Introduction

No matter how we slice it, Emergency Medicine (EM) is a young field. In the 1960s, the U.S. public began to clamor for the need of its existence. In September 1979, it became the 23rd recognized medical specialty (note: "23" is a pretty special number in sports history). In 1980, the first American Board of Emergency Medicine certification examinations were offered. In September 1989, EM received primary board status. In comparison, Internal Medicine (IM) was recognized in 1936 and Surgery in 1937. As one can imagine, as medical schools were filling their ranks, the predominant teaching faculty trained in IM and Surgery. The clinical approaches and thought processes taught across the four years were unsurprisingly IM- and Surgery-centric and mostly still are. We can all easily agree that EM calls for a different approach. The hope of this book is to explore and leave the reader with an understanding of EM decision-making and as an advocacy tool for our crucial field. Section 1 features engaging pieces on what the EM decision-making process is and why it's important from a myriad of central and talented emergency physicians. Section 2 features over 170 pearls for the frontline EM clinician.

SECTION 1

Decision-Making

1

On Deciding to Not Decide

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The number of decisions an emergency clinician must make during a shift can quickly become overwhelming. Given the frequent interruptions, the suboptimal conditions, and the high levels of stress and uncertainty, it is extremely challenging for an emergency clinician to make *all* these decisions well – **in some cases, it might even be impossible**.

Cognitive load theory suggests that all humans have a limited "bandwidth" (or "cognitive capacity") that we can harness to make decisions and perform tasks. This bandwidth is typically used in three distinct ways. ***Intrinsic*** *cognitive load* is the bandwidth we devote to making a specific decision or performing a particular task. ***Extraneous*** *cognitive load* is the bandwidth that leeches into the environment around the decision or task we're trying to accomplish; this bandwidth is spent buffering distractions and handling unrelated tasks. Finally, ***germane*** *cognitive load* is the

bandwidth we use to learn and solidify a thought process or form a new skill – germane load may be particularly high for clinicians who are more junior or still in training.[1]

Typical methods of improving decision-making under pressure focus on training individuals to make better decisions by changing the balance of or decreasing one or more of these components. Guidelines and calculators help us reach decisions more quickly, limiting intrinsic load requirements. Improved environmental design removes distractors and highlights key information, decreasing extraneous cognitive load. Practice and simulation separate some degree of learning from doing, freeing up capacity in the moment.

In this essay, we consider an alternative approach to making better decisions that in some sense decreases all three types of cognitive load, freeing clinicians up to focus more mental bandwidth where it's needed most. Instead of focusing directly on making *better* decisions, start by **making *fewer* decisions** – in other words, decide to not decide.

To explore this somewhat counterintuitive method of improving decision-making, we will look at three strategies emergency clinicians could use to make fewer decisions safely and effectively. We will finish with a word of caution and by describing ways to put these strategies into action immediately that emergency clinicians can start on their next shift.

Harvesting Freerolls

The term *freeroll* describes a decision where there are minimal or no costs associated with choosing to take an action and where there is likely to be even a small amount of benefit.[2] When you identify a decision as actually being a freeroll, you can decide to not decide by **choosing an intelligent default action ahead of time**,

and always (or almost always) take that action when that decision point arises.

Consider the "decision" of should you give your pediatric patient a sticker? Yes, you should. It is possible to concoct a theoretical situation where a sticker would cause a problem for a patient, but generally the only downside is the nearly infinitesimal monetary cost of the sticker itself. The upside of rewarding a brave young patient and celebrating their strength and grace in a complicated situation, however, is potentially enormous. It's a freeroll. Give the kid a sticker – in fact, decide right now to give all pediatric patients a sticker on their way out.

Obviously, the sticker choice is an overly simplistic example of a decision an emergency clinician might be called to make. For a more realistic one, consider the decision of whether to give dextrose during a cardiac arrest when you do not know the patient's blood sugar. Administering a dextrose solution might significantly help if the blood sugar is low and is unlikely to hurt the patient if the blood sugar is normal or high.

As there's almost certainly no downside and there is potentially an upside, you could conclude that giving dextrose during a cardiac arrest with unknown blood sugar is also a freeroll and commit your team to administering dextrose during every cardiac arrest when you don't know the sugar. Dextrose becomes a default action, freeing up your team's capacity to make other decisions.

Leaning Into Dominance

The term *dominance* describes a situation with two options that are compared along multiple dimensions where Option 1 is better than Option 2 along at least one dimension *and* no worse along any other dimension. In this case, Option 1 "dominates" Option 2.[3]

When you identify a decision as having a dominant option, you can decide to not decide by **defaulting to the dominant option or even hiding or removing the dominated options**.

For example, imagine two tests (A and B) that both measure the levels of potassium in the blood. Tests A and B are equally accurate, require the same amount of blood, and use the same sample tubes. However, Test A takes 10 minutes to run, whereas Test B takes 4 hours. Looking at these criteria, Test A dominates Test B, and any instance of having to choose between the two tests should be eliminated. Test A should be the default, easy to choose option, whereas Test B should be substantially harder to order (or maybe even eliminated entirely).

A more generous and usable form of dominance is *practical dominance*, which allows you to compare two options not along *every* dimension, but only on the "important" ones. One option practically dominates another if it is the same or better along every *important* dimension than its comparator.

Leaning into practical dominance is a great method of deciding to not decide about antibiotic choice. Imagine, for example, two antibiotics (X and Y) that are both equally effective at treating an infection but differ in terms of both cost and the frequency of administration – Antibiotic X is slightly more expensive than Antibiotic Y but only has to be taken twice daily, not four times.

Assuming the difference in cost is small and the goal is actually getting antibiotic into the patient, we can say that Antibiotic X practically dominates Antibiotic Y. Knowing this, a team could set up their electronic medical record to make prescribing Antibiotic X the default option and effectively eliminate more unnecessary decisions. (Of course, if cost were the most important factor, the conclusion would be reversed, and Antibiotic Y should be made the default choice.)

Breaking Equipoise

The term *equipoise* refers to a situation where the differences between options are either known and minimal or are unknown. Essentially, equipoise means you genuinely don't know which option is better in a particular decision. When it comes to deciding to not decide, decisions with equipoise or near equipoise can be challenging but also very high yield.

Unlike situations with freerolls or dominance, there are no clearly optimal solutions in decisions with equipoise. A common trap in this situation is "analysis paralysis," where you perseverate and burn cognitive bandwidth trying to decide between nearly equal choices. This situation is called *Fredkin's paradox*, which states that **the more alike two options are, the more energy it takes to decide between them**.

The way to evade this paradox lies in **acknowledging your uncertainty and coming to terms with the fact that you are unlikely to break the tie in any real, systematic way**. If the options are truly equal, then there's no "right" answer; if there is no answer, then is there really much of a question? Yes, but it is probably one you can save bandwidth by not focusing on. Just decide to not decide and pick randomly.

It can feel challenging to pick randomly, but it's easier to understand if you reframe it as "going with the flow." For example, there are reams of data on the (generally small or maybe even nonexistent) differences between administering different crystalloid solutions like lactated Ringer's or normal saline.[4] In most cases, there really is equipoise between the two. So, which one do you pick?

Choose whichever is easiest to reach, or the first one the nurse mentions, or whatever there is more of in the drawer. If there is real equipoise, then it does not matter what you

pick. Save that cognitive bandwidth for where it will be useful and decide to not decide.

A Note of Caution

Although the strategies of harnessing freerolls, leaning into dominance, and breaking equipoise offer effective ways to streamline decision-making, they must be applied with caution – especially in high-stakes or irreversible situations. For example, the decision to administer tissue plasminogen activator (tPA) in patients potentially suffering from a stroke is irreversible and carries significant downside potential. This is not the type of decision to skip deciding.

It's crucial to **"pump the brakes" around such critical decisions, taking extra time to double-check logic and thought processes, and decisions like this should typically be made explicitly**, not by defaults or heuristics.

Additionally, emergency clinicians must be aware of hidden complexities that can lurk in seemingly straightforward situations. Nonobvious costs such as hidden allergies or drug–drug interactions can change the dynamics of a situation, removing freerolls and wrecking dominance. Similarly, hospital shortages, intravenous (IV)-line compatibilities, or other "externalities" to a decision that a clinician might not be aware of can change the balance of a decision and shift or remove an apparent equipoise.

Ultimately, although these strategies can significantly reduce cognitive load and free up valuable decision-making bandwidth, they are not a panacea. Emergency clinicians must balance the use of these techniques with careful consideration of each patient's unique circumstances and recognize that deciding to not decide is a moving target, not a static one.

Operationalizing Not Deciding

Train Your Team: Educate your team on these decision-making strategies ahead of time, focusing not just on the how, but also the why. Explaining why you're trying to reduce the number of decisions before starting to not decide will help ensure your team knows the goal is not disregarding their questions but instead empowering the whole team to concentrate energy and focus where it's most needed.

Identify Low-Hanging Fruit: Start by examining routine decisions that seem to add little value or cost disproportionate amounts of energy or frustration. Could these be instances of freerolls, dominance, or equipoise? Work with your team to brainstorm the implications of not actively making these decisions. What would it look like if you changed one of these decisions into a default? Think through the benefit but make sure to focus primarily on potential downsides and how this new default might inadvertently lead to other complications.

Empower Team Members to Make Exceptions: Encourage all team members, especially those lower in the hierarchy, to bring the team's attention rapidly to any decision, even ones that might initially seem unnecessary. In the dynamic and unpredictable environment of emergency departments (EDs), flexibility and adaptability are key. In a crisis, knowledge gathered from the cutting edge about what's happening in real time should trump decision-making heuristics.

Build, Measure, and Learn: Anytime you're changing a decision into a default, make sure you're simultaneously implementing systems that allow for monitoring and adjusting these new processes. Recognize that perfection is probably not achievable from the outset and that iterative improvements are essential.

Keep Focusing on the Right Decisions: Remember, in the face of overwhelming cognitive demand, the goal is not just to make decisions well, but to make the right decisions well. These heuristics are tools to aid in focusing limited resources where they are most needed, complementing – not replacing – expertise and teamwork.

References

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