

Defining Collective Experience: When Does Wisdom Take Precedence?

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■ *The most important human endeavor is the striving for morality in our actions. Our inner balance and even our existence depend on it. Only morality in our actions can give beauty and dignity to life. To make this a living force and bring it to clear consciousness is perhaps the foremost task of education.—Albert Einstein*

Defining *collective experience* and determining when wisdom takes precedence are, indeed, daunting tasks. In order to prepare my position on this subject, inspiration (particularly from Anthony Asher), self-reflection, much thought, and research were required. To accomplish this task, I specifically address four points: (1) the development of an understanding of clinical wisdom, (2) the role of clinical wisdom in daily practice, (3) the teaching of clinical wisdom, and (4) answering of the question “when does wisdom take precedence?” For the purpose of discussion, I begin by defining clinical wisdom as the ability to effectively assimilate data, observations, and previous experiences for the purpose of optimizing clinical decision making. Using this relatively rudimentary definition, we can now begin the process of understanding clinical wisdom, determine its role, appreciate our ability to teach and learn it, and finally to develop a means to understand when clinical wisdom should actually be applied (or rather, when it takes precedence).

AN UNDERSTANDING OF CLINICAL WISDOM

Wisdom—The Concept

The quote by Albert Einstein at the beginning of this chapter sets the stage for the task at hand. The essence of his quote, “to make this [morality in our actions] a living force and bring it to clear consciousness is perhaps the foremost task of education,” may provide us with a unique insight into the clinical decision-making process and into clinical wisdom itself. Over the decades, we have thought of a wise person as essentially being smart, i.e., knowing things and knowing the facts. This *logical empiricism* theory of wisdom implies that wisdom is a manifestation of being knowledgeable and that *knowledge = assimilation of facts*. In recent years, however, we have progressed to a more complex approach to the concept of wisdom. David Kolb, an American educational theorist,

defined wisdom as *Knowledge + Experience*.^{5,6} This definition of wisdom adds a necessary complexity, while hauntingly leaving a gap. Is Kolb defining wisdom or rather portraying the essence of intelligence? Intelligence is the innate ability to assimilate the combination of facts and experiences. Wisdom would appear to encompass more than this.

The Foundation of Clinical Wisdom

We must ask the question “How does the brain take raw material (i.e., information and observations, etc.) and produce innovation, brilliant ideas, and the likes of ‘theories of relativity’?” In the case of clinical medicine, this input and processing endeavor theoretically translate into good clinical decisions and outcomes. This process is centered on (1) the ability to seize opportunity, (2) innovation (spirit of innovation), and (3) creativity. These three qualities (characteristics) form the foundation (and only the foundation) of clinical wisdom.

Opportunity, Innovation, and Creativity

Louis Pasteur’s eloquent, yet simple, quote “chance favors the prepared mind” provides insight into a portion of our quest for an understanding of clinical wisdom. In considering his quote, we must remain cognizant of two factors. First, windows of opportunity open and close in an unpredictable manner. Opportunities may suddenly present themselves and vanish just as quickly. Second, we must be ready to jump through those open windows as opportunity dictates, lest the window suddenly closes and the opportunity is lost.

Alexander Fleming made an observation in the late 1930s that, unbeknownst to him at the time, would have a profound impact on modern medicine and, in fact, the course of history. He observed that bread mold, a contaminant in his microbiology experiment, created a “halo” that was characterized by no bacterial growth surrounding the mold colonies (*Fig. 9.1*). To him, this was a failed experiment. He could have easily discarded the Petri dish and started over. Yet, he seized the moment. He jumped through an open window of

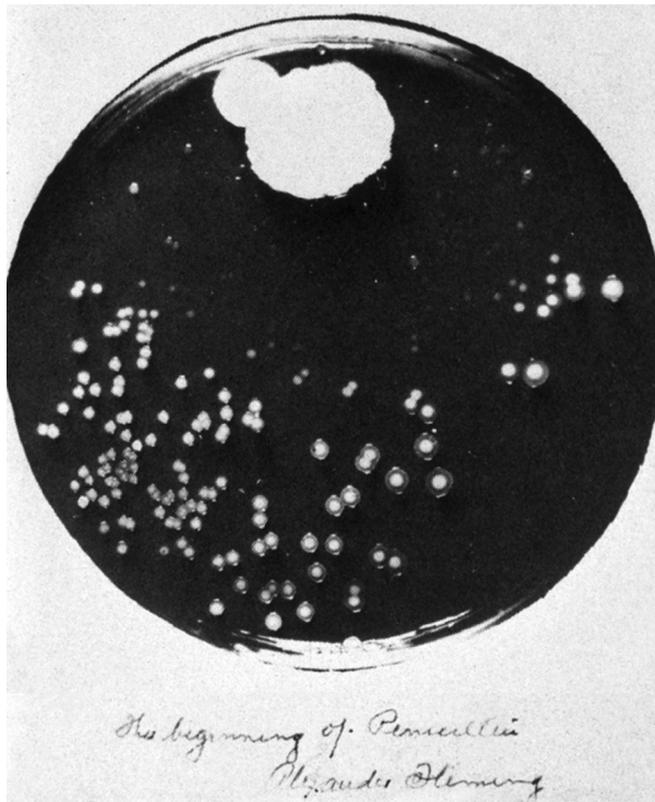


FIGURE 9.1. The Petri dish of Alexander Fleming demonstrating an absence of bacterial growth in the region surrounding the bread mold colony (from Internet).

opportunity to explore the nature of the halo. He had a prepared mind and, indeed, chance favored it (à la Pasteur's quote). Via his preparedness, he had discovered penicillin. He had made an observation of immense proportion and importance.

The fostering of the spirit of innovation and the nurturing of wisdom has much in common. Both are often not optimally achieved. Both are easily stifled. A successful innovator is often wise and a wise person is usually innovative. A wise physician, among many other endeavors, thinks of innovative ways to help his patients.

The process of innovation involves three components: (1) idea generation (or discovery), (2) the development of the idea or discovery into a usable form, and (3) the implementation of the usable form.

Fleming, unfortunately, did not fulfill all the requirements associated with the process of innovation. He made the discovery. He, however, did not develop the discovery, nor did he implement the usable form by "taking it to the people." So, in a sense, the innovative process for Fleming was somehow stifled. It took Howard Florey and Ernst Boris Chain to develop the discovery into a usable form by creating a product (penicillin) and to then implement the usable form by commercializing the product, just in time for D-Day in

1944. These events had an immeasurable impact on the course of history and forever thereafter affected the practice of medicine. As an aside, for their collective efforts, all 3 (Fleming, Florey, and Chain) received the Nobel Prize for medicine in 1945.

In Fleming's case, the process of innovation was indeed stifled. If Florey and Chain had not "picked up the ball" dropped by Fleming, our medical and social lives may well be very different from what they are today. Are we similarly stifling the creation of new medical knowledge and the clinical decision-making process? Are we missing something regarding the optimization of clinical decision making? Is there more to clinical wisdom than merely the assimilation of data? Perhaps the answers to these questions can be found by analyzing Einstein's admonition ("to make this [the striving for morality in our actions] a living force and bring it to clear consciousness is perhaps the foremost task of education"). William Osler harbored a very deep insight into this process. According to him, we should begin early to make a threefold category—clear cases, doubtful cases, and mistakes. And learn to play the game fair. No self-deception. No shrinking from the truth. Mercy and consideration for the other man. But none for yourself, upon whom you have to keep an incessant watch . . . It is only by getting your cases grouped in this way that you can make any real progress in your [continuing] education; only in this way can you gain wisdom from experience.¹⁰

Osler, in a sense, defined guidelines for achieving clinical creativity and optimal decision making. "No self-deception, no shrinking from the truth." "We must learn from our doubtful cases and mistakes." He is asking us to be aware of the open windows of opportunity that can help us fill gaps in our knowledge and to carefully use such information to improve clinical outcomes, much like during the process of innovation, an idea or discovery leads to research, product development, and then to the product's presentation to the people. Osler, however, is also saying, without equivocation, that we should be honest, particularly with oneself. We must not act like the proverbial carpenter with a hammer who looks at all objects as if they were a nail. The clinical correlate of this is the surgeon with a knife who looks at every patient as if they require surgery.

Bias and Core Ideologies

We often seem preoccupied with modeling data to fit our biases and expectations, as opposed to adjusting our biases and expectations to fit legitimate and accurate data. Friedrich Nietzsche's quote regarding an understanding of oneself is particularly relevant and looms large here: "The most common lie is that which one lies to himself, lying to others is relatively an exception."

Nietzsche is emphasizing the importance of honesty, particularly with oneself. Case in point: about four years ago

at a national medical meeting, a surgeon presented a clinical case to a large group of surgeons using an audience response system. He asked the surgeons in the audience whether they would recommend an operation for the case presented. About 80% favored a surgery. He then re-presented the case a few minutes later and rephrased the question. This time he asked whether the surgeons themselves would undergo an operation if this case represented their pathology and symptoms. Eighty percent said no. A disturbing disconnect between surgeon recommendation and true surgeon belief (as assessed by what he would have done for himself) was revealed. Honest self-introspection is often deficient. It indeed is illustrative of Nietzsche's commentary. Perhaps this represents an expression of the absence of wisdom.

Einstein's quote "Only morality in our actions can give beauty and dignity to life" is seemingly very relevant here. Perhaps what has been missing in previous discussions on the subject of wisdom is the concept of a core ideology. In their treatise *Built to Last*, James C. Collins and Jerry I. Porras¹ discussed the common characteristics associated with companies that lasted for decades. Their focus was business. Their observations, however, reach far beyond the business world. Those companies that demonstrated sustained success over decades had one common characteristic—a core ideology that was not fiscally focused. Instead of focusing on money, those companies that enjoyed sustained success over decades embraced a core ideology that focused on service or a quality product.

The following may seem simplistic (and even intuitive), but in clinical medicine, the core ideology should *always* be centered on the patient and optimizing patient outcomes. It should be people/patient-centric. Clinical wisdom, therefore, is in large part the incorporation of a core ideology (i.e., patient centrality) into the clinical decision-making process. We must ask ourselves the question over and over and over: "what would I want for me or mine?"

Hence, I have further refined the definition of clinical wisdom as follows: the ability to effectively assimilate data, observations, and previous experiences for the purposes of optimizing clinical decision making by using a patient-centric approach.

I have added (to the definition presented in the opening comments in this chapter) "by using a patient-centric approach." The implication of this logical extension is that clinical wisdom, at least in part, represents the incorporation of a core ideology (patient centrality) into the clinical decision-making process. Put another way, clinical wisdom is the judicious application of knowledge, including the assimilation of prior experiences, using a patient-centric approach. The totality of clinical wisdom, therefore, is characterized by its foundation (the ability to seize opportunity, innovation, and creativity), which, in turn, provides the infrastructure for the overriding core ideology, i.e., patient centrality.

THE ROLE OF CLINICAL WISDOM IN DAILY PRACTICE

Medical Evidence

David Sackett⁹ defined evidence-based methodology very simply: "The conscientious, explicit, and judicious use of the current best evidence in making decisions about the care of individual patients." This definition is concise and simple, but is somewhat idealistic. In reality, what we often perceive as evidence is not truly evidence. Mark Twain's comment perpetually reverberates in my mind as I read the often very biased and conflicted medical literature: "There are lies, damned lies, and statistics."

The literature, indeed, may be a poor source of truly valid information. Much information presented in the literature is anecdotal. Investigational device exemption studies are often methodologically flawed, particularly as they pertain to the day-to-day practice of clinical medicine. Conflicts of interest are often not evident or are underestimated regarding their influence on the published data. Bias thus prevails. There exist multiple forms of bias and associated market pressures that affect (consciously or subliminally) the published literature and, hence, guide our clinical actions. These biases take many forms, including investigator bias, patient selection bias, winner-loser bias (a particular problem in surgical trials), intellectual bias, financial bias, and many, many more. Conflict-of-interest issues permeate this entire milieu. Therefore, the perceived evidence may not be true evidence.

Sackett⁹ goes on to state "that without clinical expertise practice risk becomes tyrannized by evidence, because even excellent external evidence may be inapplicable or inappropriate for an individual patient." The only conclusion I can derive regarding the significance of the published literature, considering all the variables and the complexity of the environment surrounding academia and the nature of the derivation of the published literature, is that the published literature is, in general, flawed. In turn, the only conclusion I can derive regarding the optimization of clinical decision making is that the application of clinical wisdom is exceedingly important and that it is critical to the optimization of clinical care and outcomes.

THE TEACHING OF CLINICAL WISDOM

Can we teach wisdom? If we can, how? Our parents taught us judgment. They taught us to assimilate raw data. But as clinicians, we must apply data in a patient-centric manner. Educators are responsible for filling gaps and nurturing the parent-driven foundation of judgment. We must obligatorily acquire new knowledge that is to be predominantly derived from our individual and collective creativity and new-found innovative spirit in order to be ultimately successful as decision makers, caregivers, and thought lead-

ers. In this regard, we must remember that “chance favors the prepared mind.”

We can teach process (the organizational component of decision making). Problem-based decision making is an example of a thought process that can be taught. With problem-based decision making, one separates complex problems into their component parts, prioritizes these component parts, and then serially solves them in their prioritized order. This is relatively straightforward.

We can teach process, but can we teach wisdom? I believe we can. We can teach the concept that we should do for our patients what we would have done for ourselves. We can teach by example to be less impulsive. We can foster creative thinking and innovation. We can focus on compassion and apply all of the above to clinical practice. We can emphasize the fact that the patient is the major focus, i.e., patient centricity. This is the essence of clinical wisdom, and it can be taught, predominantly by example.

WHEN DOES WISDOM TAKE PRECEDENCE?

When does wisdom take precedence? This is the question I was charged with answering. I, therefore, will finish by addressing my charge head on.

First, as previously addressed, the literature is not what it is made out to be. We need to be smart enough (or wise enough, if you will) to appreciate its limitations. We must be creative enough to compensate for the literature’s deficits. True clinical creativity obligatorily employs a core ideology. It emphasizes patient/people centricity as a core ideology. This is the essence of clinical wisdom.

The concept of clinical wisdom is not complex. Both Molière (“Nearly all men die of their medicines, not of their diseases.”) and Voltaire (“The art of medicine consists of amusing the patient while nature cures the disease.”) emphasized a simplistic and yet very patient-centric approach to clinical decision making. We must put into question the patient-centric nature of our approach to clinical decision making when surgery rates for common problems widely vary from region to region in the United States.³ We must question it further when the radical disconnect between surgeon recommendations for patient care and surgeon preference for personal care prevails.

Therefore, I have two (patient-centric) recommendations for us regarding the education of our next generation of neurosurgeons and regarding the determination of the factors that we choose to guide or dictate the decisions that we make in the clinical and surgical arenas: (1) Act (accordingly) as if you or yours are the patient. (2) Act (accordingly) as if you are paying for the care you recommend.

Self-reflection is key. The clinical questions should not be centered on which operation to use. The clinical questions instead should be centered about the decision-making process

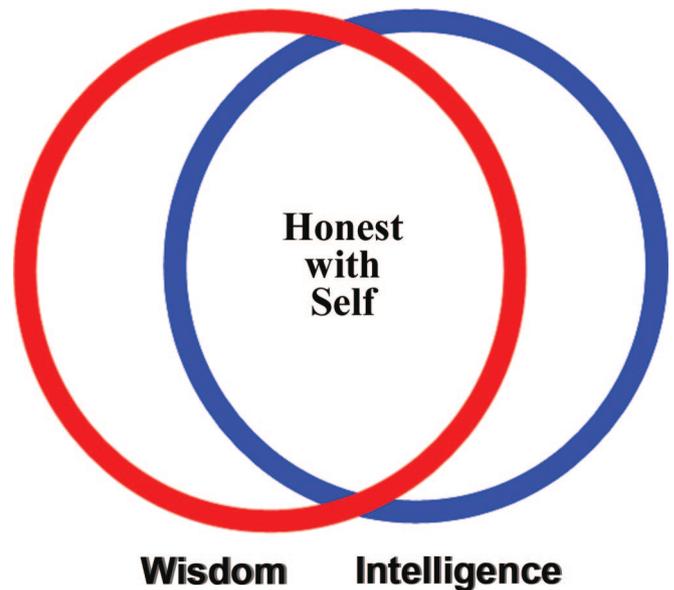


FIGURE 9.2. Two overlapping circles, representing the spirit of the ancient yin and yang concept. Wisdom can exist without intelligence and vice versa. Optimally, wisdom combined with intelligence is achieved (the region of overlapping circles). In this region (of overlapping circles), honesty with oneself results in a heightened consideration for others. In the case of clinical wisdom, patient centricity is emphasized. Figure from Benzel EC.

involved with the determination of which treatment, if any, is best for the patient, i.e., what would I want for myself or mine?

As stated, Kolb defined wisdom as the combination of knowledge and experience. What he, in retrospect, may have instead been describing is an element of intelligence. True wisdom and intelligence overlap, like yin and yang (Fig. 9.2). The wolf is a wise being, but is he smart? No, not by our standards. He, however, uses his limited knowledge very effectively and efficiently by assimilating his experiences with a focus. This focus (core ideology), in his case, is *survival!* Hence, his intelligence/wisdom ratio lies far to the left in Figure 9.2. He has little innate intelligence (by our standards), yet he is very wise. He spends every waking moment focusing on this core ideology (survival). On the other hand, a surgeon could be positioned on the right side of Figure 9.2, i.e., very smart (intelligent), but not wise. He or she may have a tremendous amount of information stored in his or her data bank. He or she may have many experiences that he or she assimilates. But, if he or she makes suboptimal decisions, he or she may not be wise. This is not good. We must remember the words of Nietzsche: “The most common lie is one that lies to himself.” Hence, the elimination of lies to oneself may help us shift from the right to the center of Figure 9.2. The center, in the region of overlapping rings, embodies the being with both intelligence *and* wisdom, a skill

set and a core ideology through which to express it. This combination of wisdom and intelligence is fostered by an honesty with oneself.

What Is Clinical Wisdom?

“Clinical wisdom is the tempering of impulsiveness with compassion and understanding.”

Clinical wisdom is the ability to think, in our case, beyond the operating room. The ability to understand that most patients do not require surgery. Clinical wisdom is the development of an understanding that we have an obligation to our patients to learn—an obligation to fill the gaps in our foundation of knowledge. Clinical wisdom is the ability to strategize for the patient as if the lives of you and yours depended on it. Clinical wisdom is the ability to look at our doubtful cases and mistakes (à la Osler) and to truly learn from them. A clinically wise physician also embraces the spirit of innovation. He has ideas (e.g., hypotheses) and makes discoveries (e.g., potential clinical solutions). He matures them and then applies them to his patients.

If we do these things, we become more critical, more clinically conservative, more thoughtful, more deliberate, more cunning, more objective and harbor an appropriate threshold for the performance surgery. Anthony Asher introduced the term *metacognition* to the attendees of the 2008 Congress of Neurological Surgeons during his presidential address. Simply stated, it represents a definition of the understanding of one’s own gaps in knowledge that is accompanied by a desire and ability to fill the gaps, in other words, knowing what you don’t know. Satchel Paige (athlete, showman, pioneer in the movement toward racial freedom, and philosopher) unknowingly addressed this subject (metacognition) with one of his many quotes: “It’s not what you don’t know that hurts you; it’s what you know that just ain’t so.”

We need to look inward to honestly assess what we do not know. We should not craft clinical solutions and derive conclusions that are based on inadequate and biased evidence. We must directly address our own biases. We must avoid lying to ourselves.

After much deliberation, I have come to the conclusion that the essence of clinical wisdom is the application of one of the fundamentals of the Judeo-Christian world view way (which preceded Buddha, Confucius, and many others who wrote about and of it), the Golden Rule, to the practice of medicine. The earliest written reference to the Golden Rule (“Do unto others as you would have them do unto you”) is found in the book of Leviticus, dated circa 1400 BC.^{2,4,7,8} (Fig. 9.3). If this core ideology is applied to knowledge and experience (as defined by Kolb), true wisdom is achieved: Wisdom = knowledge + experience + application of a core ideology.

In the clinical arena regarding clinical decision making, particularly in these difficult times in which immense market forces, a multitude of biases, and conflicts of interest perme-

אָהַבְתָּ לְרֵעֶךָ כְּמוֹךָ: אָנִי, יְהוָה
יח, לא-תקום ולא-תטר את-בְּנֵי עַמְךָ

FIGURE 9.3. Ancient writings (circa 1400 BC) portraying the essence of the Golden Rule from ancient Hebrew writing, initially recorded in the Old Testament (Leviticus 19:18).

ate all corners of our existence, wisdom takes on a new meaning. The consideration of what is right and then doing the right thing take on an even greater level of importance than it did a decade ago. The Golden Rule should perhaps be emphasized rather than assumed in clinical medicine. When, and only when, we routinely and volitionally consider the Golden Rule during the decision-making process in our clinical practices, will we have achieved *clinical wisdom*. Hence, I conclude that the definition of clinical wisdom is as follows: Clinical wisdom = knowledge + experience + application of the Golden Rule.

Knowledge + experience are the expression of the foundation of clinical wisdom (the ability to seize opportunity, innovation, and creativity). The application of the Golden Rule represents overriding core ideology that cloaks the foundation, i.e., patient centrality.

So, when does the wisdom take precedence? Considering the aforementioned, the answer to this question unfortunately is—infrequently.

Perhaps this question should be rephrased. If one asks the question “When *should* wisdom take precedence?” The answer is *nearly always!*

Disclosure

The author has no personal financial or institutional interest in any of the drugs, materials, or devices described in this article.

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