# Revisiting the Ten Commandments of Emergency Medicine: A Resident's Perspective

Christopher S. Evans, MD, MPH*; Corey Slovis, MD

*Corresponding Author. E-mail: chris.s.evans.md@gmail.com, Twitter: @ChrisEvansMD.

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## INTRODUCTION

Three decades have passed since the publication of "The Ten Commandments of Emergency Medicine" by Wrenn and Slovis.[1] Emergency medicine has continued its distinct perspective on patient care that juggles undifferentiated symptoms, time constraints, and the unpredictable influx of critically ill patients since the article was published in 1991. Although the specialty has continued as an indispensable component of health care, it, like all of medicine, has continued to evolve and adapt. As emergency department (ED) volumes continue to increase while emergency clinicians are expected to recognize acute illness, use increasingly complex diagnostics, and initiate (and often complete) resuscitations and treatments, the potential for errors continues to increase. Having an accessible framework to assist emergency medicine trainees in avoiding common errors has been immensely helpful for many residents and practitioners of emergency medicine. However, any framework must also recognize the complexity of emergency medicine practice, and clinical decisionmaking should not be simplified solely to lists, protocols, or algorithms. The goal of this review is to summarize the original 10 commandments of emergency medicine, highlight aspects that have remained constant, and discuss pertinent changes during the last 30 years from the perspective of a senior emergency medicine resident at the same institution from which these commandments were originally drafted.

## SECURE THE ABCs, BUT CAREFULLY

### Original Commandment: Secure the ABCs

Performing a rapid but thorough assessment of the airway, breathing, and circulation (ABC) of every patient every time remains essential. However, during the last 30 years, the emergency medicine literature has greatly expanded our understanding on the nuance of managing the ABCs, and now the manner by which one "secures the ABCs" combines the art and skill of emergency medicine. Although it is not possible in this format to summarize all nuance and various strategies of such a broad commandment, we propose here a select few examples to highlight common clinical scenarios. First, once we identify a certain component of the ABCs that needs to be addressed, we should also be deciding how quickly and aggressively interventions need to be started, in what order to perform such interventions, and potential harms if initial diagnostic impressions are wrong. Determining whether patients are "protecting their airway" is not always a dichotomous decision or a constant, and can change over time. Rapid sequence intubation is not without risk, and determining whether a patient needs an airway immediately or within the next 20 to 30 minutes allows optimization of hemodynamics and oxygenation before intubation.[2,3] Similarly, as our understanding of the potential harms of over- and underfluid resuscitation continues to expand, special care should be taken with how much and how quickly intravenous crystalloids are needed during a resuscitation. Additionally, the order in which one addresses the ABCs should be assessed in specific clinical scenarios such as prioritizing early defibrillation in a shockable rhythm[4] or early hemorrhage control in trauma patients.[5]

## REMEMBER NALOXONE, GLUCOSE, AND THIAMINE

### Original Commandment: Consider or Give Naloxone, Glucose, and Thiamine

The consideration of giving naloxone, checking a rapid point-of-care glucose level, and administering thiamine in every patient with altered mental status remains paramount. It is far too easy to make assumptions about the cause of altered mental status while allowing precious time to pass in the setting of potentially easily reversible cause. In the era of the opioid epidemic, recognizing acute opiate intoxication and resultant respiratory depression requiring emergency reversal with naloxone is critical.

Furthermore, using a titrated dosing strategy for naloxone administration reduces risk of precipitating acute withdrawal, may protect staff, and may increase the likelihood of response. In patients with long-term opiate use who have mild respiratory depression, one can dilute 0.4 mg naloxone into a 10-mL normal saline solution, resulting in a naloxone dose of 0.04 mg/mL that can be titrated in 1-mL aliquots to improve spontaneous respirations without precipitating acute withdrawal.[6] Conversely, in the setting of synthetic opiate overdoses, typical doses of 0.4 or 2 mg intravenous naloxone may not be sufficient, with doses exceeding 10 mg intravenous naloxone being required in some cases.[6] Since the original writing of the 10 commandments, we now recommend rapid assessment of glucose level with a point-of-care glucometer in contrast to empirically administering dextrose, particularly in the setting of patients with stroke syndromes.[7] Although thiamine deficiency may be less prevalent than previously thought in acutely intoxicated ED patients,[8] timely initiation of thiamine in the ED should be considered, given that the consequences of delayed recognition and treatment, regardless of cause, are significant.[9] Furthermore, data outside of the ED have raised awareness of other clinical scenarios in which to consider giving thiamine 100 mg intravenously, including cachectic-calorie-malnourished patients with cancer[10]; malabsorption states, including gastric bypass patients[11]; patients with hyperemesis gravidarum[12,13]; and those with eating disorders.[9]

## ADMINISTER A PREGNANCY TEST (AND SOMETIMES BEDSIDE ULTRASONOGRAPHY)

### Original Commandment: Administer a Pregnancy Test

The adage that every women of childbearing age who has a uterus needs a rapid determination of pregnancy status still holds true. In the setting of advances in reproductive technologies, the upper end of ages at which a pregnancy test should be obtained have been broadened, especially if a patient is aged mid to late 40s but has received infertility treatment in the past. Although the evidence surrounding the use of point-of-care ultrasonography is not sufficient to merit a commandment for all pregnant patients, we advocate incorporating it into evaluation of potential pregnancy-related emergencies, particularly in resource-limited settings or practice settings that have delays in access to radiology. A positive focused assessment with sonography in trauma abdominal ultrasonographic result in a young female patient with atraumatic abdominal pain has the potential to quickly and easily identify emergency diagnoses even before pregnancy test results.[14,15]

## ASSUME THE WORST

### Original Commandment: Assume the Worst

One of the primary roles of emergency physicians is to rule out diagnoses that are a threat to life, limb, or vision. Although such diagnoses are less common, it is important for emergency physicians to remember that their job is not to necessarily obtain the correct diagnosis, but not to miss a dangerous diagnosis that may result in patient harm if not recognized. A minor but important update from the original commandment involves the specialization of care outside of the ED. As inpatient and outpatient medicine becomes increasingly subspecialized, emergency medicine is best positioned to initiate evaluation for life threats, and it is imperative to not assume that other care teams will consider a broad differential of life-threatening diagnosis "once the patient is admitted." Similarly, when we are confident a life-threatening diagnosis is exceedingly unlikely but a patient does not respond to interventions as expected, we should welcome the opportunity to revisit the potential for missed diagnosis that warrants further evaluation.

## DO NOT SEND UNSTABLE PATIENTS TO RADIOLOGY, BUT IF YOU MUST, DO NOT LET THEM GO ALONE

### Original Commandment: Do Not Send Unstable Patients to Radiology

Unstable patients are generally safest and best served by not leaving the ED for radiology-performed diagnostic studies. If feasible, use portable radiography and use point-of-care ultrasonography as a diagnostic tool. However, advanced diagnostic imaging, including computed tomography (CT), has rapidly become an integral part of diagnosis and is commonly needed for appropriate disposition decisions in the ED.[16] With newer EDs often including closer proximity to CT scanners, sometimes the best step in management after initial resuscitation is a CT scan to most expediently arrive at a diagnosis and identify the most appropriate specialists to definitively care for the patient. In such cases, the patient should not go to radiology alone and not before treatment that is possible in the ED is initiated.

## SEEK OUT THE RED FLAGS

### Original Commandment: Look Out for the Common Red Flags

A core heuristic to decisionmaking in emergency medicine is recognizing red-flag symptoms or signs suggestive of emergency diagnoses. Although this commandment holds true today, it warrants revisiting with

minor additions, including the use of new technology for seeking out red flags or warning signs of developing pathology that would have been easily missed 30 years ago. First, being particularly attentive to any aberrations to the 5 vital signs is of the utmost importance, and with the accessibility of vital sign integration into electronic health records, trends in vital signs over time should be routinely checked. Document an interpretation and interventions attempted for abnormal vital signs, and be wary of discharging home a patient with tachycardia without an explanation. Similarly, for common chief complaints such as atraumatic back pain, continue diligence in asking pertinent social history elements, including history of injection drug use or prior back surgeries and injections, regardless of one's assumptions or unconscious bias about the likelihood of such risk factors. As the proportion of ED patients who are older adults increases,[17] be aggressive in evaluating aortas in every older patient with back, flank, or abdominal pain. Furthermore, be wary of attributing an ED presentation to simple alcohol intoxication without earnestly entertaining the possibility of alternate diagnosis or critical illness, especially if there are abnormal vital signs or hypoglycemia, or in situations in which chemical sedation is required.[18] Last, and unchanged from original commandments, continue asking the following 3 questions, knowing that any negative answer should give one pause and be thought of as a red flag: Has the patient ever had this complaint before? Can the patient receive adequate intake by mouth outside of the hospital? Can the patient walk or at least ambulate at his or her baseline?

## TRUST NO ONE, BELIEVE NOTHING (NOT EVEN THE ELECTRONIC HEALTH RECORD)

### Original Commandment: Trust No One, Believe Nothing (Not Even Yourself)

Initial resuscitation decisions often must occur in the setting of incomplete or inaccurate information. Although electronic health records have revolutionized the amount of data available to clinicians, care must be taken to not rely blindly on their data, well-intentioned emergency medical services reports, or "outside hospital records" that come with patients from other facilities. Whenever possible, verify pertinent medical history with the patient or family, and if not, ensure the history is consistent across multiple entries in the electronic health record. Similarly, when working with consultants, do not discount any concerns you have about the patient in front of you. This is very important when consultants are recommending something discordant to your own thoughts or that you have never heard of, especially if they are providing a telephone consultation for a patient they have for a patient they have not yet evaluated. Last, we must be flexible and understand we may not always hear the whole history because a patient's story may change over time or there may be a multitude of reasons a patient may not be able to or want to provide all information when you are caring for him or her.

## LEARN FROM YOUR MISTAKES

### Original Commandment: Learn From Your Mistakes

Mistakes at every stage of training in emergency medicine are still common,[19] and since the initial drafting of the commandments, the availability of data has led to increased understanding of the costs and prevalence of medical errors.[20,21] Although we should continue to strive for decreasing errors and improving safety, we must embrace the posture of learning from mistakes, regardless of their severity. We should continue to cultivate cultures in which trainees and faculty have multiple mechanisms of reporting mistakes,[22] as well as to identify trusted colleagues and mentors beforehand to debrief and constructively work through errors, particularly if a bad outcome resulted.

## DO UNTO OTHERS AS YOU WOULD YOUR FAMILY (AND THAT INCLUDES FAMILIES DIFFERENT FROM YOURS)

### Original Commandment: Do Unto Others as You Would Your Family (and That Includes Coworkers)

This commandment stays largely unchanged. Although it seems basic, treat all patients how you would want your family members cared for if they were in an ED. In certain situations, this commandment may need to be broadened to incorporate the "platinum rule," whereby we consider how the patient or his or her family would like to be treated, especially if it may be outside the framework that includes our personal or family preferences.[23] Emergency medicine is an incredible responsibility and provides a unique lens through which to see humanity. Although we should feel pride knowing that we care for anybody and everything that comes through the door, it can be challenging. When faced with difficult patient encounters, do more evaluation, not less, and always practice empathy.

## WHEN IN DOUBT, ALWAYS ERR ON THE SIDE OF THE PATIENT

### Original Commandment: When in Doubt, Always Err on the Side of the Patient

The scope of emergency medicine is incredibly broad and the management of uncertainty is central to decisionmaking in emergency medicine.[24] Beyond the sheer volume of information required in emergency

medicine practice, we are also navigating an increasingly complex medical system with subspecialists and limited outpatient follow-up options for patients. Despite all of this, our fundamental responsibility is to our patients. We must always advocate for what is the best for them at all times. Even if we are not able to solve the issues that brought someone to the ED, we can always do what we are able to alleviate suffering. Furthermore, when confronted with uncertainty, always inform the patient and ask oneself how likely it is the patient would be able to return if he or she were to get worse.

## CONCLUSION

The Ten Commandments of Emergency Medicine were written almost 30 years ago, and like almost everything else in emergency medicine, they need to be interpreted in the face of new knowledge, evolving practice patterns, and innovative technology advances. With the emergency medicine trainee in mind, these revised commandments serve as a basic framework to avoid common errors by grounding patient care in the central tenets of emergency medicine that have persisted while recognizing the importance of incorporating new evidence that guides how we practice our specialty.

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*Author affiliations:* From the Department of Emergency Medicine, Vanderbilt University Medical Center, Nashville, TN (Evans, Slovis); and the Department of Emergency Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC (Evans).

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