

Chapter 20

Tools for Applying Medical Knowledge

Kjell Benson

Introduction

Medicine is not itself a science. Despite its reliance on a well-stocked fund of scientific knowledge and its use of technology, it is still a practice: the care of sick people and the prevention of disease [1].

Every day, as we encounter patients face-to-face, clinicians are reminded that the task at hand is not strictly scientific. Clinicians treat individuals, and individual cases. And yet doctors also need to dedicate themselves to mastery of the “well-stocked fund of scientific knowledge.” This dialectic between generalized knowledge and individual humans constitutes the clinician’s enigma, and is the subject of this chapter.

The patient encounter consists of an inescapable singularity between two people at a moment in time. Even with the same pathological process, no two cases are ever the same. The coalescence of that particular time, that patient, that clinician, and that disease occurs only once, ever. When clinicians lose sight of the individual in front of them, the criticisms of Western medicine blossom: paternalism, sterility, and futility. Yet patients also expect the application of the entire armamentarium of scientific knowledge to their particular case. Our society has invested heavily in studying generic scientific entities such as “heart disease” and patients want the benefit of all this research. So modern Western medicine has staked its reputation on this delicate balance between “art and science.” Veering over into pure individualism takes one into spiritualism and faith-healing; over-reliance on pure science leads to scientism and hopelessness. Negotiating the knife-edge of clinical practice takes training, constant reflection, and a familiarity with the required tools. Medical training has emphasized our scientific fund of knowledge but has not always been clear about the origin of scientific tools and how those origins affect their application.

K. Benson

Adventist Medical Center, 10123 SE Market Street, Portland, OR 97216, USA

e-mail: bensonka@ah.org

Why do we cite studies when we decide on care? How do we know illness will proceed in the course we predict? How much of what we tell to patients is scientific versus something else?

Hospital admission creates a unique moment of existential crisis in patient lives as they encounter the collision of serious illness, a complex medical system, and a vast quantity of scientific information. The goal of this chapter will be to uncover assumptions hospitalists use in applying this medical knowledge on individual and group levels in order to better care for patients. Philosophical reflection will be seen not as a dry abstract pursuit, but one that is rich in the details of human existence, and one that we all already employ every day in our medical practices. By the end of the chapter I hope you will have a new appreciation of how clinicians apply medical knowledge which will, in turn, foster your own ongoing reflections on the philosophy of medicine.

The Origins of Medical Knowledge

Western medicine's roots in classical Greek thought have been well described [2]. Prior to Hippocrates, illness was thought of as a magical process or the outcome of divine intervention. The Hippocrates and his followers ascribed natural causes to disease, and thus was born what came to be distinctive about Western medicine: a focus on empirical observations and closely described precise physical symptoms and responses. Recently, philosophers have also pointed out that medicine's distinctiveness may also be due to the Greek notions of *phronesis*, or practical wisdom, and *nous*, or intuitive understanding [3].

Practical wisdom was described by Aristotle as the use of reason in everyday situations with the goal of improving human life:

Phronesis, then, must be a reasoned and true state of capacity to act with regard to human goods [4].

Aristotle required rational thought, combined with action, with a goal of human service. Commentators have remarked how well this formulation seems to fit the physician–patient relationship:

(1) Phronesis deals with human affairs...; (2) it deals with things that can be otherwise; (3) it deals with things that have a telos [a known goal]; (4) for phronesis it is more important to know... the particular situation, and to reach a decision here and now, than to know only the principles in a universal and abstract way [3].

Abstract principles may be fine for philosophers, but clinicians are required to act in particular situations, and always for the good of their patients. Reflecting on a day of practice in the hospital, most clinicians realize they used more “practical wisdom” than true science. There is a practicality in counseling patients on the treatment of warts or the sniffles that will likely never be transcended by more complex science.

However, practical medicine is not sufficient to define medical practice, as practicality is a ubiquitous trait of human experience, and not unique to physicians. Medicine becomes unique by combining scientific facts, “[which] are known through a process of induction, [and] intuition which is knowledge of first principles” [3]. A thorough *intuitive* understanding of a set of first principles defines medicine.

The “first principles” that early Greek physicians relied upon are scarcely recognizable to us today—humors and temperaments—yet the fact that they combined empirical observations with a set of first principles was an innovation that has laid the groundwork for all subsequent advances. Today, medical students enter school with (hopefully) a solid foundation of practical wisdom, and then are exposed to two full years of “first principles”—the basic sciences. They then add to these first principles with an exposure to actual pathology, and the natural history of diseases. The intuitive grasp of health and sickness engendered by these first principles forms the foundation of all future patient encounters (see Table 20.1).

This intuitive knowledge was the first tool of the physician, and despite its limitations, still remains so. Contradicting our intuitive assessments often forms the impetus for ongoing medical advances. Patients and beginning students often believe that we need to treat the blood sugar level in diabetic ketoacidosis (DKA). But, after seeing the disastrous results of ignoring the acidosis, the intuitive sense that the problem is high blood sugar is corrected. And yet, despite all the myriad examples of intuitive errors, an expert clinician is often judged by peers as being an expert just because of their well-developed *intuitive* skills. The student and resident soon absorbs a new intuitive understanding of DKA treatment, and may by the end of the internship nearly forget why they are treating to the anion gap rather than the blood sugar level. What I know intuitively now is not what I knew intuitively as a child. Intuition is a remarkably adaptable tool.

Despite advances in cognitive science and pedagogy, the Aristotelian description of practical wisdom and intuition continue to describe the most basic processes of today’s clinical thought. When we encounter situations that have no precise analogue in sophisticated scientific studies, when we try to apply our clinical knowledge to patients, we inevitably come back to skills in *phronesis* and *nous*. Medical training and residency teach an enormous quantity of “facts” that successful doctors memorize, but they also refine our practical wisdom and intuition.

The next tool in the clinician’s toolkit, and the next historical step in developing evidence, represents a logical progression from individual intuition: collective intuition, or the expert consensus conference. Miriam Solomon gives a review of

Table 20.1 Foundations of Patient Encounters

Modalities of medical knowledge
Wisdom and intuition
Expert consensus
Evidence based medicine
Narrative

the development of consensus as a medical tool in *Making Medical Knowledge*, “The NIH Consensus Development Conference Program began in 1977 and ended in 2013” [5]. This single statement encapsulates the entire movement, which is already considered outmoded due to more “scientific” approaches, but which remarkably sticks around, as anyone who has participated in medical staff committee work, or specialty society consensus statements, can attest. We still meet as “expert clinicians,” in various decision-making bodies, and through our collective “intuition” guide best practice care. Indeed, one of the draws of practicing hospital medicine is the team approach usually undertaken, in comparison to the inevitable individualism of the clinic provider. Hospitalists often discuss cases with colleagues just to obtain the group consensus.

The Evidence-Based Medicine (EBM) movement supplanted experts in their role as arbiters of medical knowledge. Translational medicine, which moves basic science knowledge from the lab to clinical application, and evidence-based medicine, which verifies the actual utility of treatments in patient care, are the two main elements of modern scientific medicine. Anthologies such as this *Update in Hospital Medicine* appropriately rely on EBM to inform their treatment recommendations. The clinician’s main role can now be seen as the translator of EBM for their patients. The clinician functions as an interpreter of statistics for the patient and the public.

However, implementing translational and evidence-based medicine has turned out to be more difficult than we predicted. For example, the randomized clinical trial is considered the gold standard of EBM as opposed to an observational study. Yet, as Solomon quotes, “empirical proof that observational studies of treatment are wildly off the mark has been surprising elusive” [5].

It needs to be shown empirically that the general use of evidence-based medicine in clinical decision making results in improved outcomes for patients. That is, it needs to be shown that using systematic evidence reviews, and the clinical guidelines based on them in patient care, produces better results [5].

There exists a trust-gap in the public’s view of medicine, due in no small part to difficulties in replicating EBM data and a naïve reporting of “evidence” in the media without the context which other evidentiary tools such as “intuition” provide.

To claim to be a scientist in our culture is to stake out authority and power. But physicians suffer the ill effects of this hubris: as patients and as citizens, we expect them to be far more certain than either their practice or the biology on which it is based can warrant, and for many reasons, they are likely to take these expectations for their own [1].

Western culture likes to insist on the scientific basis of medicine, and physicians often acquiesce because of our “hubris,” and patient expectations. Evidence based and translational medicine are crucial, but they are slow and advance haltingly. The patient expects more than the tool can deliver.

The final mode of medical knowledge application calls itself narrative medicine. “Its central claim is that attention to narrative – in the form of... a story co-constructed by patient and physician – is essential for patient care” [5]. At its best, narrative medicine moves beyond platitudes regarding the value of listening to patients, and insists that “narrative form contains information that is relevant to

treating the individual patient” [5]. We shall see later in this chapter the power and the pitfalls of the idea that “good readers make good doctors” [6].

Ancient Greek practical wisdom and intuition, expert consensus, evidence-based medicine, and narrative constitute the tools of medical knowledge. Our medical training and practice has introduced clinicians to these tools, even if not always acknowledging them explicitly. The tools were developed in historical succession, but are not applied in a value hierarchy. Solomon advocates for using these various tools of medical knowledge in an “untidy pluralism” and practicing clinicians will empathize with this approach. Most practicing clinicians will be able to identify their use and contribution to the care of the patient, sometimes all in single encounter! But how best to become more explicit in our use of these tools in clinical medicine? The following sections of this chapter aim to explore the potential of these tools in real situations in order to assist the practicing clinician.

Induction and Reductionism

My patient has a cough, fever, and crackles at the left lung base. The chest radiograph shows an infiltrate. “You have pneumonia,” I tell him. “The Thoracic Society guidelines recommend a macrolide antibiotic to cover for *Streptococcus pneumoniae* and atypicals. Here is your prescription...”

“But doc, how do you know I will get better? I don’t feel well. My grandmother died of pneumonia and she was given the exact same prescription.”

Such questions often draw empathetic platitudes, or perhaps a discussion of clinical trials if time allows. But the real answers strike at the core of what we do as physicians, and reflect on the troubled relationship of medicine to society. We are not taught to provide comprehensive answers to questions of why we do what we do. Yet this communication gap undermines the trust that “is essential to patients in their willingness to submit to treatment” [7].

We practice medicine in certain ways because we have seen them work, and because we have read about them working—in “the literature”—but do we know why we trust our experience and our studies? The instinctive reaction to cite studies does not really explain why *your* patient should trust his or her life to *those* studies. Studies simply aggregate many cases of a similar disease in sophisticated “evidence-based” ways. “What does that study have to do with me?” asks the astute patient. The question is as old as civilization itself, and one that Aristotle pondered in his discussions of “primitives,” or individual cases, in the context of making a general conclusion (see Table 20.2).

Table 20.2 Medical application of Induction

Induction

Drawing conclusions about the general case from examining numerous particular instances

Now some think that because one must understand the primitives there is no understanding at all... for it is impossible to go through infinitely many things [4].

We cannot ever review every single individual example of a phenomenon because there will always be another one that occurs in the future. Even looking at something as simple as a falling object which demonstrates the effects of gravity, how do we know that the next heavy object will fall just as the last one did? Trying to review “infinitely many things” raises the fundamental philosophical question of *induction*, or drawing conclusions about the general case from examining numerous particular instances. We make a leap, from the individual to the general. In Aristotle’s world, without scientific investigation, this leap was derived from tradition, and required the use of “*phronesis*” or practical wisdom. Much of current medical practice continues to rely on practical wisdom in a way that Aristotle would recognize. After all, most of medical practice is still not “evidence-based.”

However, we also believe that pneumonia will improve with azithromycin because we believe that induction works. After studying many cases of pneumonia, we can make a prediction about a future case of pneumonia. The statement sounds fairly bland when put this simply, but actually reflects a fundamental leap in philosophical reasoning that we often take for granted as medical providers, and that our patients may not deeply understand.

David Hume, the eighteenth century philosopher, reacted to the entire tenuous edifice of pre-scientific thought by introducing a deep skepticism towards causation and inductive knowledge. He realized that the attempts to explain scientific facts by appeals to phenomena such as “the humors” were fruitless and prone to error. There was no logical connection between the conclusions and the supposed facts given to reach those conclusions. For Hume, humans are left only with our experience of an event that we use as a “reason” to justify a conclusion about what caused it.

“Causes and effects are discoverable, not by reason but by experience...” Hume realized. And based on our experience, we expect the “future to be conformable to the past” [8]. However, without some theory, or rational explanation, behind our investigations, we have no basis beyond experience to predict the future. And experience can be a fickle master as he demonstrates in his famous quote about fresh eggs:

Nothing so alike as eggs; yet no one, on account of this appearing similarity expects the same taste and relish in all of them [8].

Patients frequently commit the error of equating their experience with causation. With a little reflection, we see that we all do so. A perfect example is the patient worried about azithromycin because his grandmother received that medication and died. He thinks that the death was caused by the azithromycin whereas the true “cause” of her death was likely far more complex.

The philosophy of *logical positivism* developed to show how observational evidence could provide genuine support for a scientific theory, i.e. how “experience” could teach us about real causation. Hans Reichenbach in the early twentieth century introduced the idea of the wager, or the odds of an induction being true. We justify our use of induction by arguing that if there is *any* reliable method of predicting the future on the basis of the past, induction is it.

Hume demanded too much when he wanted for a justification of the inductive inference a proof that his conclusion is true. What his objections demonstrate is only that such a proof cannot be given. We do not perform, however, an inductive inference with the pretension of obtaining a true statement. What we obtain is a wager; and it is the best wager we can lay because it corresponds to a procedure [8]. See Table 20.3.

The positivists abandoned the idea of objective *truth* behind scientific knowledge in favor of simply reproducible explanation. They claim that we do not have to worry about philosophical concepts causing others; we just need to be confident in the conclusions that we reach. And certainly much of day-to-day medical advice and treatment reflects this loss: “I don’t know why this works, or what is going on in the body, but studies show that it does.” The positivists represent a form of *empirical* thought which posits that the only source of knowledge is experience. Basic science with its biological mechanisms may supply the rationale for conducting a randomized trial, but the trial itself reflects pure logical positivism: only the observations of outcome count and can be used to guide patient care. Evidence-based medicine (EBM) does not concern itself with mechanisms of action or causation in any form; it simply reports on aggregations of massive numbers of individual *empirical* observations.

Unfortunately, empiricist explanations are often not very satisfying, especially for patients and their families who want real explanations of what is happening to their bodies. There is a human need to know “why” things happen in the world, and nowhere more so than in the body. Patients almost always want a picture, or a diagram that depicts an explanation of what process is occurring; they are not satisfied with being presented with a table of statistics. Even as EBM has provided us with the tools for the best available medical diagnosis and treatment, it has not provided the best means of engaging patients with those tools (see Tables 20.4 and 20.5).

Modern medicine has made its most spectacular advances applying empirical observation to ever smaller biological processes by isolating single variables and testing them. This is known as “reductionism” and it is the opposite of holism which asserts that certain knowledge requires studying intact systems. Reductionism works by breaking down biological systems into component molecular interactions, such as we do in pharmacological research. Holism requires the opposite approach,

Table 20.3 Philosophical Concept of Knowledge

<i>Empiricism</i>
The only source of knowledge is experience, rather than reasoning from principles

Table 20.4 Modern Approach to Scientific Method

<i>Reductionism</i>
Breaking down biological systems into component parts in order to test them

Table 20.5 Evolving Approach to Scientific Method

<i>Holism</i>
The sum of a process may be more than its component parts

positing that the sum of a process may be more than its constituent parts. Some research is done in holistic medicine, such as looking at how patient attitude affects cancer outcomes. Holism is underpinned by the concept that there is a link between our physical health and our more general ‘well-being’. Unfortunately, such holistic care is often very difficult to implement in practice and can quickly become full of platitudes rather than concrete pathways to improve health. Because of the difficulty in implementation, complex questions of how attitude or prayer might affect cancer outcomes is left to the “art of medicine.”

Contemporary philosophers such as Thomas Nagel question whether further scientific advances will require studying whole systems rather than just parts. Extremely complex systems, such as the human brain, may have a whole that is greater than the sum of their parts. Nagel does not see reductionism as satisfactory for explaining the operation of the mind; neuroscience can tell us how molecules cause nerves to fire, but not how consciousness is created.

The existence of consciousness seems to imply that the physical description of the universe, in spite of its richness and explanatory power, is only part of the truth [9].

If physical processes cannot account for consciousness, then the physical description of the body may not be adequate to account for its complete development, and that may have implications for descriptions of evolution that describe only changes in physical processes of living things. For modern scientific medicine, the physical description of the body is what we rely on implicitly, and everything else is compartmentalized as “bedside manner.”

Nagel’s critique goes on to show that the existence of mind challenges Darwinian “blind” evolution. According to Nagel, only if there exists some teleology, or intrinsic destination, for evolution can one explain the emergence of consciousness.

To explain consciousness, a physical evolutionary history would have to show why it was likely that organisms of the kind that have consciousness would arise... There [might be] natural teleological laws governing the development of organization over time, in addition to laws of the familiar kind governing the behavior of the elements [9].

Patients facing serious illness or death often find comfort in the idea that their lives have meaning—even if it is not always religious meaning. The holistic consciousness that Nagel describes is currently scientifically inaccessible to us. Will humanity’s yearning to be seen as more than a collection of parts always remain at the level of clinical art, or could it emerge in a scientific manner and become amenable to reproducible study? Will the line between the “art” of medicine and the “science” always remain drawn where it is now?

As our culture becomes increasingly diverse and skeptical of claims about “truth,” a working familiarity with the philosophy of science becomes helpful to medical providers. Scientific medicine is openly debated in the marketplace of ideas now more than ever. Every one of my patients wonders whether they should be seeing me rather than the *curandera*, the naturopath, or Google. And if they do see me, they wonder if I know what I am doing, and why they should trust me with their lives. And these are good questions, ones that we should embrace because they deserve answers rather than trite statements like, “Because this is how I was

trained.” In the next section we will look at ways that medicine with its reductionism can still manage to embrace the holism of the patient’s entire situation through narrative.

Narrative Medicine and Narrative Fallacy

Here is a patient history taken while admitting from the emergency department to the hospital:

HISTORY OF PRESENT ILLNESS: Mr. B is a very pleasant 60-year-old male with extensive past medical history who presented for evaluation of extreme weakness. The ambulance reports that the patient had a witnessed fall while walking to the store to purchase some cigarettes. He states that he is currently homeless, but compliant with medications and follow-up with the clinic. He did not report any syncopal episodes, or chest pain, but does report significant shortness of breath.

It’s just the beginning of a story really, or perhaps the end of a long and complex story of a difficult life. Like any story, it conceals as much as it reveals, and creates a mystery. But the snippet already lets the doctor start sifting through medical possibilities, thinking of other questions to ask, or tests to run.

The focus on the patient’s story has led to the modern methodology of “narrative medicine” as a means of creating medical knowledge about a patient. Narrative medicine is nothing new of course; the doctor’s job has always been to listen to the patient and to be a witness, and to show empathy by somehow connecting to the story that the patient tells. Even the most technical of the subspecialties listen to patient stories: surgeons, electrophysiologists, and interventional radiologists. And those of us in more holistic specialties have made this our bread and butter. For better or worse, doctors are often evaluated by patients nearly entirely based on our ability to listen and empathize.

Stories allow the clinician to make sense of particularities and match them to patterns. “The experience of narrative is conditioned by *schemas*; that is, narrative has a recognizable structure that governs recognizable features so that, in a manner very different from positive science, we *notice* what is not there along with what is there” [10]. The following history demonstrates our ability to quickly fit a story into a schema and fill in the blanks for what elements are present or missing:

HISTORY OF PRESENT ILLNESS: Mr. X is a 70-year-old man without known cardiac history who was transferred here for management of ventricular fibrillation arrest. This morning the patient was loading boxes into a truck and went back into the house. His daughter heard a crash and found the patient on the floor, unconscious and unresponsive. The history was obtained from the patient’s family and daughter who lives with him. Per brother’s report, patient had been complaining of left shoulder pain for the last few weeks. He does not seek medical attention and has not seen a doctor for many years. Apparently 5 years ago he saw an eye doctor who told him that he needed to see a primary care physician based on the findings in his eyes.”

Mr. X has suffered from significant vascular disease for years, he progressed to classic angina and then suffered a massive infarction while loading boxes. In this

case, Mr. X does not tell his own story. In fact, in some sense, none of us may *ever* tell our own stories. People use the cultural baggage that they inherit in order to make sense of the events of their lives, and this “baggage” actually determines the course of the story. Nowhere is this more evident than in medicine. We are a culture currently obsessed with “health” and medical advances. All my patients have filtered their health experiences through a myriad of lenses before I hear about them: grandmother’s herbal tea, House MD, and so many others. We all tell filtered stories, and the physician’s job is to be the literary critic and detective.

Taking relatively undifferentiated symptoms, and pre-conceived notions, and weaving these into a medical story is the skill that distinguishes a master clinician. At its best, it is what makes primary care and hospital medicine so exciting because nowhere else are we exposed to raw stories prior some other clinician’s interpretation.

If we wish to know about a man, we ask “what is his story - his real, inmost story?” - for each of us is a biography, a story. Each of us is a singular narrative, which is constructed, continually, unconsciously, by, through, and in us [11].

When I have medical students on my service, we often spend time reviewing pathophysiology, but even more time may be spent teaching how to construct the patient’s story. Medical students quickly learn to assemble “facts,” such as blood pressure, symptoms and lab values. But not until they start to create a plausible narrative with the facts do they become doctors. Sometimes this is called the art of medicine, as opposed to science, but it is also true that “scientific reasoning often makes use of causal narratives” [5]. In some ways, doctors function as the close readers of the “book” of the patient’s story, matching patterns against what we have already read and know.

Narrative medicine has pointed out the distinction between the chief complaint and the patient’s chief concern. “That concern is the patient’s awareness of what his illness means in relation to the ongoing story of his life” [10]. The clinician constructs a story, and the patient also constructs a story, but sometimes with a different plot. This process has been called “re-storying” in which the clinician translates the patient’s narrative into a medically conditioned narrative. The patient has “chest pain,” and after tests the clinician reframes the story by telling the patient that she has “acid reflux.” For the most part, this “re-storying” has “positive therapeutic effects,” [10] but can lead to problems. The stories the patient tells, and then the ones we tell, do not always harmonize with actual events. Even more concerning are the selective memories that we hear every day, the downplaying of drug use, and the dissembling in order not to alarm family members.

Humans are... in general susceptible to the ‘narrative fallacy’ in which the attempt to weave experience into a coherent story results in the omission of facts, or even in their (intentional or unintentional) distortion or fabrication [5].

Doctors are not immune to the narrative fallacy. In fact, in order to ‘package’ a patient into a “History and Physical,” “Progress Note,” or one of the other codified narratives that physicians use for communication, we are *required* to commit the narrative fallacy by assigning a diagnosis. We cannot complete a patient assessment

of any kind without constructing a story. And the story must fit one of the accepted and routinized narratives that scientific medicine has constructed in its repertoire. In other words, we have to assign one or more diagnoses, and these diagnoses are always the conclusion of the story that we construct (Table 20.2).

This narrative urge ties directly to the case-based, practical, knowledge of the doctor. Physicians are not scientists, we are a humanistic profession and would starve without a constant diet of stories. However, perhaps not all illnesses *should* fit a narrative. Chaos and its acknowledgement might serve medicine's interest from time to time. We shall address this issue again later when we take up the question of medical knowledge in its larger social context.

The Existential Encounter

Existential philosophy begins with the assertion that the autonomous individual has the capacity, and indeed the obligation, to self-reflect and create a meaningful existence. In popular culture we know this as the “existential crisis,” when someone questions the purpose or value of their life. Hospitalized patients nearly always undergo an existential crisis due to the gravity of an illness that requires an inpatient stay. The patient confronts the reality of illness and no intellectual reasoning can soften the blow. Meanwhile, the doctor braves the responsibility for another human's life, and no amount of training can lighten that burden.

Hospitalization for the patient with emphysema who has been a long time smoker nearly always occasions a profound introspection into the choices they have made in the past, and the amount of life they have left to them. No longer do we hospitalize the worried-well. As inpatient acuity rises amongst our patients, so does the potential for a confrontation with mortality. For the doctor, the patient's existential moment often passes unnoticed in our busy day. Rita Charon, in *Narrative Medicine*, remarks on this by lamenting, “If only the doctor would, as a matter of routine, be prepared for the jarring, jolting, inarticulate presence of dread; if only he would be attuned to the inevitable and exorbitant terrors that illness brings [6].”

Existential philosophers nearly always begin with an acknowledgement of dread, and none more so than the first existentialist, Soren Kierkegaard. His 1849 essay, *The Sickness Unto Death*, begins by asking, “Is despair a merit or a defect?” [12]. Yet, how can despair be a merit, or an asset? Kierkegaard's prose is notoriously convoluted and difficult, often itself causing despair in the reader! The process of teasing out his meaning may help us better understand patient crises when faced with hospitalization.

In despairing over something, he really despaired over himself, and now he wants to be rid of himself [12].

Despair is complex, and linked to our self-regard. Most hospitalists attend to numerous patients with imminently terminal diagnoses, either arranging hospice at home upon discharge, or assisting with actual symptom management for their final

few breaths. Are dying patients in despair? And if they are, is this a “merit or a defect?” Or perhaps the essay refers to the physician’s own existential predicament as we face our inability to perform our duty to heal? Most dying patients seem inexplicably at peace, whereas their families and clinicians are clearly despairing.

Thus to be sick unto death is to be unable to die, yet not as if there were hope of life; no, the hopelessness is that there is not even the ultimate hope, death [12].

What is the relationship between despair, hope and death? These concepts lie at the root of the existential crisis entailed by hospital stays. Kierkegaard refers of course to the Christian faith of physical death not signifying ultimate death, that in fact physical death is the ultimate hope of heaven. But the essay also refers to an earthly despair as well, “there is not one single living human being who does not despair a little, who does not harbor an unrest, an inner strife” [12]. I have seen patients sick unto death even as they were young and quite alive.

My hospital is on the front lines of America’s heroin epidemic, and if there is any substance that manifests Kierkegaardian despair, it is heroin. Once I cared for a 30-year-old woman who arrived in the emergency department with a fever of 103, rigors and pinpoint pupils. Her body hurt “all over,” but mostly when she took a breath, when the pain radiated to the middle of her upper back. Her left forearm had needle tracks with a palpable corded vein where the poison had clotted and scarred injection sites. There is a wild look in heroin eyes that radiates despair.

The reader knows how this story proceeds, for it is a Greek tragedy with its ending foretold before the story even begins. The “heroine” has a fatal flaw. A heart valve infection from dirty needles and dirty drugs—right sided endocarditis with septic pulmonary emboli. Blood cultures with *Staphylococcus aureus*. Homeless. A “boy-friend” who brings a backpack to her hospital room and spends a lot of time in the bathroom. The standard of treatment for this woman would be intravenous antibiotics for weeks; we used to recommend six. But the logistics of that are impossible. How to maintain an IV line in someone who would rather use it as access for the next high? How to deliver medications at home when there is no home? Various infectious disease studies have experimented with a shorter treatment course, down to even 2 weeks of IV antibiotics. Even this will be nearly impossible for her to accomplish.

The addict lives entirely for the moment and cannot conceive of tomorrow, much less 2 weeks from now. Just 2 months ago she delivered a baby, could not stay clean, and lost her infant to state protective services. If she could not stay clean for her own baby, how will she do so for a mere life-threatening blood infection? My patient has no hope for life, nor even for death, because she cannot conceive even of death. When I talk about “life threatening,” her eyes wander to the window. She has no conception of any future. And without the ultimate hope of death, she is truly in despair, without even the benefits of despairing, and thereby perhaps changing her life.

Not to be in despair must signify the destroyed possibility of being able to be in despair; if a person is truly not to be in despair, he must at every moment destroy the possibility [12].

Existential despair links intimately to our conception of time. A patient arrives in the emergency department not breathing well. The hospitalist takes the history. We try to match the patient’s perception of when various symptoms occurred with

our natural history of congestive heart failure. The patient’s recitation of the events has to match the timeline of medical knowledge for that condition. When the dyspnea “just came on” the doctor thinks pulmonary embolism, but when “it has been a while” we think pneumonia if it has been a medium amount of time and heart failure for a longer course. Every clinician has experienced the dissonance when the related amount of time and what we hear suffers through an assumption (Table 20.6).

Patients have their own internal time through which they make sense of their symptoms and illness recognizable as two time horizons (see Table 20.7). First is the immediate, the “now.” Pain brings one into the present moment like nothing else. Right now I feel like this, and I want to feel better. The second timeline corresponds to personal destiny; how does this illness fit into the meaning of my life? The individual life meaning depends on where one sees it is headed. What is the destination of my life and what impact does illness have on that? The belief in purpose, goal, or cause is described as *teleology* (see Table 20.6). Breast cancer survivors have best highlighted how patients find meaning in their disease in modern culture, and thereby create the teleological nature of “illness time”:

Writing in a journal, even for 15 minutes a day, helped me explore my feelings and find meaning in my cancer experience.

I am so grateful I was given a second chance – even a third chance at life. Just having a strong need to be there for my daughters, family, friends and loved ones... really got me through it. It’s not about me. I’m not the only person in this fight [13].

Illness has meaning, and that meaning becomes defined by the place where the illness takes you. Breast cancer advocacy networks and support groups have been the most active in promoting the discovery of meaning in illness, but everyone creates signification with even minor illnesses: “I was working too hard, so now I got this cold and I’m going to have to slow down for a while.”

The physician–patient relationship plays out between the two time horizons of illness: the “now” of suffering, and the teleology of human destiny. Each patient conceives of medical treatment in terms of his or her philosophy of destiny. “What good will come of medical treatment,” is a question that has meaning only with knowledge of one’s end. “What is my purpose on earth,” has to be answered before one can answer the question of what therapy to undertake. For example, a routine knee replacement makes sense in the context of being able to achieve mobility and meaningful activities. Without the horizon of a personal destiny that requires a

Table 20.6 Assigning Meaning to an Illness

<i>Teleology</i>
The attempt to describe things in terms of their apparent purpose or goal

Table 20.7 Patient’s Internalized Time Perception of their Illness

<i>The time horizons of illness</i>
The “now” of my suffering
The teleology of my destiny

workable knee, replacing it has no meaning. Some patients' beliefs require that they stay in a wheelchair, others require peak athletic performance. Of course, the immediate time horizon of suffering may also come into play. End-stage arthritis is painful, moment to moment, and every moment of every day. So the patient makes his or her decision about knee arthroplasty between the two poles of immediate suffering and the long-term destiny. Knee replacement as a medical therapy is a simple example that allows us to see these two poles, but indeed all medical interactions revolve around these same two understandings of time.

Edmund Husserl, existentialist philosopher of human perception, described these two horizons of time:

There belongs to every external perception its reference from the 'genuinely perceived' sides of the object of perception to the sides 'also meant' – not yet perceived but anticipated [14].

Perception of the moment of "now" occurs always with our anticipation of a similar past and future experience. The experience of pain now is always informed by the past and where we are headed in the future. Think only of the patient with appendicitis. After diagnosis and prior to surgery, the patient is often stoic in the face of pain, anticipating its imminent resolution. But post-operatively, after realizing that surgery did not resolve all the pain, and with no expectation of impending relief, the same pain takes on an entirely different character.

Classical thought, both philosophy and theology, all presupposed an implicit human teleology. Aristotle proposed perfecting human virtues as our end goal; Christian theologians turned towards completing God's will on earth. Only with Darwin and evolutionary theory did our Western culture lose its implicit teleological character. Current biological theory posits that no creatures are being "perfected," but only increasingly adapted to their environments. Humans are not the "peak" of evolution, which teleology would maintain, but are only one of evolution's branches, subject to the forces of nature and reproduction like everything else. And yet as doctors, we strive mightily against the bonds of evolution by fighting to prevent patients from falling prey to its ravages. We battle against genetic defects, risk factors, and even social Darwinism in its placement of some patients into unhealthy living situations. The very existence of the doctor is a daily poke in the eye of blind evolution. And as we battle the genetic and social determinants of evolution, we are often unwitting proponents of a teleological view.

And as patients, why seek care if there is no future? Kierkegaard's dark essay may actually be about light. The possibility of despair may be essential to the human endeavor of hope. The sickness unto death has a double meaning. Cancer and heart failure are sicknesses unto death, but so is the loss of despair. To "despair" is precisely to act in accordance with the facts, to give up an attempt *because* the goal is impossible. The patient requires an acknowledgement of despair in order to come to terms with the illness and thereby, perhaps, to have hope. The heroin addict who talks of "discharge tonight" because she has "things to do" has moved too quickly to hope without going through appropriate despair. The heroin addict who looks out the window while discussing a heart valve infection has never moved past despair at all to encounter the possibility of hope beyond it.

The physician often needs to recreate teleology, or the meaning of the illness, for therapy to succeed. It is a task that neither physicians nor patients are well-trained to undertake. Except for hospice patients who have perfected it. The formula for all despair is to “want to be rid of oneself.” The addict despairs in this sense. But the hospice patient has accepted despair and thereby rid himself of it because he no longer wants to be rid of himself, and has finally, and perhaps for the first time in his life, accepted himself.

Philosophy opens a door for us to see how hospitalized patients encounter an existential dilemma. This crisis engenders a reckoning with the dualistic nature of “illness time,” both the immediate now, and the teleological future. Physicians help patients by interpreting their “despair” in the face of illness in terms of their ultimate destinies as individual humans.

A Systems Perspective on Medical Knowledge

Physicians encounter patients exclusively one at a time. Our decision-making, the use of our knowledge tools, and even our existential dilemmas all take place in a context of a single patient. But our roles as hospitalists extend far beyond individual patients out to our hospital team, our community and our society. Hospitalists more than any other specialty explicitly function within a larger “team” structure. How does this social role affect how we apply medical knowledge?

Understanding a medical encounter as a narrative, as we have seen, entails an entanglement with meaning and with a goal of care. Because of the concern about “good” and “bad” outcomes of stories, they inevitably lead to questions of ethics: what is a good outcome? Every medical narrative we read has an ethical subtext as both the physician and the patient ponder the goal and weigh it morally. Modern medical ethics “has primarily been dominated by applying certain analytic principles to ethical situations: autonomy, beneficence, nonmalfeasance, and justice” [10]. These principles help us to make decisions for and with patients. They are fairly easily taught and have served practicing clinicians well. At their best, these principles can be used to help a patient address their personal *chief concern* and achieve their own highest good (see Table 20.8).

However, a principle-based ethical system is difficult to apply to physicians ourselves while we work and care for patients. What does it tell us about achieving our “highest good” in being a doctor? Aristotle used a different ethical system which we now call “virtue ethics.” His writings promote ethical behavior as virtuous behavior, and consists of those actions that enable each person to achieve their own *eudaimonia*, or “highest good” (see Table 20.9). Virtue was defined as that which leads to a good life, and were listed by Aristotle as competency, conscientiousness, discernment, compassion, trustworthiness, and decency. The crucial point of virtue ethics is that one cannot define what actions those excellences would lead to without knowing one’s community. What are proper behaviors towards others? Well, what is your tribe or group? What is the good life? Again, tell me about your community.

In a multicultural society, answering questions about community has often created a roadblock to using virtue ethics. Although few would argue with the list of virtues, coming from any culture, the actions those virtues require vary considerably. Within any particular group, the virtues are used to what is a “good” person, and hospitalists have become just such a community. More and more, hospitalists work within integrated health systems, whether private, non-profit, or governmental. These health systems function in some ways like the old Athenian city-state. They are culturally homogenous because modern medicine has defined proper behavior. They are democratic and egalitarian as every team member contributes to best patient care. And finally, they are defined in terms of ultimate goals: healing patients. These ultimate goals become more explicit every year as health systems take on “risk” through bundled payments, accountable care organizations or other payment models. With risk-based payment comes an inevitable focus on outcomes and defining the “good” in life (Table 20.10).

As we move into a city-state form of integrated medical care, the use of virtue to help guide us may become more helpful:

Virtue ethics – conceived in terms of the narrative knowledge and narrative skill of repeatedly relating part to whole – signals the necessity for a “pause” in action to ask about conscientiousness, discernment, compassion, and overall decent behavior in the face of suffering [10].

Each integrated health system will define *eudaimonia* differently. This consideration takes the form of “relating the part to the whole.” Consider the patient with new atrial fibrillation. She was admitted from the emergency department, short of

Table 20.8 Principles of Decision Making

<i>Principle-based ethics</i>
Autonomy
Beneficence
Nonmaleficance
Justice
<i>Virtue-based ethics</i>
Competency
Conscientiousness
Discernment
Compassion
Trustworthiness
Decency

Table 20.9 Philosophical Goal of Care

<i>Eudaimonia</i>
A contented state of being happy

Table 20.10 Risk of Determining Good Outcomes

<i>Narrative fallacy</i>
The attempt to weave experience into a coherent story resulting in distortion

breath and with a racing heart. Her EKG confirmed atrial fibrillation so she came to the telemetry floor on a diltiazem drip which slowed her heart rate from 150 down to around 100. On further exploration of her history she had been having episodes like this for the past few months, all resolving spontaneously until now. Her echo showed some left atrial enlargement, and she was concerned that her heart “was betraying her.” We discussed rate versus rhythm control, stroke risks and what ongoing care and follow-up she would need.

The multiple questions regarding what is best for my patient are informed by scientific evidence, but do not end there. This woman will need to continue to see medical providers and the next step in her care will involve conversations with her regarding her activity goals, her stroke risk, and her home situation. How confident am I in her follow-up with a primary care provider? The answer to this last question will likely depend on the relationships between primary care and cardiology, and both of those tied into payor source. Whatever medical “good” we can offer her is complicated by a myriad of factors that have to do with the physician’s skill as a clinician, the depth of the physician–patient relationship, and their role in the larger society.

Inside my health system, the *telos* for patients is quite clear, and in fact summarized in its mission statement: “Care you can have faith in.” Like all health systems, we strive to provide a continuum of care with the goal of maximizing our patients’ health. Every day, staff show up to work and assume their shared place in our common city-state, subsuming our outside roles to our shared *telos* of the patient “good.” And because we share a common end-goal for patients, the physician’s practical wisdom comes back into play. We can use our intellectual wisdom, combine it with our practical wisdom, as we make diagnoses and implement treatments that are scientifically based but individually tailored to each specific person in his or her context. The rest of my culture is fragmented in the post-modern world, but at work the classical model of virtue ethics harmonizes actions, day after day.

We must all ask ourselves how our health systems define *eudaimonia*, the good life, and how we think of patients’ teleology, or goal in life and illness. How does your health system define *eudaimonia*, and how does that affect what you do day to day? Attempting to discharge the patient with endocarditis and addiction issues, who needs long-term intravenous antibiotics, but has a poor or dangerous living situation, is a constant challenge. How much “social engineering” are health systems willing to perform in order to achieve better health outcomes for their at-risk patients? Does our responsibility stop with providing the antibiotics, or does acting virtuously require providing addiction treatment? How will we integrate patient responsibility in to our care plans when there is a financial risk for our health system, or eventually even for us personally as providers?

On the patient side of the health system interaction, can we employ virtue ethics to recapture patient responsibility? The virtues for physicians reflect a corresponding list for patients. Surely we can hope for more in our patients today than simply that they are “autonomous.” My patient with endocarditis survived her initial bout despite receiving less than ideal antibiotic therapy. For months I saw her and her boyfriend bounce between the emergency department, the inpatient unit, and the

hospital cafeteria. Once, as I left my late shift at 2 am, her boyfriend was pushing her down the street about a block from the hospital in a wheelchair labeled “hospital property.” My hospital has become her “community” in some odd codependent way. And as her community, perhaps her only community, there may be a place for her to act virtuously. I often propose nursing assistant or nursing school to our “frequent flyer” patients; health care could benefit from their perspective and they could benefit from the discipline and organization we offer.

As the above nearly daily patient care conundrums indicate, accomplishing the healing task of medicine in complex modern environments is not clear-cut. In fact, creating something coherent out of the complex lives and social situations of many patients often seems impossible. And perhaps it indeed is. Earlier we discussed narrative medicine and the narrative fallacy of insisting the all patient stories fit into a recognizable “plot.” The promise of virtue ethics offers an analogous situation in a social context: sometimes patient situations represent pure chaos. Patients and their “biopsychosocial” story make less and less “sense” within our societal health system. The heroin addict with endocarditis and the elderly woman with no family, no treatable medical conditions, but increasing inability to care for herself at home, both have no virtuous pathways today. The virtuous physician simply cannot act with Aristotle’s commendable attributes of compassion, trustworthiness and discernment. Of what use is discernment within a maelstrom of chaos? Sometimes an acknowledgement of chaos may be its best antidote. We may come to see that the lack of a virtuous pathway in our day to day jobs may actually be the main factor contributing to physician burnout. There seems to be a fundamental human need to be able to see ourselves as acting virtuously within our group or society.

The narrative structure of the physician–patient relationship, which starts with practical and then scientific knowledge, necessarily leads to a concern with outcomes and goals. These chief concerns open the door to the inevitability of an ethics to everything that the provider does. We are trained to use principle-based ethics, but may find that our place in integrated health systems allows us to use virtue ethics as well. The new perspective of virtue ethics may allow us to gain perspective on care decisions, and possibly even help our patients to cultivate virtue in their own lives.

Conclusion

This chapter has attempted to highlight how clinicians use medical knowledge in clinical care. We reviewed how medical training develops practical wisdom along with more “scientific” evidence-based tools, and then culminates in narrative techniques which allow us to confront the existential dilemma of the individual patient encounter. Finally, we concluded with the expansion of single patient encounters to include the hospitalist’s role in a health system in order to shed light on how virtue ethics assist in patient care.

Throughout this chapter we have encountered ideas from major philosophers including Aristotle, Hume, Kant, Kierkegaard, Husserl, and Nagel. The actual practice of modern medicine stems from their insights in ways we often do not appreciate as we become caught up in the pressing affairs of patient care. Reflexively, providers' daily duties also cast light on these philosophical ideals. Physicians are also philosophers, and our intensely personal work within a moral system, with the goal of improving humanity, is one that would resonate with Aristotle two millennia later. To be a physician is necessarily to be a humanist, and a philosopher.

The refinement of virtue can inspire both patient and physician to confront their existential predicaments and confront "despair." Burned out clinicians and burned out patients both stem from a loss of imagining virtuous actions within existential moments. Can we create pathways for virtue for ourselves and for our patients in the often chaotic environment of healthcare? This chapter advances the argument that practical philosophy, and the humanities, are important in the clinical practice of medicine. That is, they are not just about better communication, or the physician–patient relationship, but affect actual patient outcomes because *how* we apply our tools of knowledge determines the types of outcomes that are even possible, even when those outcomes are sometimes only chaos.

Just as humanism is integral to medicine, so is being a human integral to being a physician. Practical wisdom and intuition begin with fundamentally human ways of knowing, not unique to providers. To be a doctor is to be human, to be human is to be a doctor. All humans are physicians as they try to improve the lives of those around them; the secret for each of us is to know our own specialty and thereby our limits.

References

1. Montgomery K. *How doctors think: clinical judgment and the practice of medicine*. New York: Oxford University Press; 2006.
2. Bynum W. *The history of medicine: a very short introduction*. Oxford: Oxford University Press; 2008.
3. Braude H. *Intuition in medicine: a philosophical defense of clinical reasoning*. Chicago, IL: University of Chicago Press; 2012.
4. Aristotle. *Posterior analytics*. In: McGrew TJ, editors. *Philosophy of science: an historical anthology*. Chichester: Wiley-Blackwell; 2009. p. 46.
5. Solomon M. *Making medical knowledge*. Oxford: Oxford University Press; 2015.
6. Charon R. *Narrative medicine: honoring the stories of illness*. New York, NY: Oxford University Press; 2006.
7. Jacobs AK, American Heart Association. *Rebuilding an enduring trust in medicine: a global mandate: presidential address American Heart Association Scientific Sessions 2004*. *Circulation*. 2005;111(25):3494–8. Print.
8. TJ MG, editor. *Philosophy of science: an historical anthology*. Chichester: Wiley-Blackwell; 2009. p. 220–4.
9. Nagel T. *Mind and cosmos: why the materialist neo-Darwinian conception of nature is almost certainly false*. New York: Oxford University Press; 2012. Print.

10. Schleifer R, Vannatta J. The chief concern of medicine: the integration of the medical humanities and narrative knowledge into medical practices. Ann Arbor, MI: University of Michigan Press; 2013.
11. Sacks, Oliver, 1933–2015. The man who mistook his wife for a hat and other clinical tales. New York: Summit Books; 1985.
12. Kierkegaard S. The sickness unto death. London, New York: Penguin; 2008.
13. Metastatic Breast Cancer Network [Internet]. New York; 2004. Available from: www.mbcn.org/stories. Accessed 5 Jan 2017.
14. Welton D, editor. The essential Husserl: basic writings in transcendental phenomenology. Bloomington: Indiana University Press; 1999.

Further Reading

Devettere R. Practical decision making in healthcare ethics: cases and concepts. 3rd ed: Georgetown University Press; 2009.