

tion in a table; however, the author did not cite the ARDS Network trial¹ of steroids in late ARDS, together with the previous positive results.

In Section 8, on mechanical ventilation, the author describes, in detail, lung-protective ventilation.

Section 9, on acid-base disorders, is well written. The influence of albumin on the anion gap and the role of bicarbonate as a buffer for acidosis were appropriately added to this section. Section 10, on renal electrolyte disorders, gives a thorough review of important electrolytes in critical care. Contrast-induced renal failure is appropriately highlighted. One of the major advances in recent critical care is the clinical meaning of transfusion.

In Section 11, on transfusion practices in critical care, the meaning of erythrocyte transfusion is well-addressed.

Section 12, on disorders of body temperature, is new in this edition. The author reviews the clinical issues of hyperthermia, hypothermia, and fever.

In Section 13, on inflammation and infection in the ICU, the information regarding initial volume resuscitation target and the role of steroids in severe sepsis has been updated. I appreciated the author's comment on page 817 regarding antibiotic overuse in the ICU, as the author stated that, "the first rule of antibiotics is try not to use them, and the second rule is try not to use too many of them."

The contents of Section 14, on nutrition and metabolism, do not differ much from those in the 2nd edition, except for the adrenal insufficiency and thyroid crisis issues.

The uses of analgesia and sedation are well-addressed in Section 15, on critical care neurology, where the individual dose titration and interruption of drug infusions are stressed. Chapter 50, on disorders of mentation, and Chapter 51, on disorders of movement, are both well-written. The common pharmaceutical toxins are addressed in Section 16, on toxic ingestions.

I believe that the 3rd edition is correctly updated in terms of its content and contents descriptions, compared with the 2nd edition from 1996. The book is not superficial. The author carefully surveys the important fields of critical care. I did not find a typographical error during my review. It is amazing to me that a single author performed such an extensive review of the advances in each field and rewrote most of the 2nd edition. I enjoyed reading **The ICU Book**. The 3rd

edition provides a valuable and detailed review of many important critical care fields. I recommend this text for respiratory therapists, physicians under critical-care training, and for critical care nurses.

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Avoiding Common ICU Errors. Lisa Marucci MD, Elizabeth A Martinez MD MHS, Elliott R Haut MD, Anthony D Slonim MD DrPH, Jose I Suarez MD. Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins. 2007. Soft cover, illustrated, 896 pages, \$54.95.

The 1999 Institute of Medicine report *To Err is Human: Building a Safer Health System*¹ put into words what many of us who care for intensive care unit (ICU) patients knew all too well. We knew that, despite the hard work and dedication of therapists, nurses, doctors, and many others, our patients did not reliably get interventions that could improve their outcomes. They were not nearly as safe in our hands as they should have been. Many of us responded to this challenge, dedicating ourselves to reducing errors by working harder, reading more, attending medical meetings, and sharing our experiences at morbidity and mortality conferences.

Despite our dedication and hard work, there is little evidence that ICU care has become safer or more reliable. In fact, both safety and reliability may actually worsen as treatment options become more complex.² We learned from the Institute of Medicine report that working harder is not enough. What can we do to make ICU care safer and more reliable?

Avoiding Common ICU Errors is a bold title. The preface, written by safety advocate Peter Pronovost, lays out a 3-fold ap-

proach to improving ICU safety: "We need to expose mistakes, develop strategies to reduce them, and evaluate our progress." How well does this book reach these aims? Who would want a copy of this text in her office reference collection? Would the title "Common ICU Errors" better reflect its content and value to readers?

Avoiding Common ICU Errors is organized into 14 chapters: 13 thematic, the last "miscellaneous." Chapter subjects include medications, devices/tubes/catheters/drains/procedures, ventilators/airway/intubation/extubation, infectious disease, shock/fluid/electrolytes, neurologic, laboratory, nutrition, renal, blood, imaging and tests, pregnancy, and miscellaneous. Each chapter contains a succinct 1–3-page review that includes relevant references that address specific issues that may lead to harm of ICU patients. For example, the first chapter, on medications, includes reviews of 57 topics, including "Know the characteristics of the narcotics you prescribe," "Do not use succinylcholine in patients with burns, paralysis, or other high-potassium states," "Remember that malignant hyperthermia may not have hyperthermia." In total, the text includes reviews of 317 errors considered "common" by the 164 contributing authors.

The reviews are concise and well written; some contain a table or figure, and each includes 3–5 references. Most of the reviews are thorough, given their focused intent. The text itself is pleasantly readable and includes an index, although there is no separate index for tables or figures.

Do the reviews address truly common ICU errors? I would have expected more focused attention on nosocomial infections, including interventions designed to prevent device-related bloodstream infections and ventilator-associated pneumonia (VAP). Issues of device-related bloodstream infections are superficially addressed in the section "Be meticulous in the technique when inserting and caring for central venous access catheters in the ICU, to lower the incidence of infection." The use of chlorhexidine as the preferred skin antiseptic is reviewed, although its described use ("should be applied via a concentrically larger circular motion for at least 20 seconds and should be allowed to dry without blotting or fanning") does not match current manufacturer recommendations, which call for 30 seconds of back-and-forth scrub strokes on a dry site or 2 minutes of back-and-forth strokes on a moist site, followed

by 30-second and 2-minute drying times, without blotting, respectively.³ Also not addressed are details of post-insertion care, including minimizing blood-drawing through central lines, assessing need daily, and removing the device as soon as possible. Further, there is no mention that peripherally inserted central lines, when used in the ICU, have infection rates similar to conventionally inserted devices and should be managed with the same vigilance.⁴

VAP, which is the most serious nosocomial ICU infection and is reviewed in the section "Keep the head of the bed elevated at least 30 degrees if no contraindications exist," should get specific focus because there is good evidence that VAP rates can be reduced. One study demonstrated that by "bundling" head-of-head elevation along with daily interruption of sedation, assessment of readiness to wean, and prophylaxis against deep venous thrombosis and stress ulcers, VAP incidence may be reduced by 44%.⁵ If that observation is correct, the implication is that ventilated ICU patients who do not routinely receive these therapies will continue to experience potentially preventable VAP.

One other intervention that did not get specific focus was the need to limit tidal volume when managing mechanical ventilation for patients with acute lung injury and acute respiratory distress syndrome (ARDS). The issue is addressed along with the ARDS Network results in the review "Know how to measure plateau pressure when using pressure-regulated volume control ventilation mode and know what to do with the value once it is obtained." Given the importance of this simple, effective, inexpensive intervention, and knowledge that not all patients who qualify for the therapy actually receive it, I would have expected a specific topic review.⁶

Though one could quibble with the topics included and omitted, I have a larger issue of concern. If the text's stated aim is to avoid common ICU errors, how can I actually use

this book to avoid common errors and improve safety in my ICU? It appears that the authors expect me to remember the more than 317 common errors and simply stop making them. For example, the first 10 topics encourage me to "monitor," "know," "consider" (twice), "strongly consider," "avoid," "use," "specifically query," "do not use," and, finally, "remember." Most of the other entries have similar exhortations. How could I or any other clinician possibly remember all the important dos and don'ts in this book? My perspective is that no human memory, most certainly not mine, has the capability to reliably recall the important contents of this book. How then can this book contribute to avoiding common ICU errors?

I believe the answer is found in Pronovost's preface, where he states that "we need to expose mistakes" to make progress towards reducing harm. This text admirably takes a step toward that aim with its 317 topical entries and mention of other errors included within each review. What the text does not do is provide any framework, other than an individual clinician's memory, to "develop strategies to prevent them." For example, one strategy that improves the use of maximum barrier precautions during insertion of central lines is to assemble all appropriate supplies into a kit, thereby removing system barriers (eg, providers can't locate the right supplies) and making it much likelier that providers will safely perform these procedures. I believe the text would be greatly enhanced by including references to ICU system design and improvement strategies, perhaps by including a chapter devoted solely to that topic.^{7,8}

For whom is this book useful? I recommend this book to ICU physicians, nurses, and respiratory therapists, particularly those searching for topics to focus ICU system improvement efforts. As Pronovost noted, reducing harm in the ICU begins by "exposing mistakes," and this text's authors should be commended for collecting and reviewing "Common ICU Errors," which

perhaps could be a more representative book title. "A journey of a thousand miles begins with the first step," and this text does take an important first step in the journey to reduce harm and improve safety in our ICUs.

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