



LETTER FROM THE EDITOR-IN-CHIEF

Keep Your Differential Broad, Especially During Flu Season



I'm phenomenally bad at gambling for a multitude of reasons. I bet small when I should bet large. I bet large when I shouldn't even be playing the game. I'm especially terrible at roulette because when I pick a number, usually 22, I stick with it—much longer than I should. Each time the wheel stops, on any other number, I'm disappointed, sure. But that disappointment is quickly replaced with hope that the odds of lucky 22 coming up next time must be better. In other words, I feel that I'm due. And with every non-22 spin, I become more and more certain that the odds of 22 coming up next must be increasing.

This represents a form of cognitive bias commonly referred to as the Gambler's Fallacy, for obvious reasons. The Gambler's Fallacy is a type of mental trap that urgent care providers should make themselves intimately familiar with or ignore at their own peril. It centers around the belief, conscious or unconscious, that prior results predict future occurrences. And while the Gambler's Fallacy can prove costly on the casino floor, it can be deadly when operant in UC—especially during flu season.

So, what specifically is the danger of the Gambler's Fallacy? Imagine you're working a busy clinical shift during February or March. You've seen 30 patients, 90% of whom have some combination of cough, sore throat, runny nose, and headache. Some report fevers, others don't. Some may even mention difficulty breathing or chest pain.

You're now seeing patient number 31, a 45-year-old man who reports having a cough, fevers and chills, difficulty breathing, and malaise. Certainly infective endocarditis, pneumonia, pulmonary embolism, and ACS/CHF would be on your differential if this patient presented in July. However, it is human nature for the Gambler's Fallacy (like any cognitive bias) to manifest itself more forcefully during times of mental fatigue (eg, after seeing 30 URIs).

At the end of a long day during the winter months, even the most experienced providers will generally find themselves jumping to a diagnosis of influenza when seeing a patient like this. And, perhaps after getting a CXR to exclude pneumonia, discharging the patient without a thought of

things like endocarditis or sepsis. Certainly, there's more flu in the wintertime, so we're more likely to be right when we guess flu than in other seasons. The problem arises, however, when we guess wrong.

Influenza can be dangerous, especially in higher-risk patients, but is most commonly a self-limited week of misery. However, the symptoms of influenza are highly non-specific and overlap broadly with a long list of infectious and noninfectious life-threatening diseases.¹ Many of these serious conditions (eg, endocarditis, urosepsis, and thyroid storm) show no seasonal variation. However, remembering to consider such conditions during flu season presents a challenge for UC providers who, in turn, are experiencing the most mental fatigue themselves during this busy time of year.

Consequently, this often leads to misdiagnoses on initial presentations for these noninfluenza illnesses and subsequent delays in appropriate care. For example, in one epidemiological study by Chen, et al,³ patients were nearly twice as likely to have heart failure present at the time of diagnosis of infective endocarditis during the winter months. To further complicate the situation, the incidence of certain influenza mimics, such as pulmonary embolism and acute coronary syndrome, also increases during cold and flu season.^{2,4}

From a patient's perspective, developing a condition that mimics the flu in the wintertime is not ideal (not that there's ever a perfect time to be bacteremic). To make matters worse, patients easily succumb to their own set of cognitive biases: They think it's the flu. Everyone has the flu. They don't want it to be anything serious. So, when they do come into urgent care seeking mostly reassurance, we are often all too ready to simply oblige and move on. However, if we are wrong and miss a serious diagnosis, the consequences can be fatal.

So, what can be done to minimize the risk to the provider and patient of the Gambler's Fallacy leading to misdiagnoses and poor outcomes? Allow me to suggest three simple, high-yield strategies which can easily be implemented on your next shift:

1. **Pay attention to vital signs.** As the axiom goes,

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"They're called vital signs for a reason." Hypotension, hypoxemia, severe tachycardia, and/or tachypnea are suggestive of either serious influenza infection or an alternate diagnosis. Regardless, these patients should be immediately referred to a full-scope ED.

2. **Ask for the patient's most prominent symptom and construct a differential around this.** For example, if a patient is most bothered by headache, focus on presence or absence of neck rigidity and altered mentation to ensure you're not missing meningitis. If a patient is having vomiting and abdominal discomfort, palpate their abdomen carefully to ensure there is no focal tenderness. If they have a sore throat, evaluate for trismus and drooling. In short, simply make sure you're listening to the patient's actual chief complaint.
3. **Get a flu test.** The newest generation of nucleic acid amplification testing (NAAT) point-of-care influenza testing used in most UCs has much-improved sensitivity and can exclude influenza with reasonable certainty. The specificity of NAAT flu tests is also excellent and, therefore, a positive test essentially rules in the flu. While there are a litany of self-limited noninfluenza viral illnesses, patients with negative flu testing in whom there's reasonable clinical concern for one or

more other dangerous conditions warrant additional work-up emergently.

These techniques can mitigate the Gambler's Fallacy all through the same simple mechanism: They force us to pause in the midst of our busy clinic days and ask ourselves, "What else could this be?" It turns out—a lot. And even though it's the winter, remember all that shivers is not flu. ■



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IN MEMORIAM: PETER ROSEN, MD



It's a popular, but trite, tribute to say someone "wrote the book on [fill in the blank]." It's usually not a statement of fact, however.

A rare exception would be to say, "Peter Rosen wrote the book on emergency medicine" because, in fact, Peter Rosen, MD really was responsible for the first comprehensive textbook in emergency medicine (*Rosen's Emergency Management: Concepts and Clinical Practice*, the first edition of which was published in 1983).

A longstanding advocate for emergency medicine even before that, he's credited by some as being instrumental in seeing that discipline recognized as a proper specialty.

It's no surprise, then, that when the founders of *The Journal of Urgent Care Medicine* set out to form their first Advisory Board,

Dr. Rosen was at the top of the wish list. We invited him, he graciously accepted, and we were proud to have his name on our Masthead from that first issue until his death. He even flattered us by serving as a peer reviewer from time to time—though the argument could be made that he was peerless.

Dr. Rosen died at his home in Tucson, AZ on November 11, 2019. He was 84 years old.

Since then, his contributions to the practice of medicine have been lauded by every conceivable EM body in the United States, as well as the medical schools he was affiliated with over the years (Harvard University and the University of Arizona prominent among them). We would be remiss if we didn't do the same, and thank him posthumously for lending significant academic weight and goodwill to a fledgling publication. We're pleased and fortunate to have been associated with him. ■