The divergence of roads in Baltimore

"Dr. Osler was solving problems that the textbooks put down as insoluble; he was ridding the art of medicine of cobwebs and barnacles; he was sending our parties of enthusiastic young men to explore the medical Farthest North and Darkest Africa. He observed things that no one else noticed, and he drew conclusions that violated the league rules."

-H.L. Mencken

It was a chilly fall day in Baltimore, 1911, and Abraham Flexner was preparing for his meeting with William Welch. He meticulously parted his thinning, dark hair that sat on a long and stern face, barely cracking a smile. Tightening his wide tie over his dark black suit, he slid to the kitchen for a cup of coffee, absorbed in his own thought. He stood tall at just over six feet. His Semitic features were somewhat obscured by a well-trimmed, bushy mustache, that seemed to have slight upward curls at its edges. He wore small wire spectacles over his tiny black eyes. He seemed to exist in a space all his own, and, as his friends and enemies often said, he lived within his own perception of reality. In a mere year, this former minor educator had vaulted himself to fame and prominence, taking the entire medical world by storm. He understood the significance of his accomplishments and his new-found worth, and today he hoped to transform that into something that would forever alter American health care.

His hotel sat just outside the Johns Hopkins medical campus, in a well-manicured area of East Baltimore well beyond the stench of its more industrial harbor. Here there was a mix of poverty and wealth, and the Johns Hopkins Hospital, an innovative leader in medical education, catered to both, transforming itself into the beacon of American medical excellence. Flexner himself had graduated from Hopkins many years ago with a degree in education. He obtained his diploma in just two years before moving to Indiana to establish a school. His brother, Simon, was a prominent doctor on staff, a man who had achieved notoriety by discovering a bacterial infection that still bears his name. But Abraham was contemplating a far broader matter that mere scientific discovery. William Welch, Johns Hopkins Hospital's president and a pathologist on staff, sought to meet with him to discuss perhaps the most significant change that the medical school, and all of American health care, would ever incur.

To Abraham Flexner, who believed in process and order, it was going to be just another day. One year earlier he had penned a comprehensive report sponsored by the Carnegie Foundation that scrutinized all of the nation's medical schools and picked winners and losers from among them. For Flexner and his allies, the report that would ultimately bear his name was the first requisite step in professionalizing and standardizing not only medical education, but the entire field of American health care. This was the culmination of work from the American Medical Association (AMA), an organization that had been fighting for half a century to gain hegemony over the training and practice of doctors. Now with Flexner's report, the AMA, whose prior work had spurred Flexner's findings, put itself in a position to be the final arbiter regarding what a school must prove to be worthy of graduating "credentialed" physicians. Many schools did not make the cut and quickly died a natural death. Many doctors—women, blacks, alternative practitioners, those without certified education—lost their ability to practice medicine. In an instant, because of Flexner, the entire medical landscape changed.

Flexner believed that American health care must mimic the German example and adapt a rigid, standardized approach to education. And it was at Hopkins he hoped to drive in the first stake of a grand new program of reform. As he finished his single slice of toast and coffee, Abraham Flexner

prepared to meet with Welch, an ally of his, and the most powerful man at Hopkins since Sir William Osler retired. Doctors Welch and Osler had personal enmity for each other and proclaimed very different visions about what health care, and specifically Johns Hopkins' mission, should encompass. With Osler gone, and with both Flexner's report and the promise of large amounts of corporate money in his back pocket, Dr. Welch now could do as he had always hoped. He would conspire today with Abraham Flexner to transform Johns Hopkins from a clinical institution that taught students how to care for patients, into the nation's most prominent research facility, replacing clinical staff with full time scientists, and instituting a standardized curriculum for students that emphasized a pursuit of pure science, a curriculum (based on Flexner's recommendations) ultimately that every credentialed school would be compelled to follow, and one that largely has remained intact even today.

To exorcize the ghost of William Osler from Hopkins, Welch needed money and a template, and on this day in Baltimore, Abraham Flexner was prepared to offer him both. Now working for the Rockefeller Foundation, Flexner promised Welch enough money to hire full-time research faculty, increase lab facilities, and institute a rigorous 4-year scientific curriculum. With Osler gone, William Welch could have his way.

Osler had established a program of clinical instruction at Hopkins in which practicing physicians like him and his colleagues trained medical students. As Osler said, "Medicine is learned by the bedside and not in the classroom." Osler not only reformed Hopkins and transformed it into a premier medical institution through his novel bedside patient-centric approach to teaching, but he did it with part-time instructors who were practicing doctors in the community and who made their living by seeing patients. While he valued research and teaching, he believed that both were subservient to an education obtained in the real world by working with real patients. "He who studies medicine without books sails an uncharted sea," he said. "But he who studies medicine without patients does not go to sea at all." Osler never did any research on his own; he published books and gave lectures around the world about how to take care of patients, and how to raise a new class of physicians who would be expert in patient care. Hopkins was his grand laboratory for change.

William Welch despised Osler and sought to move Hopkins Medical School away from the patient and into the lab. As a pathologist and a disciple of the scientifically-oriented German school of thought, he believed that clinical teachers were no more than greedy hacks who would sully students and stymie their path to medical greatness. Osler held sway at Hopkins, at least while he remained. But once he retired, his hand-picked clinical colleagues lacked the influence to maintain Osler's vision. Welch slowly drove them out, one by one, replacing them with scientists. When Flexner approached him with money and new method of education—one that Welch himself helped to formulate through his position at the helm of the AMA—Welch now had the power and authority to entirely expunge Osler's stamp from Hopkins. He hired full-time faculty and fired all the clinical staff, including many of Osler's friends. Students now received their education in the class, in labs, and on the wards, not in the offices of community physicians. They were taught by doctors who did not practice medicine but who merely read and researched it. All of this happened rapidly once Welch and Flexner shook hands and made a deal on that chilly fall day in 1911. Hopkins was entirely transformed, and a new epoch of medical education began.

But 3500 miles east in London, Sir William Osler was fuming mad. A man known for his biting wit, his sardonic insults, and his medical genius, Osler did not fall easily. All that he held dear was being

threatened by the very man now glibly eating a piece of toast in Osler's city of Baltimore, a non-physician who knew nothing about patients or medical care, a man prepared to expunge Osler's had accomplishments by allying with no other than Osler's nemesis, William Welch. So, Osler wasted no time; he contacted his allies and used his influence to save the experiment to which he had devoted his heart and his life.

At the heart of this book lives the battle between these two men from Hopkins and the forces they represent. The struggle between Osler and Flexner set medical education and the entire health care industry on a trajectory that continues to this day. Not much has changed since the battle ended. One of the men continues to be quoted and well known, although his ideas have evaporated from our medical horizon. That is William Osler, whose books and innovations are thought to have initiated the birth of modern medicine, but whose vision was permanently shattered by the battle that commenced. The other was Abraham Flexner, a man known to very few, neither a physician nor a person with any knowledge about health care, but one whose report on medical education stamped a template upon medical care in America that we use even today. Flexner's message is the very antithesis of what William Osler had so passionately advocated, and the changes it sparked transformed health care from a field devoted to the patient, as Osler so desperately endorsed, to one devoted to the pursuit of science alone and to the corporate foundations that funded scientific pursuits.

Medical care in America sat on a precarious spire through the latter part of the nineteenth century. Both Osler and Flexner understood this sordid fact. Far too many doctors were charlatans and patent doctors who pushed snake oil on unsuspecting patients and lacked even the most rudimentary scientific knowledge and acumen. There were no standards or skills to which American physicians had to adhere, and many dispensed treatment that was more injurious than beneficial.

Most medical schools were diploma mills, and only students who could pay were able to obtain a degree. Hundreds of such schools were scattered across the country, producing far too many doctors as was necessary. (B12) Educated people typically eschewed the medical field; a survey in 1851 showed that from top colleges 26% of students became clergymen and lawyers, and only 8% became doctors. Doctor salaries were low and the competition for patients fierce, a situation that remained intact at least until the turn of the 19th century. (G82-4) A popular book in the 1880's, *The Physician Himself*, by DW Catheell, encouraged doctors to be more concerned with showing an image of competence rather than actually being competent. According to medical historian Paul Starr, "Cathell's guide reflects the exceptional insecurity of the 19th center doctors, their complete dependence on their clients, and their vulnerability to competition from laymen as well as colleagues." (g86-8)

In an attempt to counter the beleaguered state of health care, a group of physicians in 1846 started a small organization called the American Medical Association (AMA). Meeting in New York, these doctors orchestrated a national organization whose goals were to raise and standardized medical degrees with the aim of improving the caliber of practice, decreasing the physician pool, and increasing doctor salaries. Throughout the century, the AMA met only once a year and remained small, exerting most of its influence on state medical societies. The AMA gained members and exerting influence by helping state medical societies gain control over licensing, (G90-112) setting standards by which physicians would be required to practice. This went a long way toward creating a set of licensed doctors who could distinguish themselves from the mass of untrained practitioners dotting American's medical landscape.

At this juncture, the AMA never elucidated a vision of health care that encompassed science and patient-centered care as the core of a viable medical system; its concrete objectives were much more nuanced and vague. It essentially was a trade association that imposed laws and restrictions that were favorable to its members. Only in 1900 did it begin to see the advantage of "touting itself as a promotor of scientific education" to advance its agenda. (H2-3) In fact, even as late as 1906, the AMA promoted a pharmaceutical policy that on the surface sought to remove sham drugs from the market, but in reality promoted a regulatory system to "withhold information from consumers and re-channel drug purchasing through physicians." (G129-32) The ultimate intent of the AMA was not necessarily to improve the drug market, but to make sure that doctors had control over it; that was their mantra.

One ingredient proved essential for the AMA and its licensed physician members to improve their status: more firm control of medical education. And that is the crux of our story. As long as medical schools remained unregulated, as long as they could spit out poorly trained snake oil salesmen who had an MD degree, then American doctors could not achieve the status, money, and exclusiveness that the AMA sought. The AMA sought to cultivate a landscape with fewer schools training fewer doctors that were directly controlled by the AMA's regulatory system. To that end, in 1904 the AMA established a council of medical education, formulating minimal standards that should be implemented in all medical schools. In 1906 it inspected all 160 medical schools and made judgments about which ones (82 in all) met minimal standards. But it kept its findings secret, fearful that any judgment it imposed on medical schools would be viewed as being self-serving, (G11-18) which of course it was.

To appear more objective, the AMA commissioned the Carnegie Foundation to essentially repeat its survey of medical schools and render an opinion about which schools met standards, so as to get "independent and presumably disinterested support for its efforts." (B73) The Carnegie Foundation, led by Henry Pritchett, had similar concerns about medical education as the AMA, so their collaboration made sense. (B 73)It is important to realize that by 1908, when the AMA sanctioned this second survey, medical education had already been improving on its own, primarily due to state regulations and also a natural disintegration of poor schools due to high operating costs. The 450 schools training doctors in the late 1800's had already been whittled down to 150. Many schools were already undergoing reforms to improve themselves. Many other schools remained marginal; they did not have any lab equipment or hospital affiliations, some even had sparse curricula and were situated in one room homes. 60% of schools did not have requirements for admission, only an eighth of the schools required two years of college education, and many remained for-profit institutions. (B70-1)

Many in the Carnegie Foundation touted the German model of medical education as the template upon which any changes should be based. German schools utilized a hard science curriculum; students were well versed in chemistry, physics, biology, and physiology, and this provided the crux of their education. Labs and classroom work constituted requisite ingredients of education; clinical experience was far less important. The AMA's goal was to stamp the Germanic system upon American medical education that would be the same in every American medical school without variation. (I598) To orchestrate and implement the "new" survey of American medical schools, Pritchett chose Abraham Flexner, a relatively unknown former educator, a man with no medical training or background, but someone who adhered to the German model.

But why Flexner? Why not a medical doctor or someone privier to the controversies in medical education? Or even someone who had set foot in a medical school? According to one source,

Pritchett's hiring of Flexner was "one of the strangest appointments in education history." But Pritchett was counting on the AMA to lead the actual effort, with Flexner being more of a figurehead who followed the AMA roadmap. (B68) However, Flexner was not the type of man who liked to be directed. As someone who had lived in Germany, who graduated from Hopkins, and who had experience in education, he had very established ideas about what he hoped to achieve with his survey. In fact, he made very profound decisions about many schools by only spending a few hours studying them. After consulting with doctors from Hopkins and others in the AMA, his report would do more than just set standards for medical schools; it would profoundly alter the very foundation of American medical education and practice, a legacy we will live with today, over 100 years later.

Who was Abraham Flexner? Born in Louisville, Kentucky in 1866 he was a son of Jewish German immigrants. He received a Bachelor of Arts at Johns Hopkins after only two years. He moved back to Kentucky where he founded an experimental school based on the German model, a school that ultimately failed. He met his wife, Annie Crawford, a former student in his school, and she ultimately became a successful Broadway playwright, bringing the couple to New York. Buoyed by her income, he then studied psychology both at Harvard and at the University of Berlin, never receiving a degree. While in Germany he was influenced by Fredrich Paulsen, a leader of the German school system, who believed that American education was not sufficiently serious and fact driven. Like German physician Fredrich von Mullen, from whom Flexner also learned, Paulsen advocated a stringent system of learning whereby teachers taught students through a formulaic and scientific fact-based curriculum. (B59, 91) After returning to New York, Flexner landed a job with the Carnegie Foundation through his brother Simon, a medical researcher at Hopkins and a good friend of Henry Pritchett's. (A63, B63)

The President of Johns Hopkins medical school, William Welch, a pathologist who also adhered to the German school of education, happened to be the president of the AMA at this time. Welch and Simon Flexner were good friends, and Welch was also connected to the Carnegie Foundation and supported its proposed survey of medical schools. Welch had co-authored the AMA's unpublished report on medical education in 1907 with Simon Flexner, a report upon which Flexner's report is based. Welch believed in a rationalistic and scientific view of medical education: if students can master science, they can figure out a patient's diagnosis and treatment without necessarily seeing or speaking with the patient. They just need data. Welch felt that medicine was a branch of pathophysiology, the science of studying the human body's operating system. He also insisted that all doctors, and all teachers, needed to be proficient in lab science rather than clinical skills; the vector of treatment for Welch ran from the lab to the bedside. In other words, doctors need only understand science and engage in research, and they will then be able to diagnose and treat diseases. (I599) As a corollary, Welch was adamant that all medical educators should be full time lab faculty; the clinical faculty (those who actually practiced medicine) were too busy and not sufficiently qualified to teach, he said. (K1860)

Flexner's report stated that two-thirds of American medical schools were hopeless and should be shut down, and that most of the others needed significant reform. All but two African-American schools were relegated to oblivion, and the remaining two were expected to train black "practitioners" whose main job was to care for the black community and assure that they don't spread disease to whites. Said Flexner: ""The practice of the Negro doctor will be limited to his own race, which in its turn will be cared for better by good Negro physicians than by poor white ones. But the physical well-being of the Negro is not only of moment to the Negro himself. Ten million of them live in close contact with sixty million whites. . . . The Negro must be educated not only for his sake, but for ours. He is, as far as the

human eye can see, a permanent factor in the nation" (Flexner report) Similarly, all schools that trained women, and all that trained alternative doctors, were eradicated by Flexner's report. Those schools deemed salvageable all were primarily white male institutions with close ties to the AMA. If they complied with the report's recommendations regarding curricular, structural, and faculty reform, then they would be accredited by the AMA's Association of American Medical Colleges, be eligible for philanthropic funding from groups like Carnegie and Rockefeller to help defray full-time faculty and structural cost, and look to Hopkins as a model of how to succeed. (H2)

The report was front page news across the country. The *New York Times* announced that medical school "Factories for the making of Ignorant Doctors" were going to disappear thanks to the Carnegie report . (B69) The report, it was believed, represented a milestone in American medical care, a turning point whereby the health care delivery system in this country would be purged of its most corrupt and loathsome elements. The response was fairly uniform adulation.

All doctors henceforth trained and credentialed in America would be scientifically oriented and experts in research. They would be taught by full time researchers, not clinicians who saw patients. And they would follow a science-based pre-medical and medical curriculum uniform in structure. Flexner hoped that Johns Hopkins would be the nidus of his new educational reforms, but to do that he had to first bulldoze over what William Osler had created, whose legacy was the soul of Hopkins Medical School.

To Osler and the clinicians of Hopkins, the vector of education ran from the patient to the lab; students learned from seeing and working with patients, not from research or lectures, and then brought that information back to the scientific theater. Teachers needed to be practicing physicians, and students needed to learn at the bedside. Osler believed in the very opposite ideals of his nemesis William Welch and of the German school. And until his retirement, Osler's word was law at Hopkins.

William Osler was born in Ontario, Canada in 1849. After graduating from medical school in Canada, and working at McGill, he was recruited in 1889 the be the lead physician at the new Johns Hopkins Hospital in Baltimore, and in 1893 he helped create and lead the new Johns Hopkins Medical School. He essentially built the school from scratch, designing a curriculum based on his primary dictate: that students learn only through immersion in direct patient care. From the day they entered school, students interacted with patients, an act that became their only forum of learning in the third and fourth year. To further their clinical proficiency, Osler invented the residency, whereby after graduating from medical school, new doctors would take apprenticeships for several years before going off to practice on their own.

Osler did not believe that pure scientists like Welch were capable of teaching the new crop of American doctors. Said Osler, "I cannot imagine anything more subversive to the highest ideal of clinical school than to hand over young men who are to be our best practitioners to a group of teachers who are ex officio out of touch with the conditions under which these young men will live…" (C387-9) The thrust of Osler's educational focus was to emphasize problem-solving and critical thinking skills; he sought to synthesize medical science with human complexity under the tutelage of practicing doctors, tackling medical care through a lens that was pathophysiologic but also socio-economic and cultural as well. He specifically rejected the "inculcation of facts through rote memorization" and the assumption that one could apply scientific dogma to patients without knowing the patient first. (F6-8)

When Osler left Hopkins in 1905, he not only vaulted his school to the very forefront of prestige, but he was also a national celebrity, having authored the widely read *The Principles and Practice of Medicine* and given lectures all over the country. He retired to England and left the cherished institution he created to his many clinical colleagues and friends.

But to William Welch and the scientists at Hopkins, a different type of school was needed to push Hopkins into the new age of medical education, one made possible by Flexner's carefully orchestrated report. By painting Hopkins as his model school, Flexner was in fact looking at a Hopkins that existed not in the realm of reality, but rather through the eyes of those who wanted it to change. (G115-16) That Hopkins was the type of school that Flexner revered is a great absurdity; in many ways it was the very anthesis of the rigid science-based bastion of learning that Flexner sought to promote in his report. But by painting the school using brushes and canvas supplied by Welch, Flexner in essence altered the very heart of Hopkins by making it seem to embody what he believed it should become.

From his perch in England, Osler did not stay subdued for long. Known for his fiery personality and pointed wit, he immediately conferred with his clinically-minded friends still at Hopkins, many of whom were being threatened by Welch with dismissal and demotion. Osler rejected Flexner's conclusions, believing that researchers should be confined to research institutions and not medical schools because they were poor teachers and they lacked the ability to mentor students along a path toward clinically relevant, compassionate, and scientific medical care.(I600) He read the report "as a brutal and ignorant attack on his staff, his principles, and his sense of professionalism." Osler did not understand how faculty could be composed of anyone other than physicians actively practicing the art of medicine. "Why chance the sacrifice of something that is really vital, the existence of a great clinical school organically united with the profession and the public," he said. He believed that the report will "likely spell ruin to the type of school I have always said should be and which we have tried to make it…," a place of refuge for the poor, a place where the best that is known is taught to the best students, where "men are encouraged to base their art upon the science of medicine…." Stating that Flexner had a "very feeble grasp of the clinical situation at Johns Hopkins Hospital" and that the institution was "more brilliant from the clinical side than the laboratory side," he felt that the report would diminish the educational experience of its students drastically. "The danger would be of the evolution throughout the country of a set of clinical prigs, the boundary of whose horizon would be the laboratory, and whose only human interest was research, forgetful of the wider claims of a clinical professor as a trainer of the young…." (C385-88)

Osler and others fought back as best they could. He wrote to Welch and to his clinical colleagues, asking them to repudiate the report, and not move Hopkins and the entire medical educational establishment in a direction he knew to be deleterious to the field. At Harvard, Francis Peabody, another clinician who was trying to inculcate medical education with real-life experiences, similarly assailed the Flexner report. Peabody who famously stated that "The secret of the care of the patient is in caring for the patient," (F20) felt that Flexner's approach "weakened the soul of the clinic." He, like Osler, sought a more patient-centered and less lab-based means of teaching students how to practice medical science that focused on actual patient care rather than theoretical scientific theories that may not apply to the individual patient for whom they were caring. (B15) They both believed that Flexner's report "fossilized medical education into following a standardized format" that moved so far away from patients as to be useless in training competent physicians. (H3). Said one author: "Osler and Peabody recognized the danger of reducing the patient to simply a pathophysiology characterized by laboratory

tests" while fearing that such a parochial focus blinds doctors from "the broader contextual issues that so often play a crucial function in disease." (I600-1)

But there were more powerful forces afloat than merely a few men who fought over medicine's direction. Despite the experience, status, and wisdom of men like Osler and Peabody, their words evaporated in the report's wave of acclamation. In fact, although Flexner's report did reflect what he and others believed to be the most logical path upon which the American medical system needed to tread, replacing corruption and incompetence with the scientific rigor of the German school of thought, the report was also a tool used by some to achieve a very specific agenda. Not only did the AMA gain power and notoriety by now grabbing the reigns of American medical education and licensing, but other corporate philanthropic groups like the Carnegie Foundation, who sponsored Flexner's study, and the Rockefeller Foundation, where Flexner worked for much of his subsequent life, had carefully crafted the report to construct an American medical system that met their needs and expectations.

For the next 15years of his life, Flexner worked in the Rockefeller Foundation general education board, dictating which schools would receive foundation money and which would not. "During that time, he approved the donation of half a billion dollars to schools that met all the rigid criteria of his report and in the process "profoundly altered the medical education landscape;" the schools that did not follow Flexner's script received no money and could not afford to stay afloat, (B1) failing too to be granted requisite accreditation by the AMA. As one author states, "Money was power, and contributors to medical education knew that." (F12)

What was the agenda of groups like the Rockefeller foundation, and why did they buy into Flexner's model? Essentially, their hope was to create great bastions of medical research, whereby American medical institutions could engage in scientific study that matched that of Europe and created breakthroughs that would advance the medical industry and, undoubtedly, generate financial gain and a boost in reputation for the foundations and their parent corporations. These foundations had very specific agendas for the many schools they sponsored, and their donations were tied to the realization of those agendas, which typically required moving the schools from a clinical direction to one that was purely scientific and lab-based. (F12) Schools had to eliminate clinical faculty, hire full-time science based faculty, emphasize basic science research in their teaching, and adhere to the very rigid science-based curriculum that Flexner laid out in his report. This instigated bitter struggles between old line clinical teachers like Osler who used to have clout, and the newer research scientists who were now taking over. Full time faculty could only exist if the schools were subsidized, and these large foundations were happy to pay the schools so long as the schools adhered to their rules. (B21-3)

As the tide of funding and accreditation became clear in the years after Flexner, most schools accommodated to the new reality. Clinical professors disappeared from these schools, full-time researches took their place. The foundation leaders—who were in fact agents of the large corporations who funneled money to them—then dictated to these schools the forms of research they desired. Hence began a cycle in American medicine in which clinical skills fell prey to basic science, and in which corporate entities dictated the direction of medical education, medical research, and medical practice. "Whether their motives were shrewd business instincts or noblesse oblique, the influence of these industrialists and financers was profound, some would say pernicious." (B19) Within years, the clinical institutions that Osler always envisioned, ones in which patients and clinicians taught students, and in which students would leave the school with both a scientific and humanistic knowledge of disease and

treatment, completely vanished from the medical landscape. Osler's name remained well-known and respected, but Flexner's ideas won the day. All this occurred because the corporate boards gained enough power to impact the direction American medicine would flow. "Though the board represented itself as a purely neutral force responding to the dictates of science and the wishes of the medical schools, its staff actively sought to impose a model of medical education more closely wedded to research than to medical practice. These policies determined not so much which institutions would survive as which would dominate, how they would be run, and what ideals would prevail." (B121)

Hence, on that chilly day in 1911, when a well-groomed and stern-faced Abraham Flexner walked through Baltimore to meet with William Welch, he planned to describe to Welch a blueprint for change that both men had already conspired to create. Flexner had been working with Frederick Gates of the Rockefeller Trust, who wanted to provide Hopkins with a $1 million grant if the school transformed to the model school described by Flexner's findings. Essentially, Hopkins would be the nation's premier research institute, with salaried researchers paid by corporate grants to the school, with all students following a rigid curriculum focused on science (A74), and with strict guidelines for admission and graduation. The clinical realm championed by Osler and his colleagues would be relegated to a footnote. Clinicians "have long ceased to be scientifically significant…. Whether the extremely prosperous physician or surgeon should have a place in such an institute as the Johns Hopkins Hospital seems to me most doubtful," said Flexner to Gates. (C-381)

Within a decade all medical schools fell in line. "Many have argued that this was a mistake. They would have preferred to see only a few schools like Johns Hopkins training scientists and specialists, while the rest, with more modest programs, turned out general practitioners to take care of the everyday ills that make up the greater part of medical work. But this was not the course that American medical education followed…." (G123)

Despite emphatic and frequent protests from Osler in England, the world that he bred at Hopkins and beyond quickly dissolved. His colleagues were fired and replaced by a purely research-based staff. No longer did clinicians teach students, and no longer did students learn from their patients, as Osler so vehemently insisted. Welch readily accepted the million dollar grant from Rockefeller, and spearheaded a dramatic transformation in medical education and practice that relied on Flexner's template, the AMA's leadership, and Corporate dollars.

The other winner in the battle for medicine's soul was the AMA. After Flexner, "the AMA would largely control medical school accreditation which would become bureaucratized and sclerotic. It also became the officially recognized entity authorized to speak on behalf of all physicians." (H3) Flexner himself believed that medical education and practice would change and grow as times changed. "The flexibility and freedom to change—indeed the mandate to do so—was part of the system's mission from the very beginning. Contrary to popular myth, the system was always intended to evolve." (F25). Unfortunately, groups like Rockefeller and the AMA were not interested these changes.

Today, medical schools, and the entire health care network in this country, reflect the legacy of Flexner. As one author stated, "The practice of medicine was seen as a rigorist science with clear answers to defined questions, the foibles of patients being the province not of the laboratory-trained physicians but of clergymen and social workers." (K1860-1) The medical system would now focus on "disease organically defined, not on the system of health care or on society's health more generally." Patient-centered care, prevention, and the nuances of disease all were dismissed as being soft-science, now

made subservient to an absolutist creed of basic science which, if studied rigorously, could unlock the mysteries of the human body and provide the key to both diagnosis and cure. (F25). Using a narrow set of courses in chemistry, physics, and biology to determine which students best qualified to be physicians, and then teaching students the science of human health through a set science-based classroom curriculum that today is nearly identical to the one recommended by Flexner, medical schools have moved far away from the vision of Osler. Humanistic qualities, critical thinking, and a patient-focused approach to care have lost their role both in the selection of students and in their training. "Isn't it astonishing that the medical school curriculum structure has remained unchanged for more than 100 years? And if we omit the 'dynamic sociological encounter between patient and physician' [as Osler advocated], is it any wonder a health care crisis would emerge?" (H3)

The legacy of Flexner's report and the rise of the AMA has left many scars with which we are living today. On the positive side for physicians, many charlatan practices have disappeared, and physician competency and income increased considerably. In 1900 the average doctor earned $750-$1500 a year. By 1928 they were already earning on average $6354, with salary escalating continually due to a deliberately low physician supply and strong advocacy by the AMA. (G142) But, too, the field became quite homogeneous and dependent on a scripted formula of practice to achieve success. The increased cost of medical education, required to help defray costs for full-time faculty and research facilities, eliminated all but the wealthy from the ranks of medical students. And, as we will see, Flexner's report and its ramifications triggered deliberate policies of discrimination against women, African-Americans, and Jews. (G124) Only two African-American medical schools remained, and the black doctor only endured in the profession through the diligent and tireless efforts of the newly created National Medical Association (NMA) which sponsored a parallel black medical system that side-stepped the pervasive bigotry sewed into the AMA and the American medical system it helped to create.

The other casualty of Flexner's triumph was the slaying of Osler. Today many people know Osler, or at least have heard the name. Virtually no one has heard of Flexner, the Rockefeller and Carnegie Foundation, or men like William Welch. Yet Flexner's report and its subsequent embrace by the AMA, charitable foundations, and established medical schools like Hopkins have secured Osler's irrelevance to the practice of medicine and the training of physicians. After Flexner, researchers were "regarded as of greater intellectual worth than clinical practitioners which, not lending itself to grants, publications, or academic glory, was deemed a lesser calling." Even when schools trained non-research physicians, the emphasis on clinical education revolved around specialization and a scientific view of disease. (K1861) According to historian Howard Berliner, Flexner's "language leaves little doubt that he held the mass produced 'family doctor' in low esteem and he considered the new standard among physicians to be the highly scientific and sophisticated clinicians molded in the Hopkins environment of its equivalent." (B15)

In 1984 an AAMC report recommended changes in medical education that would move clinical medicine beyond the narrow confines of Flexner's report, changes they predicted would take root within just a few years. These were to:

- Develop analytic skills and instill patient-centric values into the curriculum.
- Encourage a broad liberal arts pre-med education
- Emphasize critical thinking over memorization

- Ensure that clinical clerkships encourage respect and concern for patient values
- Reward doctors who are educators. (I598)

Needless to say, none of those reforms have been implemented in any meaningful way 35 years later. Pre-meds are required to immerse themselves in the study of basic science and bench research; any other path disqualifies them from achieving admission to medical school. They must also perform extremely well on the Medical College Admission Test (MCAT), a rigorous test that demands rote memorization of expansive basic scientific facts that are irrelevant to what they will encounter as physicians. Even through medical school, the ability to memorize/regurgitate and to follow instructions unquestioningly are the attributes that are necessary for achieving success. Research-based scientists without clinical acumen or experience teach students, and students are exposed almost entirely to specialized and formulaic medical practices and ideas. Most significantly, patient-centered care as advocated by Osler has become a token gesture rather than the crux of all medical education.

We are indeed in a health care crisis. In our country we spend a trillion dollars of health care dollars for interventions that have been shown to be ineffective or even dangerous. Almost 50% of all we do as doctors is considered low value. Despite all we spend on health care, we rank among the worst in outcomes among all industrial countries. We are a nation of specialists who advance high-tech medical interventions and excessive drug use to ameliorate number-based diseases that are generically defined. Virtually all research is financed and controlled by industry and is conducted within medical schools whose research faculty are dependent on industry to survive and thrive, thus sullying medical science with a raw self-interest that has led it to reach often gravely misleading conclusions. Patients feel frustrated, and their needs often fall prey to generic protocols and an emphasis on rigid scientific dogma. Students continue to be trained as scientists and not as physicians. Said one historian, "The Flexner Report… has taught us the danger of establishing a confining (and ultimately damaging) standard" in medical education and practice. (I601).

Can our health care delivery system ever change? To do so, we first must understand why it has moved so far off the rails of common sense and medical sanity. Today, over 100 years after the Flexner report and Osler's death, we should ask why we have not changed yet. Are there too many people and organizations benefitting from the current system? Do medical thought leaders believe that Flexner's formula is still the best one for our health care delivery system? Or is it perhaps inertia and a lack of understanding of what needs to be fixed? In the end, we should peak back to a time before Flexner and grasp what William Osler had already gifted to the medical world. When read today, Osler's words and ideas resonate. Certainly, if we are ever to transcend the health care mess in which we are embroiled, me must understand and embrace Osler and finally acknowledge the flaw of Flexner's errant road.

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