

Simulating the Healing Machine: A brief, critical history of standardized patient programs

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In “Following the Threads of an Innovation: The History of Standardized Patients in Medical Education,” Dr. Peggy Wallace begins:

The emblem of the medical profession, the caduceus, was given to Hermes, the messenger of the gods, by Apollo, the God of Medicine, who empowered the winged staff to bring peace out of conflict. Skeptical, Hermes tested Apollo’s declaration by planting the golden winged rod between two fighting serpents at which point they both entwined themselves in opposite directions onto the staff, ending up facing each other in reconciliation. That totality, the caduceus, is a symbol of integration...After thirty years, the standardized patient now...holds in the caduceus’s paired wings, the inspiration for learning from the immediacy of the human encounter...The *standardized patient*...is a person who has been carefully trained to take on the characteristics of a real patient to provide an opportunity for a student to learn or to be evaluated on skills *firsthand*...It puts the learning of medicine in the arena of veritable clinical practice...—as close to the truth of an authentic clinical encounter as one can get without actually being there, because there is a living, breathing, responding human being to encounter.¹

As elegant a symbol as the caduceus might be for Wallace’s notion of the physician, it is unfortunately incorrect. It was in fact Aesculapius, god of medicine and son of Apollo, whose rod entwined by a single snake was commonly used as a symbol for Greek medicine. The staff of Hermes, the god of merchants and commerce, was instead commonly representative of economy, trickery and negotiation.² In fact, before the U.S. Army Medical Corps adopted it in 1902, the caduceus was also featured prominently on the front doors of the Bank of England.³

It would be difficult to find a more perfect demonstration of the confusing implications of standardized patients in medical education than Wallace’s mistaken mythology. Though critics from a wide variety of fields have long discussed the enduring tensions between the interests of health and finance in the medical profession, the standardized patient embodies a particularly contemporary iteration of the American physician’s dilemma after the turn of the century: at once bound to the longstanding legacy of Aesculapius, caretaker and healer, she is also subject to

¹ Wallace, Peggy. "Following the Threads of an Innovation: the History of Standardized Patients in Medical Education." *CADUCEUS-SPRINGFIELD*- 13 (1997): 5-28, 5.

² Finn, Ronald, David A. Orlans, and Geoffrey Davenport. "A much misunderstood caduceus and the case for an aesculapion." *The Lancet* 353, no. 9168 (1999): 1978, 1978.

³ *Ibid.*

the whims and demands of a new god of the twentieth and twenty-first centuries: the industrialized market.

Indeed, this paper argues that despite its relatively recent introduction to medical curricula, the standardized patient as a pedagogical and evaluative method has had profound effects on medical education and testing, and has had wide-reaching implications for how a physician's responsibilities and interests within the contemporary healthcare industry are defined. Standardized patient encounters implicitly reconfigure the presumed relationship between doctor and patient and doctor and clinic that medical students rehearse in school, perform in board examinations, and then embody in their professional careers. In both my experience working as a standardized patient and my research into the program's history, I have been struck by the multiplicity of ideological and economic interests that have shaped it. However, standardized patients unfortunately have yet to receive serious attention from a critical historical perspective. Though there have been several scholarly studies of standardized patient programs, the vast majority focus on evaluating, defending, or attacking the ability of standardized patients to meet certain goals of medical education without ever questioning the goals themselves. The aim of this paper, then, is to furnish a brief and first critical genealogy of the standardized patient, beginning with its foundational precedents in early twentieth century medical education reform, continuing onto the history of the first standardized patient case, and concluding with how the program has changed and grown over the past half century.

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Any serious study of the history of modern medical education in the United States would be remiss not to discuss the works of Abraham Flexner and Dr. William Osler. Both Osler's tenure at Johns Hopkins University Medical School from 1893 to 1905 and Flexner's report on the state of American medical schools in 1910 were critical in instigating major shifts in the infrastructure and priorities of medical education. Specifically, both called for a heavy emphasis on *clinical experience* and *public accountability* in medical education that both argued was direly lacking at the turn of the century. A close reading of both Osler's writings and Flexner's report reveal some of the interests and agendas that lay the foundation for the standardized patient in the latter half of the twentieth century.

At the end of the Civil War, American medical schools and hospitals faced an imperative to change in the face of some major advances in scientific knowledge and research. As Osler remarked in his essay "The Hospital as College," originally published in 1903, "[t]he last quarter century saw many remarkable changes and reformations...in the teaching of the science and art of medicine," specifically "in substituting laboratories for lecture rooms—that is to say the replacement of theoretical by practical teaching."⁴ Yet while the learning of the sciences themselves had grown, Osler still found the organization of that bedside time unsatisfactory, explaining that he "envy[ied] for our medical students the advantages enjoyed by the nurses, who live in daily contact with the sick."⁵ Osler saw the clinic as an ideal extension of the classroom, excitedly referred to all of the learning "material" available in vast urban centers: "Think of the plethora of patients in this city, the large majority of whom are never seen, not to say touched, by a medical student! Think of the hundreds of typhoid fever patients, the daily course of whose

⁴ Osler, William. *Aequanimitas, with other Addresses to Medical Students, Nurses and Practitioners of Medicine*, 3rd ed.a (Philadelphia: The Blakiston Company, 1947).

⁵ *Ibid.*, 316.

disease is never watched or studied by our pupils!”⁶ Osler considered clinical work and experience essential for twentieth century physicians to integrate the rapidly increasing body of scientific and laboratory work covered in the first two years of medical school into their work as practitioners.

At the same time, Osler was concerned already at the turn of the century about the increasing demands placed upon hospitals as more and more people began coming to them for treatment. “In the present state of medicine it is very difficult to carry on the work of a first-class hospital without the help of students. We ask far too much of the resident physicians. . .and much of the work can be perfectly well done by senior students.”⁷ The difference then in what Osler was proposing, more than ward visits and observation, was putting the medical students to work as part of their education. “What I wish to emphasize is that this method of teaching is not a ward-class in which a group of students is taken into the ward and a case or two demonstrated; it is *ward-work*, the students themselves taking their share in the work of the hospital,”⁸ Colleges did not simply need more immersive educational opportunities for their students; hospitals also needed more skilled laborers.

To meet these two needs, the first in medical education and the second in hospital management, Osler instituted at Johns Hopkins University the first clinical clerkship of its kind in North America, one after which medical schools were modeled in the first half of the twentieth century.⁹ According to Osler’s program at Johns Hopkins, medical students were given an unprecedented amount of ward duties, including history taking, physical examinations, laboratory tests, patient monitoring, and even limited consultation on the management of a

⁶ Ibid., 319.

⁷ Ibid., 317.

⁸ Ibid., 322.

⁹ Ludmerer, K.M. *Learning to Heal: The Development of American Medical Education* (New York: Basic Books, Inc., Publishers: 1985), 256.

patient's treatment.¹⁰ One of the reasons Osler was able to institute this kind of program long before any other medical schools was the newness of the medical school and the fortuitous openness of Johns Hopkins Hospital to such a new method of teaching and healing that were until that point untried on this side of the pond. The hospital was opened in direct conversation with the needs of the medical school in mind. In Osler's words, Johns Hopkins was created by "wise men who planned the hospital who refused to establish an institution on the old lines," but instead recognized that "the amphitheatre clinic, the ward and dispensary classes, are but bastard substitutes for a system which makes the medical student himself help in the work of the hospital as part of its machinery."¹¹ By merging the duties of the hospital with the duties of the medical student, the precedent set by Johns Hopkins University established clinical labor as an unshakeable pillar of American medical education. As a result, the potential contradictions between a the medical student's roles as both a reliable laborer and a burgeoning independent, scientific mind would prove critical in the standardized patient's development.

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Equal to Osler's advocacy for clinical experience was Abraham Flexner's scathing indictment of the lack of consistent evaluative standards for those entering and graduating medical school. Notably, his research and opinion were enlisted by the Carnegie Foundation because "amongst the thousand institutions in English-speaking North America which bore the name college or university there was little unity of purpose or of standards."¹² Flexner's call for more rigorous

¹⁰ Ibid., 69.

¹¹ Osler, *Aequanimitas*, 384, 389.

¹² Flexner, Abraham. *Medical education in the United States and Canada: a report to the Carnegie Foundation for the Advancement of Teaching*. No. 4. Carnegie Foundation for the Advancement of Teaching, 1910, vii.

accountability derived from his belief that “all colleges and universities, whether supported by taxation or by private endowment, are in truth public service corporations, and that the public is entitled to know the facts concerning their administration and development.”¹³ Flexner’s deepest concern was that “very seldom, under existing conditions, does a patient receive the best aid which it is possible to give him in the present state of medicine, and that this is due mainly to the fact that a vast army of men is admitted to the practice of medicine who are untrained in sciences fundamental to the profession and quite without a sufficient experience with disease.”¹⁴ Flexner concludes his analysis with the following three-tiered proposal:

first, upon the creation of a public opinion which shall discriminate between the ill trained and the rightly trained physician, and which will also insist upon the enactment of such laws as will require all practitioners of medicine, whether they belong to one sect or another, to ground themselves in the fundamentals upon which medical science rests; secondly, upon the universities and their attitude towards medical standards and medical support; finally, upon the attitude of the members of the medical profession towards the standards of their own practice and upon their sense of honor with respect to their own profession.¹⁵

The key words to understanding Flexner’s legacy from his recommendation above are undoubtedly “public,” “laws,” and “standards.” For what made Flexner’s paper so notable and influential was how thoroughly it documented the utter lack of public oversight in the United States medical profession of 1910. Flexner’s report devotes one hundred forty-two pages of a three hundred plus page publication to individual evaluations of every medical school in the United States and Canada. In his assessment, the schools are listed alphabetically by state, and each described in terms of its entrance requirement, attendance, teaching staff, maintenance

¹³ Ibid., ix.

¹⁴ Ibid., x.

¹⁵ Ibid., xiii.

resources, laboratory facilities, and clinical facilities. He then concludes each description by assessing the standards of each state overall, oftentimes coming to scathing conclusions.¹⁶

It would be irresponsible scholarship to imply that Dr. William Osler and Abraham Flexner single-handedly overhauled the entire infrastructure of American medicine. However, the precedents established by their work are undeniable. If Osler's legacy was in the incorporation of the medical student as an essential part of the hospital machine, Flexner's was in the boom of state licensure and certification that became necessary for medical schools to operate legally. In his book *Learning to Heal: The Development of American Medical Education*, Kenneth M. Ludmerer compares Flexner's effects on medical licensing to Upton Sinclair's provocation of the Pure Food and Drug Act of 1906:

Abraham Flexner's *Medical Education in the United States and Canada*...now had the same effect in prodding the public to demand effective licensing laws. In every state over the next several years [following the publication of Flexner's report], tough new laws were passed or existing laws strengthened...state boards passed judgment upon the medical schools of the country, and only graduates of 'approved' medical schools were permitted to apply for the license to practice.¹⁷

As a result, the number of medical colleges in the United States dropped by nearly a half between 1910, when Flexner's report was published, and 1930, while the number of medical students and graduates remained the same.¹⁸ Thus the years leading up to World War II saw the rise of a well-maintained elite fleet of American medical schools to such an extent that though “[w]ork in undergraduate medical education was never viewed as complete...by the 1920s it was clear to all observers that the task of institution-building had been finished.”¹⁹

¹⁶ “Tennessee protects at this date more low-grade medical schools than any southern state...Low as the entrance standard must be, it has been made lower in order to gather in students for six schools where one should suffice.” Ibid., 309.

¹⁷ Ludmerer, *Learning to Heal*, 236.

¹⁸ Council on Medical Education and Hospitals, “Medical Education in the United States,” *Journal of the American Medical Association* 95 (1930): 504, table 5, in Ludmerer, *Learning to Heal*, 247.

¹⁹ Ludmerer, *Learning to Heal*, 257.

But just as the Civil War spurred countless developments in American medical practice, American hospitals and American medical education after World War II faced significant upset to what had previously been seen as a solid system. The changes, and subsequent challenges, were extensive. As Ludmerer explains,

After the war, the rich learning environment of the teaching hospital was placed in jeopardy. The most immediate threat arose from the conversion of large numbers of charity beds to semiprivate beds...hospital costs were soaring, and charity care represented a growing financial burden... Additionally, many faculty were already spending much more time in research, owing to the postwar boom in federal research funding. Now, with the expansion of clinical service, faculty were being asked to see more private patients as well. With only 24 hours in a day, faculty often found themselves cramped for time, and it was easy for teaching or resident supervision to be shortchanged... The conditions of medical practice were also rapidly changing—not only from the spread of group practice and private medical insurance but also from more fundamental forces: the steep rise in population since the turn of the century, the sharp increase in the number and proportion of children and older individuals, each with special medical needs; the urbanization of America and movement of many city dwellers to the suburbs; the growing conviction that medical care was a right; and the increased ability of an affluent society to pay for that care.²⁰

I quote this description at length because the landscape onto which standardized patients emerged was a complex one, in which both the demand for hospital labor and the public's expectation of quality assurance had grown tremendously, indeed beyond the means of teaching hospitals to meet either. It was in such a landscape of financial unsustainability, want of professional oversight and assessment, and an expansion of both medical care's availability and cost that the first "programmed patient" was born.

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²⁰ Ludmerer, K. M. *Time to Heal: American medical education from the turn of the century to the era of managed care* (New York: Oxford University Press, 1999), 173, 176, 194.

“Patty Dugger,” a fictional paraplegic woman with multiple sclerosis and the first standardized patient, was first conceived by neurologist Dr. Howard S. Barrows in 1963 as a way to assess what skills his students were and were not learning over the course of their clinical work in the neurology department. Though Patty Dugger was only the first of many, reviewing the events leading up to her first appearance make very clear the paths she and her fellow characters were to follow in the second half of the twentieth century.

When Barrows arrived at USC in the early 1960s, he came face to face with many of the pressures Ludmerer describes as being typical of medical education at the time. As he puts it, he “was the only full-time neurologist there...responsible for a 100-bed neurology service, often with additional beds in the corridors. I was also responsible for the clinical clerks rotating through neurology.”²¹ Just a year before arriving at USC, Barrows had met a Dr. David Seegal, who “would sit down and watch every single one of the clinical clerks do a complete history and physical.” Dr. Seegal said that this was important, as no one to that point had ever bothered to observe these young men and women...He was able to find numerous errors in history-taking skills, physical examination skills, and thinking skills, and he provided the students feedback.²² This chance meeting with Dr. Seegal had a profound effect on Barrows, and returned to him during his difficult beginnings at USC juggling all of his various responsibilities as teacher, hospital supervisor, and doctor of neurology. Yet rather than being so concerned with the learning process taking place in their clinical clerkship, what troubled Barrows especially was his inability to supervise very closely the student’s performance at the bedside. His underlying suspicion, in fact, was that his students were not performing their duties correctly, but he was

²¹ Barrows, Howard S. "An overview of the uses of standardized patients for teaching and evaluating clinical skills. AAMC." *Academic Medicine* 68, no. 6 (1993): 443-51, 446.

²² *Ibid.*, 445.

unsure what to do about it. Though Barrows admired Seegals' thorough approach, within his busy schedule he longed for a less time-consuming solution.

In his first publication on the subject of standardized patients, "The Programmed Patient: A Technique for Appraising Student Performance in Clinical Neurology," co-authored with Stephen Abrahamson of USC's medical education department, Barrows defines "the goals of a clinical clerkship are to provide the student with skill in history taking, physical examination, diagnosis, differential diagnostic concepts and procedures, and patient treatment or management. A written oral examination cannot effectively measure student performance in such a patient-oriented teaching endeavor."²³ But if we return to Osler, it is clear Barrows' assumptions on the purpose of clinical clerkship have diverged. While Barrows emphasizes the duties of the medical student only as hospital worker, Osler consistently refers to the clinical work as a way to further scientific inquest: the patient is in fact learning "material" for understanding through observation what has been introduced by textbooks and laboratories. As Osler says:

In what may be called the natural method of teaching the student begins with the patient, continues with the patient, and ends with the patient, using books and lectures as tools, as means to an end... Teach him how to observe, give him plenty of facts to observe, and the lessons will come out of the facts themselves.²⁴

These "things" "and "facts" are never specified, but can be inferred to be some kind of intersection between a human body and the diseases and the various organic processes being carried out upon and within it. While Osler devotes at least half of his essay "The Hospital as College" to how the student can become a better scientist through observation in clinical work, Barrows is entirely concerned with how the student is able to get information and solve problems efficiently for the smooth functioning of the hospital. In his development of the standardized

²³ Barrows, Howard S., and Stephen Abrahamson. "The programmed patient: a technique for appraising student performance in clinical neurology." *Academic Medicine* 39, no. 8 (1964): 802-805, 802.

²⁴ Osler, *Aequanimitas*, 315.

patient, Barrows explicitly redefines the clinical clerkship objectives in terms of the hospital's needs, and more importantly the greater need to oversee and assess the student's performance as an essential, unpaid labor force within the hospital. Though perhaps ideal for the observation of disease and the examination of live patients, the wards proved unsatisfactory for the observation and examination of the medical students themselves. A new model had to be created.

This difference highlights the introduction of two major priorities in the medical student's curriculum, of which standardized patients are a kind of specter: one is the problem of *time and resource management*, and the second is the emphasis on *examination* and *standardization*. As he explains, it was these two priorities that led Barrows to create the first standardized patient simulation in 1963:

1. No matter how well a patient is known by the faculty there is no guarantee, humans being complex as they are, that the patient will present the same history or even, in many instances, the same physical findings to the student. We are all aware of how a patient's history and physical findings can change from examiner to examiner.
2. The ideal, or even adequate, patient, is often hard to find at the time of a test. Cooperativeness, language barrier, level of consciousness, [etc]... can frequently interfere.
3. The faculty cannot be sure that all the facts about the patient are complete or correct.
4. One cannot safely predict how the patient, especially a long-hospitalized patient, is going to react to a student's examination... Lastly, a *group* of students is usually tested. Testing seven different students, each working with a different patient, does not allow for a comparison among other students.²⁵

The dissatisfactions then that gave rise to the standardized patient were a strange inverse of those that gave rise to the teaching hospital. The sick bodies once considered the abundance of materials described by Osler in hospital ward beds²⁶ were now thought "hard to find" by Barrows. While Osler and his contemporaries argued again and again for preparing the students for the situations they would face as physicians by immersing them in that context, Barrows explicitly recognizes the dissimilarity between the demands of examinations and the

²⁵ Barrows, "The programmed patient", 803.

²⁶ Osler, *Aequanimitas*, 319.

circumstances on the ward. Nonetheless, his entire article argues for the necessity of standardized patients in the preparation of medical students. The demand for examination, as indicated by the rise in that National Board of Medical Examiner's prominence in the decades following World War II²⁷ demonstrate that ultimately Flexner's conception of healthcare as a publicly accountable corporation, and the expanding infrastructure and economy created to regulate that accountability, took far greater precedent over the kind of scientific inquiry and long hours of observation and in-clinic study lauded by Osler.

Though Barrows' concerns regarding clinical assessments and time management in the wards had been accumulating gradually, it was the combination of two specific events that finally sparked his imagination. The first was the introduction of 8mm single concept cartridge, which Barrows saw as a remarkable opportunity to capture and communicate clinical skills to residents and students alike. He enlisted an artist's model from the USC Art School, Rose McWilliams, and filmed the different portions of a thorough neurological physical examination so that residents and students could observe or brush up on their technique. At another encounter shortly after his arrival at USC, Barrows was told a story by a colleague who was following up with actual neurological patients who at the time were used in board examinations to evaluate students' clinical skills. One patient informed this friend that his last student had been rather hostile and physically ungentle. When the director expressed his disappointment and regrets, the patient simply said, " 'Don't worry, I fixed him—I put my Babinski on the other foot and changed my sensory findings.'"²⁸ For those not familiar with these exams, the patient confessed that he had *simulated* false physical findings to exact revenge on an insensitive student. It was at this juncture that Barrows conjectured if physical findings could be simulated by someone who

²⁷ Ludmerer, *Time to Heal*, 197.

²⁸ Barrows, "An Overview of the Uses of Standardized Patients for Teaching and Evaluation Skills", 446.

actually had them, they could most likely also be simulated by someone who did not.

Complementarily, if someone could pretend to take a neurological exam for the camera, could she not also be trained to take a neurological exam directly with a student? If both Barrows' suspicions proved true, all of the aspects of real patients that made the evaluation of students so inconsistent could perhaps be controlled. So Barrows worked with McWilliams again to develop the first standardized patient case: Patty Dugger, a paraplegic woman with multiple sclerosis, presenting with bladder control complaints. As Barrows explains, McWilliams was "coached to have a paraplegia, bilateral Babinskis, dissociated sensory loss, and a blind eye. She learned to present with the anxiety and concern of the real patient she was modeled after."²⁹ Though Barrows had succeeded in directing and training the first standardized patient, he now faced the difficulty of how to observe the student without compromising the verisimilitude of the examination circumstances. "Should I peek through a drape, or what should I do? I finally decided I would make [a] checklist that Rose would fill out afterwards."³⁰

Though Barrows mentions the evaluative portion of a standardized patient's responsibilities as an afterthought, its effects have been far-reaching in the implementation of standardized patients in medical education, particularly for the uses of testing and evaluation. In many ways the complete inverse of Osler's clinic as classroom, in which the disease could be observed in its natural habitat, Barrows' simulation instead instituted the artificial clinic as the medical student's ideal testing environment. Barrows' standardized patient was not only the site of the students' examination but also their examiner; for the first time in the medical discourse the student's observational gaze was returned by its object. Whereas Osler's medical student was at heart an observer of disease, Barrows' medical student was the observed, and their own performance of

²⁹ Barrows, "The programmed patient", 805.

³⁰ Barrows, interview by author, in Wallace, "Following the Threads of an Innovation," 8.

certain skills and tasks took priority over the careful, attentive study of actual diseases and the people with them.

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Though Barrows is generally credited with the invention of the standardized patient, another major innovator of clinical skills pedagogy was Dr. Paula Stillman. As Wallace explains it, Stillman wanted to create a learning rubric for her pediatric clerkship that “would be based on behaviors, not abstract ideas, so that it could also be used for giving feedback to the students.”³¹ To do this, Stillman hired real mothers to relate stories of different children, including their own, to the pediatric clerk. The mothers were not only taught a checklist of questions that the student should ask, but were also asked to give direct feedback to the student regarding their behavior towards the patient during the interview. As Stillman recalled, “ ‘In the beginning, I used to videotape everything. But [the mothers] got so good at remembering specifics when they gave feedback that I stopped videotaping.’ ”³² Stillman found the initial work with simulated mothers so successful that, when she accepted a position as the lead instructor of a physical diagnosis course, she decided to try introducing a standardized patient to give the students feedback on their physical treatment of the patient’s body, as well as their communication and emotional comportment. As Stillman points out, the standardized patients not only understood what was to be done, but how, and were encouraged to help the student learn to do certain physical maneuvers correctly. Stillman recalls that “ ‘if you weren’t reaching up high enough in the axilla

³¹ Wallace, “Following the threads of innovation”, 12.

³² Stillman, interview by author, in Wallace, “Following the Threads of an Innovation,” 12.

when you were palpating the axillary lymph nodes, they could teach you how to do that. They knew nothing about medicine. They were strictly process people.”³³

Over her career, Stillman developed her program even further so that her standardized patients were not simply intervening or complementary pedagogical resources, but actually instructed the medical students. Around the same time Stillman was working with simulated mothers, she learned about the work of obstetrician / gynecologist Richard Kretzchmar who, inspired by Barrows’ work at USC, develop a program of “gynecology teaching associates,” or GTAs, who were trained to teach students and offer feedback on the physical and communicative components of a gynecological exam. After inviting Kretzchmar to visit the University of Arizona, Stillman created a similar program with local Tucson retirees with chronic illnesses. Wallace explains that Stillman “taught the patients both how to examine themselves, and how to teach the students to detect the abnormality on their own bodies.”³⁴ By introducing the patient instructor as a complement and colleague to the resident and preceptor, Stillman’s work forces a major epistemological shift onto the entire Oslerian paradigm: not only were these patients watching and evaluating the student, they were also purveyors of a knowledge the student herself did not possess. Under Stillman’s guidance, the teaching material, while still material, became a kind of expert.

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Though both Stillman and Barrows are considered instrumental in the integration of standardized patient programs in medical schools across the country, Barrows’ legacy has grown

³³ Ibid.

³⁴ Wallace, “Following the Threads of an Innovation”, 13.

to be more dominant. This in part due to the contributions of a Dr. Ronald M. Harden of Scotland, who in 1979 developed the OSCE, or the Objective Structured Clinical Examination. This consisted of a series of “standardized, brief, task-based stations...used to evaluate discrete clinical skills or skill sets”³⁵ specifically with “actors in highly choreographed scenarios to “evaluate the performance of professional behaviours.”³⁶ Though OSCEs are flexible in the skills they assess and the grading rubrics they use, the format of multiple stations for evaluating many people at once is what makes it such a unique and effective assessment method. As Barrows remarked, “the stations are characteristically 5 minutes or so long, and an entire class of students can be assessed within one day. This examination is widely used, as it represents the first opportunity to directly and reliably assess clinical performances on a large scale in medical education.”³⁷ But where Harden was interested in evaluating a specific set of skills, Barrows was searching for something even more comprehensive, more time efficient, for assessing clinical performance.

In Barrows’ view, “much of the assessment of medical students’ clinical performances is based on their performances on oral and written examinations...This is ironic, as the multiple choice question does not evaluate what is important in clinical performance.”³⁸ To attempt to address some of his concerns, while working as Associate Dean of Education at Southern University School of Medicine Barrows held a conference in June of 1984 entitled “How to Begin Reforming the Medical Curriculum,” co-sponsored by the Macy Foundation. Not unlike the research the Carnegie Foundation had initiated nearly 80 years before, the goal of the conference was to put forward a series of recommendations for the improvement of American

³⁵ Adamo, Graceanne. "Simulated and standardized patients in OSCEs: achievements and challenges 1992-2003." *Medical Teacher* 25, no. 3 (2003): 262-270, 263.

³⁶ Hodges, Brian. "OSCE! Variations on a theme by Harden." *Medical education* 37, no. 12 (2003): 1134-1140, 1134.

³⁷ Barrows, “An Overview of the Uses of Standardized Patients for Teaching and Evaluating Clinical Skills”, 448.

³⁸ Ibid.

medical curriculum, a forerunning one being to “ ‘require medical students to pass comprehensive performance-based clinical examinations before graduating.’”³⁹ The Macy Foundation became the champion of standardized patient-based evaluation, developing a multi-station testing platform much like the OSCE called the CPX (Clinical Practice Examination). As Barrows explained, at each station “ a patient problem is presented by a standardized patient, and the faculty are interested in assessing whether the student is able to carry out all the questions on history and all the things on physical examination that ought to be performed as a response to that particular patient’s complaint.”⁴⁰ Barrows further explains enthusiastically that in this structure “the value of the standardized patients may exceed that of real patients, in that they can be used to assess a large number of examinees in their handling of a range of important patient challenges.”⁴¹ While the Macy Foundation was organizing consortia around better evaluative methods of clinical skills during the 1980s and 1990s, the AMA (American Medical Association), AAMC (Association of American Medical Colleges), as well as various major examination organizations such as the National Board of Medical Examiners and the Educational Commission for Foreign Medical Graduates, began organizing test studies into the possibilities of using a CPX-like format as a part of their evaluative process.⁴²

The trend is not difficult to trace. Currently, NBME, ECFMG, and the National Board of Osteopathic Medical Examiners all use multiple station, all day CPX platforms as a component of their certification exams. Though a large portion of medical schools have also adopted Stillman’s approach to simulated clinical learning, the sheer number of studies, consortia, conferences, papers, and most importantly profits that have developed around the standardized

³⁹ Wallace, “Following the Threads of an Innovation,” 14.

⁴⁰ Barrows, “An Overview of the Uses of Standardized Patients for Teaching and Evaluating Clinical Skills,” 449.

⁴¹ *Ibid.*, 448.

⁴² Wallace, “Following the Threads of an Innovation,” 17-18.

patient as a tool in the evaluation and examination of medical graduates in the past thirty years is staggering. Rather than the two snakes of Dr. Wallace's caduceus that weave symmetrically around a single staff, the current state of medical education might more accurately be represented by a large gluttonous python in the midst of devouring its neighbor the garter snake. Barrows himself noted that after his clerks' first evaluative encounter with Patty Dugger, many were so enthusiastic that "the students requested a simulated patient in the middle of the clerkship so they could discover problems in their neurological workups that they might work on before the final assessment with a simulated patient."⁴³ According to Barrows' own testimony, the students were not asking for more practice with the standardized patient because they eagerly wanted to perfect their work as clinicians, but because they wanted to perform perfectly for their final examination. Combine this testimony with the design of the CPX, which construes standardized patients as platonic ideals or representations of various pathologies, and suddenly the medical student's education becomes an incarnated performance of the textbook: a series of representative exemplary case studies, with which medical students are able to practice until they become exemplary representations of clinicians. The amount of space, time, money, and people now required to regulate and maintain the publicly accountable corporation that Flexner dreamed of over a century ago has now become so large a pressure on medical education that the curriculum has been structured around the tasks of assessment and data collection, and not the other way around.

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Epilogue

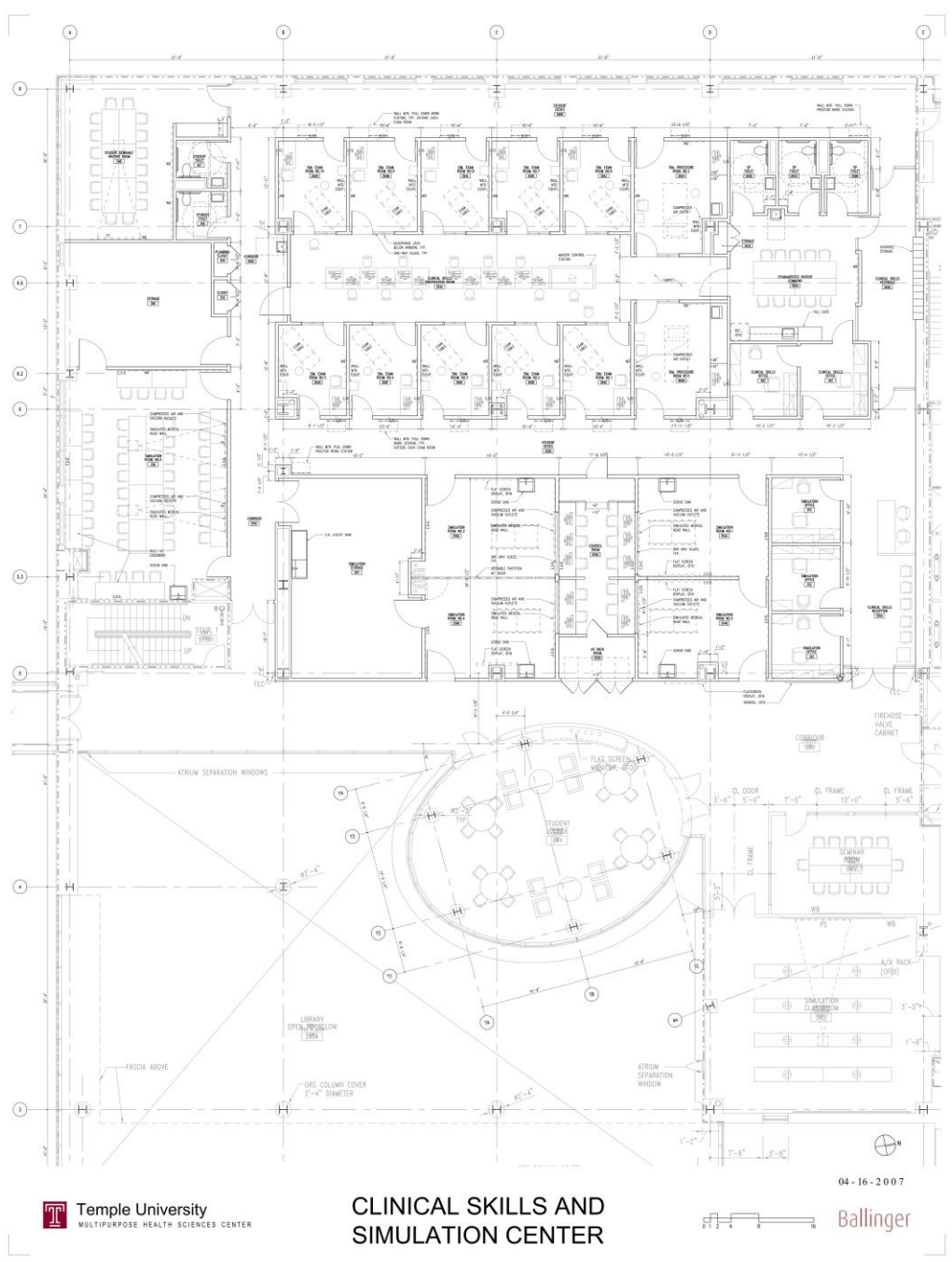
⁴³ Ibid., 446.

My interest in the role of standardized patients in medical education is admittedly a very personal one. From 2011 to 2014, I worked as a standardized patient at Temple University, University of Pennsylvania, and Jefferson University. During this time, my work ran the gamut from patient instructor of various anatomical systems to one of eleven standardized patients in a station-based, end of the year examination for third year medical students. Over my time working as a standardized patient, the two questions I was asked the most were “How will I know what an abnormality looks/sounds/feels like in *real* life?” and “Will this be covered in the OSCEs?” For both questions, I always deferred to a medically licensed physician preceptor, who almost always answered the exact same way: “After much practice on the wards and the real clinic, you’ll learn how to notice what you’re looking for,” and “Perhaps, but here’s what I always do in my actual practice.” If the “real” education of the medical student still takes place on the wards, as my colleagues and Dr. William Osler seem to allege, then what exactly was the purpose of my job for three years? What was I teaching?

While my research helped me a great deal in answering this question, the contemporary landscape of standardized patient programs requires much more attention and analysis. In 2007, Temple Medical School opened a building of brand new facilities, which included a state of the art Clinical Skills and Simulation Center.⁴⁴ Anyone with even a passing knowledge of *Discipline and Punish* would be able to understand that the new design of the center is incredibly portentous. Identical examination rooms circle round a central observation chamber that remains invisible to the occupants of the rooms themselves behind one-way mirrors. Inside each room is also a microphone and a camera, that feed to computer and large screen monitors in adjoining rooms. To set clinical skills courses in these facilities underscores for students that the medical

⁴⁴ See Figure 1, a scanned copy of Ballinger’s plans for the new medical school facilities, 2007, sent to me by Michael Curtis, Director of the Standardized Patient Program and Director of the Clinical Skills Center at Temple University School of Medicine

clinic is a machine not of healing, but of performance measurement and time management, and the physician simply a component of that machine, a player in that performance, a reliable deliverer of reproducible results.



CLINICAL SKILLS AND SIMULATION CENTER



04-16-2007

Figure 1, a scanned copy of Ballinger's plans for the new medical school facilities, 2007, sent to me by Michael Curtis, Director of the Standardized Patient Program and Director of the Clinical Skills Center at Temple University School of Medicine

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