The Case of the Unexpected Outcome

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Expert Responses
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Curated Community Commentary
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Melissa Armstrong walked into the Emergency Department, readying herself to take on her third evening shift in a row. It'd been a long week so far, and she felt a bit tired, but that's because she'd seen more than 60 patients in the past 2 shifts. But this was the curse of being a newly minted attending at a busy urban hospital. You took the shifts that you were given. Walking by the Physician's station, she noted Mike gesticulating wildly at her.

"Hey! Melissa!" he said, as Melissa walked over to him. "Remember that lady with chest pain from yesterday that you sent home?"

Melissa felt that niggling sensation in the pit of her stomach. Those were NEVER good words.

"Well, she came back in a this morning, and she was pretty sick. We had to intubate her and send her to the unit. It looked like she had a giant pulmonary embolism."

Melissa thought for a second and said, "Wait, the 34 year old?"

Mike nodded.

"But she didn't have any risk factors!"

Melissa quickly rushed to the office, and pulled up the chart. She found her note and read it. She had outlined her diagnostic reasoning, She had thought the patient was low risk according to the Well's PE score, PE rule out criteria (PERC) was negative, so she hadn't ordered a D-Dimer.

Diagnosis: viral syndrome.

Her stomach turned and she was hit by a wave of nausea.

"Hey… you're looking pale," stated Mike, escorting Melissa to a chair. "Sit."

He disappeared momentarily, and returned with a glass of ice water.

"Drink."
"But….She had a cough and a fever. Others in the family were sick. After meds, pt was feeling fine!" she sputtered. "Her vitals normal. Look, she's Well's low risk and PERC negative! What could I have done differently?"

"Well, all I know was what I saw this morning – tachycardic, hypotensive, D-Dimer of 6,400. Her CT-Pulmonary Angiogram showed a saddle embolism. If she didn't have a PE yesterday, she definitely did this morning."

"Dr. Armstrong… to Trauma bay 1. Dr. Armstrong…"

"Well, I guess it's time to get to work, Melissa. They're calling for you in Trauma. Come on, Melissa, shake it off!"

Melissa shook her head, trying to shake off the daze and walked over to the Trauma bay. For the next 8 hours, went by quickly – but Melissa couldn't shake that uneasy feeling in the pit of her stomach. Luckily, there were fewer patients than the day before. The major care patients weren't an issue, but every viral illness in the quick care area, however, she found herself diligently documenting the Well's, PERC and even ordered a few D-dimers in very low risk patients. Luckily, they all were negative.

At the end of her shift, she went upstairs to the intensive care unit to check on her patient from the day before. The intensivist explained that the patient as doing better now that they had given her thrombolysis.

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The next morning, Melissa awoke with that queasy feeling still in the pit of her stomach. Her thoughts immediately jumped back to the case from two nights ago. Again…What had she missed?

Picking up the phone, she called Kyle, her best friend from residency. Explaining the situation briefly over the phone, Kyle immediately insisted that he would be right over with coffee from her favorite neighborhood coffee shop.

Over a latte, Kyle had Melissa recount the story.

"I just don't know what else to do. I feel like I can't go back to work without people judging me, but to keep from missing things I feel like I have to over-investigate everyone so I don't miss anything. Yesterday, I ordered 7 D-Dimers. I'm seeing PE everywhere. My confidence is just…. shot."

Imagine you are in Kyle's shoes. How would you handle this? *Other questions for Discussion are on the next page.*

Questions for Discussion

1. Melissa is obviously very upset about the case. How would you advise her to address her emotions?

2. When applying evidence-based medicine, there are still times when there will be exceptions. How do you handle those exceptions?

3. Confidence plays a large role in our jobs as physicians. How do you suggest Melissa proceed now that she is feeling very uncomfortable and second guessing herself?

Competencies

ACGME	CanMEDS
Professional Values (PROF1) Practice-based Performance Improvement (PBLI) Diagnostic studies (PC3) Diagnostics (PC4)	Professional Scholar Collaborator Manager

Intended Objectives of Case

1. Describe appropriate strategies for debriefing difficult situations with colleagues in a supportive manner, while respecting relevant confidentiality regulations or ethics.

2. Describe appropriate approaches for addressing a colleague's concerns about their own practice.

3. List ways for supporting a colleague that is displaying difficulty or disclosing that they are experiencing challenges.

Expert Response

Why can't it ever be a good thing?

by David Marcus MD

Melissa dropped the ball. She let the patient with a massive PE walk out of her department. And yet, assuming the patient was well appearing, not hypoxic, and comfortable at the time of discharge, most observers would probably agree that she had done everything right. She applied appropriate, validated, commonly used decision rules, and combined them with her clinical judgment to disposition a patient. Melissa did nothing wrong. Why then is she being so hard on herself?

Well…wouldn't you?

All of us go into medicine wanting to help people; we wish to alleviate their suffering, to make them better. We like seeing patients walk out the door and hate seeing them roll back in in worse shape. This is especially true when they are sicker because of our mistake. But Melissa's distress is not just about a simple error. Physicians are acculturated from an early age to believe in the all-knowing, infallible doctor, and we feel very uncomfortable admitting error.(1) It's not part of who we are, and the foundations of her identity as a physician have been shaken. Mistake or not, Melissa believes that she should have known that her patient had a PE.

Scarred for life

Emergency Physicians (EPs) are expected to make critical decisions in rapid sequence, all day, every day. Decisiveness and confidence are essential, and experiences like this one can have a lasting impact on practice patterns. This one event has led Melissa to doubt her own clinical judgment. Self doubt will be translated into indecision, and indecision results in the curse of over-testing, "You know, just to be safe". But over-testing doesn't help anyone. It is associated with increased costs and worse patient outcomes.(2-4) Insecurity and self doubt can be career ending for an EP in a busy Emergency Department (ED).

Or Not

As friends, we must be there for emotional support. As fellow physicians and friends, we are also in a position to help Melissa work through her moral distress at having fallen victim to the realities of Evidence Based Medicine (EBM). This case serves as a reminder that even the most rigorous, validated clinical decision rules never attain 100% predictive value. Positive or negative, they all carry a calculated miss rate.

Even when applied to the "ideal" patient 1.8% of those screened using the Pulmonary Embolism Rule-out Criteria (PERC) will have a PE. (5) But across a population, the risks of harm from additional testing and treatment with a negative PERC is greater than the risk of an undiagnosed PE. There was no indication that this patient was at an increased risk for a PE and there was no reason for this EP to act any differently. She did not miss anything.

The OARS Framework[5] (by Billich 2014)

O	Open Ended Questions	What are you feeling? Why are you upset? Why does this bother you? How will this impact you? What do your colleagues say about what happened?
A	Affirmation	That makes sense. Of course you're conflicted. I've known other people who've been in the same situation. Many of your colleagues have felt that they've missed a diagnosis. It is completely normal to initially feel you are to blame. Something similar happened to me.
R	Reflective listening	I see that... I understand that... Tell me more about... So you're mad at... It sounds like you think this will interfere with how you function in the ED... In other words...
S	Summarizing Joint Plan	Recap of plan: "Let's go over the plan..."

Expert Response

These rational arguments, however compelling, make no difference to a doctor who is convinced that her action (or inaction) nearly led to the death of a patient. Melissa is simply facing her own humanity. She is no longer the infallible physician she thought she was and this jarring realization may lead to permanent behaviour changes. Just as victims of PTSD relive the inciting event year after year and experience stereotypically negative reactions to specific triggers, so this physician will relive the terrifying near-death of this one patient whenever similar patients present. In over-testing Melissa is already showing evidence of a new, maladaptive, practice pattern. But we may be able to help her gain insight, and perhaps even change course, by applying the principles of Motivational Interviewing (MI). This coaching technique has been successfully applied for incremental behavior modification (smoking cessation, weight loss, medication adherence, etc)6 with patients. If MI can be used for patient wellness, perhaps it can also be applied to physician wellness.

One Day at a Time

MI is a counselling strategy that "creates an empathetic environment"6 by allowing the discussant to do most of the talking so that they find their own motivation for change or, in this case, a motivation to avoid change where change is not needed. One MI model uses the OARS Framework. The goal is to "assist in raising the patient's awareness to their behaviors and to understand how their activities may be at odds with their desired goals."(6) In other words, we would aim to help Melissa recognize how drawing a d-Dimer or performing a CT angiogram for every dyspneic patient conflicts with the goal of providing quality patient care.

Using the OARS micro-skills(6,7), elicit from Melissa her specific concerns through open ended questions. Try to get to the source of her distress and use reflective listening to allow her to further explore the events and her current behavior. It is important to legitimize Melissa's feelings through affirmation while reassuring her analytic EP mind that she did the right thing. She did not make a mistake. And though some sources(6) suggest that it is better to avoid "righting" patients (proving to the discussant that they are wrong about something), in this case it may help to remind Melissa of the risks of over testing and the rationale behind the Well's Score, the PERC decision rule, and EBM in general. By maintaining a normal practice pattern she will be keeping her patients out of harm's way.

Finally, support your friend Melissa as she devises a plan that provides scaffolding for her journey towards full confidence. For example, Melissa might utilize a cognitive forcing strategy.(8) She could commit to calculating the Well's Score after each dyspnea/chest-pain patient and reflecting for 2 minutes before ordering a d-Dimer. Additionally, she might - for a time - consult with a colleague before sending the blood test or performing a CT. She might even engage in self-auditing by tracking all the chest pain patients she sees for a period. Finally, confidential chart reviews with a senior colleague or respected peer may provide her with some external validation. Regular reflection through writing exercises and discussion with a colleague and friend, or private journaling, may also be productive. With the help of these tools and the support of her friends she might again regain the confidence that she is not in any way subjecting her patients to unnecessary risk.

Melissa is in a very difficult situation, one that we will all have to face one day, either as the doc whose patient suffered an adverse outcome or in the role of her friend. While there are no commonly accepted physician peer-support "best-practices", we do not need to proceed unguided. Motivational Interviewing using the OARS micro-skills provides a framework for coaching a distressed physician back to rational medical practice. With your help, and by sticking to the plan that she herself devised, Melissa can be empowered to move forward without becoming "that doctor who scans everyone". Peer support, reflection in-action and reflection on-action will make her a stronger physician despite this unexpected outcome.

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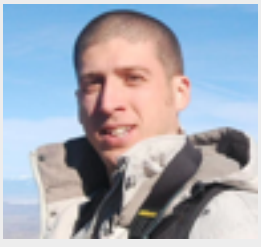

About the Expert

Dr. Marcus graduated from the SUNY Downstate College of Medicine and is currently Chief Resident at the combined Emergency/Internal Medicine program at LIJ Medical Center in New York. He teaches Ethics, Professionalism, and Emergency Medicine at the Hofstra-North Shore LIJ School of Medicine. Dr. Marcus is a strong advocate of FOAM and other open educational resources. When not stalking the resuscitation rooms he can usually be found on Twitter or sailing Long Island Sound. Follow Dr. Marcus on Twitter @EMIMDoc and check out his blog, which includes a list of international EM, Critical Care and Medical Education conferences with their affiliated social media, here.

Expert Response

Nothing is Absolute

by Ryan P. Radecki MD

Coping with poor outcomes and medical errors is a challenge ubiquitous to medical practice. No specialty is immune from cognitive errors and the resultant patient harms. Recognition of the impact of errors on physician well-being and decision-making is widely documented – approximately half of physicians involved with a serious medical error reported increased anxiety for future errors, decreased confidence at their job, decreased job satisfaction, and insomnia.(1) Incidence of these same adverse effects occurred with only slightly lower frequencies for both minor medical errors and near-misses.

Unfortunately, formal support networks lag behind needs. While many different strategies have been proposed, no consensus regarding effectiveness or appropriateness exists.(2) Institution-based responses to incidents and medical errors may not prioritize the physician's well-being, nor provide the level of support necessary for individuals under stress. Suggested strategies appropriate for this case include referrals to an Employee Assistance Program, one-to-one follow-up with a colleague, or professional counselling.

The successful practice of medicine depends on rational recognition of the limitations of knowledge and testing. The advantage of "evidence-based medicine," where applicable, is the explicit recognition of non-zero rates of unanticipated poor outcomes.

The application of Bayes' Theorem to estimate patient-specific disease likelihood does not generate a simple absolute result. These estimates, and the explicitly recognized uncertainty, provide a context for which to judge the harms of testing and treatment. For example, as estimated by Kline et al., 1.8% of patients undergoing testing and treatment for pulmonary embolism will ultimately be harmed by the test and subsequent anticoagulation.(3) Therefore, by applying the PERC Rule – as Melissa does in this case – she has identified this patient as belonging to a cohort for which testing will generate greater net harms than benefits, despite having a non-zero risk for pulmonary embolism. Recognition of this sound decision-making process, despite the outcome, may provide reassurance.

Melissa's subsequent reactive practice of over-testing is grounded in several recognized cognitive biases. These include "outcome bias," the tendency to judge a decision based on its outcome, rather than the quality of evidence initially available, and "availability bias," the inordinate weighting of recent or emotionally charged events in memory. Her behavioural and practice changes are consistent with those observed in other physicians following medical error.(4)

There is, unfortunately, no universal, validated approach for restoring confidence in medical decision-making. In general, with time and support tailored to her individual needs, her practice patterns should return to baseline.

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Curated Community Commentary

By Brent Thoma MA MD

A qualitative methodology was used to curate the community discussion. Tweets and blog comments were analyzed, and four overarching themes were extracted from the online discussions. Prior to publication, we sent this analysis to one of our community members to perform a "member check" to ensure credibility (TC).

While poor outcomes resulting from appropriate, evidence-based management are appropriately rare, our participants noted that if enough patients are seen they are bound to happen. Most were able to relay personal anecdotes about similar experiences. As Seth Trueger noted, we never hear about "the patient from last night" that ended up doing just fine, so we remember when they do not.

If bad outcomes will happen despite the best care that we are capable of providing, as emergency physicians we need to learn to tolerate risks. Clinical decision rules are good tools for risk-stratifying patients, but they cannot bring the risk down to nothing and if we investigate too extensively we are likely to cause more harm. Often, mistakes can happen not because of personal inadequacy, but because, as Daniel Cabrera noted, our understanding of medicine is incomplete.

Experiencing an adverse event

Judging by the community response, we have substantial room for improvement in helping healthcare professionals to cope with adverse events. The importance of recognizing the healthcare professional as a "second victim" was highlighted. Daniel Cabrera noted that despite often being beyond our control, we feel responsible for them.(1,2) Hans Rosenberg noted that we classically cycle through emotions such as denial, rationalization, despair, and fear as we work through the event.

Susan Shaw found that in general that medicine's ability to create safe spaces to address these events are "pretty lousy" with R.S. Sahsi finding that the most frequent response is some variation of "shake it off" or "get back on the horse." While physicians can participate in institutional debriefing following critical incidents, it rarely addresses the physician on an individual level. As noted by Eric Holmboe, the Agency for Healthcare Research and Quality has started online morbidity and mortality rounds.(3)

Moving past adverse events

Several participants noted that no physician can get past a devastating outcome by themselves. Daniel Cabrera noted that the evidence supports the development of institutional infrastructure to help health care professionals through these events.(4) Doing so may require introspection, discussion with trusted mentors, and mobilizing resources and education to prevent future adverse events. Hans Rosenberg noted that it is a long road to get through these events and encouraged taking the time to work through the associated emotions and prepare ourselves for future events.

Contributors

Thanks to the participants (in alphabetical order) for all of their input:

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Curated Community Commentary (continued)

The After Effects

While we would never want to base our practice on a study with an n of 1, singular bad experiences can color our judgement in the future. Amy Walsh and Justin Stowens shared personal stories about how they were impacted.

- Amy was helped by a counselor who asked her "If a friend came to you and told you about this case, what would you think of them? How would you counsel them?" This question helped her to realize that we are harder on ourselves than we are on others.

- Justin discussed the event with a senior physician who stated quite simply "Well… that's why we always tell people to come back if they feel worse…" While it was a very matter-of-fact statement, it made him realize the importance of that common discharge instruction in acknowledging the imperfection of our science.

No blaming

Heather Murray noted that "Hindsight is easy, medicine is not," in regards to our language when discussing the decisions of other physicians. It is much easier to retrospectively come to a different conclusion than we would have had we seen the patient ourselves. Judging another physician does not fix the problem. It is important to remember that, in all likelihood, at some point we will be that physician.

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About

The Medical Education In Cases (MEdIC) series puts difficult medical education cases under a microscope. We pose a challenging hypothetical dilemma, moderate a discussion on potential approaches, and recruit medical education experts to provide their insights. The community comments are also similarly curated into a document for reference.

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Usage