

Dr. Pam Popper's Book Review

How Doctors Think

By Jerome Groopman, M.D.

A significant part of my life's work is showing people how they can stay out of doctors' offices and hospitals. However, there are times when it is appropriate to see a medical doctor, or for hospitalization. This book, although parts of it are quite scary, is a must-read for anyone who is or will be dealing with traditional medical practice.

The author, Jerome Groopman, is a medical doctor who has had first-hand experience, both through his medical practice and as a patient, with the shortcomings of traditional practice. He states that the book was written for lay people although he hopes doctors will read it. According to Dr. Groopman, the book is directed at patients so they can be better advocates for themselves when dealing with doctors, who often need patients and their families and friends to help them think, and to provide clues as to what is wrong. Patients also have to be very proactive in order to overcome the prejudices and thinking patterns that are common to many doctors.

Judith Hall, professor of social psychology at Northeastern University, has conducted research on rapport between doctors and patients. According to her research, the sickest patients are least liked by doctors, and sick people are subconsciously aware of this. Doctors tend to like healthier people, one of the reasons being that doctors often have feelings of failure when dealing with sick patients who they are unable to help, and become frustrated as a result.

Hall is highly critical of the communication style of many doctors, which can include being quite dismissive, and says, "most of what doctors do is talk and the communication piece is not separable from doing quality medicine...Competency is not separable from communication skills. It's not a tradeoff." The first lesson a reader learns is that if you are a really sick patient, you are likely to be treated worse by many practitioners, and have to work harder to get the attention and care that you need.

Unfortunately, the book goes on to give more frightening information. Groopman describes misdiagnosis and how it occurs - according to a 1995 report he cites, 15% of all diagnoses are inaccurate. There are many reasons, one being that emotion can blur a doctor's ability to listen and think. "Physicians who dislike their patients regularly cut them off during a recitation of symptoms and fix on a convenient diagnosis and treatment. The doctor becomes increasingly convinced of the truth of his misjudgment, developing a psychological commitment to it. He becomes wedded to his distorted conclusion."

Groopman is amazed that most patients, although research shows they are aware of their physicians' negative attitudes toward them, rarely change doctors because of it. Instead, they blame themselves for complaining and bothering the doctor. However, when Groopman asks other doctors what they would do if they thought their doctors didn't like them, they almost all respond that they would find another doctor. Second important lesson - if you perceive that your doctor does not like you or you do not have good rapport with your physician, find a new one!

A significant portion of the book is dedicated to how doctors arrive at erroneous conclusions. Here are a few of the most common:

Representativeness errors – the thinking is guided by preconceived notions of the doctor and therefore symptoms are either not deemed important or attributed to the wrong cause. Example – a healthy athletic male complaining of chest pains is sent home because the doctor cannot believe he would actually have heart disease, and does not investigate.

Attribution errors – the appearance or mannerism of the patient leads the doctor to inaccurate conclusions. For example, an unshaven person with alcohol on their breath has a swollen abdomen, legs and feet and the doctor assumes the cause is alcoholism. In fact, Groopman says that doctors consider people who don't take care of themselves as less deserving of their time and attention.

Affective error – this is another term for wishful thinking. When the doctor likes a patient, he may not want to expose him or her to invasive tests, or is relieved that a preliminary test did not lead to a diagnosis of anything serious.

Availability – the tendency to judge the likelihood of an event with relevant examples that come easily to mind. An example would be a doctor who has seen lots of cases of pneumonia recently, and even though a patient's symptoms don't readily fit, assumes that this is just one more case of pneumonia. This is also referred to as “distorted pattern recognition.” It leads to confirmation bias – selectively accepting or ignoring information, which confirms what the doctor expects to find. This leads to something called “anchoring” – firmly and quickly latching onto a single cause/thought rather than considering multiple possibilities.

The Emergency Room is a place where errors of this type are even more likely to happen. First, the doctors have no relationship with the patients, and often do not know much about their medical histories. They can be tired, distracted, and overworked. Groopman advises that in the ER a doctor's “studied calm” should be apparent. Doctors who are distracted or interrupted show indication that they may not be in a position to evaluate a patient properly.

Groopman advises patients to ask questions as a way to compensate for less than optimal conditions in an ER setting. A fair question to ask an ER doctor is “what's the worst thing this could be?” This is a way to get the doctor focused outside of diagnostic biases described above. Another fair question is “what body parts are close to the source of the pain?” These kinds of questions can get doctors to think more broadly and to consider other causes of your problem.

Groopman readily acknowledges that doctors know little about the effects of nutrition on health, and that diagnoses involving diet as a culprit are often completely missed. We certainly see first-hand evidence of this in our office almost daily. Allergies, food intolerances, celiac disease and other conditions are often not considered at all, and conditions like Irritable Bowel, which respond well to dietary change, are often treated with medications and there is no discussion of diet as a mitigating tool.

The propensity to misdiagnose even affects the opportunity to get a second opinion. Groopman describes diagnosis momentum, referring to a situation involving a doctor becoming convinced of a diagnosis, and then passing that diagnosis on to other doctors and other health care professionals. This momentum crushes everything else in its way and it is often only the insistence of the patient or family members that causes doctors to look for other diagnoses.

The rush to diagnose is also an issue. Sometimes even when there are glaring inconsistencies, doctors will put aside those inconsistencies in order to come up with a diagnosis right now.

This is not surprising, but another problem is the over-confident mindset of many health care providers. Doctors assume they are right because they usually are, and they can tend to focus on positive data more than negative data because they very much want a positive outcome. Groopman states that specialists in particular have a tendency to demonstrate unwarranted clinical certainty. They rely on their knowledge and often do not consider variations in human biology, and the individual circumstances of a patient.

Many of these problems start in medical school. According to Jay Katz, a physician who teaches at Yale Medical School, another reason why mistakes are common is the culture of conformity that starts in medical school. He relates being told by a distinguished faculty member at a university hospital during medical school that the use of coumadin and other anticoagulants was the treatment of choice for threatening pulmonary embolism and that using any other therapy was considered unprofessional conduct. He goes on to say, "Nor were we encouraged to keep an open mind. ...we were educated for dogmatic certainty, for adopting one school of thought or the other and for playing the game according to the venerable, but contradictory rules that each institution sought to impose on staff, students and patients."

As a result, doctors are generally unwilling to acknowledge uncertainty or to take it into consideration when diagnosing or coming up with a plan of action. Groopman goes on to describe other behaviors and thinking patterns that can result in inaccurate diagnosis or patients getting worse instead of better.

Commission bias is the tendency to move toward action rather than inaction, even if the action is not particularly warranted. This is most likely to occur with an arrogant physician with a large ego, but can also occur when a physician feels pressured by a patient to do something. Although we would love to think that doctors have the ability to clearly advise patients about the right thing to do, they are often influenced by the desires of their patients and will often just "go along."

Search satisficing is the tendency to stop searching when something is discovered, even if it may not be the actual problem when there may be more than one thing to be found. One way to keep this from happening to you is to ask more questions. If you are given vague answers, or you do not understand your diagnosis or what is going to be done to help you, find another doctor.

Groopman has relevant personal experience as a patient and relates the story of how he visited several doctors about excruciating pain in his right hand, and was given several diagnoses and treatment recommendations that he knew were questionable. Some doctors refused to answer his specific questions about potential outcomes, options, etc. He was particularly shy about agreeing

to procedures since he had done so several years earlier when he agreed to allow a spinal fusion procedure. The surgery left him debilitated, which caused him to be considerably more cautious before agreeing to another operation.

Through a time-consuming process that involved consulting with numerous doctors, Groopman finally got the answers he needed and had a procedure that restored 80% of his function. He reflected on whether or not the fact that he was a doctor was responsible for his positive outcome, and decided that a lot of it was common sense. Patients should not agree to allow procedures they don't understand, they should not allow dismissive, arrogant doctors to provide care, and they should keep seeking information until they get the answers they need.

According to Dr. Linda Lewis, Groopman's mentor at Columbia, "there is nothing in biology or medicine that is so complicated that, if explained in clear and simple language, cannot be understood by any lay person. It's not quantum physics." In other words, the reason for not providing information is arrogance, not that the patient will not understand the dialog.

Patients can help themselves by asking questions about complications, discomfort, projected outcomes, etc. According to Groopman, a doctor's response can tell you a lot. A doc that gets short and huffy maybe does not know as much as he lets on, while a good doc will welcome your questions and do his best to give you the information you need.

The book includes a section on the reading of x-rays, another potential source of medical errors. Dr. E. James Potchen at Michigan State University has studied the performance of radiologists. In one study, a film of a patient who was missing the left clavicle was shown to radiologists. 60% of the radiologists who looked at the X-ray did not notice. When the radiologists were informed that the chest x-rays were obtained as part of an annual physical exam 58% of the radiologists still overlooked the missing clavicle and labeled the X-ray as normal. When told that the purpose of the x-ray was to determine whether or not he patient had lung cancer, 83% of the radiologists overlooked the missing clavicle. What was astounding was not only the fact that the doctors did not observe the missing bone, but the confidence level they had in their diagnosis.

Potchen also observed that some doctors tended to "overread" the x-rays and were more prone to false positives, while others were more prone to have false negative rates. Others were more inclined to be indecisive and to ask for more films before making a decision. Potchen concluded that the longer a radiologist looks at a film, the higher risk of making a mistake. After 38 seconds, radiologists generally begin to see things that are not there.

Screening through mammography is known to be highly inaccurate (I have written about this on numerous occasions – please see other editions of Health Briefs). In one sample of 148 radiologists looking at mammograms for 148 women, the correct diagnosis for patients who had cancer ranged from 59% to 100%. For those without cancer, the accuracy rate ranged from 35% to 98%.

Research shows that doctors even disagree with their own diagnosis. When evaluating biopsies, pathologists only agreed with themselves 89% of the time. For senior pathologists, agreement

with their own diagnosis only happens 87% of the time. For patients with abnormal cervical cells, doctors who were asked to reconsider their earlier diagnosis only agreed with themselves 68% of the time. Senior pathologists only agreed with their junior colleagues 51% of the time.

Radiologists are often victimized by search satisfaction – as soon as they find something they stop looking for anything else. Other problems include the large number of images radiologists are asked to look at during short periods of time, and the specific requests that accompany x-rays. Many radiologists are asked to rule something out, but then do not look at the images objectively to determine if there is something else going on. Sometimes radiologists are under pressure to give a diagnosis by the referring doctor, and according to some radiologists, it is difficult to resist giving the doctor what he is asking for.

Some doctors do not provide histories to the radiologist, not wanting to prejudice the reading. On the contrary, according to many radiologists, this is a stupid practice that often causes conditions to be overlooked.

The use of computers has been suggested as a solution to variations in reading X-rays, MRI's, mammograms, etc. However, computers have not proven to be very helpful. In one study, the use of computers assisted in improved detection of cancer between 14 and 24% of the time. However, the computers also caused radiologists to change correct diagnoses 10% of the time. Of 15 radiologists in this trial, no two had identical results in identifying the 80 patients with and the 160 patients without cancer. The difficult-to-find cancers were only identified by 4% of the radiologists. None of the radiologists identified all of the 80 cancer cases accurately. In fact, the computer caused more false positive readings than would have occurred without the use of the computer technology.

The message for laypeople is to remember that doctors make errors based on stereotypical observations, prejudices, and other factors, and that patients and their families need to be diligent, and demand proper attention until their problems are solved.

When diagnosing children, things can get even more complicated. On the one hand, it is important to listen to parents and take their concerns seriously. On the other hand, there is often a rush to label children. "...moodiness is labeled as depression, shyness as social affective disorder, a drive to precision as obsessive compulsive disorder," Groopman says. It is difficult for some doctors to discern when mothers are over-protective and over-reacting to their children's physical complaints vs. when there are issues that demand immediate attention.

Both pediatricians and family practice doctors see too many patients daily to do justice to many of them. One study cited by Groopman involved 45 doctors caring for 909 patients and found that two thirds of the doctors did not tell the patients how long to take medications or outline the potential side effects of the drugs. Nearly half did not specify the dose or how often the drugs should be taken.

Another issue addressed in this book is the influence of pharmaceutical companies on doctors' practices. Groopman discussed a disturbing trend, which is drug companies trying to create diseases and conditions requiring treatment. One example he uses is testosterone replacement

therapy for men. According to some drug reps, men experience a male version of menopause, resulting from low testosterone levels. Symptoms doctors are told to look for are decreased energy, decreased libido, and lower endurance, which are common in many people.

According to a prominent endocrinologist interviewed in the book, many doctors who are not experienced in endocrinology are quick to prescribe testosterone replacement therapy to men. It is normal for testosterone levels to decrease by 1.2% per year after the age of 40, and “normal” (according to the pharmaceutical industry) testosterone levels are often referencing what is normal for men in their 20’s.

The issue is actually more complicated, however. Testosterone levels fluctuate throughout the day, even in younger men. Dr. William Crowley, chief of reproductive endocrinology at Massachusetts General Hospital and Dr. Frances Hayes sampled the blood of healthy men in their twenties every 10 minutes for 24 hours. At some time during the day, the testosterone levels of all of the men dropped below normal, some as much as 50%. In the case of testosterone replacement therapy, drug companies are creating a medical condition that does not exist, advising doctors to treat normal changes in hormone levels as a disease.

Another issue is procedures that become standard without any evidence of efficacy. In the 1950’s patients with angina and coronary artery disease routinely underwent an operation that tied off an artery that runs underneath the breastbone. The rationale was that doing so would increase blood flow to the heart. At the end of the decade, a clinical trial showed that those who underwent a sham procedure showed just as much improvement as the patients who underwent the “real” procedure.

A basic misunderstanding of biology is often responsible for unnecessary procedures. Radical mastectomy was performed because doctors believed that the way cancer spread was by invading tissues contiguous to the tumor. We now know that cancer spreads through many means, including through needle biopsies used to confirm its presence. Lumpectomy turned out to be a better solution, but hundreds of thousands of women had radical mastectomies, and many are still advised to do so unnecessarily today.

Spinal fusion to relieve back pain is the most recent procedure to be identified as useless. 150,000 of these surgeries were performed in 2006. But there is no evidence that damaged or herniated discs are predictive of back pain. Studies have shown that 50% of adults have anatomical changes that appeared significant in imaging scans, but experience no pain. 80-90% of people over 60 had significant disc degeneration with no pain in one study, while 80% of those who do have pain get better with rest, physical therapy and other non-invasive measures.

When lower back pain is the issue, testing is worthless most of the time. 85% of patients with low back pain are not given a specific diagnosis. 90% improve within 2 to 7 weeks, and even for those with acute ruptured discs, 80% feel significantly better after 6 weeks without surgery.

One incentive to have surgery is that many patients can be placed on disability following the surgery. One surgeon who asked that his name not be used stated that almost all of the patients he advised not to have surgery found other doctors in the area to perform it, leading him to

decide that if patients were going to have surgery anyway, he may as well be the person to perform it.

Surgeons are reimbursed at the rate of about \$5000 for discectomy, while they receive \$20,000 for spinal fusion, creating a powerful incentive to perform the more expensive procedure.

Research continues to show little to no benefit from having spinal fusion surgery, yet doctors continue to perform tens of thousands of these procedures annually. Some doctors anonymously told Groopman that they would not participate in trials to compare simple discectomy with spinal fusion because they were convinced of its benefit and spinal fusion was a main source of their income.

Groopman advocates informed choice, which he defines as learning how different doctors view medical problems and how science, financial incentives and personal bias mold advice given to patients. Groopman acknowledges that there is no single source for all of this information, placing a huge burden on patients to research and discover the truth.

It is particularly important to be diligent during treatment for serious diseases like cancer. Many doctors will not change the course of treatment even when what they are doing is not working. Often doctors will reaffirm that diseases are fatal or hard to treat rather than thinking outside the box for a treatment that could work better. This behavior tends to buffer the physician against the fear of failure.

The way doctors communicate information to patients has a great deal to do with their receptivity to treatment. For example, a 30% chance of success will get more patients to go along than a 70% chance of failure, even though both statements are communicating the same idea. And improvement is often mistaken for cure, particularly where cancer is concerned. Groopman also addresses the deception created by using relative vs. absolute percentages when discussing outcomes, often leading patients to expect better outcomes than are possible with proposed treatments.

Dr. Jeffrey Tepler is a hematologist and oncologist at New York Presbyterian Hospital, and from his statements in the book, seems to be a doctor I'd like even though he trends toward traditional treatment. He talks about advanced cancer patients who are "flogged," a term used to describe patients who are given continued toxic therapy without any hope of benefit. He disagrees with oncologists who believe that patients should be given every treatment available until they die.

The author finishes with some general advice. If you see a physician and you are not getting better, remember the previous descriptions of how doctors form erroneous impressions and issue wrong diagnoses. If the doctor will not listen to you or the solutions proposed are not appropriate, find another doctor. As the book shows, there are wide differences in how doctors perceive the same problem. A good question to ask is "what else can it be?" when there is no clear diagnosis. "Is there anything that does not fit?" is another appropriate question. "Is it possible I have more than one problem?" is another question to ask. These can counteract the tendency toward search satisfaction – the identification of one problem that keeps the physician from looking at other things.

Groopman concludes by stating that as a physician he has a partner who can have a profound effect on treatment outcomes – helping him to avoid the cognitive pitfalls described in the book, and asking targeted questions to make sure care is appropriate. That partner is the patient, family member or friend, who can help to keep the doctor’s mind open and gain greater understanding of the patient’s needs and problems.

Groopman does a great job in describing the things that can go wrong in medicine, in part because the practice of medicine involves humans who are fallible. But a very important point that should not be missed here is that patients need to take responsibility for their own health by asking questions, seeking information and making informed choices. The practice of medicine should be a partnership, with patients contributing 50% of the effort.