An Oath for Digital Health

Why an Oath for Digital Health?

The first—and best known—of the medical oaths is the *Oath of Hippocrates*. It is by no means the only medical oath, nor are physicians the only clinicians within healthcare who take an oath. In my own studies of these oaths over the past two decades, I've seen how these oaths were limited in very important ways. One, in particular, is relevant to digital health. It's this: oaths are taken only by a relatively small percentage of people—that is, clinicians—working within the healthcare enterprise.

Yet, a far larger number of people in healthcare have the capacity to influence the course of health and disease. Like clinicians, they are educated and have highly evolved tools in their arsenal. These people — at least in the way I define them—are healers as well. Their healing arts do not engage a clinical skill, but a business, organizational, project or some other skill. They are basic and clinical research scientists, health product manufacturers, biopharmaceutical sales representatives, marketers, legislators, regulators, policymakers, insurers, executives who choose employee health plans, patient advocates, paid in-home and institutional caregivers, disease navigators, advice columnists and news reporters. And yes, they are electronic medical record, digital health and health game developers, too.

Our societies are more complex today and we have more information with which to diagnose and new therapies to offer to treat and cure. As our healing enterprise has become more complicated, the types and numbers of healers grew. Regardless of how many we are, however, those of us who touch healthcare today are really only the sophisticated extension of ancient tribal healers who came before us. We may not "touch" a patient in reality, but even our "virtual" touch can be healing or harmful. For that reason, just as ancient healers entered into a special relationship with those they served, I believe we should, as well.

Although they have ancient roots, covenants that shaped those special relationships and sacred origins of the healing arts are not outdated. Sophisticated biomedical understanding of how a virus is replicating or where a cancer is metastasizing provides no comfort to the person who is ill nor to those who love them. Disease remains mysterious and frightening and, in many cases, is still as uncontrollable for us as it was for our ancestors. In fact, disease might be even more frightening, as the biogenetics revolution informs of us of ancestral programming that may one day cause an illness or disability we cannot prevent.

One need not be religious, honor the sacred or pray. When we're sick – or are afraid we will be – we want help. Better yet, help from someone with skills, ethics and alignment with powerful—and benevolent—forces. Oaths are covenant statements that assure us of that fact. To understand them it is helpful to know:

- The historical and sacred roots of healing;
- The important differences between covenants and contracts;
- The two types of covenants; and
- Health professionals' oaths.

That background information will be helpful as you contemplate your own, your team's, or company's oath, should you choose to embrace one. I hope you will.¹

Roots of Healing

In every ancient culture we know about—through records, grave artifacts or studies of indigenous societies we believe are similar to ancient cultures—two gifts were granted to society by God or, in the polytheistic cultures, the gods: the law and the healing arts. Each one contributed to society and the orderly course of human life. They structured personal and interpersonal behavior and provided a sense of security in the face of life's harsh unknowns.

The Law. The law structured personal behavior and interpersonal relationships within society, including contracts for such things as property and commerce, and helped resolve interpersonal conflicts. Suffer an injury at the hands of your neighbor and the law provided a guide for judges to set matters right between you and your neighbor.

The Healing Arts. What did you do when disease struck you? Who would help when an evil deity— *Febris* being one—sent you a fever? Or, if *Labasu* caused epilepsy? Who could help in the face of powerful, mysterious forces of disease and death? Could another mere human be effective against those terrible unknowns? Yes, but only if they were aligned with a deity and therefore able to draw upon forces more powerful than those frightening, evil ones.²

Contracts and Covenants

Many people today have experiences with both contracts and with covenants. Most people, however, are not familiar with how each one is defined and structured, nor about the important ways they differ.

Contracts. A contract involves at least two parties and can be initiated by any person who is party to the agreement. Those entering into the agreement witness—using a signature or mark—to indicate their willing participation. Occasionally, a legal representative like a notary public will witness the agreement as well. Historically, this was the case when one party was not literate.

A contract specifies the duties of the parties, often in great detail. Any change in the terms requires a renegotiation of the contract and the agreement of all concerned. The parties have duties to one another, but only as specified in the contract. Your car mechanic, for example, is contracted only to fix your car when it is in the shop, not to interrupt a family dinner to meet you on a highway with gas if you've run out.

Finally, contracts presuppose that one or both of the parties will fail to perform, which is why penalties for non-performance are specified in advance as part of the contract. The law enforces contracts through judges or juries, should the need arise.

¹ A suggested oath and comparison to other oaths is at Attachment A.

² A summary of this link between healing and the divine is at Appendix B.

Covenants. Like a contract, a covenant also involves at least two parties, but can also structure relationships between one party and many. An example would be covenants between a ruler and their subjects.

Unlike contracts, covenants, by their very nature, involve more fundamental elements of relationships. They are mutual, binding, cannot be reversed and alter the life and life-course of any party involved in significant ways. They are typically created between greater and lesser parties, e.g., between rulers and subjects, or fathers and sons, reflecting the superiority of the stronger party over the weaker one and the dependency of the weaker party on the stronger one.

Covenants are initiated by the superior party (a deity, a ruler, a parent) and, importantly, are witnessed by the deity or, in modern parlance, "all I hold dear." Once a covenant is in place, it ends only with death. Performance is expected 24/7 and exact duties cannot be specified because they evolve over time. An example would be the way parental responsibilities change over time, as children grow and even if unanticipated events like accidents occur or special needs are identified.

Covenants also change the fundamental identity of any party to it. Becoming a parent is a good example. Once a person becomes a parent, they are a parent when awake, when asleep, at work or at leisure. Even if their child dies, they will forever be a parent.

Covenants assume the parties will succeed in keeping promises, though an enforcement provision remains. This is one of the most powerful differences between contracts and covenants. Unlike contracts, which are enforced by judges and juries, covenants are "self-enforcing" because of two key features. First, the oath-taker invites divinity to witness the promises about to be made and then, once promises are made, the oath-taker invites rewards if the promises are kept and the opposite if promises are not kept.

Two Types of Covenants

There are two types of covenants and both are important to an understanding of healers' oaths: covenants of *grant* and covenants of *obligation*. Stories from Judeo-Christian literature are helpful in explaining both.

Covenant of Grant. In this type of covenant, one party establishes a relationship of giving, with no requirement that the other party return a favor. YHWH invited Noah into a covenant of grant when, after the flood, YHWH promised to never again destroy the earth by flood. Noah is "granted" that gift with no requirement that he do anything in return. This is the type of covenant between parents and children today, as parents grant food, shelter, warmth and education to a child, without requiring the child to earn it with good behavior.

Covenant of Obligation. In this type of covenant, one party establishes a relationship with reciprocal obligations. This occurred when YHWH invited the Israelites into a covenant of *obligation* at Sinai, offering gifts but requiring obligations in return. These are described in the books of Exodus and Leviticus, which instruct virtually every aspect of life and health. This is it the type of covenant that existed between ancient rulers and subjects, and exists today between modern governments and citizens, and husbands and wives. Each make promises that involve obligations to the other.

Health Professionals' Oaths

Covenants of grant and covenants of obligation are present in oaths taken by clinicians.³

The Oath of Hippocrates. This oath—the oldest known—includes both covenant types. First, it creates **obligation** among the physician members of the healing profession. It says, "I will study, and I will learn, I will teach my fellows, and I will treat his sons as my sons."

Then, it created a covenant of *grant* with patients, saying the physician would go the patient's home, protect their privacy and behave ethically. Literally, "I will *grant* health to the patient." In the Hippocratic Oath, the patient incurs no obligation, not to the physician or even to themselves.

Prayer of Maimonides. Physician, theologian and philosopher Maimonides rewrote the *Oath of Hippocrates* 1,600 years later. It is prayerful and more flowery but follows a typical covenant structure. Like Hippocrates, it includes an **obligation** among healers. It is innovative in that, for the first time in a medical oath, the physician invites patients into a covenant of **obligation**, saying "...and may the patient take my prescriptions and follow my advice and avoid the advice of meddlesome friends and relatives who don't know what they're doing and will probably kill them." This oath speaks to the reciprocity in the physician-patient relationship that is ignored by Hippocrates.

Other Oaths. An **Islamic Medical Oath** is similar to that of Hippocrates. Nurses take the **Nightingale Pledge**, and pharmacists have an oath, as do Associates of the *American College of Health Care Executives* and others involved in health administration, public health and management. In addition, more modern forms of the **Hippocratic Oath** have emerged. MBA students in some programs also take oaths, one that transcends market verticals where they may one day work. Each of these formulas are similar to the **Hippocratic Oath**, with *obligation* established within the profession and *grant* provided to patients. None embrace Maimonides' call of patients into *obligation* as well.

Contemplating Digital Health Oaths

Sir Arthur C. Clarke is reported to have said: "Any sufficiently advanced technology is indistinguishable from magic." The same could be said for healing, which is why I believe oaths emerged within medicine and held physicians to a standard higher than was expected of others. As an emerging profession within a large civilized society, physicians bore the burden of proof to demonstrate they were worthy of trust.

Sir Clarke's comment is relevant in digital health as well. In contemplating yours, there is one essential element I invite you to consider: oaths proceed from the superior party. This is an unpopular perspective in some quarters, but superior, in this case, does not refer to the essential value of a person. Rather, it refers to the special knowledge, skills or tools that a person possesses.

This is true of the work you do and the magic in the code, design and user experience that will help heal. You have superior, special knowledge and skill that are mysterious to the people you will serve. Patients—and other healers—who use the digital tools you develop would want nothing less than for you to assure them you are worthy of trust.

³ These oaths can be found at Appendix C.

Appendix A

Digital Health Oath

I swear by all I hold dear and sacred, and in the presence of those assembled here:

To commit to life-long learning, sharing knowledge with others and improving the standards by which my profession operates;

To do my personal best and encourage others on my teams and throughout my organization, to offer our skills to serve patients;

Intending only to do good, to contribute what I know and collaborate with others to assure the best outcomes for those I serve;

To encourage those in my care and their clinicians to appropriately use the tools I build for them, and to advocate for themselves, welcoming their feedback to support improvements to benefit them and others; and

To maintain the highest moral, ethical and legal conduct, including not making false claims about my product: to keep information entrusted to me private and confidential, lest my patients suffer further from any kind of bias and the whims of online multitudes; to recognize that the tools of digital health and artificial intelligence do greatly benefit patients; yet, may also create harm. Therefore, I will guard that my art is not reduced to an algorithm, and I will ensure the compassion for my patients is not eclipsed by technology.

If I keep this oath faithfully, may I enjoy my life and work, and be respected at all times and if I violate this oath, may the reverse be my lot.

Digital Health/Other Healer Oath Comparisons

Source	Text	Principal	Suggested Digital Health
Hippocrates	I swear by Apollo the physician, by Aesculapius, Hygeia and Panacea, and I take to witness all the gods, all the goddesses, to keep according to my ability and my judgement the following Oath.	Sacred Witness	I swear by all I hold dear and sacred, and in the presence of those assembled here:
Islamic	I swear by God the Great; To regard God in carrying out my profession.		
Nightingale	I solemnly pledge myself before God and in the presence of this assembly:		
Hippocrates	To consider dear to me as my parents, he who taught me this art; to look upon his children as my own brothers, to teach them this art if they so desire without fee or written promise; to impart to my sons and the sons of the master who taught me who have agreed to the rules of the profession and its precepts.	Continuous Improvement Through Education, Training, Leadership and Standard Setting	To commit to life-long learning, sharing knowledge with others and improving the standards by which my profession operates;
Maimonides	To revere my teacher, teach my junior, and be brother to members of the medical profession joined in piety and charity; To strive in the pursuit of knowledge and harnessing it for the benefit, but not the harm, of mankind. Permit not the thought to awaken in me: You know enough; but grant me strength, leisure and the urge to enlarge my accomplishments and to add to others. If wiser artists seek to improve and instruct me, let my spirit be thankful; for great is the field of the art. When, however, conceited fools berate me, then let the love of the art steel my spirit and insist on truth, regardless of age, fame or standing, for to retract would mean death and disease.		
Pharmacy	I will keep abreast of developments and maintain professional competence in my profession of pharmacy. I will embrace and advocate change in the profession that improves patient care.		

Source	Text	Principal	Suggested Digital Health
Nightingale	I will do all in my power to maintain and elevate the standard of my profession		
ACHE	Contribute to the advancement of our profession by exemplifying competence and leadership; Commit to lifelong learning by maintaining a personal program of continuing education; Enhance our profession through leadership in a wide range of community and professional activities.		
Hippocrates	I will prescribe regimen for the good of my patients according to my ability and my judgment and never do harm to anyone. To please no one will I prescribe a deadly drug, nor give advice which may cause his death.	Patient-Centeredness	To do my personal best and encourage others on my teams and throughout my organization, to offer our skills
Nightingale	I will devote myself to the welfare of those committed to my care.		to serve patients;
Islamic	To protect human life in all stages and under all circumstances, doing my utmost to rescue it from death, malady, pain and anxiety;		
Hippocrates	I will preserve the purity of my art and my life. I will not cut for stone, leaving this operation to be performed by specialists in this art. In every house where I come, I will enter only for the good of my patients, keeping myself far from all intentional ill-doing.	Collaboration with Other Healers	Intending only to do good, to contribute what I know and collaborate with others to assure the best outcomes for
Nightingale	With loyalty will I endeavor to aid the physician in his work,		those I serve;
Maimonides	Grant my patients confidence in me and my art, and imbue them with obedience to follow my precepts and directions. Ban from their bedside all quacks and the army of advice-giving relatives and too-wise nurses, for they are a terrible band, who, through their vanity, harm the best intentions of the healing art and frequently cause the death of Thy creatures.	Collaboration with Patients	To encourage those in my care and their clinicians to appropriately use the tools I build for them, and to advocate for themselves, welcoming their feedback to support improvements to benefit them and others; and

Source	Text	Principal	Suggested Digital Health
Hippocrates Islamic Pharmacy	All that may come to my knowledge in the exercise of my profession or outside of my profession or in daily commerce with men, which ought not be spread abroad, I will keep secret and will never reveal. To keep people's dignity, cover their privacies, lock up their secrets I will maintain the highest principles of moral, ethical and legal conduct. I will consider the welfare of humanity and relief of suffering my primary concerns. I will apply my knowledge, experience, and skills to the best of my ability to assure optimal drug therapy outcomes of the patients I serve.	Practice Ethically	To maintain the highest moral, ethical and legal conduct, including not making false claims about my product: to keep information entrusted to me private and confidential; lest my patients suffer further from any kind of bias and the whims of online multitudes; to recognize that the tools of digital health and artificial intelligence do greatly benefit patients, yet may also create harm. Therefore, I will guard that my art is not reduced to an algorithm, and I will ensure the compassion for my patients is not eclipsed by technology.
Nightingale	To pass my life in purity and to practice my profession faithfully; I will abstain from whatever is deleterious and mischievous and will not take or knowingly administer any harmful drug; I will hold in confidence all personal matters committed to my keeping and all family affairs coming to my knowledge in my calling Abide by its Code of Ethics		
Hippocrates	If I keep this oath faithfully, may I enjoy my life and practice my art, respected by all men and in all times; but if I swerve from it or violate it, may the reverse be my lot.	Recognize Consequences	If I keep this oath faithfully, may I enjoy my life and work, and be respected at all times
Pharmacy	I take these vows voluntarily with the full realization of the responsibility with which I am entrusted by the public.		and should I violate this oath, may the reverse be my lot.

Divine Foundations of Healing

Historical records documenting society's view of health as a divine gift date back to some of the earliest written records.

4000 BCE, Sumerian texts contained references to medicinal gifts from the divine to priests for healing, as do Buddhist texts of that same period. Brahma, the First Teacher of the Universe, provided mankind with Ayurveda, or the Science of Life, with 100,000 hymns and all knowledge concerning medicines. Legends describe gods conquering demonic forces of illness through ritual; 1,000 herbs, medicines, rituals and chants. Monks and sages passed down the wisdom.

2000 BCE Greece, oracle bones were used for divination of the recovery of the patient and then pounded into medicines. During that era, in China the Second Celestial Emperor developed the national pharmacopoeia by personally testing over 1,000 herbs and 70 poisons.

900 BCE, Greeks created temple hospitals. Apollo was the most powerful god-physician, using epidemics for punishment and healing wounds as rewards. Angry gods caused physical and mental diseases; appeased gods provided medicines for the favored, especially soldiers; and Greek physicians used incantations. It was said, in that day, that everyone who entered the sanctuary of the temples was cured.

500 BCE, alchemist Taoist priest Ko Hung taught that his elixirs could provide protection from an interesting array of clinical conditions—including ghosts and digestive disorders—and that they could raise the dead and confer immortality.

300 BCE, the goddesses Scarlet and White gave acupuncture to the Yellow Emperor.

By 30 CE, healing physical and mental disease was a significant part of the ministry of Jesus of Nazareth, on whose life the Christian tradition is built, commissioning others, as stated by the Apostle Luke, himself a physician, "cure the sick...".

500 CE, St. Benedict established twelve centers for healing and the study of medicine.

600 CE, the Prophet Muhammad instituted measures similar to those of Moses and called for compassionate care for the sick.

680 CE, St. Sebastian saved Rome from a plague; to honor him the Romans build a temple to him similar to those of early Greeks. He became helper during any times that plagues struck for centuries after.

990 CE, Christian societies created cults of saints who acted as intercessors and healers. Many were specialists. The hand of St. Theresa of Avila was said to cure jealousy and indigestion. Diluted blood from Thomas of Canterbury cured blindness, insanity, leprosy and deafness. The saints Cosmas and Damian appeared to a physician in a dream to teach him mastectomy. Apollonia, whose teeth were knocked out

during her martyrdom, was the patron saint of toothaches. St. Anthony was invoked against erysipelas, or St. Anthony's Fire, as it came to be known in the eleventh century.

1500 CE, during colonization of North America, missionaries found Native and Shaman practices similar to those of Christianity.

Today, there are more than 850 studies on spirituality, health, disease and recovery.

Oath of Hippocrates

I swear by Apollo the physician, by Aesculapius, Hygeia and Panacea, and I take to witness all the gods, all the goddesses, to keep according to my ability and my judgement the following Oath:

To consider dear to me as my parents him who taught me this art; to live in common with him and if necessary to share my goods with him; to look upon his children as my own brothers, to teach them this art if they so desire without fee or written promise; to impart to my sons and the sons of the master who taught me the disciples who have enrolled themselves and have agreed to the rules of the profession, but to these alone, the precepts and the instruction. I will prescribe regimen for the good of my patients according to my ability and my judgment and never do harm to anyone.

To please no one will I prescribe a deadly drug, nor give advice which may cause his death. Nor will I give a woman a pessary to procure abortion. But I will preserve the purity of my art and my life.

I will not cut for stone, leave this operation to be performed by practitioners (specialists in this art). In every house where I come, I will enter only for the good of my patients, keeping myself far from all intentional ill-doing and all seduction, and especially from the pleasure of love with women or with men, be they free or slaves.

All that may come to my knowledge in the exercise of my profession or outside of my profession or in daily commerce with men, which ought not be spread abroad, I will keep secret and will never reveal.

If I keep this oath faithfully, may I enjoy my life and practice my art, respected by all men and in all times; but if I swerve from it or violate it, may the reverse be my lot.⁵

Prayer of Maimonides

All-bountiful! Thou hast formed the human body in Thy complete wisdom. Thou hast united it in ten thousand times ten thousand parts that function continuously to preserve the harmony of the beautiful entity, the mortal integument of the immortals. Ever they are active in complete order, harmony and unity. The moment, however, that frailty of matter or passions disturb this order and disrupt the unity, the forces engage in conflict and the body is reduced to its dust. It is then that Thou sendst to man beneficent messengers, the diseases, who announce to him the danger and urge him to avoid it.

Thy Earth, Thy rivers and Thy mountains are blessed by Thee with healing substances: they can heal. They assuage the suffering of Thy creatures and heal their wounds. Thou hast granted man the wisdom to unravel the secrets of his body, to recognize order and disorder; to draw the substances from their sources, to seek out their forces and to prepare and apply them according to their respective diseases. And Thy eternal foresight has chosen me to watch over the life and health of Thy creatures, and I now go forth to follow my calling. Stand by me All-bountiful, in this great undertaking so that I may succeed, for without Thy aid, man has no success even in the most trivial things. Inspire me with love for my art and Thy creatures. So not permit that thirst of grain and greed for fame interfere with my calling, for these are enemies of truth and philanthropy, and they might also lead me astray in the mighty enterprise to further the weal of Thy creatures. Preserve the strength of my body and soul, so that they may be indefatigable at all times to help and to stand by the rich as well as the poor, the good and the bad, the enemy as well as the friend. In the sufferer always let me behold only the human being.

Enlighten my understanding so that I may grasp what is present and correctly surmise what is absent or hidden. Allow it not to sink, so that my judgment may not fail to recognize what is evident but also that it may not overestimate itself and see what cannot be seen. For fine and imperceptible are the boundaries of the great art, and of watching over the life and health of Thy creatures! Let not my intelligence be abstracted. At the bedside, let no extraneous matters rob my spirit of its watchfulness. Let them not disturb in its quiet labors. For great and holy is the search for the preservation of life and health of Thy creatures.

Grant my patients confidence in me and my art and imbue them with obedience to follow my precepts and directions. Ban from their bedside all quacks and the army of advice-giving relatives and too-wise nurses, for they are a terrible band, who, through their vanity, harm the best intentions of the healing art and frequently cause the death of Thy creatures.

If wiser artists seek to improve and instruct me, let my spirit be thankful and obedient; for great is the field of the art. When, however, conceited fools berate me, then let the love of the art steel my spirit and insist on truth, regardless of age, fame or standing, for to retract in such a case would mean death and disease of Thy creatures.

Grant to my spirit, gentleness and calm, when colleagues, vain of their years, repulse, scorn, or sneering try to correct me. Let this also be to my advantage for they know some things that are foreign to me and their self-conceit shall not offend me; they are old and old age is not the master of passions. For I too hope to be old before Thee, All-bountiful!

Grant me contentment in all things, safe in the great art. Permit not the thought to awaken in me: You know enough; but grant me strength, leisure and the urge always to enlarge my accomplishments and to add to others. True art is long, but man's mind penetrates even farther. All bountiful, Thou in Thy mercy hast chosen me to watch over the life and death of Thy creatures. I now go forth in the pursuit of my calling. Stand by me in this large undertaking, so it may be successful, for sans Thy help man is not successful, be it in the most trifling matter.⁷

The Islamic Code of Medical Ethics

I swear by God the Great;

To regard God in carrying out my profession; To protect human life in all stages and under all circumstances, doing my utmost to rescue it from death, malady, pain and anxiety; To keep people's dignity, cover their privacies and lock up their secrets; To be, all the way, an instrument of God's mercy extending my medical care to near and far, virtuous and sinner, and friend and enemy; To strive in the pursuit of knowledge and harnessing it for the benefit but not the harm of mankind; To revere my teacher, teach my junior and be brother to members of the medical profession joined in piety and charity; To live my Faith in private and in public, avoiding whatever blemishes me in the eyes of God, His apostle and my fellow Faithful;

And may God be witness to this Oath.9

Pharmacist Oath

At this time, I vow to devote my professional life to the service of all humankind through the profession of pharmacy. I will consider the welfare of humanity and relief of suffering my primary concerns. I will apply my knowledge, experience and skills to the best of my ability to assure optimal drug therapy outcomes of the patients I serve. I will keep abreast of developments and maintain professional competence in my profession of pharmacy. I will maintain the highest principles of moral, ethical and legal conduct. I will embrace and advocate change in the profession of pharmacy that improves patient care. I take these vows voluntarily with the full realization of the responsibility with which I am entrusted by the public.

Nightingale Pledge of Nurses

I solemnly pledge myself before God and in the presence of this assembly:

To pass my life in purity and to practice my profession faithfully; I will abstain from whatever is deleterious and mischievous and will not take or knowingly administer any harmful drug; I will do all in my power to maintain and elevate the standard of my profession and will hold in confidence all personal matters committed to my keeping and all family affairs coming to my knowledge in the practice of my calling; With loyalty will I endeavor to aid the physician in his work, and devote myself to the welfare of those committed to my care.

American College of Healthcare Executives

Abide by its Code of Ethics; Contribute to the advancement of our profession by exemplifying competence and leadership in healthcare management; Commit to lifelong learning by maintaining a personal program of continuing education; Contribute to the improvement of my community's health status; Enhance our profession through leadership in a wide range of community and professional activities; Uphold and further the mission of the American College of Healthcare Executives to advance healthcare management excellence.



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– Glenna Crooks, PhD

