

MAKE AN ERROR, GO TO HELL:
THE HISTORY OF ADMITTING ERROR IN MEDICINE —
A CULTURAL DETECTIVE INVESTIGATES HER NATION
AND HER PROFESSION

by

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Preface

Broken Stories

Sometimes the stories patients tell me don't quite hang together. Then I dig for the real story.

The story Joe told me was that his high blood pressure was a side effect of his stressful job at the steam plant. I believed him. At some jobs hypertension is a kind of on-the-job injury, and I had other patients who worked there.

One day he came in for a routine appointment, apologizing for his sky-high blood pressure. "I know it's high today, but it's only because I got a letter at the plant."

He had the letter with him. In it, management cited his frequent safety violations, and gave him a few days of administrative leave to, as they put it, "decide whether to improve or resign." Joe didn't dispute the safety violations, most of them. "But," he explained, "these people stress me out so much I can't concentrate." Divorced, in his forties and looking older, he also had low back pain, heartburn, irritable bowel, and post-traumatic stress disorder. In other words, all of his medical problems were stress-related.

The cause of his post-traumatic stress disorder was a puzzle to me. I had asked him about it at a previous visit. He told me the panic attacks, and the bouts of depression and anxiety, began after he rescued a neighbor by shooting her attacker. I sympathized — I knew from reading about PTSD in police officers and soldiers that having to shoot someone can really shake people up.

"Oh, no," he said. "That wasn't the part that bothered me."

What was?

“The thing was— I saved her. Probably saved her life. But after I saved her and all— she was still a lousy neighbor.”

Lousy how?

“Noisy. She had dogs, played loud music. And she left her garbage out. I got depressed thinking about it. And I couldn’t stop thinking about it. It was like I never really saved her.”

That just didn’t make sense as a cause of PTSD. Unless it was a flashback to something else. So at this visit, I sniffed around the general subject of saving people.

“Did you ever try to save anyone else?”

He shook his head.

“Did you ever try to save someone, and fail?”

He looked at me, blank. He shrugged. And then he cracked.

“Grandad!” he blurted. He started crying, big shaking wet sobs, the kind you almost never see men give in to.

Bingo. I exhaled and waited for him to come back to earth from the flashback. One of my medical assistants used to give me a point for every patient who left the exam room red-eyed — she knew I’d hit paydirt.

After a while he could talk. Were you close to your grandfather?

“Sure, he raised me.”

What happened?

“When he got sick, his doctor wouldn’t do anything. I couldn’t make the doctor save Grandad. I couldn’t save him.”

That was Joe's story, and it was stuck on replay. He cast everyone who walked into his life as one of the characters in that drama. Everyone who needed rescuing was his grandfather. And he was always the kid who couldn't save Granddad. Working in a steam plant must have been a great job for him. With every valve he turned, he saved people a block away from dying by exploding boiler. Though given his safety record, he more often failed at saving them, which he was more used to.

Joe needed the flashback, living through not being able to save his grandfather, to see the script in front of his face. He went back to work, talked to his boss, got a second chance. Now that he could hear the script that always ran in the background of his screw-up situations, he didn't have to screw up. That subtext will always be there, an easy rut for him to fall into. He can play the scene differently and get on with his life, but only if he knows where he starts from.

Later he retrained for operating large computer systems, another job where he could save people. Or not.

* * *

I see a lot of patients like Joe, whose illnesses spin out of the stories they keep reliving. One of my inspirations in medicine, Howard Brody, said that in the specialty of family medicine we help people fix their stories. I don't know what it is about some experiences that won't let people go. Maybe the higher the stakes, the earlier in life, or the greater the threat, the more likely it is to persist as an infinite loop.

Groups of people get stuck on replay, too. Every profession has a collective story, a view of itself and the world, storyboarded by the profession's founders. This is generally a good thing, because it saves time and helps get the work done. Unconscious scripts give group members their

view of the world: who are the good guys and the bad guys, who wins and who loses, and whether nice guys finish first or last. Plumbers and priests work from different scripts to get different jobs done. If they traded scripts, they'd be lost.

Because these long-running shows, individual and professional, are unconscious they are hard to close down when no one wants to buy tickets to see them anymore. Some outlive their usefulness. A view of the world that helps a child survive abuse will hobble her growth and healing when she grows up and escapes. An organization whose mission it is to defeat some great evil may go off the tracks if it ever succeeds — or if someday the great evil turns out to be not so evil after all. Some groups to which this has happened have turned to attacking anything that merely resembles their original nemesis. Like individuals, professions need to be able to hear their unconscious scripts when they need to rewrite scenes that no longer work.

We customers, clients, patients, and guests of all these professions play important roles in their dramas. Somehow growing up we learned our lines in each of their scripts. At the auto mechanic's garage, the world is a Newtonian clockworks. At the yoga studio, energy flows as the physical morphs into the metaphysical. When we visit the naturopath we want help restoring our balance. And when the doctor sees us we just want to be fixed and we know it's our fault.

Knowing whether my patients' stories work for them in their world is just as important to me as knowing how well their livers and hearts work. The patient's story is an organ system, as essential to life as the gastrointestinal and endocrine systems. But I discovered I didn't know my own story as a physician. I didn't know my profession's unconscious script, so I didn't know it was broken.

Chapter One

Because It Couldn't Happen

A Wednesday, late winter in Boston, February 8, 1995. Diane Warren works quietly at her desk at Harvard's Dana-Farber Cancer Institute, one of the most respected cancer research and treatment centers in the country. Warren sets aside a demographic form that she has filled with facts, names, and numbers from the medical chart of Betsy Lehman, a 39-year-old mother of two and health columnist for *The Boston Globe*. She turns to the next form, the history form. It calls for the dates of major events in the short life of Lehman's breast cancer, such as diagnosis, biopsy, surgery, and chemotherapy; and the results produced by each assault on this particular cancer. Warren is digesting this chart into research data because Lehman's case is now closed—Betsy Lehman died ten weeks ago, December 3, 1994, at the end of her third cycle of chemotherapy. Warren turns pages back and forth, reconstructing the sequence of events, neatly listing specifics on the form. She sets the completed history form next to the demographic form and reaches for the last form in her routine, the study drug administration form.

The researchers Warren works with will use this form to compare different drugs, and different doses of those drugs, to see how effectively and safely the drugs fight cancer. If all cancer patients lived, and all cancer treatment worked, Warren's work would not be necessary. Her meticulous shepherding of data into rows and columns maps the border between the dose that saves and the dose that fails, the line between who lives and who dies. She begins filling in the study drug administration form by opening the medical chart to the nurses' record of how much chemotherapy — the study drug — this patient received in each dose. She adds up the doses Lehman received on each day of treatment and fills in a line on the form, then divides by

the size of the patient — dose after dose, line after line. Betsy Lehman received a treatment regimen that included a series of cycles, or hospital stays for chemotherapy, several weeks apart. Warren inks in the results of her calculations: in the first cycle Lehman received, each day for four days, one thousand milligrams of cyclophosphamide, a total of four thousand milligrams. Part of Warren's job is knowing the treatment protocols, so she knows this dose is correct. Her calculations for Lehman's second cycle match the first: each day for four days, one thousand milligrams of cyclophosphamide, a total of four thousand milligrams.

In the third cycle, a few weeks later, the doses for the first day add up to four thousand milligrams. Warren fills in a line on the form. The dose for the second day matches it, as do the third and fourth days' doses: four thousand milligrams. Each day for four days, four thousand milligrams of cyclophosphamide, a total of sixteen thousand milligrams over four days. Sixteen thousand. She looks at this number. She looks at the numbers above it on the page, the doses for the first and second cycle: Four thousand. Four thousand. Then she carefully repeats her calculations, step by step.

Later Warren testified in court, "I noticed there was a number that was wrong. I wanted to ask someone if they were seeing what I was seeing." She took her sheaf of calculations across the hall to the office of Dr. Gary Swartz. "I showed him what I found," she recalled on the witness stand, "and he looked at me and said, 'She didn't get that.' I had no answer. I don't believe I actually said anything at all." Swartz picked up the phone and called the hospital pharmacy, to check the dose of medication given to Lehman in her last chemotherapy cycle the previous December. When he hung up, he informed Warren that the dose in the chart was, in fact, the dose that had been administered.

“At that point,” said Warren, “I made the connection that this was Betsy Lehman, a patient who had died.” At that moment the patient came alive for her.

Betsy Lehman’s family wants her remembered for more than dying of a mistake. To honor what she did in life, her family has endowed in her name a journalism scholarship for women. But Lehman’s name haunts every gathering convened to prevent medical errors. Not because she wrote about medical safety. One reason she didn’t is that during her career in the 1980s and 1990s few people thought much about medical mistakes . . . until one happened to her. Her death brought to life the movement to make health care safe, because the way she died wasn’t supposed to happen. Certainly not in the place where it happened—mistakes didn’t happen at Harvard. And certainly not to someone like her, because few patients could be better informed. At the peak of her career as a health columnist for *The Boston Globe*, she had a long list of contacts who would have gladly explained everything that was known about her disease and its treatment. Her husband, a research scientist, even worked at Dana-Farber. Lehman’s death in 1994 ripped away illusions that medical mistakes don’t happen, or rarely happen, or that they can’t happen here.

Or can’t happen to me.

Rest of the chapter not included in excerpt.

Chapter Two

Subtext

I had been the medical advisor for Artists Repertory Theatre in Portland for half a dozen productions over the years. Usually I helped with technical questions and medical props. Actors need to know about their characters' health, including how it feels to live with the character's health conditions, what the character can expect by way of prognosis, and how much control the character might have over the problem.

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[Working on Arthur Miller's "The Crucible."] The play didn't have any major medical issues but, continuing what I had done with medical plays, I could help explain the history and culture of seventeenth century Salem, Massachusetts.

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What I told the actors was that the Puritans believed that everyone was, at the core, either completely good or completely bad. They also believed that everything was predetermined, including who was bad, or Damned, and who was good, or Elect. They didn't make that up, or pick it out of a bin of spare parts of Western Thought. They lived it. Their unconscious script came from a time when they were religious refugees, Protestants fleeing and rebelling against Catholic rulers across sixteenth century Europe.

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The fugitives from all over Europe who came to neutral Geneva found a religious thinker, John Calvin, who shaped their visceral fear and angry hope into cosmology. . . . Calvin had a serendipitous combination of refugee experience with legal and theological education. He knew

enough about how institutions worked to see that the old theology had created a stiffly hierarchical society. And he could imagine social structures that did not exist yet, to realize the new reformed theology. Calvin became the institution-designer and -builder of the worldwide Protestant Reform movement, embedding in bricks and mortar his fellow refugees' hard-edged view of predestined good and evil — which still shapes our lives now, for better and worse.

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The concept of free will would have struck these trapped, anxious people as intuitively absurd. No theologian could have convinced them that they had any significant control over their own lives — refugees never do. Sociology calls such a learned view of the world an “external locus of control,” that is, a control panel out of reach. In contrast, those who have seen their actions make a difference grow to believe in an “internal locus of control.” Stable communities, stable landscapes, and higher social status generally foster belief in self-determination or free will, which are philosophers' terms for the internal locus of control. I learned from my patients how much difference the locus of control makes. People who hold an internal locus of control are enthusiastic about preventive health, because they take for granted that they have the power to improve their lives — they just want to know how. People who believe they have little control over their lives consider any investment in prevention a low priority. After all, they have little experience of effort paying off.

The internal and external loci of control work in our lives as different unconscious scripts, each with its own natural plot line. The script that Calvin and his fellow refugees took from their common experience was predestination, the philosopher's term for the external locus of control. If I do not have my hands on the wheel, who does? When bad things happen, victims often blame themselves for their own misfortune. The idea that no one might have a hand on the

wheel — or that there may be no wheel at all, that the events of our lives are random — is for many people too frightening an alternative to consider. The refugees chose to believe that someone else did steer their lives, and that that someone must be God.

Another lesson refugees learn is that people are sharply divided into Us, we exiles; and Them, our persecutors. And if everything is predestined by God, then God also chose at the beginning of time who will be good and who will be evil. Or, as Judge Danforth says from the bench in “The Crucible,” “There be no middle road.”

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The Protestant reform movement was radically egalitarian. They had rejected the vertical social order of the Catholic Church, extending from God on high down through King, arrays of nobles, and priests, with mere men and women at the bottom. All these gradations were clearly identified by sumptuary laws regulating what fabrics each echelon could wear — for example, lace versus broadcloth, and what foods they could eat. Protestant reformers compressed all these tiers into only three: God, We the Elect, and Them the Damned. So Puritans and their ministers wore simple garments that did not differentiate rich from middle from poor.

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The Us vs. Them unconscious script made Calvinists relentless and politically effective. They fought for their beliefs even as those beliefs adapted to their new situation. Belief in predestination comforts the helpless, by helping them make sense of their suffering. But what happens when these same people are no longer quite so helpless? What happens when they win a measure of control over their lives? Belief in predestination, when they are winning, gives them confidence that God wants them to do whatever it is they are doing.

The two ideas, predestination and Us vs Them, which together they called “double predestination,” made sense to the Puritans of their bitter experience. As they left that crucible behind, they interpreted their new situation in the light of those two beacons. For example, once the refugees returned to England, no one was chasing them any more. That basic fact blurred the formerly sharp line between the Damned and the Elect. They could have changed their view of the world to reflect this new shaded reality. But no one does that. Replacing an unconscious script is painful and risky, especially the phase in between old and new scripts when nothing makes any sense. So the expression of Calvinism adapted to the changed situation of Calvinists.

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They brought to America an adapted Calvinism. Puritans by then accepted that God kept the destinies of individuals a mystery. They still believed those destinies were separate and unchangeable, just harder to figure out than before. They concluded that God had left them two kinds of clues: an individual’s actions, pious or impious, such as giving to the poor or drinking in the gutter; and signs of God’s favor or disfavor, such as a long prosperous life or a short tumultuous one. Fortune, good or bad, took on deeper meaning. Shows of piety, such as charity and public service, carried higher stakes. The healthy and wealthy gathered additional dividends in the presumption that they were included among God’s Elect. The sick, poor, and unlucky bore, in the eyes of others and sometimes in their own hearts, the additional burden of probable damnation.

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I told the actors that pegging the ultimate destiny of their neighbors, friends, relatives, allies, and opponents made Puritans watchful. Evaluating their own souls made them anxious.

Others we judge relatively easily, by externals. But we have a flood of data by which to measure ourselves. We judge ourselves by our own actions, whether known or unknown to others; by those unspoken thoughts, wishes, and intentions known only to ourselves; and by externals as reflected in the apparent opinion of others.

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[T]elling one Puritan not to judge another was like telling them to stop breathing. Puritans kept score, on themselves and on each other. And they knew everyone else was keeping score on them.

That summer I shuttled between evening rehearsal and daytime clinic. Something felt oddly familiar about the world I introduced the actors to at night.

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But one day in clinic I noticed my reflection in a patient's glasses as he listened to me. Then I recognized the expression on his face. And it hit me: he was looking at me exactly the way the Salem villagers looked at Rev. Hale. The rest of that week I paid attention, and most of my patients treated me with that odd deference, as if they thought I spoke to them from a different plane of existence.

Other patterns in clinic echoed the culture I explained to the actors at night. I realized I knew how it felt to constantly judge and be judged. Doctors measure themselves and their colleagues obsessively. We scour our own actions and thoughts for defects. When we see mistakes made by colleagues, we withdraw from them, as the residents of Salem shunned their accused neighbors.

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As I practiced medicine during the day and explained the Puritan world at night, I noticed more parallels. Of all the unsolvable knots in our broken health care system, one of the most puzzling is that health care is riddled with mistakes. Puzzling because it should be one of the easiest to fix. Just do it right. Measure twice, cut once. And when you don't do it right because you're imperfect human beings, do it better the next time. But in medicine we aren't even doing it better the next time. The same errors keep happening over and over again. Lots and lots of them. By the summer I was working on the play it was commonly accepted that a major cause of the medical quality quagmire was that the usual response to a mistake was to fire the person who made it. That's a great way to perpetuate errors, not prevent them.

And it's exactly what the Puritans would have done. As my summer went on with one foot in each of these two cultures — seventeenth-century Puritan New England, and twenty-first-century medicine — I noticed, not just more echoes of one in the other, but that the thinking of the older culture could explain some of the lethal dysfunction of the newer culture. All of which was interesting but irrelevant since the two cultures sprang up independently. They must have.

Finally the show opened, to, of course, great acclaim, and I had my evenings and weekends free again. I spent some of them browsing through American medical history looking for Puritans. I found them.

Chapter Three

The Founder Effect

One of the American medical profession's forebears had to leave England for America because he couldn't keep his beliefs about right and wrong to himself. In seventeenth-century England, speaking up even privately could be dangerous. He arrived in Plymouth, Massachusetts in 1637, with his wife and children, at the age of forty-five. Seventeen years later, weary of disagreements with his fellow colonists, he decided to return to England.

He became my professional ancestor because, just as he was about to book passage to return to England, he was offered a job in Boston. He accepted, making him the second president of Harvard College. His name was Charles Chauncy, and he was one of the first European physicians in the future United States.

Chauncy was not only a physician. He was first of all a Puritan minister. He used the title Reverend, not Doctor, and like many clergymen of the time, he learned medicine to be a better minister. Chauncy preached the gospel and practiced medicine in Scituate, Massachusetts, a settlement halfway between Plymouth and Boston. He did not distinguish between medical and spiritual service — caring for his parishioners' broken bodies was simply part of taking care of their bruised souls. He might begin the day working on a sermon, then set a fracture, deliver a lecture, call on a family with a sick child, and get back to work on his sermon at the end of the day. Healing the body and healing the soul were felt to be done best when done simultaneously.

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One thing I envy about Chauncy's practice: His patients considered that helping them find the *meaning* of their sickness was part of his job. My patients expect me to put a name to their illness. And indeed, I can name an illness with considerable scientific accuracy — I can distinguish among bumps caused by fibrous adenoma, Coxsackie virus, basal cell carcinoma, lymph nodes, several different herpes viruses, direct and indirect hernias, and pityriasis rosea, among others. For most of these bumps I can identify the cause, predict the duration, and estimate the harm they might do.

But the name of the disease is usually insufficient. Just like Chauncy's patients, what my patients really want to know is, what do the bumps mean? They ask, 'Is it my fault?' 'How could I have prevented this?' 'Where did I get it from? Or who?' Patients want to know how the bump fits, as a character — ally or adversary? — into their ongoing life story.

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For Chauncy and his fellow minister-physicians, profound questions were the standard of care. Puritans saw everything that happened to them as a possible answer to that most basic question of their lives, the issue of their damnation or election by God.

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Another thing I envy about Chauncy's practice is that he could express openly his shortcomings, and his doubts about his own fitness for his job. He did not have to put on a mask of certainty to give his patients confidence, as I long ago learned to do.

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[S]peaking about one's own shame and self-doubt conferred on Puritans a certain credibility, as long as the particular shame was socially acceptable. The Calvinist paradox — certainty about the citizens of Heaven and Hell, but anxious uncertainty about oneself and

everyone else in the living world — elevated the status of self-doubt and made self-assurance suspect.

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Among colleagues in clinic after the patients have gone home, or behind the scenes in the doctors' lounge, self-doubt still earns respect, while unquestioning overconfidence raises a red flag and sometimes even eyebrows from across the room. But expressing self-doubt to patients, according to both my training and my experience, does not win credibility or respect.

My medical school classmates and I were taught to look like we knew what we were doing, even when we didn't — for the patient's sake. We understood. We could imagine ourselves in a patient's shoes, alarmed at the approach of a physician as bumblingly incoherent as we knew ourselves to be. We were taught that a patient's confidence in their doctor is itself a healing force, and that every patient deserves that. So we learned not to burden patients with our inner doubts.

I have been practicing medicine long enough that most of the time I really am certain about a diagnosis, and what to do about it. But other times I am not sure. I don't want to frighten my already puzzling patient with my uncertainty — but I don't want to lie or duck out without closure. So I have been experimenting with sharing my reasoning as I review the possibilities, thinking out loud in the exam room with the patient. When I first started doing this, I approached the conversation somberly. I explained the insight of medical sociologist Marianne Paget that, because every patient is unique, everything we do in medicine is an experiment. Therefore failed experiments — that is, mistakes — are inevitable. Most patients liked working through the possibilities with me, as an exercise in diagnosis. They became engaged, they spoke up about their values, and sometimes they remembered clues that helped solve the puzzle. But eventually

the idea hit home that this was not a game and that I, their doctor, really didn't know the answer. Then their faces subtly changed. They remained polite, but the corners of the mouth tightened, and their breathing lost its easy regularity. And I was not even raising the possibility of my total unfitness for my job — as did the Rev. Chauncy — not by a long shot. When I take the patient into the wilderness of uncertainty with me, I am just refusing to slip on the mask of professional self-assurance. If I were just starting out, trying to establish a practice, I don't think I could get away with such candor.

Now when a patient asks me a question I can't answer, such as, "When will I feel better?" I furrow my brow, think hard, pause for effect, and respond, "Well, I didn't check, before I came in to see you, on the thousand white rats we have in the back just like you. So I don't know. But here's what might happen. And here's what you can do to get better faster." They still smile nervously — as the healing force of their belief in me slips away — but at least they have a good laugh first.

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But how can we still be Puritans? That was a long time ago on a historical dead end.

Medical Puritanism might have died in seventeenth-century New England — if it were not for the early American medical training system.

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[I]n a time and place without formal professional licensing, medical education did not require brick-and-mortar institutions. All that was required was a physician's home. Medical apprenticeship was the best form of physician education in the colonies, and it was pretty good. Apprentices paid a fee, lived with their mentors for three to seven years, and assisted their master with patients.

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Even so, fewer than half of colonial physicians took apprenticeship training. Some of them could not afford the fee, some did not feel education was necessary. But the children of physicians already lived in their fathers' classrooms. If the physician was also a minister, as most were in the first few generations, the family had little money to send their sons to apprentice elsewhere. Medical fathers could endow their sons with a professional education, medical supplies and equipment, letters of recommendation, and "a ready-made clientele." So medical families, for generations, filled the need of the colonies for doctors. Charles Chauncy ... trained, among others, his six sons — Isaac, Ichabod, Nathaniel, Elnathan, Israel, and Barnabas — and his one son-in-law, Gershom Bulkeley, as both physicians and ministers. Bulkeley was the son, son-in-law, brother, brother-in-law, and father of minister-physicians. He was both chaplain and surgeon to the army in the French and Indian War, though not at the same time.

Medical historian Eric Christiansen counted over two hundred father-son medical families in colonial Massachusetts, and fifty-two medical dynasties that contributed three or more generations of doctors.

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A young man who wanted training before he hung up his shingle, but couldn't afford to study in Europe, could pursue an apprenticeship with an experienced physician almost anywhere in the colonies. But New England trained more medical apprentices, and trained them better, than other regions. In fact, that network of Puritan medical families minted so many doctors that the citizens of New England could not employ them all. As fast as New England's population grew, its medical manpower supply grew faster.

Of all the medical sons, grandsons, and great grandsons trained by a colonial minister-physician — not to mention the nephews, sons-in-law, and grandnephews — only a few could inherit or establish a practice in the same town. The younger sons and less-connected relatives of these dynasties had to try their chances in the next town. Or the next county. Or on the frontier of the next state.

Preceptors advised their students to look West and South for patients. One preceptor wrote to a former apprentice that since “[the] profession is much crowded in N.E. ... young doctors [should] go South to get training and wealth.” Another preceptor mentioned in a letter that his students had dispersed into Vermont, Pennsylvania, and Ohio. Their only option was to leave home, leave friends, family, and mentors, and take to the road. Young men headed west or south — to the frontiers of Ohio, Indiana, western Pennsylvania, western New York, the less crowded areas of Virginia, Georgia, Carolina, and Mississippi — and onward. Along with their books, and trunks of medical implements, they brought with them a model — by now unconscious — of the physician’s identity, the meaning of illness, and the relationship between patient and physician.

Chapter Four

Benjamin Rush's Heroic Medicine

In the first week of August, 1793, in Philadelphia, Dr. Benjamin Rush examined a little girl with fever, vomiting, and yellow-tinted skin. She died two days later.

In the second week of August, Rush saw a half-dozen adults and children with similar symptoms: fever, aching all over, vomiting, and yellow skin. These were common complaints in an era before public sanitation, but that August the illness was worse than usual — by the end of the week almost half had died. Rush explained, “None of the cases excited the least apprehension of the existence of a yellow fever in our city; for I had frequently seen sporadic cases in which the common bilious fever of Philadelphia had terminated fatally, now and then with a yellow color on the skin.”

In the third week of August, Rush saw more patients with these symptoms. He learned from other local physicians that they too had visited an unusual number of patients with severe “bilious fevers,” the medical term then for fever with vomiting and diarrhea. He wrote, “I suspected all was not right.”

Yellow fever is one of the terrible diseases. It kills within days. Days of delirium, black vomit, and pain that feels like broken arms and legs. The yellow tint of the victim's skin signals liver failure, but by that point in the illness such cosmetic details bother the family more than the patient. The disease conquers cities, killing from one tenth to one half of those in its path. It is a seasonal disease, always in the summer. No one knew why that was so until 1900, when Walter Reed and others proved that the cause of yellow fever is a mosquito-borne virus.

In 1793 Philadelphia was the new nation's capital, its largest city, and largest port, with about fifty thousand inhabitants. Benjamin Rush had been a prodigy, at the age of fourteen Princeton University's youngest graduate. Medical apprenticeship with a local physician followed, and medical school at Edinburgh, though not because his family could afford it. It is said that Benjamin Franklin recognized the youth's potential and bore the costs of his education. When Rush returned from studying in Europe in 1769, he was immediately installed on the faculty of the Medical College of Pennsylvania, the first medical school in the nation. During the War for Independence he organized military hospitals. After the war he signed the Declaration of Independence and represented Pennsylvania at the Constitutional Convention. At the Medical College he grew in stature as a popular teacher and a prolific and engaging writer. In 1793 he was probably the best-known physician in the nation, forty-seven years old, at the height of an illustrious career.

Rush reported of that week in August, "The report of a malignant and contagious fever being in town, spread in every direction." As did the malignant and contagious fever itself. By mid-September he was seeing over a hundred yellow-fever patients a day.

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By September he was losing three or four a day. He used at first all the conventional treatments that usually worked on fevers. But, he wrote, "None of these remedies appeared to be of any service."

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Physicians of the time had two basic categories of therapy, "stimulants" and "depletives." Stimulants supported the still-healthy aspects of the body. For example: broth, tea, brandy, rest,

warm liquids, and warm baths. Depletion attacked or expelled the unhealthy invaders. For example, emetics to bring on vomiting and cathartics to provoke diarrhea expelled foul substances. Bleeding drained away “ill humors.”

Most illnesses were then thought to be forms of overstimulation, so depletives were deployed more often than stimulants. Depletion therapy was limited by the fact that the patient was, after all, a hostage to the disease, and should not be killed in the crossfire. This traditional division between defensive and offensive weaponry painted illness as a battle between good and evil forces. Most sick people were treated with a combination of stimulants to support them, and depletion to expel the disease. That combination was failing Dr. Rush and his patients.

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He threw himself into what we would now call a literature search. “I ransacked my library, and pored over every book that treated of the yellow fever.” His library flooded him with as much irrelevant and contradictory information as a search of the World Wide Web produces now.

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Soon he found the answer he sought. “I recollected that I had a manuscript” The document he remembered was a letter from a Virginia doctor facing the 1741 yellow fever epidemic there.

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“A new train of ideas suddenly broke in upon my mind,” Rush writes, and we are off and running again. His strategic understanding of the battle has changed: Nature is not an ally against this disease. Neither is it an enemy — nature has been captured and removed from the battlefield by the attacking force. But if nature can no longer save the patient — then who can?

The only remaining defender is the physician, who must alone, heroically, free the patient from disease and restore the healing force of nature. Such a rescue demands stronger medicine.

Calomel was a mercury compound, used since the ancient Greeks for purging. The usual dose was one grain, the weight of a grain of wheat, or about 50 milligrams. Rush had learned to use much larger doses of calomel, ten grains, or half a gram, on soldiers in the Revolutionary War.

One of the first patients given the new dose had been for twelve hours “without a pulse, and with a cold fever on all his limbs. His relations had given him over.” Rush gave the near-dead man a total of eighty grains of calomel. Perhaps the pain stimulated the man’s adrenal glands to release epinephrine, a stress hormone used now in resuscitation. Rush reported, “In a few days he was out of danger, and he now lives in good health.”

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His pupils and many former pupils tried and adopted the new approach. Rush assured Philadelphians “that the disease was no longer incurable.”

Other doctors in Philadelphia were more skeptical. Some were frankly horrified.

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Rush fought like a cornered rat for his new idea. His charisma, and his thousands of students and innumerable publications mowed down the skeptics. High-dose purging also had the advantage of being new — but not too new, since the ingredients were all familiar. How could anyone wanting to save a loved one not want to try it?

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Looking back on this history, I have two different reactions, as a physician and as a historian. As a historian, I trace the colliding and intersecting forces that produced the world I

live in. I know that historical events made sense in their own time, even if they do not make sense in mine. I know that by modern standards, some past societies have done much crazier things than prescribe calomel.

As a physician, my reaction is less well thought out, more along the lines of, “Oh, my God! They did *what?!?*” I look back on my predecessors with horrified fascination, waiting for them to figure it out, waiting for them to realize what they were doing to their patients. It took American medicine an agonizingly long time to come to its senses, over a century.

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The 1793 epidemic ended with the frost, as did all such mosquito-borne plagues. Roughly one in ten Philadelphians, five thousand of them, were no more.

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Rush was a natural evangelist, both by background and temperament. He fought to save lives as a revivalist preacher saves souls.

He had been raised by an exacting Calvinist, his uncle, Rev. Samuel Finley, later president of Princeton University. Finley’s Calvinism was not Charles Chauncy’s Calvinism, much as Finley wanted it to be and thought it was. Finley (1715-1766) had joined a popular movement to return to the stern virtues of the founders, called by its adherents the Great Awakening. It was the first of a probably never-ending series of religious revivals in American history.

When the Great Awakeners preached hellfire and damnation across America to restore the Calvinism of its origin, like Dr. Frankenstein they didn’t get the resurrection quite right. The first Puritan refugees prized rigorous self-examination and open self-doubt. But revivalists fell headlong into the built-in logical trap of Calvinism: self-assurance that whatever one does is the

right thing to do. Unlike Charles Chauncy, Benjamin Rush never showed a wisp of self-doubt. After his invention of heroic therapy with calomel, he felt himself an instrument of Providence entrusted with a mission to save the sick. Anyone who disagreed with him found himself or herself attacked as a murderer of innocents, and shunned by Rush's many colleagues and students. After all, if the world contains only Damned and Elect, you are either with us or against us.

As American medicine proudly entered the nineteenth century, calomel and heroic dosing became articles of faith. Rush died in 1813. But calomel lived on well into the twentieth century. The last dose of calomel was taken sometime in the 1970s, probably in the South. Would the faith in calomel have lasted so long, I have to wonder, if Rush had not been so firmly Calvinist, or such a good evangelist?

In Rush's career he taught over 3000 students, lecturing to hundreds at a time. Through his writings he influenced generations of doctors, who called themselves his "professional sons" and named their sons after him. He was also a vigorous abolitionist, social reformer, opponent of capital punishment, and advocate of women's education. He was a devoted, humane, and amazingly courageous physician.

If only he had not been so wrong, in so many ways.

Or had not been such a charismatic leader. He led American physicians down a long, mistaken, and increasingly narrow path that they could not afford to admit was a mistake. When they came back to their collective senses, over a century later, their former place in society no longer existed.

Chapter Five

Samuel Thomson's Antiheroic Medicine

On a farm outside the tiny town of Alstead, New Hampshire, in the spring of 1790, doctors tried to save Hannah Thomson from pneumonia. When she died, her son decided that the doctors had done her no good — he could have done better himself.

Samuel Thomson, twenty-one the year his mother died, was no doctor. His chances of ever becoming a doctor were slim to none, since his only educational achievement was one month in school, at the age of ten. He knew that the poverty and isolation of his family closed off to him any career that required education. He hated farming and expected that that was the only work he would ever do. But he had some basis for criticizing the methods of his mother's doctors.

Doctors — that is, doctors who had apprenticed or attended medical school — were new arrivals to the Alstead area. Thomson wrote that when he was a child, “There was no such thing as a doctor known among us; there not being any within ten miles.” In the year of Thomson's birth, 1769, the 25-year-old Benjamin Rush returned to Philadelphia with his Edinburgh M.D., and joined the faculty of the new medical school at the College of Philadelphia. But on the New Hampshire frontier there were not even roads, let alone doctors. Travel to and from the Thomson farm was by foot or snowshoe, following marks on trees.

In the absence of doctors, people still got sick. When illness descended on the Thomson family, they sent for the Widow Benton. She was an elderly woman who lived nearby and treated her patients with roots and herbs she gathered herself.

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Herbal medicines were mainstream then, not “alternative.” In fact, there was no such category as alternative medicine. The line we live with now, between mainstream medicine and everything else, had not yet been drawn.

The colonists fully expected to find new medicinal plants, and to learn how to use them from the Indians. Some of the discoveries of New World botanists were sarsaparilla, cascara, coca, capsicum, jalap, and tobacco. In the absence of European-trained physicians, or the money to afford European medicines, settlers treated each other with sassafras for eczema and gout, snakeroot as a diuretic, jimsonweed for cramps, and wild-cherry bark for wounds.

When the Widow Benton went out to collect her pharmacopeia, little Samuel often came along. “She would take me with her, and learn me their names, and what they were good for,” he recalled. “I used to be curious in my inquiries, and in tasting everything.” The Widow Benton must have been, for Thomson, an island of warmth in a cold, oppressive childhood. As the first son, he spent most of his time from about the age of four helping his father on the farm. His father was “a man of violent and quick temper I was constantly in fear lest he should call and I should not hear him, in which case he used to punish me very severely.”

Trapped on the farm, minding the cows and watching out for his father, he turned his attention to the plants around him. Learning a new plant, for him, often meant tasting it. In this way he made a discovery that would have delighted any kid, then or now: a plant that made people throw up. Indian tobacco was one of its common names, but botanists knew it as *Lobelia inflata*. He used to offer it to other boys, “to see them spit and vomit.” As a young man he discovered that lobelia had other interesting properties. One morning, working in a field, he offered a taste to the man working next to him. By the time they reached the end of the row, the man felt like he was about to die, and looked it. “He was in a most profuse perspiration,”

Thomson observed. “He trembled very much, and there was no more color in him than a corpse.” He vomited several times, and Thomson helped his abject victim into the farmhouse. But by midday the man had more than recovered. He wolfed down a hearty lunch, then put in a vigorous afternoon’s work. “He afterwards told me that he never had any thing do him so much good in his life He felt better than he had for a long time.” That clinical memory stuck with Thomson.

Neighbors used to ask him to help them find herbs their doctors had prescribed. “By way of sport they used to call me doctor.”

In his thirtieth year, his wife Susan went into labor with their sixth child, attended by a midwife. All went well until soon after the delivery, when severe abdominal pain set in. Thomson, worried, suggested a plant medicine, but the alarmed midwife vetoed him and insisted that he send for a doctor. As they waited, the pain grew worse, the midwife more frantic, and the husband and father more frustrated. Finally, after several hours, the man sent to bring the doctor returned alone, saying the doctor could not be found, and the next nearest doctor was six miles away. The midwife expected her patient to die without help.

Without a doctor, the non-doctor took over. “I then came to the determination of hearing to no one’s advice any longer,” he wrote, “but to pursue my own plan.” He gave her “some warm medicine” and pitched a steam tent around her — over the opposition of the midwife. His wife began to improve within the hour.

Word got around. Neighbors, even distant neighbors, began to call for him when someone was sick — as a previous generation had called for the Widow Benton. But they did not call for him as they called for a doctor. Trusting one’s life to an uneducated local farmer and jack-of-all-trades, a kind of medical idiot savant, did not help one’s social standing. Even

those who asked for his help felt embarrassed to recommend him to others, and did not feel he deserved to be paid what a physician would charge.

Still, requests for medical help came in often enough to interfere with running the farm, and they were impossible to turn down. He faced a choice: “to give up practice altogether or to make a business of it.” He knew he had what we would now call an image problem, but he didn’t want to emulate the doctors he found so lacking. He needed a new way to practice.

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Defining himself as the opposite of doctors, the first of several original things he did was simplify his medicine bag. Resenting doctors’ claims of exclusive knowledge about a multitude of medications, he condensed all the drugs he knew into six formulas. Doctors used herbs and always had, but they were known and disliked for prescribing harsh minerals like mercury and antimony. Thomson defiantly chose to use only plant-based medicines. Doctors used opaque Latin names for drugs — so he labelled his drugs “Number One” through “Number Six.”

Streamlining all drugs into a few simple formulas was only a means to his real end: giving Americans control over their own medication, and even their own medicating. He composed catchy, easily-learned verses to instruct patients in their own diagnosis and treatment. For example:

Th’ Emetic number ONE’s design’d
A gen’ral med’cine for mankind,
Of every country, clime, or place,
Wide as a circle of our race.

In every case, and state, and stage,
Whatever malady may rage;
For male or female, young or old,
Nor can its value half be told.

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Let number TWO be used as bold,

To clear the stomach of the cold;
Next steep the coffee, number THREE,
And keep as warm as you can be.

“Coffee” in the poem is not the plant-based drug we use today, but a mixture of dark roots.

The second distinction of his practice was a brilliant business model. . . . Nineteenth-century healers of all types complained frequently and bitterly that patients, once cured, ignored their bills. Thomson complained, too, but he did something about it: He invented a new way of getting paid. He patented his system and the six formulas, and sold “family rights” to use it. The right cost twenty dollars, real money back then. It came with an instruction book written in Thomson’s cheery style and an initial supply of medicines.

Another new wrinkle combined his need to be in several towns at once with his belief in medical democracy: [H]e gathered his local rights-holders into . . . Friendly Botanic Societies, so that members could meet regularly, and assist each other with his system in time of illness. Soon the twenty-dollar family right also included membership in the nearest Friendly Botanic Society.

Meanwhile, the doctors Thomson began to compete with were in trouble. In the century and a half between Charles Chauncy and Samuel Thomson, several forces reshaped relationships between sick people and their doctors — mostly for the worse. Back when a sick colonist explained to their minister-physician where it hurt, the doctor already knew his patient pretty well. He knew her family, too, and not only as patients. . . .

As towns prospered, and roads connected the towns, workers in every trade could reach more customers, suppliers, and employees. As most ways of making a living became more lucrative, workers could afford to depend on just one trade, instead of juggling several. Towns

could support *both* a minister and a doctor — and even a schoolteacher and maybe an apothecary. Access to more patients allowed doctors to devote their full attention to medicine. I'm sure this professionalization of medicine felt like progress at the time, but it must have constricted sickroom encounters. Charles Chauncy and his patients had mutual trust and understanding — which are in themselves healing. Later doctors knew a little bit more about medicine and a great deal less about their patients.

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[And] a growing source of competition confronted apprentice-trained doctors: thousands of barely trained graduates of the new commercial medical schools. After independence these schools, founded in faint imitation of great European medical centers, signed up as many paying students as possible. But most of the schools offered no more [than] a few months of lectures by local doctors.

Merciless competition, caused by too many seats in the new medical schools, pitted half-educated young doctors against each other for survival.

The only option was to leave home, leave friends, family, and teachers, and take to the road. Young men headed west or south — to the frontiers of Ohio, Indiana, western Pennsylvania, western New York, the less crowded areas of Virginia, Georgia, Carolina, and Mississippi — and onward.

These changes cut the ties between doctors and their communities, and alienated doctors and patients from each other. Rev. Charles Chauncy's patients had given him respect and job security, so he could afford to tell them the truth as he understood it. Later, patients and doctors usually met as strangers ... The medical educators of colonial New England had taught that

patients were souls to be saved, which fostered a style of medical care that was personal and, well, caring.

Without a prescribed attitude toward patients, desperate underemployed young men inevitably came to see their patients mainly as sources of income — customers. They viewed their professional colleagues mainly as threats to their own survival. Isolated from family, friends, and connections, survival became the highest moral good of these aspiring practitioners. The moral obligations owed to customers are far less stringent than the moral obligations to people's souls.

On the frontier, a doctor who admitted fault, or even self-doubt, might as well have thrown in the towel and crawled back home. The ones who survived learned what we would now call impression management, a form of scriptwriting. No script is ever completely new — the impression they wished to create bore a resemblance to the doctors they had known and studied under back home, professional descendants of the minister-physicians by way of Benjamin Rush. Faced with the failure of old ways — like Calvin and his fellow refugees — these would-be physicians wrote a new script.

The last thing they needed was a new kind of competition.

There had always been objections to the violence of calomel, especially as doses reached heroic proportions. Benjamin Rush had attacked such resistance like a crusader fighting for Jerusalem. After him, his many professional sons could afford to be merely annoyed, or saddened, by patients who refused what their physician knew was best for them.

Samuel Thomson presented a very different obstacle. He crystallized popular doubts into the first organized, systematic opposition among patients to calomel and its prescribers. For a

long time he out-competed doctors for the hearts and minds of patients. The swelling ranks of Thomsonians — as his followers were called — made the followers of Rush feel besieged and surrounded. If regular physicians expected their patients to come back to them from practitioners they had dubbed “puke doctors” and “steam doctors,” and, for good measure, “steam and puke doctors,” they must have been disappointed.

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At first the Thomsonian advantages were mainly social and organizational. The social networking of the Friendly Botanic Societies and the ideology of medical democracy attracted families, especially in the less advantaged regions of the West and South. The Friendly Botanic Societies serendipitously filled another gap: They incubated physicians. Naturally some purchasers of the family right had more of a gift for healing than others. As neighbors recognized an emerging talent, an apt student of Thomson’s system would be entrusted with more patients and gain clinical experience. When a Friendly Botanic Society launched one of its own into the botanic medical profession, he stayed in his community, giving him a huge advantage over the rootless M.D.s prowling the country for patients.

Then two events, one political, the other biological, turned the tables. In 1828 Andrew Jackson was elected president, the seventh holder of the office. After four Virginia bluebloods and two Boston Brahmins, the victory of this rude, self-educated backwoodsman changed ideas about who could be President, and who deserved respect, as radically as the election of Barack Obama in 2008. Lack of education no longer disqualified anyone from any position. Regular doctors, proud of the education that they felt entitled them to loyalty from patients, never knew what hit them. What they claimed as their greatest asset turned into a target for the populist public.

Then a new threat came that tested every kind of healer. Cholera invaded North America. And regular medicine utterly flunked cholera.

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Cholera forced Rushite American physicians into a natural experiment that compared their skills with those of other kinds of healers. Without cholera, they might never have noticed how little good and how much harm they were doing. But by the time they did notice, they found themselves out on the limb to which Benjamin Rush had led them. Glancing back at the tree, they saw angry patients sawing away at the limb, and below, a horde of snapping sectarians. What could regular physicians do? Apologize to their patients and beg the patients to take them back?

Physicians of all kinds left records, in public and private writings, of their changing thoughts as they tested themselves against cholera. Patients also changed their thinking about their doctors after the epidemic, but they left fewer traces of their reasoning process. How do we know if a doctor is good? We see and feel the results of a doctor's treatment, but we never know if we would have come out better or worse with another doctor. Somehow, through the mysterious process of collective decision-making, the American consensus about regular physicians changed.

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Thomsonians never constituted a majority, except probably in some parts of Ohio. Samuel Thomson, at the height of his success, crushed his own movement by refusing to allow it to change. He clung stubbornly to his romantic original vision of an empowered yeomanry, in

which experts had no place. Disciples who had helped advance the movement wanted to establish Thomsonian medical schools and infirmaries. To Thomson himself, this looked like another version of the same false authority he had spent his life defeating. The movement did not outlive its founder, but the force of botanic medicine continued through splinter groups to the present day, as a visit to any shopping mall proves.

Thomson himself is mostly forgotten today, probably because history is written by the winners. But he made the strange world we live in. He changed his chosen enemies far more than they affected him. Regular doctors, confronted by Them, began to see themselves as Us. Warm feelings of embattled collective solidarity sprouted in medical hearts, leavening the spirit of competitive self-preservation that drove American medical character after Independence.

As doctors lost business to their improbable new antagonists, they began to draw lines, not between educated and ignorant — but between orthodox and heretical, legitimate and illegitimate, regular and irregular — between Them and Us. Historian John Harley Warner points out: “For the first time in American medicine, heresy — not just ignorance — became a crucial professional issue.” Politics overcame science. Allegiance to the emblems of regular medicine, such as calomel — and denigration of irregular methods — became marks of orthodoxy. The newly self-styled “regular” doctors drew a line in the sand, the arbitrary line we now take for granted as the border between mainstream and alternative medical science. This split ... does exist in some other countries with modern medical systems, but not in all. Plant-based drugs were not politicized in most other countries, as they were in the U.S.

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[A]fter Thomson had been a few years in practice, the Boston Medical Association published a new code of medical ethics for its members. In contrast to the philosophical aim

of several millenniums of medical ethics, the Boston code laid down detailed rules [of professional behavior]. ... For example: “No discussion of the case should take place before the patient or his friends.” Instead, the code declares, discussion among physicians must be secret and confidential. Disagreements should not be aired before the patient or the public.

Controlling how doctors behaved toward each other did not succeed in making the irregulars go away. So the rule-makers tried segregation. In 1820 a new provision was added to the Boston code, warning regulars not to “consult with, or voluntarily meet in a professional way, or aid or abet any practitioner ... who is not a member of this Association.” In other words, not a regular physician. Not one of Us.

Chapter Six

The Puritan Who Thought He Was Funny

Ernest Amory Codman steps up on stage before a crowded hospital auditorium. It is Wednesday evening, January 6, 1915, and he is about to make the worst mistake of his life.

Codman called this meeting, of doctors, hospital administrators, and civic leaders, to address controversial problems in the quality of hospital care. At 45, he is the chair of Boston's Suffolk District Medical Society, the chair of a national committee on hospital quality and safety, and one of a half-dozen or so leading lights of a national movement to improve medical care. Most of the physicians in the room have known Codman for many years, since he trained here at Harvard Medical School and its hospitals. They like and respect him as a bright, conscientious surgeon.

They also know that quality of care is a worthy cause, and his interest in it is sincere. But it threatens their long-established independence, and might jeopardize the esteem in which their patients hold them. Codman calls his own proposal for reform the End Result System: a follow-up visit with every hospital patient one year after discharge to document the success or failure of treatment. For example, several years ago he tracked down the end results of 600 stomach surgery patients one year or more post-op. The data showed that some of his colleagues achieved better results on stomachs than others. He did not publish his findings, but he nevertheless earned a certain amount of hard feeling.

Codman's ancestors came to Massachusetts with the Puritans, and he describes himself, with his high forehead and light eyes, as "pure English Puritan stock." His grandfather, Rev. John Codman, was an orthodox Calvinist who refused to allow more lenient clergymen to preach

to his congregation. Quite a few members of the audience tonight are distantly related to Ernest Amory Codman through the Puritans — this is Harvard, after all. He himself is agnostic, and not a member of any church. But he considers his conscience, which led him to this campaign, an “inheritance from my Puritan ancestors which must ... be appeased like any other appetite.”

Now all the speakers have spoken, and the hour is late. The talks were interesting and diverse, covering several different approaches to improving care. An obstetrician-gynecologist from New York, Robert L. Dickinson, described how hospitals in that city were looking at everything from card catalogs of surgical instruments to the job descriptions of department heads. An industrial engineer, Frank Gilbreth, compared medicine to manufacturing, and curtly informed his listeners that they lagged far behind factory workers in teamwork and organization.

All that remains for Codman to do now is thank everyone, commend them for their good work, and send them home. But he has something more he needs to say. He feels the speakers tonight went too easy on the failures of the current system, as he expected they would. It is therefore his responsibility to point out the urgency of the problem. He pulls a drape off a large poster at the back of the stage. The artist, a friend of his, made it big enough for the whole room to see, eight feet wide by four feet high. But he realizes that many in the audience cannot read the labels on the poster.

He decides to explain it to them.

“We have all heard of the goose that laid the golden eggs,” he begins. “In this case it is an ostrich.” He has placed the Patient at the center of his diagram — in the person of an ostrich with her head in the sand. At the bird’s feet is a nest of golden eggs, representing her — that is, the patients’ — money. “She is kicking the golden eggs over to the Back Bay physicians,” he explains to the crowd, which contains quite a few residents of that affluent part of town. “Over

there,” he points, “is the Harvard Medical School.” The professors of the medical school are grabbing the golden eggs as they fall, turning their backs on a pillar labelled ‘Medical Science.’ Hospital trustees sit at a table behind the ostrich. They ask each other, in cartoon balloons, if the ostrich would still be willing to lay those golden eggs if she knew the low quality of care she was getting for her money.

The room is silent for a minute or two, as it occurs to everyone that if there is anyone in the room Codman has failed to insult, it is not for lack of trying.

Then pandemonium breaks out, an unaccustomed development at a medical meeting. Half the people in the room stand up and begin shouting objections. The other half also stand up, but, heading for the exits, shake their heads sadly as they edge around the shouters blocking the aisles. Codman tries to lead a discussion, but gives up and adjourns the meeting.

By the end of the week the Suffolk County Medical Society requested and accepted Codman’s resignation as Chairman. Harvard dropped him as an instructor. Weeks later, some of the doctor’s friends still were not speaking to him.

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At the age of sixty-five, he called the End Result System his “great and still unsuccessful interest,” for the sake of which he had “toiled harder and suppressed more regrets” than anything else. He admitted that “I should have done better to choose either one or the other path and ... become a leader or a satirist. I tried to do both.”

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Ernest Amory Codman and the early hospital efficiency movement matter to us now because in them we see the first meeting of the Puritan mind and modern [medicine], and they do not understand each other. They talk past one another without listening.