

Draft New Chapter for NOLS Wilderness Medicine Text

Judgment and Decision-Making

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Patient care is a series of decisions ranging from the common and simple (whether to treat a blister) to the unusual yet significant (whether to evacuate someone with a belly ache). These decisions affect the patient's health, the safety of your expedition members and the safety of those who may come to assist in your evacuation or rescue.

Along with the many tales of outdoor leaders showing good judgment when faced with a medical decision there are stories of people missing the significance of signs and symptoms and delaying evacuation and tales of rescuers sent needlessly into harm's way. We want to support good judgment by being thoughtful and skilled decision makers.

Judgment and decision-making are based on a process of forming an assessment, analyzing and comparing the information and options, and then laying down an opinion. Many decisions are simple and routine. We have the information and experience we need and thoughtful people to consult. Yet there are times when we must make decisions in the mist of uncertainty, challenged by missing data, conflicting information and urgency. We're at the edge of our experience and training and we're often on our own, making decisions without being able to consult a higher authority.

Humans have developed fascinating and complex ways to reach decisions, and we often do so without giving the process much thought. We may use a rule of thumb, follow a protocol or algorithm, or make a guess. We may act quickly based on experience, or gather information and make a reasoned decision. This chapter takes a brief tour of common ways we make decisions, their pros and cons, and some traps we want to avoid.

GUESSING

The self-aware decision-maker knows that we guess, sometimes unintentionally, and probably more often than we care to admit. Guessing, using intuition uninformed by data and possibly misinformed by experience, isn't always bad. If consequences are low it saves time and provides the solace of action. However, when a person's health is at stake, we don't want to guess.

RULES OF THUMB

Heuristics, simple "rules of thumb," are common problem-solving aids, mental short cuts based on collective and personal experience. We use heuristics in everyday decisions, often without thinking. We "measure twice, cut once" to avoid error. We benefit from the cold weather camping experience of our elders by adhering to the saw to "go to bed warm to sleep warm." We evaluate weather by considering the mariner's rhyme "red in the morning, sailor take warning; red at night, sailor's delight." We avoid the irritation of poison ivy by remembering "leaves of three, let them be."

Using mental short cuts can be expeditious. We think, then act. They are valuable tools as long as they are accurate and relevant to the decision we need to make. We trust heuristics because we assume they are proven over time and supported by statistics or science. In fact, they may not be accurate in every context. "Red and yellow, kill a fellow. Red and black, venom lack" is used to identify the Coral Snake found in the U.S. Unfortunately, if you cross the border into Mexico and head south this heuristic doesn't work. There are Coral Snakes with red and black adjacent bands that are deadly. Be aware when you are using a heuristic, and consider whether it is both accurate and relevant to the situation at hand.

PROTOCOLS, TREATMENT AND EVACUATION GUIDELINES

Medical professionals use protocols, standing orders and algorithms to guide treatment and evacuation decisions. These are pre-determined decision points that are helpful to guide the novice, and to remind the expert. They may be the local operating plans, lost person and medical protocols familiar to outdoor leaders. They may be the evacuation guidelines you read in this book.

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It can be very helpful to have decisions decided before you encounter the situation, especially if they are the work of thoughtful, careful and experienced professionals. Thank goodness we don't need to choose the compression rate every time we do CPR. We can use the protocol of a minimum of 100 compressions per minute, the heuristic "push hard, push fast," or the memory of practicing to the beat of "Staying Alive."

Yet a word of caution: algorithms useful for classic signs and symptoms can discourage independent and creative thinking when the picture is vague. There may be a patient who does not trigger a protocol, for example does not meet your program's abdominal pain triggers, but still warrants evacuation. You may be leading a peak climb, knowing you plan to turn around at a certain time, yet decide to descend earlier due to building weather. Protocols are not a substitute for judgment. Cookbooks are best used by thinking cooks who recognize when recipes need to be changed.

EXPERIENCE

We make decisions based on our experience. We recognize specific patterns, find clues within those patterns and compare this to our experience. Experts intuitively and quickly recognize a situation and evaluate, accept or reject choices. This is called the expert decision model, expert intuition, natural decision-making or a pattern recognition model. It's fast: see the pattern, make the decision.

An experienced medical person can look at a patient's appearance, see subtle clues, recognize a pattern and come up with a hunch as to what is wrong - "This guy is having a heart attack." An experienced rescuer can look at a map and quickly know whether a litter-carry will be over shortly, or take all night.

The important word is experience. Most of us are outdoor professionals first, and medical providers second. We need to be honest about our medical experience, or lack of it. We need to be candid about what we have learned from our experience-- learning that often comes from acknowledging errors, which is challenging, as well as successes, which are easier to acknowledge. We need to be careful about reaching conclusions from one or two experiences or from interpretations of our experience which may be inaccurate. We can confuse correlation with cause, or fall into the trap of misperception, thinking the patient had one problem, when in fact they had another.

INFORMATION GATHERING MODEL – THE PATIENT ASSESSMENT SYSTEM (PAS)

The Patient Assessment System is decision-making based on the old-fashioned virtue of careful, deliberate and systematic thinking. We gather information, weigh alternatives and then decide.

Gather Information

The initial assessment identifies threats to life and the chief complaint, which will likely be the focal point of the decision. The SAMPLE history and head-to-toe exam complete the gathering of subjective and objective information.

Identify options, choices, alternatives

The assessment, the problem list, catalogues our findings. The plan lists the alternatives, and our treatment and evacuation decisions. There are many important decision points in wilderness medicine (i.e. deciding if abdominal pain warrants an evacuation) and less acute questions (i.e. determining the usability of an ankle injury) but the ultimate goal is identifying who is sick and who is not-- hence the importance of good data gathering in the PAS.

Are there clear boundaries on this decision such as limits to your resources or route options? For example, there are no helicopters available or you cannot cross the river on the evacuation route. Do you have treatment or evacuation protocols or orders from your medical director or organization to guide or dictate your decision?

Decide, implement and evaluate.

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In wilderness medicine we have extended patient contact time which allows us to repeat our assessment to check unclear findings, to look for changes in our patient's status, and to evaluate the efficacy of our actions. Our decision-making continues throughout our patient care.

An organized analytical approach can be thoughtful, careful and thorough. It also can be slow. There are certainly times when we don't have the time for this approach, yet consider that in wilderness medicine, we usually don't have the option for rapid transport. We can use time to help us make good decisions.

THE HUMAN HAZARD

There isn't a perfect way to make a decision; every method has its pros and cons. If you're self-aware as a leader, you are honest about your human frailties, tendencies and biases. Here are just a few of the dangers that lie in the fog of decision-making, and some thoughts on how to avoid them.

Cognitive biases are thinking habits, both conscious and subconscious, built up over time and experience. We may think we are being thoughtful, but it's very human to have bias in what information we select, and what we observe. We may anchor our decision on a convenient diagnosis without considering options. We may fill in a blind spot in a pattern with information we desire, but information which is not really there.

Wishful thinking is the familiar trap of making the terrain fit the map. In medicine this can cause us to attach a label to the patient despite discrepancies in the evidence.

Cherry-picking only a few features of an illness can cause a *pattern recognition* error. We close our minds to new information and alternative explanations and solutions.

When we hear headache in the wilderness we think dehydration, the *common diagnosis*. Common things are common, yet we must be cognizant of the most potentially serious alternative diagnosis. Treat the patient for the statistically probable problems on your list and, in case you are wrong, consider the most serious possibility.

Decision-making is not an objective and rational process free from the intrusion of emotion. *Emotional hooks* from recent or vivid scenarios affect our cognition and our judgment. Be wary about 'going with your gut' when the gut is a strong emotion, positive or negative, about a patient.

"WHAT WERE YOU THINKING?"

Students of decision-making, those who want to be able to answer the question "what were you thinking?" develop the habit of mindful or reflective practice, the ability to think about their thinking. It's an intentional attentiveness to thoughts, sensations, emotions, interpretations, judgments and heuristics. It's honest self-evaluation, pertinent feedback, attentive observation, an ability to take different perspectives, and presence of mind.

Reflective practitioners seek *honest feedback*. They need to know, as best they can, what really happened. Only by debriefing and reflecting can we truly learn whether the decision made was appropriate, whether it was the actual cause of the outcome and is worth repeating in the future. If we are not open to conflicting information and willing to admit error, we may base future decisions on an inconsequential intervention or a flawed observation.

Reflective practitioners see each situation as unique and avoid prematurely slapping a label on a problem and closing the mind. Clarify unclear information and language. Verify alleged facts. If you are not sure about your history or physical exam, go back and do it again. At the same time, *tolerate uncertainty*. You may not be able to answer all questions or gather all the data. Make the best decision with the information at hand.

Reflective practitioners are able to see a situation from multiple and opposing perspectives, intentionally considering other explanations and challenging their first impressions. Ask what is common, what is the worst case and what can be ruled out.

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Cultivate the *presence of mind* to be watchful, observant, open, curious, flexible and present when faced with anxiety, uncertainty and chaos. Rituals, as simple as pausing and taking a breath, can remind you to be mindful. Repetitive training can give you the confidence to perform tasks with competence, and give you the mental reserve to think.

Be *self-aware*. “Did I ignore any data?” “What emotions are operative in me, in this situation?” “What of this situation is different?” “What assumptions am I making?” Everyone stumbles into decision-making traps. Self-awareness and watchfulness give you a better chance to catch yourself before you fall.

Communicate effectively. Often the first step into the error trap is miscommunication. The medical error literature has many examples of vital signs, medical history or drug doses incorrectly reported and leading to poor decisions from the cascade of flawed information. Listen actively. Restate key points. Use concise, distinctive speech, without mumbles or fillers, with recognized vocabulary, controlled tone of voice and minimal jargon.

Use your team. Effective teams create a culture where the team members can pool their wisdom by asking questions, clarifying information and understanding when to advocate for alternate perspectives.

FINAL THOUGHTS

The best wilderness medicine practitioners are life-long learners. They willingly work on the rough edges of their competency to help them navigate the real world. Knowing that real world decision-making is not as simple as choosing the correct heuristic or protocol they thrive on practicing both their skills and their judgment.