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Author

Mayer, Andy

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Are Emergency Physicians' Brains Different?

Andy Mayer, MD FAAEM

Emergency physicians are used to not knowing all of the facts. Our professional brain is trained to gather all of the immediately available data which can reasonably be obtained within the time constraints of the emergency department and then decide and act. This timeframe can be seconds or minutes but not usually more than a couple of hours. We do not have the luxury of expansive history gathering, data collection, discussion, and reflection. Every emergency physician has had to come to terms with the stressful reality of having to decide something really important without enough information. We make the decision to admit or discharge and then have to move on to the next patient. Just think for a second about how long you really deliberate on whether or not to admit the 45-year-old guy with chest pain with the normal EKG. You do not have the luxury of time in making decisions and this is the dilemma of the decision-making process which separates different types of physicians.

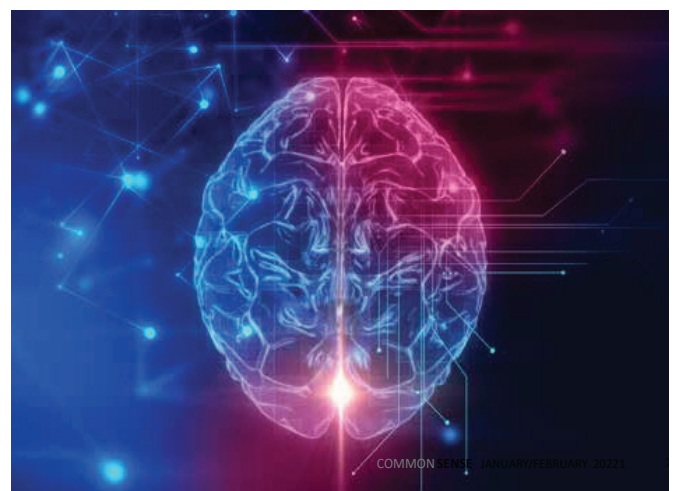
Consider when you entered medical school and started your first clinical rotations and first felt the small but growing pressures and responsibility of "deciding." Initially medical students are mostly information gatherers who find the information needed to help the decision makers on the team make the right decision. You as a young medical student had to decide what to present to your team and needed to try and emphasize the right points. You did not decide who needed admission or who was ready for discharge but you had responsibilities which allowed you to help with patient care and observe how decisions were made as a step towards accepting this responsibility yourself. You could mostly err by omission by not knowing or not sharing a piece of information which would help in the decision process.

As you moved along in your training and started seeing patients alone in a clinic or emergency department setting your level of responsibility grew. The level of supervision decreased and the level of responsibility increased. Some medical students can "decide" and move on more quickly than others. Did you notice the difficulty some of your fellow medical students had with making decisions? Some could present a simple abdominal

case to your resident or staff on rounds in thirty seconds leading down the path which they thought was correct. These students had already "decided" for themselves what action needed to be taken and made the presentation which directed the decision makers towards that path. Others hampered by their indecisiveness stumbled through a patient presentation undecided on what to do next. This slowed down rounds and caused the real decision makers to dive deeper into the case as they sensed that they could not trust the presentation and had to gather information on their own. This helped the indecisive medical student as they felt relieved of the responsibility due to the increased involvement of the team in their patient's care but it also enforced this indecisive behavior. Could you tell who in your class would be drawn to emergency medicine as opposed to dermatology, pathology, or rheumatology? Some medical decisions need to be made fast and others allow copious time for deliberation while the 24-hour urine is running.

Medicine draws in many types of personalities. Many cannot imagine standing in the OR for hours while other could not imagine sitting in a room talking to patients about their emotions for an hour. Some of your fellow medical students could not decide who needed a repeat CBC in the morning on their own and others felt comfortable making more

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important decisions and were able to speak to families and patients about serious topics. I sometimes wonder in this regard about emergency physicians and their brains. Did we train our brains to decide quickly or were we born with this ability? This is the classic nurture verses nature question.

There is a great book about this dichotomy of decision making. It is called "Thinking, Fast and Slow" by Daniel Kahneman. It is well worth reading as you can think about where you stand in this regard. He divides decisions into two types. System 1 involves what you would think of as rapid decisions made after a limited amount of deliberation. Some might think of this as instinctual or emotional responses but the essence is making a decision rapidly without all of the information. System 2 thinking is what might be considered more thoughtful or deliberative. These decisions use more time and effort weighing the evidence and making a conscious decision and could be considered more logical.

Naturally, one would think that emergency physicians would live in System 1 and rheumatologists live in System 2. However, is that true? I personally think that it is but I suspect that we drift back and forth between the two systems. We have cases where we decide and make a disposition in our head but then while explaining to Epic our medical decision making we slow down and rethink our decision and move into System 2. In essence we change our mind or think better of sending a certain patient home. That is fine and correct on an occasional basis but imagine an emergency department where the emergency physician goes back in on most patients and orders another round of tests to delay the decision. I think we all know an emergency physician who you had to follow on a shift who worked that way. You cringe when you look at the schedule as you will typically find the department a mess. Patients are signed out to you who already has a full set of labs and a CT back but an ultrasound or whatever was added on. In effect, the decision on admit or discharge has been deferred to you. We all know this is a medicolegal problem. Does this emergency physician use mostly System 2 and does not have the time they need to make a decision in a busy emergency department? Were they always this way or did something happen?

I think that sometimes we are triggered to handle certain cases in System 2 due to a bad experience

Everyone has a soft and sore spot in their medical brain. You all know colleagues who work up certain complaints more thoroughly and slowly than their usual pace. If you press them on this there is always a story related to a patient. This certainly occurs right after a bad case. After a good doc misses a pulmonary embolus for example, every short of breath patient will get a CT angiogram or whatever the second level of evaluation entails to allow the distressed physician time to decide it is okay to send the patient home. However, these decision-making adjustments can last for years or your entire career. I had a partner who had the misfortune once of discharging the wrong middle aged man with atypical chest pain. He was initially paralyzed and took off of work for a week or so but then seemed fine. However, he had an anniversary type reaction and happened to be working on the one year anniversary of this visit with said patient. He became paralyzed that day with any patient with chest pain. He moved to System 2 and became stuck and ended up admitting every patient with chest pain that day. He recovered but our brains are remarkable things. You will find certain physicians who for the rest of their careers will do a sepsis type workup on any child with a high fever. When questioned about this behavior by a resident trying to do cost effective or evidence based medicine they can become defensive and evasive before they reveal their battle scar which led to this decision delay.

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If you ever come upon a fellow emergency physician who becomes paralyzed with indecision after a bad case you will immediately recognize the fact that without the ability to promptly decide that the emergency department stops functioning. We have the unenviable task of making life changing decisions while being interrupted and rushed on a daily basis and yet we do it well.

Now we added Covid to this mix and many of us faced the daily question of what we were supposed to do with the Covid patient right in front of us. Dealing with a new and deadly virus with virtually no information and experience as to how to best deal with it is an unrepresented challenge related to deciding what to do. Sending a middle-aged patient with an oxygen saturation of 94% who kind of looks sick or deciding not to intubate the very hypoxic patient with Covid was difficult. We had to fight System 1 with System 2 when our knowledge base was extremely low and ever changing. It made my brain hurt. Attending meetings early during Covid it was clear that all decisions were really temporary as our conclusions were usually at least partially wrong.

Consider where you stand on this spectrum of decision making. Are “fast” emergency physicians the masters of System 1 and are “slow” ones always in System 2? Where is the right place on this spectrum from a medicolegal perspective? Can you change where you are on the decision making tree?

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