100 thoughts for the critical care practitioner in the new millennium

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THOUGHTS ON MAKING DIAGNOSES

1. Making a diagnosis is only important as it relates to treating the patient or providing a prognosis; do not chase a diagnosis simply as an intellectual exercise.

2. When a patient’s mental status deteriorates suddenly and unexpectedly in the intensive care unit (ICU), first check the chart. Look at the medicines the patient has been receiving as well as the recent orders.

3. There is no physical finding or lab abnormality in sepsis or pulmonary embolism that is invariably present. This includes fever in sepsis and hypoxemia in pulmonary embolism.

4. Feel the feet of a patient in shock—a patient with warm toes does not have cardiogenic shock.

5. Histories given by drug users are unreliable.

6. When the patient’s arterial blood gases tell you he is ill and you do not think he is, remember one of two things is at work—either you’re wrong or the blood gases will improve.

7. Most patients who carry a diagnosis of “rule out pulmonary embolism” do not have a pulmonary embolism. The trick is figuring out which ones do.

8. Soft tissue infections of the extremity should always receive a radiograph, surgical consult, and culture of the outer border of the wound.

9. The neurologic examination in the ICU is different from the standard neurologic examination. Become familiar with how to do it. Do not call a neurology consult just for a good examination.

10. The patient who comes into the ICU with a normal serum sodium and experiences hyponatremia or hypernatremia in the ICU is usually the victim of iatrogenesis.

11. Whenever confronted with an unusual drug overdose, draw two extra tubes of blood right away. Label and refrigerate them; you may need them later.

12. In patients with severe, chronic hypoxemia and no obvious etiology, remember to take an occupational history. Some of those patients were chronically exposed to pulmonary toxins in their employment.

13. Some diagnoses will not be made by you.

THOUGHTS ON THERAPY

14. Maintain a healthy respect for airway problems—they are the greatest source of preventable disasters.

15. There is no such thing as a medication or a surgery completely without risk. Anyone who tells you otherwise is fooling himself or herself.

16. Avoid treating the heart rate of a patient with sinus tachycardia. If you absolutely feel you must treat, treat the cause.

17. Nobody ever died of peripheral edema. It took a while for it to accumulate and it takes a while for it to disappear. Do not try to make it go away too fast.

18. The most difficult decision in a critically ill patient is generally whether and when to deliver the baby. This decision is best made in conjunction with the gynecologist, anesthesiologist, and neonatologist all talking with you in the same room. Unfortunately, the decision is all too often not made that way.

19. Patients in shock who are in the stage of metabolic acidosis often cannot be stabilized unless mechanical ventilation is instituted. Progressive metabolic acidosis in the patient with shock is an indication for positive pressure ventilation.

20. Most patients receiving mechanical ventilation do not require paralyzing drugs. The ones that do rarely need paralysis for >48 hrs. Make a point on rounds of discontinuing paralytics as soon as possible, especially in patients with status asthmaticus receiving high dose corticosteroids.

21. When the issue is whether or not a patient is septic, the most important question is “how sick is the patient?” If the patient is sick, begin antibiotics immediately; if the patient is not too sick, wait and see how he or she progresses and what the results of cultures are.

22. The goal of antibiotic therapy in critically ill patients is to narrow coverage, not to broaden it. The general rule is that the initial antibiotic coverage should only be broadened when the patient is clinically deteriorating.

23. There should only be one person in charge of a cardiac resuscitation. At the end of the resuscitation that person should thank everyone who participated whether or not the resuscitation was successful.

24. Not every patient who carries the diagnosis of delirium tremens is suffering from delirium tremens. Be reasonably certain when you treat delirium tremens that is what the patient has.

25. New medications are being introduced all the time. Make an effort to learn about them but remember that it is better to know several medicines well than it is to know many superficially.

26. Review a patient’s medications on rounds daily. Look for medications that can be discontinued and discontinue them.

27. Osler called morphine “God’s Own Medicine.” The uses it has in critical care—pain control, sedation, treatment of pulmonary edema, reducing work of breathing—make it a drug every critical
care practitioner should know how to use.

ON CATHETERS AND TUBES

28. A patient receiving mechanical ventilation that had been quiet and suddenly becomes agitated should never be sedated until the following have been checked: tube patency, breath sounds, and oxygen saturation. Breaking this rule will eventually lead to disaster.

29. The four indications for endotracheal intubation are to bypass an obstructed airway, to provide positive pressure, to provide airway protection, or to provide tracheobronchial toilet. Be aware of what the indication is every time you intubate a patient and always ask yourself if the indication is gone before you extubate the patient.

30. Any time any catheter is not functioning properly, the first question you should ask is, “Does the patient need this?”

31. Pulmonary artery catheters provide data, not judgment.

32. The doctor who tells you his patient cannot be managed without a pulmonary artery catheter generally cannot manage the same patient with a pulmonary artery catheter. It’s not a good idea to let people who are not familiar with the catheter tell you when to use it.

33. In critically ill patients with pulmonary problems who have pulmonary artery catheters, always draw a mixed venous sample from the pulmonary artery. Learn to calculate the pulmonary shunt and learn what it means.

PRACTICING CRITICAL CARE

34. Critical illness goes on 24 hrs a day, 7 days a week. But because no one can be with the patient all the time, the best critical care practitioners are those who can anticipate problems and delegate a coherent treatment plan to others. Unlike the emergency room, the ICU doesn’t lend itself well to shift work.

35. Any time you make a critical decision right before leaving the hospital, telephone an hour or two later to check up.

36. When confronted with a difficult ICU decision, if you’re not sure what to do, it’s usually a good idea to do nothing. Eventually it will become apparent what course to take.

37. Try a new technique or therapeutic approach at least once a month. If you fail to see results after three consecutive tries of the same approach, leave it for someone else to try.

38. Practicing critical care is like living life—it’s hard for everybody and harder if you’re stupid.

39. When practicing critical care, it’s an advantage to be smart. But the best critical care doctors are those who pay attention to detail. Some smart critical care doctors have never learned that.

40. Most people who work in the hospital are afraid of, or intimidated by, the ICU and everything that goes with it. It can be a frightening place (think of your first time there). Your ability to practice critical care lies in the fact you have overcome that fear and intimidation.

41. Do not practice critical care with an eye toward avoiding lawsuits. The best strategy for avoiding lawsuits is to work hard, act in good faith, and establish a good rapport with patients and families.

JUDGMENT, SUCCESS, AND FAILURE

42. Good judgment is based on experience and experience is based on bad judgment.

43. Savor your successes but do so quickly and then move on—dwelling on them causes overconfidence.

44. Learn from your failures but do so quickly and then move on—dwelling on them causes indecision.

45. Some patients you think will get better will get worse.

46. Some patients you think will get worse will get better.

47. When you’re making decisions on rounds, put personal problems aside.

THE INTENSIVIST RELATING TO THE NONINTENSIVIST

48. Some doctors believe only those in their specialty can practice critical care. Recognize that there are good critical care practitioners in many specialties. There are also bad critical care practitioners in many specialties. It’s the singer, not the song.

49. When dealing with other people in the ICU, say what you mean and mean what you say, but pick your spots.

50. Occasionally, doing the right thing in the ICU means making people upset.

51. Exchange notes frequently with the physicians in the emergency room. Teach them what you know and learn what they know.

52. Some elderly doctors who have never practiced critical care are really wise—learn who they are.

53. Some elderly doctors who have never practiced critical care are not really wise—learn who they are.

54. There are three reasons to call a consultant—you need help or advice, you want to learn something, or you want the consultant to observe the same phenomenon you are seeing.

55. A good consultant sees a sick ICU patient more than once a day.

56. Respect the consultant who wants to learn from you.

57. The two biggest mistakes internists make when consulting surgeons in the ICU is either believing everything they say or believing nothing they say—the opinion must be put in perspective because the surgeon hasn’t been born who is always right or always wrong.

58. The biggest mistake surgeons make when consulting internists in the ICU is ignoring them, thus failing to listen and occasionally learn because they believe internists suffer from paralysis through analysis.

59. The surgeon who knows when not to operate is just as valuable as the surgeon who knows when to operate. Sometimes more so.
of a family member’s unexpected death. Nothing else is remotely as difficult.

67. If a patient who is being mechanically ventilated is alert and awake, make an effort to talk with him or her on rounds.

68. If a patient who is being mechanically ventilated is not alert and awake, assume that the patient can hear and understand what you say on rounds.

69. Urge patients who survived after being very sick in the ICU to visit the ICU at least once in the next year after they go home from the hospital. Take a picture of them with the staff. These visits boost everyone’s morale.

70. Occasionally, when making rounds on a patient likely to die, recall how you felt when a close relative of yours died. If you’ve never had a close relative die, ask someone who has.

71. Every so often, call the ICU late in the evening. If it takes more than 2 mins for you to make contact with a human voice, make a point of notifying someone about this. Imagine how patients’ families feel hearing the phone keep ringing.

72. Whenever possible, try to individualize the visiting hours for the patient. The posted visiting hours will not be convenient for every family.

73. Whenever possible, encourage families to become involved in the care of patients. Have them bring food the patient likes. See if they can assist the nurses in giving baths. Letting a family member provide mouth care is one of the easiest and most fulfilling tasks there is.

74. Make a point to say hello to the patients who are being discharged from the ICU that day.

75. As a physician in the ICU, your role is to be the patient’s advocate. Sometimes you are the patient’s only advocate.

BRIEF SUGGESTIONS

76. When in doubt, wash your hands.

77. If you do not know how, learn to read an anesthesia operative record. Learn why your patient who went to the operating room received the anesthetic regimen that he or she did.

78. There are usually one or two patients in the hospital who are on the general wards or in the emergency department who should be in the ICU. Make an effort to find them and make sure they get to the ICU.

79. The sickest group of patients in the hospital is in the ICU; the next sickest group are the ones who have been transferred out of the ICU. Keep an eye on them.

80. If you ask a nurse, house officer, or patient how a critically ill patient is doing and they say, “the same as yesterday,” keep in mind that every patient is either better or worse than yesterday. It may simply not be within the ability of the person to discriminate. Eventually it will become obvious.

81. In almost every case, it is possible to keep house officer presentations of new patients to ≤5 mins. Have the house officers use as few lab values as possible during the presentation.

82. The patient who can sit in a chair, eat by himself, and oxygenates adequately via nasal cannula is usually ready to be transferred out of the ICU.

83. The patient with a drug overdose who comes to the ICU alive will almost certainly survive. The three main causes of death once the patient is in the ICU are delayed toxic effect of the drug, aspiration pneumonia, and a repeat suicide attempt in the hospital (which is preventable).

84. To avoid burnout, every critical care practitioner should do something in medicine besides critical care. Surgeons and anesthesiologists should keep a hand in the operating room. Internists should see some non-critical care patients.

ICU KOANS—CLINICAL AND OTHER

85. All intensivists should realize that in critical illness, the heart and lungs essentially function as one unit. An insult to one will tax the reserve of the other. Those with the best reserve are most likely to survive. Those with chronic disease of one are least likely to survive an acute insult to the other.

86. The loss of reserve of any organ system is tolerated differently if the insult is chronic than if the insult is acute. In chronic disease, other organs can adapt. Given two patients with a blood urea nitrogen of 100, one who developed the problem in a week and the other who developed the problem over 20 yrs, the first will generally appear far more ill than the second.

87. Trends are more important than single values.

88. An improvement in renal function is one of the surest signs a critically ill patient is getting better.

89. Informed consent usually is not.

90. As a wise economist once opined, “Data are not facts.”

91. “Facts are not information.”

92. “Information is not truth.”

93. “Truth is not knowledge.”

94. “Knowledge is not wisdom.”

95. As you gain experience in the ICU, you will learn answers to more questions. That is the good news. The bad news is that you will also learn there are a greater number of questions that do not have answers and that the number of those questions that do not have answers never stops growing. Think of it as an infinite jigsaw puzzle where the best you can do is fit an occasional piece.

CLOSING QUOTES FOR THE INTENSIVIST

96. Lao Tzu’s statement that “a journey of a thousand miles must begin with a single step” also applies to caring for complicated critically ill patients.

97. Remember Shakespeare’s words from Julius Caesar, “Of all the wonders that I have yet heard, it seems most strange that men should fear; seeing that death, a necessary end, will come when it will come.”

98. Pay heed Hamlet’s advice to Horatio, “There are more things in heaven and earth than are dreamt of in your philosophy.”

99. Remember Cromwell’s famous admonition in a Letter to the Church of Scotland, “I beseech you, think it possible you may be mistaken.”

100. Nearly 2,500 yrs ago Hippocrates wrote, “Life is short, the art long, timing is exact, experience treacherous, judgment difficult.” An amazingly apt description of critical care today.