

Reducing diagnostic errors in the ICU



Diagnostic error occurs in 5-20 percent of physician-patient encounters, with a comparable prevalence among ICU admissions and patients who die in the intensive care unit (ICU). Further, diagnostic errors comprise 9-12 percent of adverse safety events leading to ICU admission, and the majority of these errors are deemed preventable, says a review paper to appear in *Annals of the American Thoracic Society*.

Broadly, diagnostic errors are due to cognitive failures (e.g., misinterpreting a laboratory value), systems-based failures (e.g., poor coordination of care across health systems), or both, according to the paper.

"Importantly, systems factors, like an unorganised and chaotic clinical work environment, also affect cognitive processes by way of distractions and interruptions," the paper explains. "Often both cognitive failures and systemic factors, such as inadequate flow of information and breakdowns in communication, occur together."

Diagnostic errors tend to be more lethal with increased acuity of illness. In addition, the highly complex, fast-paced practice environment of the ICU and rapidly changing physiology of the patient generate a constant stream of distractions and new diagnostic data points. Intensivists also face the burdens of documentation and competing demands from other elements of high quality ICU care, such as adherence to various protocols or best practices, which may also distract from the diagnostic process.

Diagnostic errors may result in death, permanent disability, or prolonged hospital length of stay; harms are likely to be amplified in the ICU setting. They have far-reaching financial implications when considering inappropriate diagnostic studies, misguided treatments directed at incorrect diagnoses, and lost clinician time. In addition, diagnostic errors lead to psychologic consequences such as anger and mistrust among patients and families.

Despite improvement in ICU safety, diagnostic errors remain largely unexplored and under-studied in critical care. As the report notes, "Compared to other safety problems, diagnostic errors are more difficult to identify and, due to the intricacies of the diagnostic process, are more difficult to unravel."

The paper says intensivists are well-positioned to identify diagnostic errors and to lead efforts to mitigate their impact. For example, transfer to the ICU itself can represent a seminal safety event and can be used as a "trigger" (or clue) to potential diagnostic errors in the inpatient setting. As such, unplanned ICU admissions are a rich data source for identifying potential diagnostic errors.

"Intensivists whose roles include internal quality review should regularly evaluate other sentinel triggers in the ICU, such as cardiopulmonary arrest or emergent procedures, for potential diagnostic errors," the paper emphasises. "While institutional culture change may be difficult, making reporting and internal quality review an expectation could increase opportunities to capture potential diagnostic errors, including those not associated with adverse events."

The paper suggests that diagnostic specialities, such as radiology and pathology, conduct routine secondary peer reviews even for cases in which there is no uncertainty or adverse outcome. Conducting these reviews in the ICU would normalise such auditing, the paper says.

Specific improvements to health information technology, many of which are already appearing in ICUs and hospitals, hold promise for addressing diagnostic error in the critically ill, according to the paper. For example, clinical-decision support tools and rapid data processing from the EHR, such as "sepsis screening" tools on the wards have become commonplace.

In conclusion, the paper says the time is ripe for the critical care community to define the scope of the problem of diagnostic error in the ICU. "Whether researchers or educators, administrators or clinicians at the bedside, we all have a role in contributing potential solutions. In our quest for excellence in caring for the critically ill, let us make reducing diagnostic error a top priority," write the authors.

Source: [Annals of the American Thoracic Society](#)

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