Special Article

The Psychophysics of Transition to Long Term Care

Richard W. Miles MD *

Richard W. Miles, MD & Associates, PLLC, Bella Vista, AR

Keywords:
Cognitive error
transitional care
medical decision making
nocebo effect
metacognition

ABSTRACT

More than a decade after the publication of To Err Is Human, cognitive error remains a mystery to physicians. Competent and conscientious physicians rarely recall making a single cognitive error, yet this must be central to the explanation for inappropriate physician nonadherence to evidence-based guidelines. Published information regarding cognitive error in the medical literature is scarce and widely scattered. We do know that cognitive error is induced by complexity, duress, and uncertainty, conditions that regularly confront long term care physicians when they assume care of a new patient at the skilled nursing facility. Negative attitudes and low expectations of care are common among new patients and families. This is compounded when care is assumed by an unfamiliar physician. The initial disquiet and negative misconceptions of patients and families regularly make the transition one of the most error-prone events in medical practice. On the brighter side, the transition provides an excellent opportunity to study cognitive error. Cognitive errors at transition typically begin with a decision to avoid mention of necessary changes to flawed treatment plans already in effect. This is done as a temporary measure to avoid further stressing the patient and family. But what appears to be an ideal compromise is a risky option and should be avoided. Evading the issue introduces long-term risk to the patient. In addition, although it is seldom acknowledged, evading change often has a negative impact on local standards of care. Five cognitive principles are presented as root causes of cognitive error. Six contextual factors are identified that are endemic to nursing home practice, making the physician even more error prone. Because mistrust is central to dysfunctional decision making at the transition, strategies are presented to expedite gaining trust. This article makes the case for adding training in the cognitive psychology of medical decision making to core requirements for certification in medical direction.

Published by Elsevier Inc. on behalf of the American Medical Directors Association, Inc.

What might be called anthropology’s great truth is that we underestimate how and by how much others see the world differently than we do.

Baruch Fischhoff1

Psychophysics and Medicine

Psychophysics is the study of the functional relationship between the physical value and the psychological value of any attribute.2 Utility theory dominated the study of decision making before 1979. It assumed that all reasonable people would obey the axiom of giving maximal weight to the physical value of any choice with little or no consideration of the psychological value of that choice. In 1979, prospect theory proposed an alternative view that reasonable people are frequently and predictably influenced by the psychological value of choice.3 Prospect theory had immediate application in economics, particularly in the field of marketing. Medicine developed an early interest in psychophysical principles when, in the 1980s, mainstream medical publications acknowledged marketing’s potent effect on physician prescribing behavior.4 Soon to follow were methods for counterdetailing physicians by exploiting psychophysical principles.5 About the same time, the framing effect was recognized as the explanation for the observation that alternative descriptions of an identical treatment elicit different preferences among patients.6 By 1999, randomized trials combined social influence with high-quality clinical information to successfully influence physician prescribing behavior.7 Interest in psychophysical principles had a fast start in medicine, but it never kept pace with medicine’s natural pre-disposition for evidence-based medicine (EBM). EBM enthusiasts resembled proponents of utility theory, believing that if the true physical value of a treatment option was available, reasonable physicians would choose treatments based on their physical value. Two landmark publications
subsequently appeared and openly questioned whether EBM would be a comprehensive solution to irrational choice among physicians. The Institute of Medicine concluded that medical error is inevitable, and that errors are merely the result of the human condition. Phillips et al. coined the term clinical inertia and discussed the observation that, even with full knowledge of EBM, reasonable physicians do not always do the right thing.

The Language of Medical Error

A search for causes of cognitive error led to an array of unfamiliar terminology and jargon derived from at least six disciplines of study: (1) error in medicine, (2) industrial engineering, (3) neuroscience, (4) philosophy or logic, (5) cognitive psychology, and (6) social psychology. Many of these terms resembled each other and sometimes overlapped. Frustration with chaotic terminology resorted with Goldratt’s idea that developing new and more precise jargon should facilitate discussions of the constraints to any flawed process. Daniel Kahneman makes a similar point that “a physician needs to acquire a large set of labels for diseases…..Learning medicine consists in part of learning the language of medicine. A deeper understanding of judgments and choices also requires a richer vocabulary than is available in everyday language.” Unfamiliar terms defined in this article provide labels for cognitive forces that exert undesirable effects on rational medical decision making during the transition to long term care (LTC). Examples of cognitive errors are included throughout the text, and when real cases were selected, only demographic details were modified.

An Error-Prone Workplace: The Nocebo Effect

I contend that with the possible exception of the hospital emergency department, the skilled nursing facility (SNF) is the most error prone of medical workplaces. A number of contextual factors are introduced that make transitional care at the SNF particularly treacherous. These contextual factors make the LTC physician, patients and family (PFs), and members of the interdisciplinary team (IDT) more error prone.

Roughly stated, a nocebo response is an undesirable effect induced by unreasonably pessimistic expectations. Vladecz recently wrote, “Nobody, it seems, loves nursing homes very much, but nursing homes are as necessary as they are misunderstood.” Katz observed that most PFs make the transition to an SNF when it has become their last resort. The decision is a form of conditional surrender or capitulation for most PFs. The nocebo effect can have greater impact for the occasional PF that has serious misconceptions and mistrust of the nursing home industry. These impressions are usually faulty, and they derive from lack of firsthand experience with nursing home care and decades of sensational media coverage of the industry. In addition to learned misconceptions, a dramatic change in life circumstances typically induces irrational reasoning that causes PFs to believe that life can never be good in the SNF. This transient irrational reasoning is the basis for the transitional rule, describing how poorly humans are able to predict adaptation to achieve future happiness. Second, the transition rule states that irrational beliefs usually abate within months if we do nothing to make matters worse. The second half of the transition rule does not provide an exception to addressing unsound admitting orders. Evading a discussion about essential treatment change introduces risk, even when the intent is to have this critical conversation at a later date. Even more worrisome, evasion often transmits a subtle message to other members of the medical community that has unintended effects on local standards of patient care.

My first recollection of the nocebo effect occurred at a national conference in 1989 at a major teaching hospital. A speaker mentioned an “affect squad” composed of psychiatrists, psychiatric nurses, and psychologists working at his hospital. The squad was rapidly deployed to evaluate any inpatient scheduled for an invasive procedure and displaying an irrational degree of fear or skepticism. The squad was empowered to delay or reschedule the procedure if the problem could not be quickly resolved.

What About American Medical Directors Association Guidelines? The Concept of Two Minds

The American Medical Directors Association (AMDA) has developed multiple guidelines, already tailored for common illnesses among SNF patients. Why shouldn’t LTC physicians immediately proceed to these impeccable EBM guidelines when negotiating treatment change with mistrusting PFs? The answer is not so obvious, and it considers an interesting observation that some things can be learned but cannot be taught.

Two systems for thinking are defined in the language of cognitive psychology: system 1 and system 2. This concept is not new, and the concept of two minds is deeply entrenched in our culture and folklore. To illustrate, consider the following quote from John Hurt’s version of the traditional ballad, “C. C. Rider”:

“If I had a listened to my second mind, Lord I wouldn't be sittin’ here wringin’ my hands and cryin’.”

These lyrics clearly indicate awareness of two methods of thinking and, when they were written, the songwriter was reputed not to have travelled more than ten miles from his childhood home in rural Mississippi.

The following oversimplification is useful to explain how system 1 and system 2 work together while each system tries to compensate for the other’s strengths and weaknesses. System 1 works rapidly and below the level of conscious awareness. System 1 is lazy and reckless, preferring to consider information it readily understands while ignoring the rest that requires more effort. System 2 monitors system 1 and scans its results, looking for cues that it should override system 1. System 2 is very methodical and, when it does think, it ponders each issue slowly and one step at a time. System 2 is conscientious but is easily distracted, and it is not reliable to maintain vigilance for very long. It tires easily, and high levels of mental effort cause discomfort after short periods of intense concentration.

Upon admission to the SNF, it is common for PFs to have incorrectly judged the nursing home industry and the LTC physician. These flawed judgments result from failure of both PF systems. PF system 1 made its judgment subconsciously and based on sensational misinformation about the nursing home industry. PF system 2 has not yet received cues that its judgment of care provided at the SNF is flawed. PF system 2 will not reconsider the flawed judgment without a reason. System 2 must receive cues that the original judgment was incorrect, and until then, the flawed judgment will stand.

Cues for system 2 come from two sources. One source is indisputable feedback from peers or evaluation of personal interactions and patient outcomes. The other source of cues is from system 1. Real-time feedback for PFs and physicians is rare in clinical medicine. This makes PF system 1 the only timely source of generating cues for PF system 2. I contend that PF system 1 will not respond favorably to discussions of evidence-based guidelines because, by its nature, system 1 will systematically ignore guidelines. In cognitive psychology, system 1’s tendency to ignore complex information is termed extension neglect. The only effective way to change PF system 1’s opinion of the LTC physician and the SNF staff is to demonstrate that both are trustworthy and caring. When PF system 1 understands that it can trust the staff at the SNF, it will find a way to communicate its new judgment to PF system 2.
Cognitive Principles and Contextual Factors: The Effect on Initial Planning

Physicians vary greatly in their personal bias toward intensity of preventive treatments for the frail elderly. Minimalists take a nihilistic view of all preventive treatments, whereas at the other extreme, maximalists strictly adhere to EBM guidelines. Minimalist physicians are conscientious but remain committed to their belief that care in the SNF is “what we should do when nothing more can be done.” It is easy for them to rationalize or truly believe that deficient admission orders are sufficient, and they often cite with confidence that flawed admission orders represent what the PF and a team of physicians from the community want. Other reasonable physicians are committed to application of AMDA guidelines while considering the preferences, circumstances, and needs of the PF.

Hundreds of heuristics and biases have been described in addition to hundreds of other terms from the language of medical error. All contribute to medical error. I have reduced these forces to five cognitive principles and six contextual factors, selected because they are key contributors to most cognitive errors that occur during initial planning sessions at the SNF. These forces impact the treatment decisions of minimalists, maximalists, and all other physicians just like they impact decisions made by PFs.

Five Cognitive Principles

Social Influence

Social influence has long been recognized as a cognitive force capable of influencing decision making by physicians. This principle has been exploited by the pharmaceutical industry for decades and later by academia. Social influence results from a natural hierarchy of dominance within all working networks. Dominant or respected members exert influence over less dominant or new members, with dominant members labeled opinion leaders. Making decisions that differ from those of opinion leaders can be unpleasant and induce feelings of insecurity. By contrast, conformity with opinion leaders fosters a sense of comfort and belonging. Social influence is relevant to the transition because PFs arrive at the SNF with misconceptions about the capabilities of community- and hospital-based physicians with whom they are familiar. Their misconceptions result from a belief that opinion leaders from the community possess universal skills that transfer to LTC practice. In actuality, skill sets of community-based physicians are overestimated. These misconceptions are resilient, and when they are accompanied by mistrust of the LTC physician, the two resonate powerfully.

When I began full time LTC practice more than a decade ago, I noticed that many patients arrived at the SNF on suboptimal treatment for stroke prevention in atrial fibrillation. PFs unfamiliar with me were skeptical of changing treatments prescribed by their community-based physicians. During negotiations, I experienced the predictable sensations associated with dissonance. When emotional resistance was encountered, there was a temptation to “just let it go.” By 2002, I developed a firm bias to mention evidence-based treatment options to all patients unless there was a compelling medical reason not to do so. Over the years, I have developed improved methods of broaching this issue with reluctant PFs. Now it is unusual for PFs to be unappreciative of the effort to reconsider this difficult decision. However, I still experience unpleasant sensations associated with dissonance.

Power Distance

The power distance index (PDI) is a numerical value based on a person’s nationality and ethnic origin. The index was developed from research supported by The Hermes Corporation beginning in the 1960s. The results defined how cultural heritage affects how people think in the workplace. In 1980, Hofstede published a PDI for 40 different countries, providing a numerical value reflecting the probability that a person would accept an unequal distribution of power within a working group. A low PDI indicates a predisposition to speak up to those of higher rank, and a high number indicates the opposite. The predictive value is diluted in countries such as the United States that have ethnic diversity. Hofstede's observation has been borne out by others that persons of diverse cultural origins continue to manifest their cultural legacies for many generations after a change in citizenship. It is reasonable to speculate that the PDI of LTC physicians in the United States might be better predicted by the PDI of the country of their ethnic origin.

PDI is not portrayed as a positive or a negative characteristic. It gives no consideration to worthiness or good will of superiors and considers only rank, thereby differing from social influence. Although only a small percentage of LTC physicians are likely to manifest work-related values reflected by the PDI for the United States, it serves a useful purpose of reminding us that speaking up is easier for some than for others. In theory, PDI can be ameliorated by debiasing. A few examples of high PDI cultures are Mexico (81), Philippines (94), India (77), and Belgium (65). Examples of low PDI cultures are Austria (11), Israel (13), and Denmark (18).

At a national conference, I visited several times throughout one day with a young physician seated next to me. The conversations led me to believe English was his second language. I was impressed by his knowledge and accomplishments by such a young age. One speaker admonished the audience to speak up at the time of admission to the SNF and to change inappropriate orders written at the hospital. At the next break I admitted to the younger physician that I sometimes have angst when I speak up and suggest changes to the orders of highly regarded consultants from the community. The young physician replied, “How do you think I feel?” Subsequently during the day, he mentioned that family traditions made it difficult for him to broach treatment change. He volunteered that expressing disagreement with others, particularly superiors or elders, was usually discouraged in his family.

The Bystander Effect

Caring observers become progressively more reluctant to provide assistance to a person in distress as the number of persons in attendance increases. Root causes of the bystander effect are not so clear even though the effect is highly reliable and reproducible. Possible causes are performance anxiety, diffusion of accountability, and an error of inference that, if anything should have been done, it would have been done by someone else. The bystander effect differs from social influence because it exerts its effect among total strangers and is determined only by number of bystanders.

In the context of transition to the SNF, care plans from the community are perceived by the PF as being carefully tailored by others that persons of diverse cultural origins continue to manifest their cultural legacies for many generations after a change in citizenship. It is reasonable to speculate that the PDI of LTC physicians in the United States might be better predicted by the PDI of the country of their ethnic origin.

PDI is not portrayed as a positive or a negative characteristic. It gives no consideration to worthiness or good will of superiors and considers only rank, thereby differing from social influence. Although only a small percentage of LTC physicians are likely to manifest work-related values reflected by the PDI for the United States, it serves a useful purpose of reminding us that speaking up is easier for some than for others. In theory, PDI can be ameliorated by debiasing. A few examples of high PDI cultures are Mexico (81), Philippines (94), India (77), and Belgium (65). Examples of low PDI cultures are Austria (11), Israel (13), and Denmark (18).

At a national conference, I visited several times throughout one day with a young physician seated next to me. The conversations led me to believe English was his second language. I was impressed by his knowledge and accomplishments by such a young age. One speaker admonished the audience to speak up at the time of admission to the SNF and to change inappropriate orders written at the hospital. At the next break I admitted to the younger physician that I sometimes have angst when I speak up and suggest changes to the orders of highly regarded consultants from the community. The young physician replied, “How do you think I feel?” Subsequently during the day, he mentioned that family traditions made it difficult for him to broach treatment change. He volunteered that expressing disagreement with others, particularly superiors or elders, was usually discouraged in his family.
my observation was that presentation of medical evidence was not of much benefit until the PF changed their long-held attitudes and beliefs.52

The Treadmill Effect

The treadmill effect is related to the remarkable tendency of humans to adapt to new circumstances.25,29 In the SNF, the treadmill effect is analogous to developing tolerance to a bad medical practice. The effect resembles the bystander effect but differs by not meeting a requirement that bystanders are around. Kahneman’s example of the effect is the observation that when a person is repeatedly submerged in water that is too hot or too cold, before long the person will judge the same water temperature to be just right. In the future, that person will judge other water temperatures by this new set point for perfect water temperature. The treadmill effect in the SNF is the observation that reasonable people and physicians quickly adapt to a lowered standard of excellence when suboptimal care is widely tolerated. I contend that the treadmill effect has an unintended adverse impact on local standards of care. This is justification for zero tolerance of flawed treatments at the time of admission.

Zero tolerance is easier said than done. All LTC physicians have felt the temptation to avoid broaching difficult issues with a mistrusting PF. Experience teaches us that evading the issue is never a good idea because it implies tacit approval or that we don’t care. Experience teaches us that evading the issue is never a good idea because it implies tacit agreement or that we don’t care.53 An alternate strategy is to temporarily defer a contested change, but deferral introduces similar risk to the patient that deferred decisions will never be revisited.54 Clinical relevance is particularly high in group practices where tacit approval can be inferred by all providers who subsequently observe flawed orders in effect on a patient’s medical record.

The most prevalent example of the treadmill effect in LTC practice is the observation that, during the past two decades, conscientious and well-trained LTC physicians consistently failed to treat osteoporosis before 2003. Tolerance to this form of substandard care is baffling to medical experts, and it is inconceivable that well more than 80% of LTC physicians were unaware of EBM guidelines.

The Fundamental Attribution Error: The Fatal Flaw of Judgment by Prototype

Judgment by prototype is a general purpose heuristic, essential to a wide variety of complex decision making.28,55 During the transition, LTC physicians and IDTs use this heuristic as they work under serious time constraints to determine the decisional knowledge and treatment goals of PFs. This method of rapid judgment usually works, but it has a predictable error rate. The error, termed the fundamental attribution error, occurs when judgments of the motives, preferences, and decisional knowledge of PFs is incorrect.56 Unless corrected, the PF’s decisional knowledge and treatment goals are not what we think they are. How could this happen?

The error results from the basic tendency of system 1 to overvalue personality-based or physical characteristics of the PF while avoiding the harder work of analyzing situational factors that could explain the observed characteristics of the PF. System 1 is very good at matching its observations of the PF with prototypes of other PFs it has judged and categorized in the past. When a highly favorable match is available, system 1’s work is over. System 1 presents the judgment to system 2, which has the final ability to override or accept. For a variety of reasons, system 2 regularly fails to override flawed judgments and the error has happened.97

Two other methods of rapid judgment are used on occasion: snap decisions and thin slicing.57 Snap decisions are extreme examples of judgment by prototype. They occur instantaneously when system 1 needs no additional information after seeing or hearing about the PF. The match is so favorable that there is no reason to see or hear more. Thin slicing is a more sophisticated shortcut, requiring a small sampling of data gathered about the PF. Both system 1 and system 2 use the small data set to draw broader conclusions about decisional knowledge and treatment goals of the PF.

Skeptics will believe that this error can be avoided by heightened diligence. Kahneman warns otherwise, stating that rapid judgments are not made, they simply happen. System 1 cannot be turned off and, at its best, System 2 is capable of maintaining vigilance for only short periods.17,55 Distractions and interruptions cause system 2 to fail even more frequently as a monitor for system 1. This explains why, with maximal effort and due vigilance, all LTC physicians make flawed judgments of the PF.58 Because these errors are inevitable, the only remedy available for the physician is to develop capability of recognizing that prior judgments are flawed. Shared decision making can generate cues that treatment goals and decisional knowledge attributed to the PF need to be reconsidered.53,58 Unfortunately, cues are often ignored because of overconfidence and confirmation bias.17,26,29 Cues are more likely to trigger reevaluation among the minority of physicians who recognize their own fallibility.26,29,53,58

A 55-year-old man was admitted involuntarily to my SNF from a psychiatric hospital after an incident with law enforcement officers. He had a history of repeated psychiatric hospitalizations for behaviors associated with bipolar disorder. His wife was 20 years his junior, and she made a strong case that he could not live at home any longer. After investigating the case, the IDT and I concluded that the patient’s goal was to go back home as quickly as possible, and that his wife was taking advantage of an opportunity to gain some respite from her stressful marital situation. The team cited similar cases when a younger wife had insisted that an older spouse remain at the SNF against his wishes. This was simply another one of those cases. After 3 months, I received cues from IDT members that caused me to question whether the patient really wanted to go home. The team also questioned their original judgment of the wife’s motives. The team was convened for a brief session and reversed the original impressions of the patient and his wife. The new judgment was that the current living arrangement ordered by the court matched the preferences of the patient and his wife. In addition, living at the SNF appeared to be the least restrictive and safest option available for this patient. It took the team 3 months to understand that our patient and his wife were not the people we thought they were, and they did not want what we believed they wanted.

Contextual Factors: Validation From the Aviation Industry

During the early stages of this study of cognitive error in the SNF, I perceived a striking resemblance between the dysfunctional communication among cabin crews involved in air disasters and dysfunctional initial family meetings at the SNF. Established knowledge that cognitive forces and contextual factors could coalesce to cause highly competent professionals to ride their jumbo jet into the ground provided validation of the notion that cognitive forces combined with contextual factors induce error among well-trained and conscientious physicians. Six contextual factors are regularly encountered at the first planning session at the SNF. Three factors—uncertainty, time constraints, and unfamiliarity—are almost always present. Three others—mistrust, fatigue, and missing clinical information—are sometimes present. I make the distinction between unfamiliarity and mistrust. These contextual factors bear striking similarity to contextual factors contributing to air disasters as depicted in Table 1.16,22–24,47,59–77 The contextual factor uncertainty is universal to the SNF and only results from mitigating speech in the
Table 1
Contextual Factors Associated With Cognitive Error

<table>
<thead>
<tr>
<th>Contextual Factors</th>
<th>Aviation Industry</th>
<th>LTC Medicine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatigue</td>
<td>Conversations from aviation disasters indicate a high percentage of pilots mention being fatigued and, more than half of the time, pilots have been awake for 12 hours or more. The implication is they are tired and not thinking sharply.</td>
<td>Lack of restful sleep contributes to medical error, and this has been addressed for medical residents. This hazard is probably accentuated by regular night call and underestimation by experienced LTC physicians.</td>
</tr>
<tr>
<td>Being in a Hurry</td>
<td>In an overwhelming percentage of air disasters, the flight was behind schedule.</td>
<td>Kahneman identifies time pressure as a driver of mental effort and mental fatigue. Competing demands and inadequate compensation are factors cited as causes for clinical inertia.</td>
</tr>
<tr>
<td>Technological Malfunctions</td>
<td>Minor technological malfunctions were present in the majority of air disasters. The malfunction was easily overcome, but it made the crew's already stressful job even more difficult.</td>
<td>Relevant clinical information is often missing at the transition. This has an effect on the LTC physician that is analogous to the adverse effect technological malfunctions exert on cabin crews.</td>
</tr>
<tr>
<td>Bad Weather</td>
<td>In a typical air disaster, the weather is bad. The weather seldom causes a crash, but again, it makes a stressful situation even more difficult for flight crews.</td>
<td>A stressed, angry, or dysfunctional PF has an effect on the physician resembling that of bad weather. Cognitive error is not caused by conflict, but the added stress makes the physician more error prone.</td>
</tr>
<tr>
<td>Unfamiliarity</td>
<td>In almost half of aviation disasters, the pilot and copilot had never flown together. There was no noticeable state of conflict, but the two were not entirely at ease with each other.</td>
<td>Unfamiliarity of the PF with the new physician is the rule. Humans are averse to ambiguity. This might explain why PFs would be inclined to select an inferior option suggested by an unfamiliar physician over a superior option suggested by a familiar physician.</td>
</tr>
<tr>
<td>Uncertainty</td>
<td>Uncertainty was a factor only as it was introduced by mitigating speech. This type of speech has disappeared among air crews as a result of crew safety training.</td>
<td>Uncertainty in the SNF is endemic and unavoidable. It stems from the absence of credible evidence regarding the utility of EBM in elderly outliers.</td>
</tr>
</tbody>
</table>

Reflective Practice: Thinking About Thinking

Because many mistakes happen without our awareness, we need to understand metacognition, which is the process of consciously thinking about our own thinking. We do this in everyday practice and, when we reconsider a decision we have just made, it might be termed “thinking on our feet.” Reflective practice usually implies thinking about decisions made in the more distant past. Reflection is usually triggered by a cue that causes a physician to wonder whether he has made an error in the management of a patient. Cues for me came regularly from a self-imposed mandatory review of circumstances leading to unplanned hospitalization among SNF patients.

When in private practice, I never needed to rationalize cutting corners or making errors because I almost never became aware of doing anything wrong. I have described how fortunate I was to have received a timely clue that led me to discover that I regularly made mistakes. Aware of my occasional mistakes, I was able to more easily recognize similar mistakes made by conscientious colleagues. The frequency of mistakes was disconcerting, and I began to search for causes. I also wondered why I had no recollection of having made any of the mistakes. I had a unique feedback loop as I continually reviewed all readmissions to the SNF. Feedback occurred in total privacy, and I experienced no sensation of threat or humiliation. On the contrary, I felt relief when a cognitive error was identified, and this was followed by a sense of urgency to correct similar planning errors that might have been made for other patients. As more errors were identified, I continued to wonder what was happening at the time a deficient order was written or approved. It did not take long to conclude that many treatment decisions were made subconsciously. Still without answers and solutions, I continued reflecting on long-held attitudes and beliefs. It became obvious that many of my attitudes and beliefs were flawed and were almost certainly the basis for bad decisions made below conscious awareness. I can never be certain that the flawed beliefs were the basis for the errors, but I can be certain that many attitudes and beliefs were early subsequently modified. My early use of reflective practice was described elsewhere in this journal.

Sloth or Economy? The Principle of Least Effort and Programmed Override

Skeptics still believe that error in medicine is overestimated, and they continue to believe that errors result from lack of attention, lack of effort, or sloth. That conclusion is a half-truth. It is true that system 1 is lazy and reckless, and it is true that system 2 fattigues easily and cannot always maintain vigilance. The missing half of the truth was framed by the Institute of Medicine: these weaknesses are inevitable and result from the human condition. Even with maximal effort and due vigilance, we all make errors. Mental effort is driven by three factors: complexity of a task set, time constraints, and switching back and forth among tasks. All three factors are operative as the LTC physician assimilates a new patient into the SNF. Consider the tasks involved that include the review of complex medical records and current orders while making a judgment whether the orders match the PFs’ needs or goals. Add to this multiple phone calls that interrupt the process and require the
physician to focus back and forth among other complex tasks. Finally, consider that this is done with a degree of angst that the physician will not make it home in time for a family activity. This sustained effort and resulting mental fatigue are familiar to all LTC physicians. System 1, true to its nature, is telling system 2 to “just let it go, for now.” Experienced LTC physicians cannot rely on heightened vigilance to resist system 1’s bad advice. They will require a programmed method of automatically overriding system 1’s preference for the path of least resistance. Development of a program to override is an integral part of developing medical expertise. Over the years, system 2 learns, by experience and from mentors, that taking the path of least resistance is a natural response that is usually not a good idea.

**Solutions**

**Lessons From Counterdetailing: Winning the Trust of the PF**

At the transition, LTC physicians have access to AMDA and American Geriatrics Society guidelines containing information needed to tailor care with the PF. The only obstacle in many cases is a mistrusting or skeptical PF. I assert that gaining trust of the PF begins by reaching out to PF system 1. PF system 2 will be monitoring the proceedings and, if the PF is already mistrustful, PF system 2 will be hypervigilant. Therefore, the first information presented to the PF must meet two critical requirements. The first is that the information should be easily understood by PF system 1, and the second is that it should be perfectly logical to PF system 2. In other words, the LTC physician should attend to things first. In my experience, the following quote of Jan Tillish, an early proponent of tailored care, has been well accepted by some hypervigilant PFs early in the proceedings when discussing uncertainty. He said, “any fool can make a good decision with good data. If all the relevant data existed, medical care could be relegated to telephone consultants with algorithms. The challenge is to make a good decision with flawed data.”

The strategies listed in Table 2 are unproved, but they have been useful to me when negotiating with reluctant PFs. These strategies were selected to meet the requirements of both PF system 1 and system 2. I contend that attending to these requirements should precede presentation of complex medical knowledge and guidelines.

**Improving IDT Communication: The Critical Function of Mandatory Feedback**

It can be excruciating for accomplished physicians to be made aware by others that they have committed an error of consequence. Reason describes an intellectual emergency response that can be triggered by providing such feedback to a highly committed person. In the extreme, the reaction triggers an irrational set of behaviors, designed to protect self-image. Ironically, just as feedback to the captain is a mandatory requirement of airline crewmembers, feedback from the IDT is critical to the LTC physician. Consistently provoking an excessive response from the physician will cause IDTs to be reluctant to provide feedback. Therefore, language should be tailored to provide essential feedback with unnecessary alarm. Without feedback, the physician might never recognize his own error, and all the while the patient would remain at risk.

**What About Reluctant LTC Physicians?**

Goldratt discusses how the practice style of reluctant physicians might become “their baby” and represent a major part of their self-image. Many minimalist physicians proudly acknowledge their beliefs, providing an illustration of the earlier statement that some things can be learned but cannot be taught. These physicians are overconfident that their minimalist philosophy is appropriate for their elderly patients. Overconfidence is not altogether a bad trait, but overconfidence is recognized as a major contributor to cognitive error in medicine. Inappropriate overconfidence is linked to the absence of timely feedback in clinical medicine.

**Table 2** Strategies for Winning Trust: Emotional Labor

<table>
<thead>
<tr>
<th>Exploit Inadequate Priming: Patients and family (PFs) are commonly unprepared for the transition and have unanswered questions that we might anticipate. An offer to address these is a good starting place.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Empathy:</strong> The process of developing empathy requires both listening and redirection to demonstrate that we understand the concerns of skeptical PFs. Demonstrating empathy is poorly acknowledged as a tactic to gain confidence of skeptical patients. Training for effective negotiation begins with learning to listen rather than learning to lecture.</td>
</tr>
<tr>
<td><strong>Celebrate Uncertainty:</strong> PF system 1 easily understands our uncertainty about the relevance of evidence-based medicine in the elderly. It also understands our inability to predict survival time. Discussions about how we make decisions with poor data do not offend PF system 2. PF system 1 notices when we care and are well-prepared.</td>
</tr>
<tr>
<td><strong>Recount Personal Growth:</strong> PF system 1 is comfortable with evaluating personal experiences. Before medical training, many physicians and interdisciplinary team members held unfounded beliefs resembling those of skeptical PFs. Recounting stories of how and why our flawed beliefs were modified can be effective.</td>
</tr>
<tr>
<td><strong>Mediation:</strong> Borrowing from the art of negotiation, skeptical PFs might be reassured by an offer to talk with family members who have medical knowledge or with one of their personal physicians.</td>
</tr>
<tr>
<td><strong>Sources of Credible Information:</strong> It can be useful to supply a hard copy of Nichols’ article from Caring for the Ages that directs PFs to several credible Web sites. Nichols mentions the ocean of information available on the Internet but warns that there is no filter to identify misinformation and folk mythology.</td>
</tr>
<tr>
<td><strong>Language and Rehearsal:</strong> A useful introductory sentence when mentioning change to skeptics is: “I hate to have to bring this up today, but it is too important to skip.” Practice expressing the proper degree of disapproval: (1) I’m concerned; (2) I’m uncomfortable; (3) I object; (4) I can’t provide.</td>
</tr>
</tbody>
</table>

It can be excruciating for accomplished physicians to be made aware by others that they have committed an error of consequence. Reason describes an intellectual emergency response that can be triggered by providing such feedback to a highly committed person. In the extreme, the reaction triggers an irrational set of behaviors, designed to protect self-image. Ironically, just as feedback to the captain is a mandatory requirement of airline crewmembers, feedback from the IDT is critical to the LTC physician. Consistently provoking an excessive response from the physician will cause IDTs to be reluctant to provide feedback. Therefore, language should be tailored to provide essential feedback with unnecessary alarm. Without feedback, the physician might never recognize his own error, and all the while the patient would remain at risk.

Goldratt discusses how the practice style of reluctant physicians might become “their baby” and represent a major part of their self-image. Many minimalist physicians proudly acknowledge their
prescribed statins at hospital discharge and, in 2002, I almost never prescribed a statin for any patient over the age of 75. As each subsequent recommendation for a statin was reviewed, I became progressively more annoyed until a tipping point was reached. At that time, irrational and unbecoming behavior seemed to well up uncontrollably. The behavior that followed was best described as a rant as I cited endless reasons for avoiding statins in the elderly. I will never forget the looks of amazement and bewilderment on the faces of my colleagues as I shared my righteous indignation. A few weeks later I changed my previous bias of avoiding most preventive treatments for high risk elderly patients.12,85

Discussion

This article has a number of shortcomings that are unavoidable. The methodology of reflective practice is inherently hard to understand. Conclusions drawn from reflective practice will be plausible to only a minority of physicians having keen awareness of regularly making mistakes.29 A larger percentage of physicians almost never recognize making mistakes, and they are unlikely to embrace conclusions drawn from reflective practice. I identify only a few areas of controversy or alternative explanations for cognitive error. This is not intentional; it is the result of my incomplete education in cognitive psychology. My conclusions are drawn from a study having a singular focus on clinical inertia or undertreatment. No attempt was made to understand successful decision making or the adverse effects of overtreatment. Similarly, no effort was expended on understanding the effect of unreasonably optimistic expectations of PFs.

This article proposes some root causes for the nocebo effect encountered during transition to the SNF. These proposals represent the application of psychophysical principles, tested on simple models, to explain complex cognitive errors. Kahneman86 warns that those who apply these principles to complex models do so at their own peril. Therefore, it is appropriate that readers be wary that my conclusions have application to LTC practice.

At times it is difficult to tell whether the psychophysical principles affect the physician, the PF, or the IDT. In truth, psychophysical principles affect all three. Capitulation has been simplified to depict a crisp event that is easy to identify. In real life, capitulation occurs in many forms and is not easy to recognize. Occult capitulation of a reluctant PF needs to be brought to the attention of the physician or it becomes a lost opportunity to revisit deferred decisions. This article treats the PF as a cohesive unit when, in fact, the PF is a group of individuals with diverse opinions and preferences.

I have drawn conclusions and recommendations based, in part, on the work of Elstein et al87 on clinical reasoning. Their conclusions support Morley’s88 assertion that expertise in LTC practice requires years of practical experience. Furthermore, their work suggests that clinical competence acquired at other points of service does not necessarily transfer to LTC practice. Finally, this work provides a reasonable expectation that LTC physicians are capable of developing a degree of mastery over rapid reasoning.89 Crooksherr39 warns that, in theory, mastery of rapid reasoning, through debiasing, is possible, but it will not be as simple as it sounds. I have observed that my newly acquired capability of recognizing cognitive error is not domain specific. This skill can be applied in diverse domains extending beyond the SNF and even beyond clinical medicine.90 For example, one of the nonphysician reviewers of a previous manuscript recently telephoned long distance to report several humorous examples of the Gambler’s Fallacy displayed among members of a large audience attending a public forum.

A critical challenge that remains is to develop a dependable method of revisiting deferred or incomplete medical decisions at timely intervals. Periodic care plan reviews and annual updates provide a perfect opportunity, but current methods of medical record keeping do not often reflect the complexity surrounding deferral of an earlier treatment recommendation.54,91,92 The task of tracking deferred recommendations might be assigned as a mandatory function of local IDTs.

Suggesting the wide application of marketing principles to gain trust should raise old concerns that some physicians might use this knowledge to personal advantage or to excess.52,93 Although medicine has a brief tradition of applying these principles to improve patient care, clear professional and ethical boundaries would need to be drawn.94

Conclusions

The SNF is an error-prone workplace conducive to cognitive error for both the LTC physician and the PF. Recognizing the impact of psychophysical principles should help LTC physicians identify and correct their own cognitive errors. It is critical that LTC physicians maintain zero tolerance for flawed treatments because “failure to speak up” places the patient at risk, and tolerance has a cumulative effect on local standards of care.

New LTC physicians confront psychophysical forces on day 1, but they are still left to their own resources to learn the cognitive psychology of medical decision making. If educators elect to teach LTC physicians to think better, they should begin by teaching them the process of rapid reasoning and the errors that are invariably induced. Just as important is the need for new language to discuss and study cognitive error. AMDA is perfectly positioned to incorporate training in the cognitive psychology of medical decision making into its list of core competencies for certification.95,96 It is my hope that this work will stimulate interest in study of psychophysical principles that impact medical decision making in the SNF.

References