predictive value for patient outcomes but was not sufficiently accurate to supplant thorough clinical assessment.

Citation: Treloar E, Abraham A, Smith E, et. al. Can first impressions predict patient outcomes? *Acad Emerg Med*. 2025 Mar;32(3):351-354. doi: 10.1111/acem.15053.

Relevance: In busy environments such as urgent care (UC) centers and emergency departments (EDs), quickly identifying patients needing more immediate attention is a critical skill required for appropriate triage.

Study Summary: This was a systematic review of studies conducted among emergency physicians assessing the accuracy of clinical first impressions to predict patients' outcomes. Three main databases, Medline, Embase and PSYCHINFO were searched using the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) reporting guidelines. The authors focused on morbidity, mortality, complications, readmissions, length of stay (LOS), and disposition outcomes.

The authors identified 9 suitable studies, involving 7,815 first impressions assessments of 7,539 patients. Seven of the 9 studies were ED based. The authors found that there was low physician accuracy in determining overall in-hospital mortality (32.8%), however, first impression of "looking ill" was associated with significant mortality ($p<0.001$) and acute morbidity ($p<0.001$). When comparing patient's perception of illness, patients predicted the severity of their own illness with better sensitivity than physicians (78% vs 47%) but lesser specificity (49% vs 86%). Somewhat surprisingly, attending physicians did not significantly outperform residents. Among predictions of disposition, physicians across studies had the greatest specificity in predicting patients requiring intensive care unit admission (Sp 87-95%), but relatively poor sensitivity.

Editor's Comments:
The psychologist Daniel Kahneman outlined his work defining the 2 systems of cognitive processing in his book "Thinking Fast and Slow." System 1, the "thinking fast" system, is responsible for snap judgments and often considered synonymous to intuition. Interestingly, clinical experience did not significantly affect intuition in this systematic review, which contradicts research in other disciplines. Importantly, the findings of this study suggest that physician first impressions are not without value, but are not sufficient alone to adequately predict patient outcomes. It will be interesting, as artificial intelligence (AI) is increasingly implemented, to determine how clinician judgment can be augmented. Until such tools are available, it is important to utilize both the fast system involved in developing a first impression, but also system 2 (ie, the "slow system") to ensure adequate patient assessment. ■

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How Reliable is Urine Dipstick for the Assessment of Febrile Infants?

Take Home Point: In this multicenter pediatric ED-based study, negative urine dipstick results, defined as absence of both leukocyte esterase (LE) and nitrites, had reasonable sensitivity for excluding urinary tract infection (UTI) in infants when measured with a catharized specimen.

Citation: Hunt K, Green R, Sartori L, et al. Urine Dipstick for the Diagnosis of Urinary Tract Infection in Febrile Infants Aged 2 to 6 Months. *Pediatrics*. 2025;155(4):e2024068671

Relevance: Fever is among the most common presenting symptoms in infants, with UTI being among the common diagnostic considerations. UC centers often have access to only qualitative urine dipstick testing. Given the potential long-term impact of renal scarring if UTIs are missed in young children, understanding the reliability of urine dipstick testing is of significant clinical utility.

Study Summary: This was a cross-sectional study, of infants aged 2-6 months presenting to 5 pediatric EDs in

the United States from 2011-19 with fever. Eligible patients had a catheterized urine culture obtained and a temperature ›38°C that was recorded at any point during the ED visit by any route. Children with congenital and chronic conditions were excluded. The authors defined a positive urine dipstick as any positive leukocyte esterase (≥1+ or small) and/or any positive nitrite. The primary outcome was the final diagnosis of UTI defined by a urine culture growing ≥50,000 CFUs/mL of a single bacterial pathogen.

Of the initial group of 21,150 febrile infants recruited for the initial study, 9,387 (44.4%) had a urine culture obtained. The authors found that 7,738 (82.4%) of these patients also had a urine dipstick performed. Additionally, 1,044 infants (11.1%) had a UTI as defined by confirmation on urine culture.

Infants with UTIs were older on average (›90 days of age: ~65% in the UTI group vs 39% in the non-UTI group), more likely to be female (64% vs 48%), and had higher peak temperatures (›39°C: 51% in UTI group vs 35% in the non-UTI group). The authors also found that combining nitrite and leukocyte esterase positivity optimized sensitivity and specificity of the dipstick. Positive urine dipsticks had a higher sensitivity (90.2%, 95% confidence interval [CI] 88.1%–92.1%; difference 6.4%, 95% CI 3.8%–8.9%) and specificity (92.6%, 95% CI 91.9%–93.2%; difference 5.6%, 95% CI 4.7%–6.6%). Ninety patients (1.4%) had negative urine dipsticks and ultimately were diagnosed with UTI (ie, had a positive urine culture). Of all findings on dipstick, nitrites were most specific for UTI (98.9%).

Editor's Comments: There was potential for selection bias in the study as only patients with a urine culture were included. Clinicians' decisions about sending urine for culture were likely influenced by the results of urine dipstick, which may overestimate sensitivity. Perhaps most importantly, all samples were from catheterized specimens. This assumption also limits the generalizability to UC centers as many centers do not have the equipment or appropriately trained staff to collect catheterized urine specimens in infants. Use of techniques to facilitate clean urine collection (eg, sacral massage) may be a reasonable surrogate for catheterized specimen and certainly less likely to be contaminated than bag urine collection. Prospective studies of febrile infants in UC settings would be helpful for clarifying if a fully negative urine dipstick is sufficient to exclude UTI. Until that time, clinicians are best served making individualized assessments and engaging in shared decision-making with parents about ED referrals or empiric antibiotics while awaiting culture results. The patternicity of UTIs being associated more commonly with older age, female sex, and higher temperature measurements can be considered in these nuanced clinical decision-making situations. ■

Can Virtual Reality Effectively Distract Children to Facilitate Laceration Repair?

Take Home Point: Virtual reality (VR) goggle use may be slightly superior for reducing pain and anxiety associated with laceration repair in school-aged children. The vast majority of children and parents reported a positive experience associated with the use of the VR headset.

Citation: McEvoy A, Vincent O, Vazifedan T, et. al. Virtual Reality as Active Distraction in Laceration Repair: A Game Changer? *Pediatr Emerg Care.* 2025 Mar 1;41(3):208-212. doi: 10.1097/PEC.0000000000003319.

Relevance: Procedures such as laceration repair elicit anxiety, which can amplify pain response in children. Finding new and novel techniques that have a calming effect allows UC clinicians to perform such procedures in UCs, which negates the need for transfers to ED, and provides better quality of service for patients and parents.

Study Summary: This was an unblinded, randomized control trial utilizing VR goggles as an active distraction technique for simple laceration repair compared to standard care (SC) a pediatric ED. The intervention group used Lenovo Mirage goggles (Beijing, China) with Daydream and the game Pebbles the Penguin (Stanford Chariot Program, Palo Alto, CA). The SC was given other distraction methods such as normal screen time and parental involvement. All children received appropriate anxiolytics, topical and/or local anesthetic as determined suitable by the clinical team. Main outcomes were pain and fear scores collected as measured by the Wong-Baker Faces Pain Scale (WBFPS) and Children's Fear Scale (CFS). Parents-guardians were able to help the children complete the scores after completing a survey themselves.

Ninety-one children aged 6-17 years were enrolled into the study. The authors found children using VR had significantly lower mean pain scores (2.3 vs 3.7), mean fear scores (2.2 vs 3.0), and lower risk of requiring anxiolytic medication (OR=0.27, P=0.006). Of those randomized to the VR group, 98% of parents and 94% of patients noted that they would use the VR goggles again.

Editor's Comments: Distraction techniques for painful proce-

dures are of particular importance in UC settings where rapid disposition is a priority and where anxiolytic medications are rarely available. While offering screentime on a parent's phone is effective for many younger children, this has limited utility in school aged children such as those included in this study. It's worth noting, however, that while the differences in pain and fear scores were statistically significant, they differed by only 1.4 and 0.8 absolute points respectively, suggesting less than dramatic clinical significance. UC centers will have to balance costs and the hassle-factor of ensuring an additional piece of technology (ie, the VR headset) is clean, charged, and operational against a real, but likely small, benefit for a select group of children undergoing potentially painful procedures. ■

Outcomes and Injury Patterns in Elderly Patients After Falls

Take Home Point: A small minority of patients aged over 65 years in this study were found to have injuries requiring intensive care unit (ICU) admission following ground-level fall (GLF).

Citation: Kan V, Huang W, Seitgauf-Regan G, et. al. Injuries and Outcomes of Ground-level Falls Among Older Patients: A Retrospective Cohort Study. *West J Emerg Med*. 2025 Mar;26(2):301-306. doi: 10.5811/westjem.35281.

Relevance: GLFs are particularly common in elderly patients (›65 years). When presenting to EDs after such falls, whole-body computed tomography (CT) is commonly standard practice in many trauma centers. Whole body CT is associated with significant cost and risks—including exposure to ionizing radiation, contrast reactions, and the discovery of incidental findings that often require additional invasive and unnecessary testing with further associated risks.

Study Summary: This was a retrospective cohort study of patients presenting to a tertiary Level 1 trauma ED in Massachusetts. The authors included all patients ›65 years and older patients who presented to the ED during a one-year period and underwent whole-body CT imaging (ie, CT of the head, total spine, chest, abdomen, and pelvis). Primary outcomes were the rate of significant injuries diagnosed. Significant injuries were defined as clinically significant intra-thoracic or intra-abdominal injuries, intracranial hemorrhage (ICH), and spinal fractures. ICU admission rates and all-cause, in-hospital, mortality were also included as primary outcomes. The secondary analyses were associations between age, injury types, and outcomes.

The mean age of the 638 patients included was 82 years, and 60% were women. Among them, 63% of patients were taking at least one antiplatelet or anticoagulant medication. Additionally, 120 patients (18.9%) were found to have a significant thoracic injury, 80 (12.5%) sustained ICH, 60 patients (10%) sustained thoracic spine injuries, and 51 patients (8%) sustained lumbar spine injuries. Cervical spine fractures were the most rare spinal segment injured occurring in only 5.3% of patients. Only 5 patients (0.8%) sustained an intra-abdominal injury. All those with intra-abdominal injuries had clinical features suggestive of serious pathology including hypotension, tachycardia, and severe pain/abdominal tenderness. In the study, 134 (21.0%) patients were admitted to the ICU, and 31 (4.8%) died during their index hospitalization. There was no association between increasing age and ICU admissions or in-hospital, all-cause mortality rate.

Editor's Comments: The retrospective design and inclusion criteria only captured patients who had whole-body CT scans. There may have been patients who were not scanned selectively for various reasons. This study, therefore, cannot be used to guide which patients may benefit from whole-body CT, rather it can only state that among elderly patients who underwent whole-body CT after GLF, many of the scans offered little insight in diagnosing injuries that would otherwise be missed. The cause of fall was also not reported, and it is possible that patients, for example, fell because of a spontaneous ICH rather than suffered a traumatic ICH. What is perhaps most noteworthy is that age was not predictive of ICU admission rates or in-hospital mortality. This suggests that chronologic age is less material than "physiologic age" (ie, frailty) and serious injuries related to simple GLFs, as has been identified for years with hip fractures, is a strong indicator of a high-risk for short-term mortality. Patients with repeat falls and/or significant injuries sustained from GLFs that do not require ED-level care should be viewed by UC clinicians as opportunities to warn patients and families of the ominous nature of this clinical phenomenon.

Preventing Recurrence of Bacterial Vaginosis by Treating Male Partners

Take Home Point: Treating the male partners of women with bacterial vaginosis (BV) resulted in dramatically lower rates of recurrence over the subsequent 12 weeks when compared to treatment of the female patient alone.

Citation: Vodstrcil L, Plummer E, Fairley C, et. al. Male-Partner Treatment to Prevent Recurrence of Bacterial Vaginosis. *N Engl J Med*. 2025 Mar 6;392(10):947-957. doi: 10.1056/NEJMoa2405404.

Relevance: BV is very commonly seen in UC and, in a frustratingly high proportion of cases, is a recurrent issue for many women. Oral and vaginal treatments are generally considered equally effective, however, recurrence has been reported to occur in greater than 50% of cases. It is understood that BV, while not considered a sexually transmitted infection in the same sense as gonorrhea or chlamydia, recurs more frequently in patients who are sexually active and in those with higher numbers of partners.

Study Summary: This was an open-label, randomized, controlled trial of heterosexual couples where the woman was diagnosed with BV across 5 outpatient sexual health centers in Australia. Pre-screened perimenopausal women with suggestive symptoms who also met the diagnostic criteria for the condition (presence of at least 3 of 4 Amsel criteria and a Nugent score of 4 to 10), with a stable male partner were included. Couples were randomized in a 1:1 ratio to either partner-treatment group (PTG) (treatment of the woman and her male partner) or the control group (CG) (treatment of the woman only). Treatment regimens in the experimental group were metronidazole 400mg tablets twice daily, or intravaginal 2% clindamycin cream for one week, or intravaginal 0.75% metronidazole gel for five nights for the women. Male partners received metronidazole 400mg tablets and were instructed to apply 2% clindamycin cream topically to the glans penis and upper shaft and under the foreskin (if the male partner was uncircumcised) twice daily for 7 days. No placebo cream was used for the control group to eliminate the potential for changes in the penile microbiome. The primary outcome was the recurrence of BV within 12 weeks.

The authors enrolled 164 couples; 81 were assigned to the PTG and 83 to the CG. The authors found that BV recurred in 24 of 69 women (35%) in the PTG (recurrence rate, 1.6 per person-year; 95% CI, 1.1 to 2.4) and in 43 of 68 women (63%) in the CG (recurrence rate, 4.2 per person-year; 95% CI, 3.2 to 5.7). The study was stopped early for ethical reasons based on the large difference favoring the treatment group. The difference found corresponds to an absolute risk difference of −2.6 recurrences per person-year (95% CI, −4.0 to −1.2) and a lower risk of recurrence among women in the PTG than among those in the CG over 12 weeks (hazard ratio, 0.37; 95% CI, 0.22 to 0.61). All the female participants took at least 70% of their prescribed medication while among male participants, 8 of 56 (14%) reported taking less than 70% of doses of prescribed medications. Sensitivity analyses showed that the lowest recurrence rates were found among partners of men completely adherent to treatment.

Editor's Comments: This study is overdue. It's clear that BV goes beyond the female partner. Given the dramatic treatment effect, it is very likely that attention to the male partner is an important factor in prevention of BV recurrence. This raises a number of questions that will be difficult to assess given heterogeneity in sexual practices and challenges in measuring sexual contact frequency and types reliably. Given the anatomical differences in male and female genitalia, it seems likely that men's risk of genital dysbiosis would be affected less dramatically than women's by oral antibiotics. It is unfortunate that the authors did not include a treatment arm where men were treated only with topical antibiotics (or even one with simple use of skin disinfectant soap, such as chlorhexidine, rather than cream). While not highly common, oral metronidazole is associated with potential significant adverse reactions, which may influence partner adherence. Whether these results in this small study are dramatic enough to influence treatment guidelines remains to be seen in time. However, it seems reasonable to implement discussing the importance of male partner genital hygiene immediately when faced with the frequent UC scenario of a female patient presenting with frustrations about recurrent BV. ■

Guidance for Antibiotics Prophylaxis Across an Array of Injuries

Take Home Point: These recommendations are based more on expert opinion than evidence. They do, however, offer some guidance that UC clinicians can use to justify clinical decisions regarding the use or avoidance of prophylactic antibiotics in a variety of wound related presentations. Specific situations that contravene prior, non-evidence-based use of antibiotics include, most notably, when using nasal packing for traumatic epistaxis.

Citation: Appelbaum R, Farrell M, Gelbard R, et al. Antibiotic Prophylaxis In Injury: An American Association For The Surgery Of Trauma Critical Care Committee Clinical Consensus Document. *Trauma Surg Acute Care Open*. 2024;9: e001304.

Relevance: Selective use of antibiotics with attention to

stewardship requirements are needed not only in patients presenting with illness, but also those who attend the UC with injuries.

Study Summary: This was a clinical consensus document compiled by the American Association for the Surgery of Trauma Critical Care Committee with aims to provide practical guidance on the best practices in the assessment and antibiotic prophylaxis for adult patients presenting with injuries. When choosing an antibiotic regimen, consideration for special circumstances regarding degree and type of contamination, salt water/freshwater, possibility of clostridial species, and/or mammal or human bites. The authors acknowledge that there is a large variability in the practice of using prophylactic antibiotics which results in overuse of antibiotics in aggregate among this patient population.

A summary of the areas commonly pertinent in UC practice are below.

Prophylactic antibiotics are suggested for:

- Through-and-through lacerations from the skin to the oral cavity and in the setting of mammalian bites to the face

Prophylactic antibiotics should not be routinely prescribed for:

- Simple facial and scalp lacerations
- Closed, non-operative orbital, upper face, mid-face, or mandibular fractures
- Nasal packing for traumatic epistaxis
- Simple soft tissue lacerations
- Simple stab wounds that involve only soft tissue
- Burn patients

In addition, open extremity fractures should be graded based on the Gustilo classification system and treated with antibiotics based on the fracture severity.

Editor's Comments: The intended audience for this document was hospital-based clinicians, such as intensivists and surgeons. Many recommendations are germane to UC presentations, however, and since UC patients with traumatic presentations may be following up with specialists, it is prudent for UC clinicians to familiarize themselves with guidelines they are likely to reference to determine appropriateness of care. Common practice (ie, treatment bias) among clinicians providing episodic care favors overuse of prophylactic antibiotics. This indiscriminate use likely results in more harm than benefit. These guidelines offer support for a more selective and well-informed approach to the decision-making process surrounding prophylactic antibiotics. ■