

## ABSTRACT

### The Effects of Medical Technology on Person-Centered Care in Modern Medical Practice

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Providing person-centered care has been a longstanding mission of medicine. Since Hippocrates' writing of the Hippocratic Oath, considering the patient and their wishes first and foremost has been the common goal of practicing physicians as they distribute medical diagnoses and treatment based on the guiding documents of the profession. However, with the rapid introduction of technology in medicine in the past two decades, this mission has been overwhelmed by computer screens and impersonal models of care. This thesis involves evaluating the ways information online and electronic medical records have changed person-centered medical practice and the patient experience. In doing this research, I will be examining the ways medicine has been changed to adapt to the ever-changing healthcare world to ensure the practice is filled with caring physicians focused on person-centered practice. The return to person-centered care requires an understanding of the original practice, the existing barriers, and the future opportunities technology provides to facilitate proper communication to improve patient experience, autonomy, transparency, education, and relationship alongside their physician.

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THE EFFECTS OF MEDICAL TECHNOLOGY ON PERSON-CENTERED CARE IN  
MODERN MEDICAL PRACTICE

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## CHAPTER ONE

### Introduction

Technology has created a society that is constantly evolving. At times, there seems to be more of a focus on how to improve connection and communication rather than how to actually facilitate effective interactions. Despite the technology that has surfaced and the new knowledge that has been acquired alongside these changes, consistency can be found in the physician. Since Hippocrates, the father of medicine, began his medical practices in the fifth century B.C., the physician has been an essential factor in the success of society. Similar to any position of authority, there have been guidelines set in place for the physician to operate within as they interact with patients and provide efficient care. Hippocrates firmly believed “where the art of medicine is loved, there is also a love for humanity,” emphasizing the importance of a humanized practice of medicine (63). The Hippocratic Oath was a major factor to establishing this belief and created the modern understanding on how to provide evidence-based and person-centered care for patients. However, as technology advances at a rapid rate, this art of medicine, this love of humanity, has encountered challenges and must alter itself alongside the changes in the surrounding world in order to adhere to changing expectations. The introduction of technology has created a number of barriers for physicians to overcome, but with the proper adoption of the advancements the practice has the potential to improve astronomically.

Undeniably, modern medicine is far different from medicine’s original form, but the focus on person-centered care has been a central consideration for the entirety of the profession. Whether it be the relationship between the physician and their patients or a

patient and their own perception of care, the medical practice has always consistently worked to ensure the best system for treatment of their incoming patients. Ancient medicine was originally reliant on philosophy and religion, while medicine today is heavily based on empirically-based data and action. There have been shifts in technique as new technology and practices developed. Despite these changes that the medical practice has faced, healthcare professionals agree that the patient remains the most important factor of the practice. However, despite this agreement, there has been a loss of patient respect and identity in their care as medicine become more reliant on technology and large business models (“Crossing”, Toussaint). The disappearance of traditional communication techniques and quick emergence of new platforms dramatically affected the medical practice (“Crossing”, Kohn 2). The physician is now immersed in a new community with their patients and must assume a new, unique role as members of healthcare teams working in conjunction with electronic medical records and cohesive applications to foster better communication and distribution of medical care (Mezzich). The original guidelines set in place for the physician have shifted in order to ensure the best-suited care for patients, but the essential values of patient-centered care found in the Hippocratic Oath are still highly revered and followed. The Oath in its original form is as follows:

I swear by Apollo the healer, by Aesculapius, by Health and all the powers of healing, and call to witness all the gods and goddesses that I may keep this Oath and Promise to the best of my ability and judgement.

I will pay the same respect to my master in the Science as to my parents and share my life with him and pay all my debts to him.

I will regard his sons as my brothers and teach them the Science, if they desire to learn it, without fee or contract.

I will hand on precepts, lectures and all other learning to my sons, to those of my master and to those pupils duly apprenticed and sworn, and to none other.

I will use my power to help the sick to the best of my ability and judgement; I will abstain from harming or wronging any man by it.

I will not give a fatal draught to anyone if I am asked, nor will I suggest any such thing. Neither will I give a woman means to procure an abortion.

I will be chaste and religious in my life and in my practice.

I will not cut, even for the stone, but I will leave such procedures to the practitioners of that craft.

Whenever I go into a house, I will go to help the sick and never with the intention of doing harm or injury.

I will not abuse my position to indulge in sexual contacts with the bodies of women or of men, whether they be freemen or slaves.

Whatever I see or hear, professionally or privately, which ought not to be divulged, I will keep secret and tell no one.

If, therefore, I observe this Oath and do not violate it, may I prosper both in my life and in my profession, earning good repute among all men for all time. If I transgress and forswear this Oath, may my lot be otherwise. (Hippocrates 67)

These words are essential to the understanding of any health care practice. The oath urges for a holistic practice that considers the healing of the patient as the main concern, not the healing of a disease. Ultimately, the oath humanized medicine to an extent that was unknown in the original medical tradition and established the ideas of person-centered



care as a practice. The basic understanding of responsibilities by a medical professional and the relationship that exists between a physician and their patients are outlined in this excerpt from ancient text. Improvement of patient health and well-being should always be central in treatment and diagnosis. Though the exact words of the oath physicians take have changed, ideals set in place for the profession in the text remain central to medical care.

These ancient ideals have been challenged by societal and technological advancements that have altered medical care. There is no longer a simple visit to the doctor; it is now a visit rich in interactions with computer screens and multiple healthcare professionals. Additionally, the information now available outside the hospital setting begins the appointment for the patient before stepping foot into the clinic. Advances in technology have changed the way people interact. The information we find online is often created, targeted, and edited to provide the most pleasing presentation for the audience. While social media has taken the center stage in issues concerning the sharing of information, whether that be private or public, there are also issues present within the medical world. Not only has the system for storing, sharing, and analyzing patient information become difficult to master, but the increased accessibility of medical knowledge online has changed the way physicians and patient communicate with one another. This in turn has brought to light a new requirement for physicians to understand the relationship that is forming between their patients and themselves outside of the clinical setting. They must engage in the media as well in order to understand the experience of the patients outside of the clinic. There are arguments for the necessity for increased understanding of the effects social media and public health campaigns on the changing face of medicine. Continued development of electronic health records and

patient portals has led to an increased need for physicians to endure their continuing education and engage with their patients through methods outside of clinical visits. This may be one of the most obvious and pertinent shifts from Hippocratic medicine to medicine practiced today; physicians are required to engage in various areas of medicine, not simply their clinical practice, in order to be successful in their profession and provide adequate patient care.

It is important to acknowledge that medical care is by no means an individual affair. The patient experience depends on the successful treatment of the patient in their initial visit and their subsequent actions. This may include the patient interacting with other physicians, their own medical records, or follow-up visits. There is a necessity to engage in communal understanding of a condition and its treatment in order for its success. Should patients rely only on the internet for their medical information, the misdiagnoses would lead to far more severe consequences than would a quick visit to an office where collaboration can occur. Not surprisingly, the millennial generation has been the leading the movement toward the spread of knowledge via internet platforms. Their continuous engagement in these applications on their cellular devices has led to a trend in self-diagnosis and misunderstanding of medical care. Research has found that health campaigns found on different media platforms have changed the overall health behaviors (Lloyd 38). The purpose of this research was to evaluate whether it was simply because they saw other people their age participating in these behaviors or if it was because they became truly informed. To do this, a questionnaire consisting of health application and health-related content questions was administered to 802 high school students (Lloyd 39). The study found the students to answer on average about 75% of health application questions correctly, but only about 54% of health-related content questions correctly

(Lloyd 40). These findings reiterate the importance of evaluating the way patients may understand their own health when a physician approaches an individual case. Individuals may attempt to answer their own questions about their health through a simple search online rather than a visit to their physician. Patients are able to gain understanding of their condition outside of a clinical setting, and physicians are being asked to interact with their clients in a new manner as knowledge is spread more rapidly and freely to the public. These advancements are actually beneficial to physicians; patients may be able to conquer small health concerns without a pricey visit to the hospital, but the problem arises when the information is faulty or incongruent with their established care plans.

Establishing a strong patient-physician relationship is paramount to the success of a practicing medical doctor. Today there is a strong movement to ensure proper patient care through communication and transparency with various patients who may walk into the office. The patient experience, defined by the Beryl Institution is “the sum of all interactions, shaped by an organization’s culture, that influence patient perceptions, across the continuum of care,” has become the central concern in all specialties. Evoking a positive patient experience is far more than just having a personable doctor these days; it includes the efficiency of care, the availability of information, and the professional nature of the physician himself. Professionalism of the physician has been challenged as more knowledge has become available to the public. In a few simple clicks, they may be able to diagnose themselves without a visit to the doctor’s office. Therein lies an issue in the development of the essential relationship between doctor and patient, and in turn establishes a new challenge for physicians to overcome. Once again, Hippocrates mentions this relationship in his writing from centuries ago, stating “it is far more important to know what person the disease has than what disease the person has” and this

understanding remains true in the modern practice of medicine (63). This thesis will focus on Hippocrates' belief of the importance to "declare the past, diagnose the present, and foretell the future" by focusing on the ways these ideals of patient understanding have shifted and remained as the medical world has changed (99). This thesis will investigate the ways these ideals of patient understanding have shifted as new technologies have been introduced in the medical world. It will concentrate on the loss and rediscovery of person-centered care to rehumanize medicine after the proper implementation of essential healthcare technologies to improve the patient experience. In doing so, this thesis will provide an understanding of the necessary improvement in continued education, transparency, autonomy, and interdisciplinary teamwork in the medical world to embrace a new kind of holistic practice.

## CHAPTER TWO

### Declaring the Past: Establishment of Person-Centered Care

Hippocrates states those practicing medicine should “declare the past, diagnose the present, and foretell the future” through their professional practice (Hippocrates 99). To fully understand the role of a physician in light of the vast technological advances, one must first understand the formation of the person-centered medical profession, both social and ethically, through a diachronic study of the medical practice. Hippocratic teachings, which have led the medical professions for centuries, are at the core of all doctors’ actions. With every action with patients, physicians are implored to follow a set of guidelines originating in the Hippocratic Oath. For centuries, the oath has remained the guiding ideology for physicians as they diagnose and treat their patients. Even through the trials of time, the person-centered care that is now at the core of medical practice is a result of the requirements set in place centuries ago.

#### *Hippocrates and His Contributions*

Hippocrates, a man of Greek origin believed to be born in the 5<sup>th</sup> century, is revered as the father of modern medicine (Orfanos). Born into a family well known for their medical knowledge, Hippocrates was immersed in the medical culture from a young age. The ancient medical world was one with many conflicting ideas on the causes of illnesses, creating great confusion on the basis of patient care. Prior to the writing of *Hippocratic Writings* around 430 BC, priests were considered the most fit in society to treat any said medical condition (Orfanos). The authority was granted not because of

anatomical and physiological knowledge of the body, but rather focused on spiritual or magical imbalances found in the individual (Orfanos). A priest was the only individual capable of ridding patients of these issues. Most medical care was performed through the practice of sacrificial rituals and prayer (Gill). There was no actual consideration to the physical body of the patient, and the practices glorified the beliefs and teachings of priests rather than true treatment for the patient. While this was not complete nonsense as it did focus on balance and create the overarching holistic view of treatment from the beginning, it was not proven by empirical data. These beliefs about medicine were intangible; there was no concrete evidence or record of the treatment of patients. The entirety of medicine was arbitrary and could not be personalized with each case.

Diagnoses were due completely to external circumstances, whether earthly elements or an imbalance in spirituality due to improper practice. Anyone acting in the place of a physician based their actions on arbitrary postulates that could lead to a patient's continuation of life or a lead into death (Hippocrates 70). There existed a clear necessity for the establishment of a physical understanding of the patient and their necessary care. Hippocrates' introduction of *physis* (natural and physical) in medicine took the practice from a theoretical and spiritual practice to a rational one (Orfanos). Hippocrates argued "medicine had for long possessed the qualities necessary to make a science" and therefore discussing medical issues as results of invisible or problematic substances in life was not a respectable way to diagnose the sick (71). Regarding medicine as a philosophical endeavor rather than a physical science was unfit for the goals of the practice and caused for unsuccessful patient care. The need for medicine to be regarded as science was in the nature of the practice, as patients and physicians are dually able to understand a scientific understanding, and a philosophical stance would

vary between practitioners. The Hippocratic corpus is a collection of about sixty works attributed to Hippocrates. Though it is more likely the combination of works is from multiple researchers, it provided the world with the first original representation of the human body as a natural microcosm (Gill). These are the fundamental and rational perspectives on diseases and cures all contained within the pages of *Hippocratic Writings*. Hippocratic practices found in the corpus place emphasis of the four humors and their overall balance and to cure by opposites. The regimen set in place regarding the environment and the patient-centered approach transformed medicine from an impractical, intangible practice to a new, concrete tradition. The focus on the four humors; blood, phlegm, black bile and yellow bile are considered a far too simplistic way to diagnose patients today, but in those times was monumental and created much more success in medical care. The humors were correlated to bodily conditions, exposure to earthly elements, and seasons of the year, going further to define hot or cold diseases that could then be treated with the opposite types of treatments. The treatment using the opposite qualities was the first example of allopathic practice. These categories gave physicians a physical understanding of the body which could be practiced uniformly. The “prudent Hippocratic physician would prescribe a regimen of diet, activity, and exercise, designed to void the body of the imbalanced humor” therefore treating the patient in the most appropriate manner for their individual complications (Gill). It created a trustworthy relationship between the physician and their patient, emphasizing the physical responsibility to heal the physician held in his practice. This trust that could be found in consistent medical practice provided the original basis for the introduction of person-centered care.

As Hippocrates continued his practice of medicine, he continued to prove the necessity of physical understanding in medical practice, but also worked to understand the ethical role and responsibilities of the physician in society. The medical practice in its core is an interaction between two individuals in order to reach the common goal of improved health. Though trust was established in the discovery of physical treatments with constant results, there was a need for a different type of soulful contract to exist between the physician and their patients. *Hippocratic Writings* and the introduction of the Hippocratic corpus was a breakthrough for the healthcare professions. Not only did it include specified treatment for injuries and illnesses that could be understood by both physicians and literate patients, but it contains the most important development for medicine in the words of the Hippocratic Oath. The oath holds a physician to a certain ethical standard in regards to their patient and the care they administer upon their entrance to the medical practice. The oath is as follows:

I swear by Apollo the healer, by Aesculapius, by Health and all the powers of healing, and call to witness all the gods and goddesses that I may keep this Oath and Promise to the best of my ability and judgement.

I will pay the same respect to my master in the Science as to my parents and share my life with him and pay all my debts to him.

I will regard his sons as my brothers and teach them the Science, if they desire to learn it, without fee or contract.

I will hand on precepts, lectures and all other learning to my sons, to those of my master and to those pupils duly apprenticed and sworn, and to none other.

I will use my power to help the sick to the best of my ability and judgement; I will abstain from harming or wronging any man by it.



I will not give a fatal draught to anyone if I am asked, nor will I suggest any such thing. Neither will I give a woman means to procure an abortion.

I will be chaste and religious in my life and in my practice.

I will not cut, even for the stone, but I will leave such procedures to the practitioners of that craft.

Whenever I go into a house, I will go to help the sick and never with the intention of doing harm or injury.

I will not abuse my position to indulge in sexual contacts with the bodies of women or of men, whether they be freemen or slaves.

Whatever I see or hear, professionally or privately, which ought not to be divulged, I will keep secret and tell no one.

If, therefore, I observe this Oath and do not violate it, may I prosper both in my life and in my profession, earning good repute among all men for all time. If I transgress and forswear this Oath, may my lot be otherwise. (Hippocrates 67)

This oath is the foundation of the medical profession. It refers to the covenant with the deity, teachers, patients while also providing a guideline of the appropriate limits and means of medical care. Most importantly, it provides a source of accountability for the physician. There exists an understanding of authority in the physician, but also of the autonomy and intellectual rights of the patient providing an outline for the now widely desired person-centered model of care. Keeping these words in mind during diagnosis and care ensure the patient would remain the central concern of medicine. Though physical results of medical care were of utmost importance to Hippocrates, his oath makes it apparent that practicing medicine requires a good person, not just a smart doctor. The moral responsibility of the physician in respect to their patients has been at the

forefront of care for centuries and is still referenced when discussing the relationship between providers and their patients.

Although Hippocrates was well renowned in his lifetime, it took centuries for his ideas to be documented as official guidelines to the practice. Research has shown that in the first 1,500 years of the oath's existence, there is little documentation of its use (Hulkower 41). However, despite the little proof of its official recitation or reference, the values found in the oath are still believed to have been heavily considered in all medical practices, both formal and informal, as the medical documents from that time frame reference the same ideals without Hippocrates' name attached (Hulkower 41). The oath was translated to English and formally introduced to North American practitioners in the late 18<sup>th</sup> century (Hulkower 43). At this time, physicians and other medical professionals held a high spot in society and were hardly questioned in their actions. Patients were not inclined to analyze their experience, as the trust hadn't been challenged to a great scale. The Hippocratic medical practice introduced the understanding of medicine as a patient-centered profession. In the handling of another's life and wellness, it was and continues to be unquestionably important to acknowledge the necessity of understanding the mutual humanity in both the doctor and their patients. The introduction of these ideals for all physicians to follow constructed a universal trust in those who carry a medical degree. To this day, medical schools incorporate some version of this oath as their medical students enter into their individual practice (Hulkower 42). Since the practice of medical care is difficult and requires many years of education, patients tend to trust physicians blindly with their treatment; this oath ensured physicians were being held to the highest standard in their patient encounters. Medicine had been transformed into a "tradition based upon sound scientific investigation combined with patient-centered care" but the actual ideals

surrounding patient-centered care have changed alongside shifts in societal ideology (Hulkower 43). It began as simply patient-centered with the obligation of physicians being “solely in terms of promoting the welfare of the patient, while remaining silent about patients’ rights” as individuals (Truog). The tectonic societal shifts that have been responses to little autonomy in the lives of individual people have been emphasized as against the authority of the government and institutions, there have also been great changes in the medical world as well (Truog). As patients remove their veil of compliance in other aspects of their life, the way they are treated in the clinic was placed under scrutiny as well.

### *A Necessary Shift*

It wasn’t until the 1940s that physicians’ actions were placed under much scrutiny as the veil that once laid upon the general public was majorly lifted. Upon the liberation of Jews from the concentration camps in 1945, there was much questioning about the Nazi doctors’ treatment of the prisoners (Roth 1). The actions of physicians in concentration camps were very clearly performed without any regard to the Hippocratic understanding of the profession. The actions were in “precise and absolute violation of the Hippocratic Oath” as they “mock and subvert the very ideal of the ethical physician, of the physician dedicated to the well-being of patients” (Roth 2). The events in the concentration camps were performed with consideration only to the beliefs of a singular party and as a demonstration of the power of medical professionals (Roth 2). The members of the camps suffered a complete loss of autonomy as they were handled as subjects for immoral actions. It was implicitly causing harm to patients, moving the central focus of the practice to personal gain and desire rather than patient care.

Following the events of the World War II, it became a requirement to take the oath and truly stand by it in the medical practice to ensure patient-centered practice with the goal of improving health no matter the background of the individual (Smith). The core purpose of the medical profession is to “abstain from harming or wronging any man” through the medical practice and the Nazi doctors did just the opposite (Hippocrates). It was the oath’s “appreciation for the value of life and the physician’s role in preserving it that prompted its rise into postwar medical consciousness” leading to a shift in the medical profession’s focus (Smith). The world understood more than ever the necessity of a binding document for physicians, and they acted upon it accordingly. Because of the atrocities performed, consideration for the patient and improvement of their general well-being in accordance with a general moral practice was once again the central focus of medical practice.

The World Medical Association understood the severity of the actions taken in the war, and the effect it would have on practicing physicians, and convened for a general assembly in 1948 to review the International Code of Medical Ethics (World Medical Association). The ideological backbone of the medical practice had been undermined during World War II, and in order for effective communication and care a new oath was necessary. At this conference a new, updated version of the oath was instituted for the medical professions. The ideas in the oath were outdated, giving the physician too much jurisdiction over the patient’s health and limiting patient autonomy, but its importance remained. The original form of the oath was lengthy, and with the new social norms it was no longer fit for physicians to take upon their entry to practice. The World Medical Association established the Declaration of Geneva, which is as follows:

As a member of the medical profession:

I solemnly pledge to dedicate my life to the service of humanity;  
The health and well-being of my patient will be my first consideration;  
I will respect the autonomy and dignity of my patient;  
I will maintain the utmost respect for human life;  
I will not permit considerations of age, disease or disability, creed, ethnic origin, gender, nationality, political affiliation, race, sexual orientation, social standing or any other factor to intervene between my duty and my patient;  
I will respect the secrets that are confided in me, even after the patient has died;  
I will practice my profession with conscience and dignity and in accordance with good medical practice;  
I will foster the honor and noble traditions of the medical profession;  
I will give to my teachers, colleagues, and students the respect and gratitude that is their due;  
I will share my medical knowledge for the benefit of the patient and the advancement of healthcare;  
I will attend to my own health, well-being, and abilities in order to provide care of the highest standard;  
I will not use my medical knowledge to violate human rights and civil liberties even under threat;  
I make these promises solemnly, freely, and upon my honor. (World Medical Association)

This oath allows for more autonomy on the part of both the patient and the physician while still maintaining an overarching ethical importance in practice that was introduced in Hippocrates' time. It emphasizes the humanity of the patient during treatment, and

reestablished authority in a physician's words. A close reading of the original version of the oath, or this revised version, harp upon the same big ideas; ensuring proper treatment with no harm, maintaining patient autonomy, and the importance of intellectual and physical treatment of the patient in a clinical setting (World Medical Association). However, with the language rooted strongly in the realm of physical health and effective communication instead of personal philosophy and religion, the new oath renewed the morals of medicine alongside the social climate. It brought back the emphasis on the patient in their own care and reminded the physicians that the administration of care must be done in conjunction with the people within the patients. The Declaration of Geneva emphasizes the humanity of patients regardless of appearance or personal values. Ultimately, the obedience to the responsibilities outlined in either version of the oath ensures the ethos of all practicing physicians as they practice medicine with respect to the person-centered care that the oaths establish.

There have been many changes in the medical practice in the near sixteen centuries since Hippocrates lived and wrote in Greece, and even more since the introduction of the Declaration in 1948. The Declaration of Geneva has been consistently revised to accurately reflect society, since its establishment in 1948. These changes were seen in 1968, 1983, 1994, 2005, 2006, and with the most recent version being released in 2017 (World Medical Association). The language reflects the ideas of society as the public gained clear consciousness, such as the implementation of less male gendered words as more females entered the physician's role and less jurisdiction over a female's body after the events of *Roe v. Wade*. These changes reflect the importance of having a medical practice that was not only patient-centered. Societal urbanization has also had major effects on the practice of medicine. Urbanization of cities increased the speed at

which knowledge could be spread, and the yearn for new knowledge began to overshadow the importance of patient-centered care (Orfanos). Not only this, but with the population sizes growing so rapidly the spread of disease was higher than it had ever been. With the spread of these diseases, medicine was a major issue of interest for the public leading the medical profession to be even more canonized in society (Orfanos). New problems outside of the internal medicine field were emerging, with communicable diseases of the skin such as leprosy spreading and taking lives. Public health and social problems were lowering the quality of life for patients, and instead of there being a push for preventive care, there seemed to be tunnel vision for curative care. Physicians and other researchers were focused on being the first to discover the cure of a disease rather than searching for a preventable cause. It became a game of notoriety rather than a profession of healing.

The term “preventive care” emerged in the late 1940s, around the same time as the changes brought with the Declaration of Geneva, eventually leading to the formation of the American College of Preventive Medicine in 1954 (American College of Preventive Medicine). This new idea of care again reinstated the empathy for patients alongside the professional aspect of medicine and the focus shifted to preventing development or worsening of chronic diseases to ensure patients were able to live their healthiest lives. As advancements are continuously being made in all professional fields, medicine is making rapid changes to the practice and distribution of patient care and information. While urbanization of societies has led to a change in the medical practice, a larger issue is the industrialization of medicine. This concept, not to be confused with the industrial revolution of the late 18<sup>th</sup> and early 19<sup>th</sup> century, emerged in the late 20<sup>th</sup> century as technology began to advance at a rapid rate. Modern usage of the word

industrialization refers to “a set of organizational principles” rather than being associated with factories and machines (Rees). The industrialization of medicine in turn led to the industrialization of its attitude toward patients as parts of a machine that must be fine-tuned to keep up with societal innovations.

### *The Importance of Positive Patient-Experience and Person-Centered Care*

The essence of patient-centered care that Hippocrates was urging for in his writings insisted upon a common understanding between the physician and the patient to improve the health and well-being after a consultation. The ethical responsibilities set forth by Hippocrates which physicians abide are the cornerstone to providing patient-centered and curative care. The major concern in the past was such that the care was intended to make the patient’s life easier, and in the process, the visit should leave the patient with a sense of satisfaction with their health and their experience in the clinic. Medicine will not succeed without the approval and participation of its patients, and whether physicians choose to acknowledge this fact will drastically change the response to the quality of care that will be administered.

In present medical vernacular, improvement to the patient experience is a central concern of healthcare system. Central to the success of care is the willingness of patients to visit the clinic and adhere to the recommended care. The Agency of Healthcare Research and Quality defines the patient experience “includes several aspects of health care delivery that patients value highly when they seek care, such as getting timely appointments, easy access to information, and good communication with health care providers” and argues that differs greatly from the idea of patient satisfaction. In order to assess patient experience, “one must find out from patients whether something that



should happen in a health care setting actually happened or how often it happened” while patient satisfaction is “about whether a patient’s experience about a health encounter were met” and focuses on correct diagnoses and treatment (Agency of Healthcare Research and Quality). It is arguable that all physicians should be able to ensure high levels of patient satisfaction because of their education and the necessity to move toward the improved health as the Declaration of Geneva and Hippocratic Oath state so clearly. Succeeding in patient satisfaction in healthcare is far simpler than the patient experience since the guidelines are clearly outlined. The patient experience is arbitrary and has the tendency to vary between individual patients. As more technology and innovation are introduced in the medical practice, more layers are added to the expectations of patients. New expectations from patients require new action from their health care providers to ensure proper diagnosis and care, but also proper provider-patient interaction and communication.

The positive outlook on the patient-experience has been challenged with the introduction of new technologies in medicine. Throughout many centuries, the focus remained on proper patient care and relations in order to provide quality holistic treatment for the benefit of the patient, not on individual successes for the physician. This can evidently be seen in the midwifery practice. Midwifery as a major medical practice, whether considered formal or informal, was one of many that was changed as medicine began to mold to the changing nature of society. The practice did vary between nationalities and cultural beliefs, but it was ultimately focused on the holistic care of females as they endure pregnancy. The ancient midwife practice was a superior example of patient-centered care. Midwifery is based on providing care for females throughout pregnancy and during childbirth with minimal technological intervention (American

Pregnancy Association). A full understanding of the female body and process of birth was at the forefront of the practice, with the midwives providing educational information and continuous one-on-one assistance making the care personal (American Pregnancy Association). Midwifery was heavily affected by the professionalization of medicine, as they were considered underqualified practitioners, and more women had a preference for hospitalized and medicated delivery rather than at home delivery as large hospitals became more prevalent and accessible (Teijlingen). A holistic practice that dates back to the early centuries of human civilization was crushed by the industrialization and professionalization of the medical practice, and eventually the midwife practice itself became a specialized nurse position in the late 1920s with the introduction of educational facilities for women interested (Teijlingen). Although hospital births had better statistical success, the process of childbirth was losing the human connection between the woman and her company during the hours of labor (Teijlingen). The cascade of intervention that came with increased technology to aid pregnancy turned the practice into a mechanical event rather than a personal one. These changes that can be seen in midwifery reflect the changes in medicine as a whole; better statistics, more technology, but not necessarily better care and experience in the eyes of the patients.

The movement away from holistic medical practice exhibits another misunderstanding in fully providing exemplary care. The idea of patient-centered care was essential in the early days of medicine, but as the practice continues to be societally molded, it is important to establish the difference between patient-centered versus person-centered care. When regarded merely as a patient, an individual visiting the physician is considered only in regard to their current health complication involved in a specific visit to the physician's office (Starfield). The importance of transitioning the medical practice

back to the original patient focus that could be seen in practices like midwifery is about making the patient feel like less of an object to be healed and more as a whole human to be understood. A person-centered approach to care is defined as comprehensive and accessible and coordinating care even when it is to be carried out over a long period of time or continued at a different facility for access to a specialist (Starfield). Ideally, a partnership between the physician and a patient is to be established through joint work and understanding in treatment. The patient should feel personal autonomy in their care, and while the physician maintains the highest level of ethos, the patient should be able to obtain a thorough understanding of their condition through conversation with their healthcare provider; these are the core ideals of medicine that are outlined in the moral guidelines of the practice. The professionalization of medicine and movement away from practices of holistic care has created a wall between the patient and their physician. Increasing the emphasis on person-centered care will in turn improve the patient experience, as the autonomy and dignity of the patient will once again be moved to the forefront of medical treatment.

## CHAPTER THREE

### Diagnose the Present: Technology and the Dehumanization of Medical Care

The experience in ancient medicine was less challenged by the intervention of rapid technological advancement, and physicians were more easily able to engage in direct communication with patients throughout the entirety of care as patients were not changing providers or requesting active involvement in their care. The patients were being treated in a holistic manner, and the physician was heavily bound by the morals that were taken under the sacred oaths. However, the person within the patient consistently remained the focal point of patient care. Understanding the practice and the introduction of the idea of person-centered care is the stepping stone to understanding medical practice and the challenges it faces. In its societally directed shifts, medicine has lost an essential aspect to proper care; empathy and communication with patients as individual beings, rather than names on charts or diseases to be treated. The physician-patient relationship, essential to proper and successful practice, has been broken with the introduction of health information technology due to rapid and improper integration into the medical world (Entwistle, Toussaint). Declaring the past, the formerly strict ancient Hippocratic practice, and understanding the moral implications that must be considered with each motion as a physician allows for a better diagnosis of the issues that exist in the present practice. Ultimately, this makes existing and upcoming medical professionals more able to foretell the future of medicine and its advancements in light of the responsibilities of physicians. Establishing a formal understanding of the changes that have led to the practice of medicine today allows for a proper approach to the forward

momentum of the profession. The process of diagnosing the present situation in medicine is reliant upon a review of the technology which guides the profession. The health information technologies and social platforms that have been introduced to medicine in the past two decades are the main factors in the rapid change of medicine and have contributed to the quality chasm of healthcare.

### *Professionalization and Specialization of Medicine*

The emergence of a professional consciousness within medicine changed the practice dramatically. In its early years, there was no controlling body for the profession outside of the Hippocratic Oath, and the ethical code was the major governing doctrine for physicians to follow. As time went by, it became evident that new rules and regulations were necessary for proper practice. In the early 1800s, there was overcrowding of medical practitioners, some of which were argued to be underqualified for the job (Waddington 688). There were movements to establish a guiding force in a lengthy campaign for the Medical Act of 1858 (Waddington 688). This act had a great effect on the practice, specifically by requiring a council to “regulate the profession on behalf of the state, to oversee medical education, and to maintain a register of qualified practitioners” to further ensure the success of medicine. Standards of proper professional conduct were set in place as more specializations arose and medical education was shifted from majorly apprenticeship positions to established systems of training under thorough regulation (Waddington 688). Ultimately, the push for change in the early and late nineteenth centuries fostered a “sense of professional community and asserted the primacy of professional rather than lay values” and leading to the first separation of medical practitioners from their societal counterparts, patients (Waddington 689). These

changes led to the specialized and private practice of medicine that eventually challenged the person-centered care that had been valued for centuries as information became less organized and was required to be spread to multiple practitioners.

It is undeniable that with the increasing levels of specialization in the late 20<sup>th</sup> and early 21<sup>st</sup> century there was a necessity for further organization of patient information. Primary care, the starting point for all patient care and the common understanding of a practicing physician, is defined by the American Academy of Family Physicians as “a specialist in Family Medicine, Internal Medicine or Pediatrics who provides definitive care to the undifferentiated patient at the point of first contact” and takes continuative responsibility for the patient’s comprehensive care. Additionally, the primary care physician is an advocate “for the patient in coordinating the use of the entire health care system to benefit the patient” (American Academy of Family Physicians). Primary care physicians are responsible for extrapolating information from patients to eventually arrive at a diagnosis. In the early days of medicine, the entire health care system was far less complex and primary care physicians were the major contributors to health care with little intervention from other providers (Waddington 688). Prior to intense specialization and compartmentalization of medical care, patients could make a single visit to their primary care provider and receive adequate care outside of extreme cases which required additional attention from another physician. However, the introduction of various healthcare technologies caused splits from primary care. The ability of technologies to diagnose and treat certain areas and systems of the body required new education and practice; ultimately, this was a factor that led to the increased specialization of medicine. The American Board of Medical Specialties presently recognizes 24 medical specialties, most with multiple subspecialties included. In the thirty years that passed between 1940

and 1970, the percentage of primary care physicians decreased from 75% to only 25% as the increased specialization of medicine moved forward and specialist-driven care became the normal practice (Jauhar). As more medical specialties emerged, primary physicians began referring their patients to other providers for care, causing multiple inconvenient visits for their patients and added stress on hospital administration to properly transfer patient records to another provider. This compartmentalization and specialization of medical treatments was a leading cause to the increased impersonal nature of medicine and disorganization of medical practice (Kohn 4). As medicine became more specialized, it became less centered on the patient and more centered on improving technology and maximizing income.

### *Technology is Not Easily Incorporated into Medicine*

Innovations in medicine have been introduced into the practice for centuries as science constantly moves forward and improves upon itself. The Hippocratic Corpus which was explored in the previous chapter was a major innovation to medicine, as it provided a holistic understanding of the body and its systems. It allowed for a practice of medicine that could be universally practiced based on empirical evidence. The physical knowledge of the body that was introduced by Hippocrates was the one of the first major changes to medical practice, and it was one of the leading innovations to advocate for person-centered care, as each *physis* of patients would be different and should be treated accordingly. Continuing through the centuries, the discovery of new technologies and machines, such as the stethoscope, X-Ray and ultrasounds, and their implementation in healthcare made enormous leaps to improving patient health. These major technologies, though complex at the time of invention, are now seen as simple in comparison to the

advancements of the 20<sup>th</sup> century and are essential instruments used in routine medical care. Prior to 1895 and the discovery of the X-Ray, the treatment of broken bones and tumors was determined by physical examination of the outer body based on the discussions found in ancient Hippocratic writings. Prior to the introduction of X-Rays in the medical practice, it was far more likely that the bone could be incorrectly diagnosed or treated. Improper diagnosis and treatment of a fractured bone caused an increase in unnecessary treatments and complications in the patients' lives thereafter. The introduction of the X-Ray made it possible to distribute proper diagnosis and care on an ongoing basis. Marie Curie's introduction of the X-Ray on the battlefields in World War I saved soldiers from amputation and maltreatment (Jorgensen). However, it required implementation of continued education for physicians and patients alike. X-Rays were not fully understood and there were "unintended consequences for early adopters" such as radiation poisoning and increased cancer risk (Howell). Marie Curie contracted aplastic anemia from her repeated exposure to radiation and passed away (Jorgensen). Many patients experienced complications due to unnecessarily high radium exposure because X-Rays were integrated into medicine so quickly, and on the battlefields with very high stakes (Jorgensen). These complications were unintended but could only be discovered with an increased usage within the clinic. Upon their discovery, changes were made to ensure there would be fewer side effects to the patients and the practitioner.

Similar to bone health, women's health and pregnancy were often a guessing game before the introduction of the medical ultrasound. While midwifery had a good understanding of the required holistic care for females during pregnancies, there was no manner to investigate the womb without invasive procedures if major complications were to arise. Ultrasound imagery is noninvasive and provides a physical image for a woman



to understand their body, pregnant or not (de Bakker). This not only allowed physicians to provide more information for the female, but it improved maternal health and decreased infant mortality rate (de Bakker). Though it did have physical benefits, it was one of the first technologies that created a barrier between physicians and patients, and during a pregnancy this is an essential relationship to ensure a positive patient experience. Ultrasounds led to the introduction of sonogram technicians, resulting in “a lack of communication between the doctor and patient and abandonment of effective traditional diagnostic procedures” when the women attended their appointments (de Bakker). Ultrasounds also introduced an ethical debate, as the diagnosis of birth defects became possible or even the determination of gender of the child prior to birth led to an increase in abortions (de Bakker). This led to an increased feeling of ownerships for women and their bodies, but created another level of separation between physicians and their patients should their beliefs differ. These debates are beyond the scope of this research, but are essential to mention in order to understand the depth of the relationship formed in the clinical setting.

The two technologies described are commonplace to healthcare today; there is no question of their usefulness and the safety of their involvement in medical practice is of very little concern. These complications were unforeseen with the introduction of these technologies, and eventually they were combatted. Great lengths were eventually taken to ensure the proper implementation of these technologies to ensure their effectiveness and proper use in accordance with the ethical backbone of medicine, and because of this they are now basic practices in the field. The technologies being introduced to medicine in recent decades are more arbitrary and less specified to a single area of medicine. X-Rays were immediately essential to orthopedics and emergency medicine and ultrasounds were

imperative first in gynecology and eventually other areas of curative medicine (Jorgensen, de Bakker). Additionally, the advancements today are not specific to medicine; more often than not, they are innovations for the betterment of society as whole which is then implemented individually in different professional settings. However, as can be seen through these examples, the introduction of medical technology has dramatically changed the practice, but it is imperative to note “the growth of any new technology follows a common pattern characterized by both constructive and destructive applications” (de Bakker). Without proper attention and investigation of the technology prior to its widespread introduction to the practice, there will be inevitable side effects that will require further investigation after their introduction. Proper adjustment upon the introduction of a new medical technology ensures the proper practice of medicine in line with the ethical code which physicians are asked to follow; and this overall creates a medical practice that is satisfactory for all participants.

### *Health Information Technologies: 21<sup>st</sup> Century Medical Practice*

Major innovations of the late 20<sup>th</sup> and 21<sup>st</sup> centuries are intangible computer programs that organize the data that humanity has obtained in any area of study. With the enormous amount of knowledge that is available to individuals with the click of a button, there existed a need for innovations to ensure the appropriate organization and presentation of the material. Additionally, the professionalization and specialization of medicine led to an increased need for organization of patient information between physicians. Information technology is the central innovation of the past few decades in all professional areas as it has the ability to encase a large amount of data into a central location. Information technology quickly became a central topic of conversation, as it had

the ability to connect and educate people in a rapid and intensive manner. The United States IT Department states the goals of information technologies as follows:

“Technological advances in today’s digital IT environment offer an almost borderless arena for collaboration, knowledge management, data analysis, and innovation. Capabilities are developing at an exponential rate to capture, manage, analyze, and retrieve vast amounts of information in order to build relationships, engage with broader constituencies, foster openness, and achieve transparency.”

As is stated in the definition, these are collaborative technologies that build relationships among professions. Upon their introduction to the professional vocabulary, the medical world immersed itself in the narrative. Health information technologies are the major healthcare innovation of the 21<sup>st</sup> century, and these span across all specialties and areas of healthcare. Health information technologies, most commonly referred to as HIT, are the collaborative “application of information technology to the collection, storage, processing, retrieval and communication of information relevant to patient care within a health care system” making the organization and practice of care safer and more effective for the provider and the patient (“Health”).

The goal of HIT was to make the practice safer and more efficient, but the initial usage of the technology did almost the opposite. In the book *To Err is Human: Building a Safer Health System* written by Linda Kohn in 1999, the dangers of the disorganization of patient health records were explored. Kohn states “decentralized and fragmented nature of the health care delivery system” was a contributor to “unsafe conditions for patients,” in their journey to receive care (3). The miscoordination and disorganization of the health care specialties did not allow physicians access to complete information, which led to instances of unsafe care and a loss of accountability on the role of the physicians (Kohn

3). As patients were recommended and passed to other specialists, key elements of their health and history were lost, and diagnoses had a higher chance of being incorrect. Additionally, the cost for medical care spiked with the introduction of third-party insurance companies decreasing the accessibility of care for patients in lower socioeconomic groups (Kohn 5). Overall, the healthcare system became increasingly inaccessible and overwhelmingly expensive which created disparities in care. The Institute of Medicine further described this problem as medicine operating as silos, as separate entities rather than a larger community to increase well-being of patients. These issues arising from the increasing complexity of health care were violating the major ethical responsibilities of the physician (Kohn 4). Unaffordable insurance companies began to dictate the ability for patients to even obtain proper care, with the price tag creating disparities in the populations based on social class, gender, and race. The introduction of more technology into the medical realm changed the priorities of the profession back to a focus on discovery, advancement, and economic success rather than quality care, not necessarily keeping its focus in line with the expectations set into motion by the Hippocratic Oath or Declaration of Geneva. Major aspects of these ethically binding documents, such as the utmost concern for the “health and well-being” of the patient and not permitting “considerations of age, disease or disability, creed, ethnic origin, gender, nationality, political affiliation, race, sexual orientation, social standing” to affect care were not present in practice (World Medical Association). Following the publication of Kohn’s text, the Institute of Medicine convened in 2001 to discuss and publish a plan for the sweeping reconstruction of healthcare with major consideration to the integration of information technology. The person-centered model of care, the pillar to medical care, was lost as the patient was passed from specialist to specialist without

proper consideration of medical history and diagnosis. Additionally, the physicians were more concerned with their own successes in the changing medical fields rather than their success alongside patients.

The Institute of Medicine established the basic expectations for using information technology in healthcare in 2001. Introduction of new technologies and the specialization of care created a disparity between the physician and their patients due to an inability for existing physicians and other healthcare workers to adapt effectively; however, the Institute of Medicine was the first to suggest information technology had the ability to increase communication and understanding for both parties. The STEEEP method introduced in document “Crossing the Quality Chasm: A New Health System for the 21<sup>st</sup> Century” gives a six-part improvement plan in line with the modern Declaration of Geneva and its ancient Hippocratic Oath counterpart. The method aims to build healthcare that is STEEEP; safe, timely, efficient, equitable, effective, and patient-centered (“Crossing”). The belief in the healthcare world was that these pillars of improvement would lead to a better, safer patient experience which would benefit the physician and patient through the implementation of HIT. In its nature, HIT possesses “enormous potential for transforming the health care delivery system” as it leads to the “automation of patient-specific clinical information” eliminating the illegible and disorganized paper records that made it close to impossible to provide ongoing patient support (“Crossing”). It was believed that patients would have their needs “met more quickly and at a lower cost if they could communicate with health professionals through e-mail” rather than visiting the hospital for a physical appointment (“Crossing”). The major concern for applying information technology into the healthcare system was the “sizable capital investments and multiyear commitments to building system” that would

be needed to effectively use the information technology (“Crossing”). It would require a new infrastructure dedicated to efficient healthcare delivery with an emphasis on public accountability in their own care, once again making medicine a collaborative practice alongside patients rather than an authoritative one over the patients (“Crossing”). Though there was a plan introduced to ensure proper use of HIT to ensure the improvement of medical care, there still existed chasms in the quality of care that was delivered to patients as the process was not collaborative between the patient and physician.

The STEEEP method was successful in many ways as it worked as a guide for medical practice to implement HIT in order to ensure patient safety. However, the problem of an over-crowded and over-specialized health care system did not disappear, and the barrier that had appeared between physician and their patient continued to decrease the positive patient experience and moved further a from the person-centered care. The relationship between physicians and their patients has been a cornerstone of medicine since Hippocrates’ time, and it is essential in providing person-centered care in the clinic. The insertion of information technology into medical practice and conversation has created a plethora of questions and challenges for the profession to consider. The STEEEP method suggested by the Institute of Medicine was successful in some ways, but it did not solve the issues that arose surrounding the physician-patient relationship, and technology continued to have a negative effect on person-centered care as it became more commonplace in all aspects of medicine. Implementation and use of electronic health records did improve the safety, timeliness, efficiency, and effectiveness of patient care, but it did create barriers in medicine that negatively effects the patient-physician relationship, transparency of care, autonomy of the patient, and ultimately dehumanized the practice of medicine. Though the medical records could transfer much easier, there

still was an absence of patient autonomy and education in the system. Information was orderly, but communication was lacking. The majority of medicine had been transformed into an industrialized machine.

The unprecedented rate at which medical sciences and technologies were growing in the late 1990s and early 2000s was increasing the complexity of medical practice and care at an equally rapid rate (“Crossing”). In the midst of the major industrialization of medicine, the United States health care system’s quality began to fall. The profession was “faced with such rapid changes” that the nation’s health care delivery system “fell far short in its ability to translate knowledge into practice and apply new technology safely and appropriately” (“Crossing”). There existed a chasm, as the Institute of Medicine referred to it, between what health care was and what it should have been. The quality of medical care began to fall as the spread of information via the use of information technologies overtook the medical world. The additional technological levels being added to the medical care system created a poorly organized system leading to a decrease in patient satisfaction and experience (“Crossing”). In efforts to move medicine into the right direction and to ensure the safety of patients in their care, the Institute of Medicine established a new method of care delivery.

Many changes that have negatively affected the understanding of patient-centered care occurred because there was not adequate research or consideration to the effects the new technology would have on the medical practice. Rapid introduction of the technology left physicians unsure on how to interact with the new ideals while still upholding the expected behaviors they had learned in their years in medical school (“Crossing”). The chasm that is continuously being investigated and mended in the health care delivery system today does not allow for consistent delivery of proper medical care

to all patients because there is a wall between the two participants due to improper interaction (“Crossing”). There are a number of factors that have created the chasm, such as medical science advancing at such a rapid rate and the growing complexity of medical records and organization making it difficult to manage the masses of patients as a practicing physician (“Crossing”). The system is unable to consistently deliver due to misunderstandings of expectations and inequitable means of receiving care.

### *Health Information Technologies and the Dehumanization of Medicine*

The introduction of the internet and health information online has changed the once passive patient into an active participant in their health care. Patients have access to information with a simple search, and research shows that about 53% of Americans utilize the internet to find health information after visiting a physician for medical advice (McMullan). Patients leave the clinic feeling dissatisfied with their diagnosis, perhaps due to the inadequate amount of time with their physicians to fully assess the problem, but the internet allows them to take some control of their care as they move forward (McMullan). The ability to conduct a search on their own is an autonomous act that gives them a sense of power in their healthcare journey. On the surface, this advancement of shared knowledge had potential to increase communication among physicians and their patients to personalize care. Unfortunately, physicians still struggle to be willing to discuss the issues with their patients as knowledgeable sources as they feel their health authority challenged (McMullan). The patients are not thought of as reliable or effective sources of information. While this can be a fair argument, as often times the information they may be acquiring can be false or skewed if it is from an unreliable source; but, as is in line with the physician’s oath, knowledge is meant to be spread in order to provide the



most efficient care for an individual and a patient's autonomy in care is to be of high importance in administration of treatment. In his publication "Supporting Communication in Health Care," P.J. Toussaint states "if information is the lifeblood of healthcare, then communication is the heart that pumps it" as he argues that without proper communication, not only will the physician-patient relationship suffer, but the overall healthcare system as well. With the sorting of information and the new technology able to deal with the transfer and recording of patient status and needs, the need for proper engagement and communication for safe and proper care is the new emphasis. In this time, it seems communication would be the simplest piece of the puzzle given the many platforms to which everyone has access.

This lack of communication and regard to the social advances which have inevitable consequences on the practice has contributed to the unfortunate dehumanization of the medical practice. If patients are obtaining faulty information from the sites they visit, it is imperative for physicians to acknowledge this fact and provide guidance for the patients. Instead, patients are consistently dehumanized, and treatment is increasingly mechanical. Physicians unwilling to communicate with their patients are no longer able to "foster the honor and noble traditions of the medical profession" as they are ignoring a critical factor of medicine (World Medical Association). The humanity that was so admired by Hippocrates and carefully considered in the writing of the Declaration of Geneva has been lost in the midst of technological advances. The person-centered and holistic care that was essential to the practice has been forgotten as computer screens and patient portals have overtaken the medical world. Though important to acknowledge the issues with the technological advances in medicine, there are many positive aspects with the proper implementation of these materials. It is important to remember that the goal of

information technologies is to create collaborative platforms for the building of relationships, foster openness, and achieve transparency according to the United State IT department. This cannot be done without proper communication through the respectful usage and understanding of technology in medicine. The loss of interpersonal emphasis in medicine caused the core of the practice to be forgotten; the new focus on effective communication, particularly through the use of electronic health records, has the ability to positively transform medicine, so long as the core ideologies found in its sacred oaths are not forgotten. Medicine in the present is still overcoming obstacles, but there are many new advancements that accentuate the focus on person-centered care once again and have the ability to return medicine to a humanized practice.

## CHAPTER FOUR

### Foretell the Future: Advancements in Technology to Improve Person-Centered Care

Proper implementation of technological advances in medicine has the ability to transform it once again into the sacred holistic and person-centered care that was pinnacle to the profession in ancient times. It is fair for physicians to be frustrated with the introduction of new technology; it is expensive to install and often requires more time for training (“Crossing”). However, there is no escaping technology; humanity is attached to the internet, computers and handheld devices in all areas of life, and trying to ignore the innovations will only cause medicine to fall further away from the desired practice and the patient-experience will continue to suffer. Foretelling the future of medicine requires a new insight into how the collaboration of electronic medical records and health information on the internet can create a socially relevant platforms for patients and physicians to utilize. Though it seems counterintuitive to introduce more machines and mechanization to medicine, the practice can be rehumanized through these advancements. With the adoption of new and innovative mediums to portray information or enhance communication, the message of healing and compassion that is central to the medical profession can be rediscovered in a light that will improve the patient experience. In its essence, medical care is a relationship that must “maintain the utmost respect for human life” in its action (World Medical Association). To maintain the utmost respect for human life requires compromise and empathy for their clients, and this is something that technology can actually foster in the future.

The nonfunctional dehumanization of medicine that was explored in the previous chapter is the major area that physicians, current or potential medical students, and other bodies in the health field should concern themselves with combatting. Deindividuation of patients, empathy reduction, and mistrust in patients are unacceptable actions by physicians (Haque). This issue largely comes from the introduction of technology causing medical professional to feel as though their authority is being undermined (Quirós). The reason a moral oath was needed for the profession was to ensure the physician were always aware of their responsibilities as humans treating humans, not professionals treating machines. The subsequent dehumanization of the patient in order to maintain that authority as health information becomes more accessible and patient autonomy increases is an inherent misconduct in regard to the physician's oath, regardless of the version referenced (Haque). The re-humanization of medicine alongside the use of technology is the major movement for medicine moving forward. It is imperative to acknowledge that the destruction of social devices will not enhance medical services, but rather will continue to destroy the physician-patient relationship that is central to person-centered care and patient autonomy.

While social media and public health campaigns have taken center stage in issues concerning the sharing of information, these interactions have changed in the medical world as well. These, too, are information technologies designed to store and show information about a specific set of data, the individual. Not only has the system for a patient's records become difficult to master before the introduction of EHRs, but outside of the clinic medical knowledge is available for all to engage with a simple click. Public health has become a topic within social media, spreading awareness for diseases or spreading knowledge of an issue at a certain moment in time. This in turn has brought to

light a new opportunity for physicians to foster the relationship with their patients. They are able to engage in the media as well in order to understand the experience of the patients and their conditions outside of the clinic. These new relationships are factors of relational accounts of autonomy, focused on understanding personal autonomy as located within the interpersonal relationships and social environments (Entwistle). The autonomy one feels in a situation is created by a combination of the social situation and the people involved (Entwistle). When in the hospital setting in light of the information which can be accessed by the patient on their own, whether that be about their illness or their records, it is imperative for the physician to acknowledge the patient as capable in decision-making. This is one of the most obvious and pertinent shifts from Hippocratic medicine to medicine practiced today; because of the increased access to information online, physicians are required to engage with more patients and providers outside of the typical visit rather than simply their clinic to ensure their patients are receiving proper, humane care.

It is important to understand that in the current state of medicine, a return to holistic care does not necessarily require a return to an ancient spiritual practice or even to a return to midwifery in childbirth. Instead, holistic care in the present day should be understood as once again adopting a style of care that pertains to the individual patient as a fully functional member of society. In so being, this means the patient is engaging in the conversations that can be initiated through online searches and a shift to active participants in their care. The re-humanization of medicine back to the Hippocratic ideals in the future will be a process centered on physicians adapting to the social tools of technology while also interacting with the improvements it brings to care. Societal shifts have been the governing factor of a physician's interactions with patients for centuries, as

can be seen with the changing oath amidst World War II to the Declaration of Geneva and in subsequent updates with other humanitarian movements. As medicine moves forward and the future problems are conquered, it is imperative to utilize the social technological devices that have emerged in recent decades to improve the intelligent use of the information they provide while simultaneously bringing the focus back to the person within the patient and their medical records (Quirós). All in all, the lack of communication between physicians and their patients and coworkers is what has allowed technology to invade the medical sphere so intensely. Medicine is inherently human; the contents of the oaths and their importance demonstrate this. With the loss of human interaction comes a loss of the beauty of medicine and science.

### *Epic Systems: A Case Study*

Medical software companies are working endlessly to ensure the proper implementation of technology in the clinical setting to ensure satisfactory patient care. For example, Robin Healthcare has created a device which records the patient appointment to be transcribed by scribes later on, allowing the physician more face time with the patient and less necessity to create patient notes while in the room (Robin). The use of this device causes less physician frustration in charting while also facilitating a more personal experience in the exam room with more conversation and less tapping of the keyboard. Oschner Health Systems empowers patients by distributing basic medical tools such as blood pressure cuffs and activity monitors that can link with a smart phone or computer to chart their own information. The information is then transferred to their attending healthcare team, and the care is then facilitated to best fit the needs of the patient under accurate circumstances. Oschner has even created OBars, similar to Apple

genius bars, where patients can go use interactive medical technology to help manage their own health outside the clinic (Oschner Health System). These advancements have led to patients interacting with their own accurate data in order to better understand the condition they are in. Additionally, it provides a new opportunity for patients to feel autonomous in their healthcare.

These companies have made great leaps in improving person-centeredness in medical care, however, using Epic Systems located in Verona, Wisconsin, as a case study much can be seen in the stark improvement in the cohesive nature of technology in medicine to bring the practice back to person-centered and exemplary care. In researching the name itself, their mission to provide efficient and longstanding patient care with an emphasis on the person behind the hospital guest is clearly shown. At Epic, it is encouraged to regard patient care as a story, a recounting of events that may be both joyful and sad, that must be considered when providing continuous care for a patient. In order to provide this care, the entirety of the story must be understood, the entirety of the patient must be considered, and Epic provides software to do just that. Epic Systems has developed immersive patient portals which are now used around the nation, holding the records of over 250 million patients (Epic). Their systems for electronic health records are what put them into the public eye, but since then the company has moved forward to provide applications that foster the physician-patient relationship and enhance the patient experience. The issues of patient autonomy, possibility of false information through patient internet searches, physician frustration, and overall dehumanization of medicine that accompanied the introduction of electronic medical records are at the forefront of their mission to create a pleasant story of care. The applications in progress aim to combat the problems at hand and provides more benefits than downfall for patients and

physicians. These ideas are molded by the social expectations which should be considered when introducing any new idea to an existing operation. Overall, Epic's efforts to create cohesive and simplistic programs to enhance quality of care by embracing the information technologies that have become commonplace have the ability to improve the patient experience and rehumanize medicine with appropriate technological intervention.

A personal research visit to Epic Systems allowed me to explore the ways that software developers are creating technology which is centrally focused on the patient experience. I was able to follow Taylor Seale, the team leader of patient experience team and their app in development titled MyChart Care Companion. Epic Systems, one of many health software companies, is based in Verona, Wisconsin and is one of the forerunners in improving the patient experience with the proper implementation of technology. I was able to inquire about the different ways that technology can benefit the medical practice, and the major response was the ability to provide patients with a sense of control in their care as they work alongside a care team made up of medical professional to combat a temporary problem or a chronic illness. The software creates a collaborative experience between the patient and the physician, as it can be used on a computer or cell phone in the hospital setting or in their own homes (Epic). Their technology is focused on creating an experience that is fast, scalable, open, and innovative to ensure patients and physicians alike are able to use it without creating unnecessary qualms or disconnects between the patient and their provider. These technologies are focused on creating a pleasant patient experience and have enhanced the feeling of autonomy the patient feels in their care through including reliable continuing education, ability to schedule their own visits through their MyChart portal and making



their information and participation with their care an interactive experience with their physician and other care providers (Epic). Modern medical software requires the collaboration of healthcare professionals, business professionals, and software developers to ensure proper use of the medical record. E-patient portals have been the fallback for decades, but the new innovations in interactive healthcare has created a new platform that personalizes medical treatment and transforms the practice back to person-centered and modern holistic care.

### *Improved Patient Education*

The ability of patients to access health information easily has added another layer to the patient and their experience in the clinic. The knowledge they bring with them to a visit or acquire after a visit is just as important to acknowledge and understand as the issue they present for treatment. With patient reference to the internet being so apparent, physicians have the opportunity to increase education and the spread of knowledge by adopting technology as a social platform between themselves and their patients. More importantly, it is important for physicians and software developers to understand the possibility of the information causing improper and unnecessary care that may harm the patient in the future. The introduction of the Internet has allowed for a new era of research. Any and all information can be published online, and sometimes its credibility is not considered. The possibility of faulty information in patient education is one of the forefront problems of the introduction of technology and causes great amounts of physician frustration. The introduction of the Internet has changed the way health information is transmitted. The information we find online is often created, targeted, and edited to provide the most pleasing presentation for the audience. While social media has

taken the center stage in issues concerning the sharing of information, whether that be private or public, these interactions have changed in the medical world as well. Not only had the system for a patient's records become difficult to master before the introduction of EHRs, but outside of the clinic medical knowledge is available for all to engage with a simple click. Public health has become a topic within social media, spreading awareness for diseases or spreading knowledge of an issue at a certain moment in time. This in turn has brought to light a new opportunity for physicians to foster the relationship with their patients. They are able to engage in the media as well in order to understand the experience of the patients and their conditions outside of the clinic. In an article written for the Journal of the American College of Cardiology, David Snipelisky argues there are four major uses of social media: personal, networking, education, and public health. He argues "social media will continue to become an important part of medicine, so it is important for physicians to understand and utilize its opportunities" in their everyday practice (Snipelisky 2460). This is one of the most obvious and pertinent shifts from Hippocratic medicine to medicine practiced today; because of the increased specialization and professionalization of medicine, physicians are required to engage with more patients and providers rather than simply their own clinical practice or specialty to be successful in their profession.

A solution to the ineffective communication between patients and physicians is being addressed in the form of applications that integrate patient records with care plans. Epic Systems has done remarkable work to improve the patient experience both inside and outside of the clinic. Their most recent advancement, MyChart, is an ideal blend of patient education and care made to be act similar to a social media platform to encourage patient care and education between clinical visits. Epic's MyChart Care Companion

follows the same general structure as any other social media platform. The app allows patients to create a personal account where they have access to their electronic health records and can see any information regarding their medications or daily routine. Additionally, the app allows approved members to have access to the account, as per HIPPA regulations, which provides another member to the care team. The idea of person-centered care to explain and predict individual care plans based on context, health history, strengths, weaknesses, and their personal life is made more possible through the ability of the patient to display themselves for their care team. These features ensure the patient has a sense of connection with their care team, which is a major step forward in rehumanizing medicine as a practice. When a physician, nurse, or care coordinator accesses a patient's profile they are presented with all the information the patient feels is important, and this information may not have been addressed in a rushed clinic visit. Epic is also working in conjunction with Mayo Clinic to provide patient education. Reliable information for Mayo Clinic, one of the leading sources for information surrounding patient needs, ensures that patients receive accurate and ongoing information about their illness (Mayo Clinic). This decreases the probability of patients obtaining and adhering to faulty information, which in turn will decrease physician frustration.

### *Improved Patient Autonomy and Transparency*

It is important to once again define patient autonomy in order to understand its importance in the proper use of technological innovations. Definitions of patient autonomy in healthcare state “that professionals have a duty to treat the patient according to the patient's desires, within the bounds of accepted treatment, and to protect the patient's confidentiality” (ADA). With the arrival of the active patient, the desire for

significant self-management in care has become a major aspect of creating a pleasurable experience for the patient. The ability for patients to access the electronic health records has itself increased the amount of control a patient has over their care. Rather than the information from the clinic being kept in a manila folder and locked away in the cabinet, patients are able to interact with the medical records to assess the symptoms they are having and the recommendations that physicians will make. This form of autonomy was less of a barrier for physicians to hurdle. The increasing independence seen in patients causes frustration in physicians as they feel they should remain the authority figure in care; this is how medicine was practiced in the ancient times. However, as holistic care involving technology continues to evolve, the attitude toward patient autonomy must shift with it. There is a balance to be found between supporting actions of autonomy and recognizing them as such (Entwistle). The relational approach to patient autonomy allows this balance to be found more rapidly (Entwistle). By acknowledging the societal setting and therefore reasoning for the shift in patient desire for more autonomy, physicians will be better able to serve their patients as human beings with personal desires.

Upcoming medical technology gives patients more autonomy than has been granted in the past, and it does so with consideration to physicians as well. The MyChart Care Companion application allows patients to take control of their treatment by logging daily their symptoms, medication, and sometimes even their vitals if necessary. Not only is technology around electronic records expanding to ensure autonomy and person-centered healthcare, but there are medical tools that patients can purchase to aid them in obtaining their own data through companies like Oschner, mentioned previously. These applications and tools being readily available for patients is especially helpful for chronic

diseases such as diabetes or hypertension, as it has the ability to educate the patients firsthand without a need for a lengthy and unsatisfying visit to the doctor's office.

Technologies should not take the place of the proper clinical visit; rather they should supplement the routine visits. The access to technology has the ability to create a transparency between patients and physicians that will foster effective communication in the clinic. The accessibility of their medical records and the ability to have continuing education through the applications that hospitals and physicians interact with ensure transparency in care. Rather than a computer screen coming between the patient and the physician as a wall, the computer can be used as a window. The major movement in this is the Open Notes Initiative. The mission of this initiative is to provide “ready access to notes can empower patients, families, and caregivers to feel more in control of their healthcare decisions and improve the quality and safety of care” and in turn improve the patient experience and their relationship with their own healthcare (Open Notes Initiative). The focus on patient-centered and person-centered care requires an understanding of shared decision making and allowing transparent access to medical charts and data from visits has shown a better outcome to decision making and adherence to the care plan (Delbanco). There was backlash to the movement at first as physicians were worried it would increase their workload between appointments and sever the relationships they have with patients rather than foster it. Research showed that the introduction and adoption of the Open Notes Initiative caused only a very modest increase in workload for physicians as notes were just made clearer so patient could more easily understand, and patients reported feeling more satisfied with their care as they felt they had more control and understanding of their own life (Delbanco). Patient were less confused about their care and adherence to their recommended care plans increased with

the transparent communication with their physicians (Fossa). It was also found that although not all patients chose to open the notes when they were made available to them, but simply having access made them feel more confident in the treatment (Delbanco). The Open Notes Initiative in conjunction with the increased ability to access medical records through applications which feel familiar improve the patient experience without major changes to the practice itself.

The knowledge that the notes will be shared with the patients also requires the physician to be mindful of their notes and ensure they are always adhering to the responsibility that they “will not permit considerations of age, disease or disability, creed, ethnic origin, gender, nationality, political affiliation, race, sexual orientation, social standing or any other factor to intervene” between the administration of care (World Medical Association). Because the notes were available for patients to read, the possibility of discrimination or inadequate care was greatly decreased. Physicians are required to provide clear and appropriate information to their patients which helps avoid threats of discriminatory malpractice (Delbanco). The charts are no longer entries into the computer that will not be accessed until the next visit; they have become collaborative locations for information with a person on both sides. Physicians must respect the person within their patient and create a collection of records that is coherent and helpful, and the patient feels respected and powerful in their relationship with their physician, which in turn will improve the quality and safety of medical care. The Open Notes initiative is now used with over 33 million patients worldwide and software companies are integrating the access to notes into their collaborative applications with electronic health records to encourage full autonomy, understanding, and person-centered treatment for patients. It is

overcoming the barriers that have been established through the introduction of these information technologies in more ways than one.

### *The Importance of Interdisciplinary Teamwork in Medicine*

In modern society, each person is a member of a network. The idea of being completely individual in action is near impossible with the various social platforms and communication techniques for anyone to be truly on their own. Though one may feel they are on their own in their personal health journey, they are automatically immersed in the social network that their family and surrounding community engages with. With the increasing specialization of medicine, the requirement for interdisciplinary understanding of care in a sense similar to a modern holistic understanding has been made essential. Medicine has never been an individual affair, but with the intervention of computer screens and subsequently decreased face time in the clinic, patients have reported feeling dissatisfied with their care due to a sense of isolation from their care team. Additionally, patients are being sent to multiple appointments before actually being treated, and this contributes to the dehumanization of the patient through their medical care. Patients' medical records are immersed in information technology and available for all specialists to interact, yet different specialist and other healthcare workers still seem to have a communication gap in their performance of the treatment. Treatment is not a one-man job; it is not wholly the physician providing care or the patient following the care. Instead, it is a collaborative effort from both ends to ensure proper healing.

Research has shown that patient satisfaction is increased when treated by an interdisciplinary team (Mezzich). The interdisciplinary team may consist of physicians, nurses, physical therapists, social workers, and other healthcare professionals who all have different backgrounds and opinions of patient care (Mezzich). There are difficulties in ensuring efficient communication between the different members of the care team as well as issues arising when there are conflicting opinions. Continuous patient transport between different specialties may cause chasms in what the care should be. The implementation and adopting of upcoming medical technology and shared electronic health records have the ability to lessen these complications. At Epic, there is much concern to the ability of the team to have access to the chart in MyChart Care Companion. Team members are sent different notifications based on urgency; for example, nurses may be sent notifications concerning a missed dosage of medicine and can then send a reminder to the patient, while physicians would be notified in emergency situations or when it is time for a new prescription to be sent based on the patient log. The interdisciplinary connectivity brought about by this technology allows for the problem to be addressed from many different angles. Not only is the communication between physicians and patients enhanced, but the communication among the entire interdisciplinary care team becomes easier.

By moving forward with medical software in these ways, technology will be able to combine with medicine to create a new type of holistic care that is fitting for the current social environment. Through expanding the patient alongside new technology, they regain autonomy in their care and physicians will become less frustrated with the quality and distribution of medical treatment. There is still much work to be done in order to implement this social technology in its entirety, and there are many changes to come



that will continue to change the way individuals interact with their medical care. However, these movement forward are foretelling a future with greater connection and lesser accounts of negative patient experience and interaction within and outside of a clinical setting. The love of humanity that rests at the core of medicine can be rediscovered through a new holistic understanding of humanity in the present.

## CHAPTER FIVE

### Conclusion

The exploration of the effects of medical technology is imperative in moving forward in medicine. Future practices will continue to be influenced by the constant introduction of new information technologies and the medical information will continue to become available online. Without acknowledging the possibilities that technology brings to the medical practice, the physician-patient relationship would continue to be negatively impacted and patients' experience in the clinic would become increasingly impersonal. Through an investigation of the establishment of the person-centered care model with Hippocrates, the complications technology has brought, and the innovations that are transforming medicine and bringing it back to person-centered care physicians and incoming medical students have the opportunity to undertake their responsibilities as medical professionals with consideration for the social setting they are involved with. The social aspects of medicine should always be regarded when distributing care, and the communicative aspects are essential to consider when determining personal health plans for patients. Physicians must humanize their patients, and patient must humanize their physicians, and the combined efforts to engage in social uses of health information technologies will rehumanize medicine in a nuanced manner by providing new platforms to enhance the patient experience, their personal autonomy, transparency in diagnosis and treatment, education, and relationship alongside their physician.

Medical technology companies are moving forward to create software that will embrace the importance of person-centered care. The conversation goes far beyond the

clinic and leaks into all aspects of life, as the technology has the ability to involve family, friends, and the patient in a unique web of support. Whether believed to be fortunate or unfortunate, rediscovery of a love for humanity in medicine with society today seems to require a discovery of a love for information technology. Barriers that come with new platforms in technology are inevitable, and this thesis allowed for an exploration of the ways that interdisciplinary teamwork among medical professionals, software developers, and patients has the potential to break down these barriers and avoid them with future implementations of technology in the medical world. Emphasis on the humanization of medicine is central to returning to a holistic model of medical care.

There is a necessity for medical professionals to engage with these topics within their continuing education so they can provide proper, humanly care for their patient no matter the discipline. With the large variety of specialties and growing network of information that accompanies patients, an understanding of the past of medicine, the present barriers, and the future trajectory of the profession is an effective and simple way to improve the attitude toward medical care and its practitioners. The physician holds an imperative role in society; this implements a requirement to fully understand the nature of their practice in light of social changes. There are many other issues that have arisen in the medical world that have made the distribution of medical care difficult that were not addressed in this thesis. In reality, medicine is a large business with many layers. As an incoming medical student, the information I have obtained in researching and writing over this topic will provide me with a unique perspective as a practicing physician in the future.

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