




Machines and artisanal health workers

Máquinas y arte-sanos

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ABSTRACT This work discusses the dominant models and tensions within the health field regarding the conceptualization of the human body (as a machine), the process of health work (industrial and artisanal models), institutions (hospitals and health centers) and primary agents (the medical corporation and the medical industrial complex). The context of analysis is the United States from the end of the 19th century to the present. Economic-political, ideological-cultural, and scientific-technical dimensions are discussed, which permeate the historicity of the field. The purpose is to illustrate how the health field has transformed over time, as well as the role instrumental reason and financial capital has played in this process, to the detriment of relational aspects.

KEY WORDS Human Body; Hospitals; Health Centers; History; Medicalization; Robotics.

RESUMEN Este trabajo discute los modelos dominantes y las tensiones, al interior del campo de la salud, entre la concepción del cuerpo humano (máquina); el proceso de trabajo médico (modelos industriales o artesanales); las institucionalidades (hospitales y centros de salud) y los principales agentes (corporación médica y complejo médico industrial). El análisis se contextualiza en EEUU desde fines del siglo XIX a la actualidad. Se discuten dimensiones económico-políticas, ideológico-culturales y científico-técnicas, que atraviesan la historicidad del campo. El propósito es elucidar cómo se viene transformando el campo de la salud, y qué peso tiene la razón instrumental y el capital financiero en ese proceso, en detrimento de lo relacional.

PALABRAS CLAVES Cuerpo Humano; Hospitales; Centros de Salud; Historia; Medicalización; Robótica.

INTRODUCTION

The dream was that reason, in the form of the arts and sciences, would liberate humanity from scarcity and the caprices of nature, ignorance and superstition, tyranny, and not least of all, the diseases of the body and the spirit. Paul Starr⁽¹⁾

Between the 18th and the 20th century, a series of inventions and technological developments led to productive and organizational models that first shaped the Industrial Revolution, and then the technological revolution. Since then, new “ideals” emerged in different fields of knowledge that had an impact on work processes, organizational forms, institutional developments, social construction of reality, and relational processes.^(2,3,4,5,6) Not only was this translated into the “objectivity of the first order,” established by the *distribution* of *material* resources and means of appropriation of socially scarce goods and values, but also into the “objectivity of the second order,” in the form of systems of *classification*, mental and bodily schemata that functioned as *symbolic* templates for the practical activities, conduct, thoughts, feelings, and judgments of social agents.⁽⁷⁾

The purpose of this article is to illustrate the transformations of the health field during the 20th century, and the importance of technology to the detriment of relational aspects that remained subordinated to instrumental reason as the dominant logic.

Henry Sigerist stated that “medicine is the most closely linked to the whole of culture, every transformation in medical conceptions being conditioned by transformations in the ideas of the epoch.”⁽⁸⁾ For this reason, when analyzing a hospital, a health center or a doctor’s office, proposals or searches of organizational forms of a Taylorist, Fayolist, and/or Fordist nature supported by hard technologies (material technologies, basically equipment) are found. Nevertheless, neither those hard technologies nor all of them combined constitute an explanatory totality of what is done

– and especially, what should be done – in any health institution, in which soft technologies (interpersonal relationships based on bonds and care for others) support the artisanal work process, which has a high potential not only in terms of efficacy but also in terms of efficiency and the bond between workers-users-institutions and territories.^(9,10,11,12,13)

It should also be noted that the complexity of the changes of professional identities goes beyond the advances in medical science during the last century. These changes occurred in the context of a relational fabric among professionals, the State, and the community through different mechanisms which have distorted professional practice, while interfering in the efforts to reach health levels that are consistent with scientific knowledge; and have transformed health into a commodity, denying its status as a right.^(14,15)

Therefore, the analysis forces people to consider not only the space and time conditions but also the articulation between actors and structures and the macro and micro so as to understand the relational processes from a historiographic approach following a logic of processes, letting history explain itself and not being reduced to a linear sequence of events.⁽¹⁶⁾ As a result, the analysis comprises the historicity of the subject of study, which leads us to relate the problem to history:

Hegel and Marx have taught us that the problem of history is the history of problems, and that it is impossible validly to describe any human fact without bringing into that description its genesis. This implies that one must take into account the evolution both of ideas and of the way in which men represent to themselves the facts studied, since that evolution constitutes an important element in the genesis of the phenomenon. Of course, the converse is also valid. The history of problems is the problem of history, and the history of ideas can only be positive if it is closely bound to the history of the economic, social and political life of men.⁽¹⁷⁾

The methodological proposal acknowledges the hermeneutic power of historical reconstruction. History matters because it provides explanations and helps us to understand the present time from a perspective centered on society and on the interests of their actors.⁽¹⁶⁾ In view of the foregoing, we propose to analyze medicine starting in the 17th century – when the idea of the human body as a machine was consolidated – up to the current crisis of the “health care systems,” discussing how the singularity of the field and the interests of the actors influenced the work processes, the organizational and institutional forms, and the medical profession itself. The aim of this text is not to describe the history of medicine as a combination of biographies or as a sequence of discoveries, but to understand the changes that transformed the medical work into a profession through cognitive monopoly, corporate arrangements, associative strategies, and the promotion of group identities, which were only overcome later by the distinctive dynamic of capitalism through the medical-industrial complex.^(18,19)

This work is made up of seven sections: the introduction includes the purpose, the problem, and the methodology; the second section analyzes the association of the human body with the machine; the third section focuses on the different roles of the hospital from the 17th century to the present time; the fourth section examines the Medical-Industrial Complex; the fifth section addresses the impact of the arrival of robotics in the work processes and proposes the return of the artisanal health worker and of traditional artisanal work; the sixth section recovers the history of health centers to ask ourselves about its denied institutionality and its potential ability to define the rules of the game and house the artisanal health worker [“*arte-sano*,” play-on-words to highlight the artistic and artisanal nature of medical work and its influence on health]; and lastly, as a closing section, we revisit the illusion generated by progress, which promises great achievements but often ends up in disappointment.^(11,20) We will formulate questions that attempt to unchain five axes of discussion: the conceptualization of the human body and

the corporeal; the type of work within the field; the humanization of health care; the institutional forms at stake; and health as a social right or as a market good.

Empirical references are mainly based in the US because it is the country where the central ideas of the general theory of management were developed⁽²¹⁾; because it was the country where the great reform of medical education took place – Flexner Report – at the beginning of the 20th century⁽²²⁾; because in the subject of hospitals – as noted by Henry Sigerist – it reviewed the history of hospitals in Europe in a shorter time⁽¹⁾; because it had a health care system based on private insurance, financed by the neoliberal think tanks, despite having the most expensive health system in the world, in relation to its gross domestic product (GDP)^(23,24); and because it is the country where the medical-industrial complex originated.⁽²⁵⁾ By taking empiric references from the US, we only recognize its central role in the “*doxa*”⁽⁶⁾ that permeates the health field and, therefore, its cultural and ideological influence on the technical-scientific development.⁽²⁴⁾ Thus, we will analyze how the evolution of medicine in the US became the dominant history of medical reason in the last centuries, and how the health care process became a question of power during the 20th century. This places the American Medical Association (AMA) as a central actor in this process, to such an extent that, from the mid-19th century onward, there was practically no president of the United States (whether democrat or republican) who had not attempted, without success, to launch a health care reform that would limit medical power. It was the medical-industrial complex that managed to pierce that power through massive processes of medicalization in the late 20th century.⁽¹⁾

THE HUMAN BODY AS A MACHINE

The metaphor of the human body as a machine originated during the 17th and the 18th centuries, an idea that remains until the

present time, although it is denied by scientific evidence.

The iatromechanical theory

The shift from the qualitative to the quantitative started in the 17th century. Until then, quantification in medicine had hardly existed.^(26,27) During the Renaissance and the Baroque movements, medicine was witness to a series of changes in science that had an impact on its constitution. Thus, the central part of the machine – bellows, pumps, and valves – promoted physiology,⁽²⁸⁾ the experimental method was consolidated with the works by Francis Bacon, René Descartes, and Galileo Galilei, which led to a mechanical and mathematical vision of the world.⁽²⁸⁾ While new instruments, such as the microscope and the thermometer, were being built, different theories such as iatrochemistry, iatro-mechanics, animism, and vitalism attempted to explain diseases.⁽²⁹⁾ This caused tough conceptual confrontations leading to the first scientific associations, which coexisted with astrology, the Inquisition, and alchemy as expressions of reason, religion, and magic. All of these competed to explain the different ways of falling ill and dying.⁽³⁰⁾

The iatromechanical theory (during the 15th and 17th centuries) was based on mechanical physics and considered the human body as a machine. Hence, it was understood that the solid parts of the body were governed by the law of statistics, while the liquid parts were ruled by hydraulic laws.⁽²⁹⁾ Ivan Illich argued that in this way of understanding the human body, “pain turned into a red light and sickness into mechanical breakdown.”⁽³¹⁾

The pinnacle work of anatomy written by Andreas Vesalius was released in 1543 with a title that was very appropriate for those times, *De humanis corporis fabrica* [The Fabric of the Human Body]. Another milestone in the conceptualization of the human body as a machine was set by William Harvey, an English physician who, between 1616 and 1618, described the general blood circulation through comparative anatomy, contradicting Galen’s

“truths.” Harvey’s book, released in 1628, was titled *Exercitatio anatómica de motu cordis et sanguinis in animalibus* [An Anatomical Exercise on the Motion of the Heart and Blood in Living Beings].⁽³²⁾ The 70 pages of the publication had significant impact as it was the first time experimental logic was applied in biology. Despite the resistance caused by the text and the fact that the author was considered a lunatic, William Harvey established an explanatory model that transcended medicine and made an impact on biology. This theory, supported by the principles of hydraulic engineering, was complemented with Marcello Malpighi’s findings who, in 1661, described pulmonary capillary circulation through the use of a microscope. Harvey, with his work on blood circulation, was the first to include mathematics in the study of the human body through tests and calculations.^(33,34) About the same time, Jean Pecquet and Thomas Bartholin discovered the lymphatic system, whose existence was formally denied by William Harvey.^(27,33) In 1748, Julien Offray de La Mettrie (1709-1751) wrote *L’Homme Machine*⁽³⁵⁾ [Man a Machine]. This French physician, naturalist, and empiricist caused great controversy when he denied the existence of the soul and defended ideas that, in the next century, would constitute the basis of the racial and criminological ideas of positivism.

Those were times of proliferation of the automaton, which represented the association of the human and the machine – symbolic isomorphism – that dominated the scientific field.⁽³⁶⁾ Until then, the human and the machine had been disparate elements.⁽³⁷⁾

René Descartes was one of the first thinkers to accept the theory developed by Harvey, with whom he maintained an intellectual relationship,⁽³⁶⁾ and was considered – along with Harvey – co-founder of modern physiology. This explains René Descartes’ interest in medicine, to the extent that it was referred to as Cartesian medicine.^(36,38,39,40) In the *Discours de la méthode*⁽⁴¹⁾ [Discourse on the method], Descartes expressed his hope of finding rules that would revolutionize medicine, and explicitly described the human body-machine relationship:

Every human body is a machine and those machines manufactured by the divine artisan are the best crafted, which does not mean that, for that reason, they cease to be machines. If only the human body is considered, there is no difference of principle between the machines manufactured by men and the living bodies begotten by God. The only difference lies in optimization and complexity.⁽⁴¹⁾

[Own translation]

In relation to Harvey's theory, René Descartes suggested vital heat as the source of energy to move the heart. Beyond that difference, he agreed with ideas that only supported the mechanical vision of the human body, building his theoretical model on the principles of physics. He understood the human body as being inhabited by a rational soul that gives it greater complexity without denying its divine creation. This is how the Cartesian dualism of spirit and matter, mind, and body emerged, which Descartes tried to ignore by assigning to the pineal gland the function of interconnecting the corporeal with the incorporeal.^(27,30,33)

Why was the iatro-mechanical theory consolidated? Because the mechanical language at that time was the dominant model in the Western world,⁽⁴²⁾ the only resource available for modern reason to explain reality, and by analogy, the human body. Denying the mechanical was relinquishing the scientific, the objectifiable, and the hegemonic at that historical moment. This is the reason why the iatro-mechanics extrapolated the success of physics to the medical field and, by sustaining it experimentally, they displaced the vitalists, who had sneered at the attempts to quantify medicine and taken refuge in the qualitative approach as a pattern of scientificity.⁽²⁶⁾ However, the inconsistencies of iatro-mechanics enabled the animist theories to challenge their explanations.^(29,30,34) The mechanical theory was also functional to the development of the workforce that needed the development of a budding capitalism.⁽⁴³⁾

Georges Canguilhem stated that the relationship between organism and machines

had been studied in one direction only: the function of the organism in terms of the structure of the machine as something given, concealing the meaning of this assimilation and the absence of the problematization in the relationship between science and technique.⁽⁴⁴⁾ In order to invalidate these assimilations, Canguilhem highlighted the functions of the human body that did not exist in the machines, such as the polyvalence of organs, the vicariance of functions, and different phenomena, such as self-construction, self-conservation, self-regulation, and self-repair⁽⁴⁴⁾; backing up his arguments in Immanuel Kant, who stated as follows:

In a machine, he writes, each part exists for another, but not by another. No piece is produced by another piece; no piece is produced by the whole; nor is any whole produced by another whole of the same species. There is no watch-making watch. No part replaces itself by itself. No whole replaces a missing part. The machine thus possesses motor force, but not a formative energy capable of transmitting itself to external matter and propagating itself.⁽⁴⁴⁾

The machine was the promise of progress (the illusion), which would make ostentatious consumption possible. The machine had to help the fragile body, repair it and, if possible, replace it.⁽⁴⁵⁾ Healthy bodies had to be destined to work; time for leisure and desire was over. It was necessary to bring together the economic-political sphere and the ideological-cultural sphere. For all these reasons, the Victorian morality, starting in the mid-19th century (with its Puritan characteristics), locked up sexuality within the family; sex was limited to its reproductive function, and confined to the parents' bedroom, because the bodies had to be available only for work. As a result, the hypocrisy of bourgeois society omitted any reference to sex and desire, except within the parameters of the normal and the scientific. This morality (in fact, a double standard of morality) coincides with the heyday of the Industrial

Revolution and the British Empire,⁽⁴⁵⁾ which needed the thought of the human body as a machine, beyond the fact that the idea of the organism had already surpassed Harvey's and Descartes' mechanistic perspective.

The mechanical conception helped the medical discourse to expel desire, because the object of study of medicine was disease and not the individual, and it was only interested in the body as the place where different ailments occurred, which reached a scientific status in pathological anatomy. Thus, the order was inverted, and corpses were used to understand the living, which made it possible to see in the corpse what was invisible in the living body.⁽⁴⁶⁾ René Leriche, a French surgeon stated: "if one wants to define disease it must be dehumanized."⁽⁴⁶⁾ For this reason, the medical discourse attempts to prevent the sick person from speaking or receiving sufficient time during the appointment and, generally, the patient will only be listened to on the basis of the medical discourse itself.⁽⁴⁶⁾

Autopoiesis

If the iatromechanical theory lost its scientific status and was replaced by other paradigms, why is the idea of the human body as a machine still valid? Because it is the only way of sustaining the idea of the sick person as an object, therefore, replicating the subject-object relationship, which is central to the Cartesian reason (substantial reason); an expression of a duality that is reluctant to abandon the universities and remains as a scientific ideology among professionals, expressing itself in their discourses, which is in flagrant contradiction with the advances in science that they use, but of which they do not think.^(47,48) It should also be acknowledged that many types of knowledges and machines from previous centuries are still valid today. Medical deontology conceals medical ideology; hence, professionals are at ease while developing their task among "machines." Following this rationale, there is neither room for the subject, the individual, the collective, nor for words or bonds.^(12,13,46)

The limitations of the machine model to explain the human body became evident with the development of sciences. As a result, the general systems theory incorporated the concept of living machines to surpass the dominant mechanistic logic. Ludwig von Bertalanfy believed that, from a systemic perspective, human beings were open systems that processed energy.⁽⁴⁹⁾

In Chile, starting in 1950, Humberto Maturana decided to understand the human body as an autonomous unit that created general phenomena.⁽⁵⁰⁾ During his stay at the Massachusetts Institute of Technology, he noted his differences with other researchers that were working with artificial intelligence. They were trying to shape the biological phenomena, while Maturana considered that a living being was a circular organization. This is the reason why he differentiated in the living being the domain to operate as a totality in its space of interactions, the domain to operate from its structural components without the need to refer to the totality that constitutes them, that is to say, the living being as a living system. From those ideas, and along with Francisco Varela, he developed the concepts of self-referential systems or circular organization, which were later replaced by the concept of autopoietic systems.⁽⁵⁰⁾

In the 1960s, Humberto Maturana and Francisco Varela worked on the origin and the organization of living beings, differentiating them from machines.⁽⁵⁰⁾ The first manuscripts of their book were poorly welcomed in the scientific fields. Francisco Varela commented that the text was considered unpublishable by publishing companies in several countries. Reception was also cold during the lectures given at the University of Colorado, Boulder, and the University of California, Berkeley. The first positive reaction was from Anthony Stafford Beer (a renowned expert in cybernetics and management systems) that was visiting Chile during the Project Cyber-syn or Synco (Information and Control system) during the administration of Salvador Allende. Anthony Stafford Beer was the one who finally wrote the preface of the book in 1972.⁽⁵⁰⁾ Ivan Illick, who strongly supported

its publication during the International Committee for Documentation (CIDOC) [*Comité International pour la Documentation*] in Cuernavaca, commented about the text: “you have succeeded in placing autonomy at the center of science.”⁽⁵⁰⁾ [Own translation] The book was released by the publishing house of the University of Chile in 1973 and was published in English in 1980, when the ideas had already transcended and had been globally acknowledged. Meanwhile, Maturana and Varela wrote a scientific article, which was rejected by several journals and not published until mid-1974 in the journal *Biosystems*, becoming the first reference to autopoiesis in English.^(50,51) The end of the socialist experience through democracy forced the authors into exile. It is neither easy nor gratuitous to include issues on the international scientific agenda from the southern hemisphere, especially when these issues originated within a context where the governments defend popular interests and work outside the dominant topics of the international scientific agenda.

Since then, the concept of autopoiesis has been established in the scientific field, first in biology and then in chemistry. It was the topic of an editorial in the journal *Nature* in 1991.⁽⁵²⁾ Autopoiesis, as a concept, acquired the power of a metonymy with far-reaching implications in human sciences. Francisco Varela would come to understand that its use was not always loyal to its original postulates.⁽⁵⁰⁾

In view of the foregoing, the human being ceased to be a set of molecules to become a molecular dynamic in a game of relations and interactions, a closed network of changes and molecular syntheses.⁽⁵⁰⁾ This led to the extrapolation that Francisco Varela made in the social field years later when stating that “culture is an autopoietic system that exists in a space of conversations”; [Own translation] this idea strongly influenced Fernando Flores, who stated that an organization is a network of conversations.^(50,53)

In summary, autopoiesis showed that “the living being is a systematic entity, even when its realization has a molecular nature,” [Own translation] which demolished the idea of associating the human body, as a living

being, to a lifeless machine and denied that “the body is in the social because the social is in the body.”⁽⁶⁾ Due to these ways of conceiving the living, it was understood that the complexity of the health-disease-health care process (HDPC) was being ignored by “a lack of health care knowledge,” resulting from “not thinking about health care,”^(48,54) [own translation] which denied the biological complexity of the human body and the social-historical nature of the health-disease-health care process, supporting Heidegger’s affirmation that “science does not think.”⁽⁵⁵⁾ What were the consequences? The idea of the human body as a machine dominated the common sense of users and professionals (daily life, subject of life).⁽⁴⁸⁾

The hospital as a political-institutional construction

The first known hospitals – 6th century BC – take us back to the Temple of Aesculapius, the Roman legions, and the valetudinarians.⁽⁵⁶⁾ In the Middle Ages, the hospital was governed by the Church and was created as a way to spatialize poverty and social marginalization under forms of confinements and/or isolation. Hence, hospitals were shelters for the sick and for those who had no homes or family. They were places to die and, if the person was healthy when admitted, it would not be long before he or she would become ill because of poor hygiene. Hospitals were charitable institutions that were ruled by the Church or social leaders of the community.^(57,58)

The process of medicalization of society started in the 18th century.⁽⁵⁹⁾ The hospital acquired a therapeutic role; it stopped being an architectural figure to become another technology of cure,⁽⁶⁰⁾ and for this reason it needed to be organized. Consequently, maritime hospitals started to incorporate new organizational forms, and quarantine was introduced to prevent epidemics and control smuggling, which was part of the chaos that negatively affected trade. Furthermore, the hospital became socially hierarchized, among other reasons, because of the professionalization of

the armies, which implied that the loss of a soldier was burdensome, therefore, when a soldier was wounded he had to be cared for and treated accordingly. At that time, curing people became a necessity and led to the creation of the figure of the hospital physician in Europe along with the implementation of medical rounds, the systematic registration of patients, and the grand rounds of clinical case discussion. Thus, both the individual and the population became an object of knowledge and medical practice, the framework of a new experience developed in the hospital.^(43,60)

From the 18th century onward, the hospital was transformed into a collective medicalization apparatus, medicine exceeded the limits of sick patients and diseases, and established biopolitics as a form of government control over the population through health, hygiene, birth rates, longevity, and race. Medical power increasingly became the right to intervene and “make” live or “let” die, in contrast to what had been happening until then: the State only had the right to let live and make die.^(61,62,63)

The hospital gradually transitioned from an institution for the poor to one for the wealthy, and from being funded by charity to becoming a profitable business. The incorporation of science transformed hospitals. From being “citadels of science and bureaucracy,” they became “citadels of trade” that considered the cure of a disease as a commodity.

In the 19th century, the white coat worn by physicians replaced the black cassock worn by the priests. That is how physicians became mechanics of the machines and, ultimately, priests of the souls,⁽⁶⁴⁾ a priesthood that would decline over time. Thus, hospitals transformed themselves from magical-religious institutions into organizations based on private clients,⁽⁴⁵⁾ focused on the treatment of diseases to the detriment of the health care provided to people.

From the workshop to the factory

The creation of hospitals in the US started in 1750 under two different forms: secular

hospitals, managed by laymen with a predominance of Protestants; and public hospitals, run by the municipalities, the counties, or the federal government. Starting in 1850, different institutional structures started to emerge, such as religious institutions (Catholic immigrants); ethnical institutions, which served as cultural containment against discrimination and prejudice; or places specialized in children and women. Homeopathic physicians created their hospitals as well.

During the first decades of the 20th century, hospitals, often privately owned, were established as central actors in the provision of health care. The use of hospitals increased, starting to displace medicine in the doctor’s office, which was, until then, the preferred place to receive medical care.^(1,43,64)

The iatromechanical theory, by installing the image of the body as a machine, introduced the need for a workshop to repair it, which became the role of the hospital starting in the 18th century, when its hegemony was established. The mechanical ideas subordinated the hospital to the Industrial Revolution. Expressions such as, “every hospital is a processing industry of people”⁽⁵⁸⁾ [own translation]; “the organized processing of patients by doctors and machines seemed akin to mass production methods of industry”⁽⁶⁵⁾; “health workshop or medical industry”⁽⁶⁶⁾ [own translation]; or “the transformation of medicine into an industry” evidenced the penetration of the mechanical ideas into the language.⁽¹⁾

During the Industrial Revolution in the 15th and 16th centuries, the first workshops were located in the owners’ houses, where they had their machines and tools. However, as machines became more complex – they increased in size and raised their price value – the workshops moved from the owners’ houses to the factories. The same occurred in the US at the end of the 19th century and the beginning of the 20th century when physicians moved from their homes to the hospital. The difference with Europe was that the physician was always in the hospital; on the contrary, in the US, physicians came to

the hospital without any patients, and then brought them in.⁽¹⁾ Milton Roemer referred to the “doctors’ workshop” in reference to those American professionals from the private sector, who started to use the hospital as a doctor’s office and charged their fees to the patients. This practice, which started at the end of the 19th century, became generalized among physicians that came back from the First World War and brought a positive experience of cooperative and team work.^(56,65)

In 1873, the nurses’ cap replaced the veil worn by the nuns who were traditionally in charge of patients. The professionalization of nursing, based on the model established by Florence Nightingale, changed the role of those women, who until then had worked as cleaners and had been treated as maids by the physicians. Starr highlights the fact that, over time, the new professional nurses became valuable assistants to the physicians, despite being rejected at first for fear that they would stop obeying their orders. Social workers had a similar fate when they started working at the hospital.^(1,18,66,67)

In 1890, hospitals that focused on economic profitability emerged, motivated by the development of surgery and antiseptic practices, which started in 1880. The decrease in hospital mortality had a positive impact on the image of the hospital. The bacteriological revolution, initiated by Pasteur in 1855, led to the creation of the first bacteriological laboratory in Philadelphia in 1896. The scientific breakthroughs not only boosted the number of hospitals, but also resulted in shorter stays of admitted patients, which were expressed in days rather than in weeks.^(1,66,67)

To release itself from the stigma of its prescientific phase, the hospital, as an institution, rejected or isolated contagious and dangerous cases, as well as patients with incurable diseases. It was about creating a health institution that would remove the image of a place of death. The purchase of technology for the evolution of the hospital required capital, and physicians sought financing from banks, politicians, and lawyers, or trust funds. Thus, management committees

were also created, giving place to the figure of the hospital manager.⁽¹⁾

Eventually, physicians based their relationship with the sick patient on three facts: the information given by the patient orally, the observation of their physical appearance and characteristics, and, very rarely, the physical examination. The latter, at the very most, was limited to the sense of touch or checking the patient’s pulse. The black briefcase, containing the stethoscope, the auscultation towel, the tongue depressor, the thermometer, the alcohol, and the reflex hammer constituted all the necessary technology.

The information in the medical record was not systematized and only reflected the medical discourse. The symptoms (what could be reported) and the signs (what could be objectified) were not always used in that sense and were often confused. This distinction started with the incorporation of the first technologies (stethoscope, microscope, among others) and reached its highest expression in the second half of the 20th century, when the development of sophisticated equipment accentuated this process, displacing the medical subject itself and building a medical institution-sick person relationship.⁽⁴⁶⁾

Between the end of the 19th century and the beginning of the 20th century, along with the development of scientific medicine, hospitals were prioritized, becoming a competition for the physicians that practiced medicine in the private sector, who felt left out of the scientific discoveries and the chance to be part of the medical institution. Only a small percentage of them worked in these organizations, hence, the issue of controlling the organizations and creating their own hospitals (microenterprises) was raised, especially in small towns. These physicians feared that hospitals located in big cities were going to take away their patients.

During the last decades of the 19th century, the medical profession in the US challenged every attempt of regulation and/or participation, whether state or private. In the first years of the 20th century, the American Medical Association (AMA) had created a

strong position of power that influenced public opinion and state agencies. The AMA took over the field of medical attention by defining its contents, financing, and organization: “the public power was handed over to the professionals.”⁽⁶⁸⁾ [Own translation] Thus, physicians succeeded in maintaining the integrity of their work and controlling the division of labor, contrary to what happened to other professionals, who despite their resistance, were defeated and saw how their profession became industrial work.

The instrumentalization of knowledge, which started in the second half of the 19th century, would converge in the specialization of the medical practice. Until then, specializing in a specific part of the body was frowned upon, medical practice had to be general. That is why generalist physicians dominated the field and specialization was associated with quacks and healers. However, by 1880, the number of publications by specialists was growing at a faster pace than those by generalists.⁽⁶⁵⁾ Until the end of the 19th century, only a small part of the population visited a physician. Since then, there was strong pressure to pass laws that granted licenses to practice medicine, because the academic degree could be bought, for example, at Michigan University.⁽⁶⁹⁾ The Flexner Report⁽²²⁾ organized the situation starting in 1910. Since then, physicians took over the monopoly of the cure and knowledge began focusing on science, leaving behind theology and philosophy.⁽⁷⁰⁾ In 1929, one out of four private physicians in the US was a full-time specialist and, in 1969, this number increased to three out of four.⁽⁶⁵⁾ At the beginning of the second decade of the 20th century, medical knowledge guaranteed such a quality of cure that a sick patient, who chose a physician randomly, had more than a 50% chance of benefiting from that medical encounter.⁽⁷¹⁾

Between 1911 and 1921, the number of patients in New York paying for their hospitalization rose from 18% to 45%, and the number of private patients from 20% to 24%. Hospitalization inequalities were evident; hospital patients were admitted into common wards, while those patients admitted by

private physicians had individual rooms and a higher likelihood to receive visitors.

During the 1930s, the economic conditions resulting from the “Great Depression” made it imperative to create new financing systems, such as medical insurance campaigns, organized by the professionals themselves, such as the Blue Cross. Not only did this reflect the specialization of the medical profession but it would also increase the number of hospitals, promoted by private health insurance companies that contributed to its growth and to the centrality that they acquired in the health system until mid-1970.⁽⁷²⁾

Physicians decided to make use of hospitals instead of being their employees, with the intention of keeping their autonomy without losing control. This was evidenced in 1937, when radiologists and anesthetists got hospitals to pay them fees and not salaries.⁽¹⁾ The technological development brought about new scenarios: Who would control them and who would seize the proceeds of those newly incorporated technologies? By the 1920s, nurses took over the anesthetic field and the use of x-ray units. The situation changed in the following decades when physicians gained total control of the specialties and, therefore, their profitability, subordinating nursing to them.⁽¹⁾

Between the 1940s and the 1960s, the AMA formed “the Iron Triangle” with the support of other medical organizations, insurance companies, and entrepreneurs. They all had in common their strong private interests and a Congress that responded to their demands. They were collectively against medical care reforms, which they described as “the final and irrevocable step toward a Socialist state”⁽⁶⁸⁾ [own translation] that would cause physicians to become “slaves”⁽⁶⁸⁾ [own translation]; private health insurance plans were their main proposal.

Physicians were interested in the attention of the acute process of disease. Otherwise, the patient lost the physicians’ interest because there was nothing left to do and, as a result, patients were discharged without taking into account their recovery or their rehabilitation. It began to be clear that medical

practice relied more on the professionals than on the administrators. This led physicians to have full control of hospitals.^(1,73) Hospital financing was a problem and, at the same time, it was evident that physicians were the main variable to explain hospital admissions.⁽⁷⁴⁾ They provided the patients who paid the hospital fees, and thus, the economic importance that trust funds had until then started to be reversed.⁽¹⁾

Physicians could follow the evolution of individual diseases and their diagnoses in hospitals on a wider scale than in their private offices. *Post mortem* dissections in inmates provided more information on pathologies. Hospitals became research centers (especially after the Second World War). The efforts to improve the use of drugs implied clinical trials and statistical analysis. Birth and death went from the home to the hospital. The moral authority of the physicians, which was until then based on personal qualities, started to be supported on their scientific competences. Clinical experimentation was frantic, sometimes abusive, offering little protection to patients.^(1,57) Thus, consolidating a hospital-centered culture that naturalized statements such as: “*without hospitals it is impossible to bring the benefits of the health-saving sciences to the people. Without hospitals it is impossible to raise the Nation's health standards.*”⁽⁷⁵⁾

What was described throughout the text applies to the US, but it is also observed to a greater or lesser extent in most countries. It should be noted that the next quote, from a Chilean public health expert about the National Health System (that started in Chile in 1952), shows that publicly owned institutions neither resolve the limitations of the hospital-centered culture in people's health care:

For the Chilean organization, the hospital is the fundamental axis of health organization. It is so far from being the last link that our proletarian class says, “I am going to the hospital” instead of “I am going to the doctor's.” Tradition obliges them to do so, and their everyday language is simply an evidence

of our organizational failure.⁽⁷⁶⁾ [Own translation]

Although these words are from the late 1960s, it is necessary to ask ourselves about the reasons why it is still imperative to focus health policies on hospitals and not on territories and health centers. What are the scientific evidences for this?

From the factory to the company

The organizational forms of 20th century hospitals were influenced by the general administrative theory. Its objective was that hospitals should work in the same articulated way as factories did^(77,78); however, financing was always a problem, to such an extent that it was debated if health care was a social investment or if it should be considered an expense, even doubting if such expense was related to health care results.^(1,79) The metaphor used by Paul Starr to portray the situation was: “American medicine seemed to pass from stubborn shortages to irrepressible excess, without ever having passed through happy sufficiency,” it was necessary to “curb its apparently insatiable appetite for resources” of such a way of practicing medicine.⁽¹⁾

The matter of costs and expenses was not new. Between 1925 and 1926, two lectures about the economic factors that impacted the organization of medicine were held. In these lectures, it was decided to create the Committee on the Costs of Medical Care in order to control expenses and after five years of research, in 1932, it published twenty eight volumes entitled *Medical Care for the American People*.⁽¹⁾ Between 1950 and 1960, the cost of hospital health care grew constantly in the US; community hospitals expenses grew on average by 8% annually and, in 1965, by 14% annually. When analyzing the costs, unnecessary surgeries and patients that did not need to be hospitalized were detected. Physicians had entered a game – which still continues today – that was promoted by the payment of fees in a way that the higher the costs, the higher the refunds. That is how the figure of

the third-party payer entered the scene, which favored the enforcement of the Roemer's Law that stated that the number of beds available created a demand for their use.⁽¹⁾ Health expenditure and its financing became the central matter, to the extent that if we compare the expenditure as a percentage of the GDP between 1960 and 2017, it more than tripled. Meanwhile, the hospitalization expenditure was multiplied by 12, although the admission rates decreased, and the hospital expenditure by 200, although the number of hospitals was reduced by 20% and the total US population increased by 75% (Table 1).^(24,80,81,82,83)

At the same time that the expenses increased, there was a concentration of technology and, consequently, fewer admissions to hospitals, which initiated the outpatient medical care, not necessarily centered on the traditional private doctor's office method but on microenterprises.⁽⁸⁴⁾ The surgical outpatient practice, the therapeutic efficacy of drugs without the need of hospitalization, the development of certain technologies (peritoneal

dialysis), and the creation of institutions for the elderly people converged during this transition. Despite this fact, there were still two big problems: the increase in costs and the overprovision of services. This not only happened in the US: the financial crisis on health care systems was and still is a worldwide problem.⁽²⁴⁾

Starting in the 1970s, a period of loss of legitimacy of the professional medical power in the US started; it was the "end of a mandate," as highlighted by Paul Starr.⁽¹⁾ Two factors converged in this phenomenon: a loss of trust in the ability of science and technology to promote the well-being of societies, and the inability of medicine to tackle health care problems in an integral manner. At the same time, movements for health care and patient's rights emerged, as well as the women's movement that distrusted professionals and institutions under their responsibility. One of the most frequently discussed problems was that of the premises, the method, and the type of intervention during childbirth. The

Table 1. Hospital indicators: health expenditure as a percentage of GDP and total population. US, 1873-2017.

Years	NH	Number of beds, in millions			NI	Occupancy rate		ALS	EHCH	HE	TNBH	EHPGDP	PT
		Total	F	NF		F	NF						
1873	<200	-	-	-	-	-	-	-	-	-	-	-	39
1875	661	-	-	-	-	-	-	-	-	-	-	-	39
1909	4,000	-	-	-	-	-	-	-	-	-	-	-	92
1928-1930	7,000	-	-	-	-	-	-	-	-	-	-	-	122
1950	6,788	1.45	-	-	18.48	-	-	-	-	2.1	-	-	150
1960	6,876	1.65	-	-	25.03	-	-	-	-	5.6	-	5.0	179
1973-1975	7,156	1.46	0.131	1.333	36.16	76.7	-	11.4	1,030.34	27.2	3,537	7.2	211
1980	6,965	1.36	0.117	1.247	38.89	80.1	77.4	10.0	1,851.04	100.5	3,500	9.4	227
1990	6,649	1.21	0.098	1.115	33.77	72.9	69.2	9.1	4,946.68	250.4	4,046	12.2	250
2000	5,810	0.98	0.053	0.930	34.89	68.2	65.9	5.8	6,648.62	415.5	3,940	12.5	282
2010	5,754	0.94	0.044	0.897	36.91	65.3	66.6	5.4	10,313.44	822.3	3,871	16.4	310
2016-2017	5,534	0.89	0.030	0.860	35.16	64.7	-	6.1	12,777.25	1,082.5	3,761	17.0	316

Source: Own elaboration based on Starr,⁽¹⁾ Reiser,⁽⁶⁵⁾ The World Bank,⁽²⁴⁾ Catlin and Cowan,⁽⁷⁹⁾ Hartman et al.,⁽⁸⁰⁾ Diez Roux and Spinelli,⁽⁸¹⁾ Pan American Health Organization,⁽⁸²⁾ American Hospital Association,⁽⁸⁴⁾ Center for Medicare & Medicaid Services,⁽⁸⁵⁾ US Department of Health and Human Services.⁽⁸⁶⁾

NH = Number of hospitals; F = Federal; NF = Non-federal; NHP = Number of hospitalized patients (in millions); ALS = Average length of stay; EHCH = Expenditure for hospitalization in community hospitals (in dollars per patient); HE = Hospital expenditure (in billions of dollars); TNBH = Total number of births in hospitals (in millions); EHPGDP = Expenditure in health as a percentage of gross domestic product; TP = Total population (in millions).

aim was to demedicalize and deinstitutionalize, trying to limit the autonomy and power of professionals.⁽¹⁾ Around the same time, Ivan Illich wrote: “The medical business has become a greater danger for health.”⁽³¹⁾ [Own translation]

In 1970, *Fortune* magazine published an article that stated: “*The doctors created the system. They run it, and they are the most formidable obstacle to its improvement.*”⁽¹⁾ A statement like this, published in an economy magazine, was until then impossible. The interests of governments, companies, and liberal protest movements that fought for equality in health care agreed to denounce this crisis and blamed physicians for it. The idea that decisions could not be in the hands of physicians and that they should be political was established, as well as that medical care should be a separate entity from hospitals and that it should search for more efficient systems, as well as regulate the fees charged in those institutions. As a result, these ideas and reform proposals started to be part of the political agenda.

The medical care reform was addressed both by democrats and republicans. The whole process was described by the AMA as “*the most dangerous interference by the government in health practice in the history of the nation.*”⁽¹⁾ [Own translation] By the end of 1969, a national health care insurance was proposed, under the sponsorship of Nelson Rockefeller; in 1970, Edward Kennedy and Martha Griffiths proposed a National Health Security Plan; and in 1971, Richard Nixon announced “a new national health strategy” where the Health Maintenance Organization (HMO) would be the main innovation; all of which gained strength in 1976 under Carter’s administration.⁽¹⁾ The HMO was described as “an organized system of health care services that provided a large number of medical services to those who voluntarily signed up, in exchange for the payment of a fixed and periodical fee.”⁽⁵⁸⁾ [Own translation]

Between 1970 and 1974, the medical organization started to move away from the professional control toward the complex of medical schools and hospitals, regulatory

agencies, insurance companies, conglomerates, holdings, and other companies, and from health professionals toward economists and business experts.^(1,79) This “end of the medical mandate” [own translation] marks the beginning of the separation between medicine and physicians, who were left at a crossroad among the new scenarios (medicine as part of the business world) and a professional practice that, until then, had resisted the attacks of capitalism that attempted to regulate it and that intended to continue with their old practices. The above mentioned only expresses the end of an expansion cycle of production, with a greater integration and control over the health care providers.⁽⁸⁸⁾ It was time for the big transnational corporations, generators of values and identities that were deterritorialized, affecting the Nation-States and their cultures. These corporations, not only conditioned the decision-making processes of the States, but also sought to keep their autonomy before them and the civil society, which demonstrated that they considered their owners as the only subjects of rights.⁽⁸⁹⁾

At the end of the 20th century, hospital care became a massive industry co-opted by the ideology of the market. It went from communal relationships – to the extent that, in the mid-20th century, executive officers could have their own houses within the same land of the hospitals – to associative relationships of exchange and/or economic associations.⁽¹⁾ During the last decades of the 20th century, the hospital became a medical-industrial complex actor, related to private interests and financial capital, as part of the process of industrialization of medicine.

Moreover, as an institution, it became an enigma for many disciplines: it was analyzed as a social system, as a complex organization,^(90,91) or as small business associations; and while the sociology field wondered why hospitals were detaching from bureaucratic models, in the economic field the question was: What causes its maximization? Because profitability was not the answer.^(1,92)

THE MEDICAL-INDUSTRIAL COMPLEX: FROM HIPPOCRATES TO ADAM SMITH

On January 17, 1961, the president of the United States, Dwight Eisenhower, in his last speech to the country, warned the people about the gigantic arms industry, which he called “the military-industrial complex,” which, along with a vast military establishment, had acquired great political and financial power. Eisenhower’s concern was based on the possible conflict between public and private interests in research and technological development in the crucial field of national defense.⁽⁹³⁾

In January 1970, *Fortune* magazine published an issue titled “*Our ailing medical system*,” dedicated to technological growth in medicine and to the financial bigwigs of the US health care system. The headlines of the articles were: “*It’s time to operate*”; “*Better care at less cost without miracles*”; “*Change begins in the doctor’s office*”; “*Hospitals need management even more than money*.” An article from this issue was written by Harold Meyers under the title “*The medical-industrial complex*,” where he described how technical development for diagnosis, treatment, and the cure of illnesses led to breakthroughs and innovations, such as the development of artificial hearts, artificial heart valves, microsurgery elements, pacemakers, cobalt-powered machines, customized hospital beds, dialysis machines, chromatography machines, automated analysis of blood tests, and the development of electronics applied to the health field, among others.⁽⁹⁴⁾

This technological development attracted new companies that joined the already existing ones, to transform health care into a more docile market object. The business of manufacturing and selling the products used by professionals and hospitals caused a merger of companies – and the creation of medical divisions within others – in order to participate in a 63 trillion-dollar market (in 1969), a great amount of which was directed to manufacturing the mentioned devices. This market

had been growing at a yearly rate of between 10% and 15%, to such an extent that people talked about a “health care dollar.” Scalpels, suture material, gloves, syringes, cages for laboratory animals, and machines for organ preservation increased the profits of already existing companies, such as Eli Lilly, Baxter Laboratories, Johnson & Johnson, and General Electric; and promoted the formation of new companies, such as American Hospital Supply Corp., Philip Morris, Zenith, Motorola, Addressograph Multigraph, Bigelow-Sanford, Lockheed, Monsanto, International Paper, Scott Paper, and Kimberly Clark.

In 1975, Ivan Illich stated in *Némesis médica*⁽³¹⁾ [Medical Nemesis]: “Institutionalized medicine is a serious threat for people’s health. The impact of professional control over medicine disempowers people and has reached epidemic proportions.” [Own translation] He also described “the ultimate evil of medical progress” and declared iatrogenic disease as its consequence. In Greek mythology, Nemesis personified divine justice and the vengeance of the Gods which fell upon “mortals who infringe on those prerogatives the gods enviously guard for themselves,” in the attempt of becoming heroes rather than human beings. Hence the title of Ivan Illich’s book, which acquired greater meaning over time.^(31,95) Medical societies were horrified by the book, which was also criticized by Juan Cesar García⁽⁹⁶⁾ – the founder of Latin American Social Medicine – because of its phenomenological character, a criticism that Pasos Nogueira reconsidered three decades later.⁽⁹⁷⁾

Between 1970 and 1980, “a new master” came into existence, the medical-industrial complex, which transformed the institutional structure of the health care field, by displacing the power of the AMA into the financial capital.⁽¹⁾ The beginning of this process is related to the approval of Medicare and Medicaid, in 1965, turning medical care into a very profitable business given the public financing, which attracted investors.⁽¹⁾ This reframed the relationship between doctors, hospitals, medical schools, insurance companies, the pharmaceutical industry, the

medical technology industry, and other profitable businesses related to the health field.⁽¹⁾

In 1980, ten years after the medical-industrial complex was first mentioned in the issue of *Fortune* mentioned above, Arnold Relman, chief editor of the *New England Journal of Medicine*, referred to the “new medical-industrial complex” in one of the magazine’s articles. In this article, he analyzed the emergence in the United States in the 1970s of a network of private corporations involved in the health care business, whose only goal was to make a profit.⁽²⁵⁾ It was estimated that the medical-industrial complex in the US had an income of around 35 to 40 billion dollars per year (almost a quarter of the total expenses on health care during 1979), and that the profits earned had risen between 30% and 35% in 1979.⁽²⁵⁾ As a result, Relman wondered whether it was possible to leave health care in the hands of the market game, when there are not enough studies about its contribution to the quality and/or decrease of costs.⁽²⁵⁾ At that time, the United States spent 10% of its GDP on health, and Relman claimed that “it is clear that costs cannot continue to rise at anything near their present rate unless other important social goals are sacrificed.”⁽²⁵⁾ Nowadays, 38 years after his claim, the expenditure on health of the United States is equal to 17% of its GDP and almost 15% of its population (approximately 45 million people) do not have health care.

Arnold Relman argued that not only was the pharmaceutical industry, which had been the target of criticism and complaints since the 1970s, part of the medical-industrial complex but also the production of health technology and other health care facilities, professionals or any other actors related to health care, which were part of an economic emporium with decisive influence on crucial matters, such as research, training, and medical attention. Arnold Relman stated that the medical-industrial complex was a growing network of corporations devoted to providing health care services – geriatrics, hemodialysis, home care, and laboratory diagnostic tests – for onerous purposes. Medical services were, until then, provided by non-profit

institutions, individual professionals or professionals that were part of the cultural practices of a family group.⁽²⁵⁾ The concept of medical-industrial complex was later known as financial-medical-industrial complex or medical-financial complex.^(99,100,101,102,103)

Arnold Relman highlighted the naturalization of health care as a product of the market, which caught the attention of Wall Street, focusing on this enormous private medical industry, which was rapidly growing, with a bright economic future ahead and relatively invulnerable to the recession. Therefore, Arnold Relman raised the need for regulation, but at the same time, had doubts about doctors acting as regulators given the conflict of interest in their prescriptions and interventions. According to Relman’s research, “probably more than 70 per cent of all expenditures for personal health care are the result of decisions of doctors,”⁽²⁵⁾ which showed that the only important risk for investors was the threat of greater government control.⁽²⁵⁾ This raised a dilemma between “economic interests and social values.”⁽¹⁰³⁾ Relman’s concerns were confirmed by later publications that stated how economic interest replaces care for health, and how knowledge is produced by transforming individuals and/or populations into objects through clinical trials, which were later used as scientific evidence.^(104,105,106,107,108)

The organization of the medical-industrial complex set the basis for high standards of “unified control,” which is characterized by a change in property type and control (profitable corporations replaced public organizations and charitable institutions); horizontal integration (dominion of multi-institutional systems and the shift of control from communities to regional, national, and/or international areas); corporate diversification and restructuring (corporate conglomerates participating in various markets); vertical integration (organizations spanning different levels and health care stages); industrial concentration (more control and ownership over services rendered in increasing larger markets).⁽¹⁾

The medical-industrial complex led to overly expensive medical care based on business models and not on validated scientific results.⁽¹⁰⁹⁾ In this regard, we can retrieve different quotes that illustrate how publications of clinical trials showing “negative” effects take up to two to four years more to be published than those that show positive effects. During this period, patients may receive ineffective or harmful treatments.^(109,110) All of the above is possible due to the relationship between professionals and industry, which evidences the existence of an “all-for-industry science” with strong interprofessional ties, centered around commercial practices and financial and productive models, with a lack of interest in people’s health.⁽¹⁰⁹⁾ The power of the medical-industrial complex is expressed in the abilities to medicalize social and/or natural situations, such as identifying new diseases.⁽¹¹¹⁾

The increase in medicalization in society is the result of changes that express the expansion of disease diagnosis, the biomedical improvements, and the aging of the population. All these factors affect more and newer populations, and lead to the creation of more and newer markets. As a consequence of the above, it has been observed that people in their everyday lives consider the following conditions to be medical problems: andropause, baldness, and ADHD (attention deficit hyperactivity disorder) in children, and now expanded to include adults.⁽¹¹²⁾ Medicalization also expanded to mental health: alcoholism, addictions, childbirth, and the rise of cosmetic surgeries (breast implants, lifting, among others.) Another manifestation of this medicalization is the increase in the number of diagnoses in the DSM-IV [Diagnostic and Statistical Manual of Mental Disorders], which grew from 106 in 1952 to 297 in 1994,^(112,113) which explains the expansion of “abnormality” standards and social control by medical knowledge,⁽¹¹²⁾ opposing Georges Canguilhem’s statement made in 1943: “Hence medicine always exists [...] because there are men who feel sick, not because there are doctors to tell men of their illnesses.”⁽⁸⁾

Financial relationships between the medical-industrial complex and health professionals can be found in research studies (clinical trials), in education (undergraduate and graduate programs), and in continuing medical education. This evidences the existing conflicts of interest,^(114,115,116) because the doctor’s decision is influenced by the economic viability of the industry. This relationship creates a bias in decision-making, an effect that is multiplied if the person that creates “the influence” is an educator in his/her specialty given their leadership position.^(114,115)

There is clear evidence that industrial sponsorship in the health field, in general, always results in an economic balance in their favor.⁽¹¹⁷⁾ It has been estimated that for every dollar that the industry spends on doctors, the industry receives a profit of 3.56 dollars. It is also relevant to mention that a third of the operating income of many of the large US medical corporations depends on the medical-industrial complex.⁽¹¹⁵⁾ The acceptance of consultancies, fees, gifts, travel expenses, and dinners by professionals are just some of the ways in which equipment manufacturers and the pharmaceutical industry “seduce” the prescriptive behaviors of health professionals.^(114,115,116,118)

Therefore, while some propose the regulation of the medical-industrial complex,⁽¹¹⁹⁾ others defend its freedom, arguing that regulating Big Pharma would create a ghost of scientific mediocrity.⁽¹²⁰⁾ There is no doubt that medical knowledge owes a lot to research, generally initiated in university laboratories – most of them state-run institutions – and then applied on a large scale by the industry. Economic interests concealed behind apparent scientific discussions are extremely powerful, which may be seen in the book *The Truth About the Drug Companies*⁽¹⁰⁴⁾ written by Marcia Angell (first woman to serve as editor-in-chief of the *New England Journal of Medicine* between 1999 and 2000).

In 2014, Peter Gøtzsche, a Danish doctor and director of the Nordic Cochrane Center, published a book whose title compared the pharmaceutical industry to organized crime.⁽¹²¹⁾ That publication received the

award for the best book of the year by the British Medical Association. Over the course of its 504 pages, Gøtzsche analyzes the relationship of the pharmaceutical industry with different issues, such as asthma, epilepsy, diabetes, clinical trials, conflicts of interest in scientific publications, the lack of State regulations, and the indiscriminate usage of antipsychotic drugs and its relation to suicide in children; and describes how the drug business is carried out at the expense of people's health. In 2018, Cochrane Collaboration removed Gøtzsche from office for having accused the institution of their increasing lack of democratic collaboration and scientific pluralism.⁽¹²²⁾

In 2012, when asked about how his prediction about the medical-industrial complex had turned out to be, Arnold Relman answered that his speculation had been even worse than he had expected. In light of the dynamics of the health field and its lack of regulation, Susana Belmartino wondered who the arbitrator would be.⁽¹²⁴⁾

ROBOTS, PROFESSIONS, AND ARTISANAL HEALTH WORKERS

In the 20th century, the discussion about medical practice was divided into two positions: a dominant one, which highlighted the instrumental (reducing medical professionals to the status of technicians) and aimed to

automate work processes; and a subaltern one, based on the practices of the old generalist doctor, which highlighted the importance of personal relationships and the bond between workers and users, trying to restore medical practice outside the corporations.^(12,84,125,126) During this evolution, science became a synonym for technology and became dehumanized (Table 1).

These differences show a trend that seeks to substitute artisanal work for *homo faber*; however, it undoubtedly cannot fully transfer the heuristic passion and power from the artisanal to the technical. The idea of artisanal medical work practice can be found in Maria Cecilia Donnangelo's dissertation, presented in 1975, which highlights the tension of such transition from a more structural approach.⁽⁴³⁾

The idea of the machine led to thinking that repetition implied learning (replicant machines, such as the pacemaker), without worrying about the boredom that it represented. On the contrary, complex manual dexterity is not boring, which shows that only when the brain and the hands are separated, the workers' interest and motivation are affected because their work loses its uniqueness.⁽¹²⁸⁾ Isaac Stern's rule – for music – posited that the greater the dexterity, the more time can be devoted to training without getting bored. This rule can be extrapolated to any artisanal work.⁽¹²⁸⁾ The important feature in artisanal work was quality, which was related to the *maestro's* dexterity and not to the instruments. The capital annihilated artisanal work, and

Table 1. Differences between medical practice around 1900 and today

	Doctors working on a small scale receiving fees (1900)	Doctors working in bureaucratic organizations
Autonomy in work content and working conditions	More generalized work controlled by the doctors themselves	Typically, segmented work, directed by administrators according to organizational impositions (profits) and State regulations
Purpose of work	Doctors used to consider "patients" those seeking care from them.	Technically, patients are clients or members of the organization and doctors share these patients with other health care specialists
Work tools	In general, the doctors owned or rented their tools, and they also hired their own employees	Generally, technology belongs to the employing organization and is operated by other bureaucratic employees

Source: Own elaboration based on Engeström.⁽¹²⁷⁾

sought to create technicians.⁽¹²⁹⁾ In classical Greece, *techné* (lucrative professional work) was different from *paideia* (disinterested knowledge),⁽¹³⁰⁾ as well as *techné* (manufacturing) was differentiated from *poiesis*, which implied creating. Plato believed that *poiesis* enabled the transition from not being to being, it was a creative action.⁽¹³⁰⁾ Heidegger stated that the essence of technology was not technology itself, and that it was important to distinguish between modern technology, which implied a notion of imposition, and the ancient artisanal technique, which was not imposed upon entities but rather respected them. Heidegger argued that “the essence of technology is in a lofty sense ambiguous,” as it combined danger with solution.⁽¹³¹⁾

The advent of the robot

The idea of the automaton has distant origins but has remained over time, reaching its peak in capitalism. Automaton or robots – not always considered synonyms – can be found in the Talmud (legend of the Golem), in the Iliad, and in different historical moments, in which automated devices are built to help and/or replace people in the work processes.⁽¹²⁸⁾

Little is known about the story of René Descartes and his only daughter, Francine, who died of scarlet fever in 1640, at the age of five. Grief-stricken, her father decided to build an automaton. To this end, he commissioned a craftsman to make a ceramic mask of the girl’s face and, using scrap metal and clock pieces, he made an automaton the size of Francine that was able to utter human-like sounds. Thus, the modern philosopher, the man of reason, replaced his deceased daughter with an automaton, which he kept and carried in a trunk and, once he was alone, took it out to tell “her” about his day, ideas and projects.⁽¹³²⁾

In the mid-20th century, the beginning of microelectronics and smart machines paved the way for robotics in medical practice.⁽¹²⁸⁾ An example of its current impact can be found in the corporation Intuitive Surgical,

which manufactures robot-assisted surgical systems, especially the da Vinci System, which received regulatory approval to be used in surgical procedures in 6 continents (64 countries), with over 3,600 surgical robots and more than three million patients of urology, gynecology, general surgery, pediatric surgery, thoracic surgery, cardiac surgery, and otorhinolaryngology.⁽¹³³⁾

The relationship between robotics and artificial intelligence never ceases to amaze people. However, can we think of robots interacting with patients, interpreting signs, symptoms, and subjectivity? It seems impossible, but then again, how would this interaction between professionals and their patients be? The dominant models of care distance themselves from humanization, which is evidenced in the stories of doctors who have been hospitalized.^(134,135) Thus, we ask ourselves: can we advance toward the right to receive treatment based on relationships that promote the acknowledgment of others, within a context where there are bonds that transcend the “medical order” and its health care models without losing scientific quality?

During childhood, automatons are desired toys and are presented as representations of the real world, whereas in adult life they represent an oppressive reality. Walter Benjamin stated that the process of mechanization was centered upon the idea that machines can do anything, which conceals the fact that it causes not only muscular but also intellectual atrophy. Benjamin believed that machines limited human behavior and affirmed that human beings “live their existence as automatons [...] creating an initial conceptualization of future inhumanity.”⁽¹³⁶⁾ [Own translation]

The medical profession

Sennett argued that the first modern use of the word “professional” referred to people who considered themselves different from ordinary employees.⁽¹²⁸⁾ Freidson found it difficult to define what a profession was, but when in doubt he stated that “if anything ‘is’

a profession, it is contemporary medicine.”⁽¹⁸⁾ He based his statement on the position of medicine in society from the second half of the 19th century, when it was akin to ancient State religions that had the monopoly of the right to define health and illness with high levels of legitimacy, to the extent of receiving the legacy of the cure from the State, which – regardless of the political ideology – leaves the technological aspects of its work in the hands of doctors.^(18,71)

Eliot Freidson recognized that medicine, considered a profession, had the characteristic of being performed in the intimacy of an office, which is often limited to a relationship, not necessarily a harmonious one, between two people, but unlike other professions, whose actions are more collective, medicine may be exempted from the influence of the interests of the social game.^(18,71)

This is the reason why, while there was a social trend to eliminate the individual component in the profession and to replace it with several organizational forms in the 20th century, the medical field took advantage of its autonomy and managed to become an exception among the other professions, because not only did it escape from the control mechanisms of those organizational models but it also took over institutions, such as hospitals, which restricted the possibilities of regulating medical practices.

Since the end of the 19th century, the hegemonic construction through “medical liberties” has represented one of the cornerstones of their professional unions – not only in the United States – which were expressed in non-prescription drugs, payment for medical assistance, and patient’s freedom of choice.^(1,137) All these factors contributed to physician autonomy from political power and supported their claim for participation in the creation of policies and in the organizational directories, while denying the same possibility to other professions.^(1,18) The importance of hegemonic organization began to decline in the 1980s with the introduction of financial capital and the creation of the medical-industrial complex. As Paul Starr

stated “the chief threat to the sovereignty of the profession was the result of its success.”⁽¹⁾

What can be understood as good medical work? What is its essence? Do we have answers that could be understood by amateurs so that the State can regulate it and communities can control it? This social expertise should be people-oriented, using a clear and accessible language. On the contrary, the antisocial will create a gap between knowledge and the ability of experts and non-experts.

The return of the artisan?

The workshop was the artisan’s home, where three different tiers coexisted: masters, journeymen, and apprentices. They all worked together but not as equals. The workshop was the place where the conflict between authority and autonomy was evidenced. Authority arose from the masters’ skills, being intimately linked to their ethics, which was legitimized by the transfer of those skills to the journeymen and the apprentices. Masters were quasi-father figures and decided the work that would be done under their supervision.⁽¹²⁸⁾ Artisans taught through practical examples, at the beginning they showed the work, and did not speak, but given the great gap existing between language and body, body language became the founding element of spoken language.⁽¹²⁸⁾ Apprentices joined the workshop and, under religious oath, promised not to reveal the masters’ secrets and to remain beside them during work. Apprenticeships usually lasted seven years and ended with the presentation of a work based on imitation and copy, which had to demonstrate the apprentices’ skills. If the apprentice became a journeyman, he could remain as such between five and ten more years. To become a master and become judge of the entire process, they had to demonstrate management skills and reliability as leaders, in addition to the creation of a superior masterwork. The masters’ verdicts were indisputable, and very rarely did the guild (an association of artisans) have to intervene.⁽¹²⁸⁾ The similarities with the rationale currently

found in universities are undeniable and are evidenced in their academic chairs, and their tenured professors and assistant professors, in the research scientist careers in scientific institutions, and in the postgraduate training programs and/or professional internships. These examples reenact on a large scale, the practice described in medieval times as artisanal work, although this resemblance is usually ignored.

Richard Sennett takes up from the *Enciclopedia* [Classified dictionary of Sciences, Arts and Trades] the importance of artisanal work as a work correctly done, and defines craftsmanship as “an enduring, basic human impulse, the desire to do a job well for its own sake.” That is to say, to devote oneself to doing a good job, which requires curiosity, research, and learning.⁽¹²⁸⁾

This work does not romanticize artisanal work, as Fernando Diéz Rodríguez had attributed romanticized attributes to John Ruskin and William Morris’s proposals concerning the general work field,⁽³⁾ nor does it propose a return to the past; however, it shows artisanal work as an improvement of what medical work currently represents, in the dialectical sense that we learned from Juan Samaja (remove-maintain-overcome).^(138,139) On the basis of all the above, we propose the term artisanal health workers to refer to the health worker, not in the sense that every work they do is artisanal, disregarding the scientific and/or technological breakthroughs, but because their work is based on relationships, without prejudice to scientific quality. In this sense, we can recover the idea of “art,” which medicine recognized as part of its work before being overshadowed by the technological revolution.⁽⁶⁵⁾ These artisanal health workers are essential for the health of a society, because as Henry Sigerist stated: “great doctors are not necessarily the ones who determine the health of a population, but rather the army of medical practitioners who, scattered throughout the country, are at the patient’s bedside.”⁽¹⁴⁰⁾ [Own translation] Sigerist reinforced this idea by proposing doctors not to depend financially on their patients and, therefore, not feel compelled to profit from

disease and suffering, instead doctors should be salaried employees, as opposed to the liberal practice of the profession.⁽⁷⁰⁾

Nowadays, the difference between bright medical students and experienced doctors lies in the fact that the latter are more precise in their diagnoses, as they are less formalist, and act in a more receptive way, keeping in mind the uniqueness of the patient, and on the other hand, the students would be more formalist in trying to understand situations in a cause-effect logic, not in a procedural manner. This artisanal experience with imperfect tools is understood in the appreciation of the social expertise, which centers in the expert not only the ability to produce but to repair, which in medical practice, requires attention skills and, above all, care.⁽¹⁴¹⁾

The great Spanish doctor, Gregorio Marañón (1887-1990), was asked: “What is the most important medical technological innovation of the last few years?” He answered, “the best tool for a doctor is a chair,” as a reference to the power of listening to the patient. “Caring, curing.., maybe,” repeated Carlos Gianantonio (1926-1995), who is considered the father of Argentine pediatrics.

For Richard Sennett, doing is thinking, in contrast to the old saying “first you do, then you think.” [Own translation] Thinking of oneself as an artisanal rather than an industrial worker has personal and social implications.⁽¹²⁸⁾ People who produce things do not always understand what they do, nor are they always the owners of what they do. They have a tacit knowledge, they know how to do things but they cannot verbalize what they know. They do not suffer much because of the work they do but because of the way they are organized and think about the organization. Rigidity and rationality crystallize their thoughts about the organization, without realizing that they should play in those transitional places created by the organization, but as they ignore this, they can only do what they know.^(128,142) Richard Sennett revisits John Dewey’s statement: “work which remains permeated with a play attitude is art,” and with that statement he recovers play as a central element of culture.^(128,143,144)

The questions that all workers and their collectives should ask themselves are: how do we produce ourselves as subjects in the task of caring? And how do we care for those who suffer? A possible answer would be to understand that doing more and better is doing differently.

DENIED INSTITUTIONALISM: HEALTH CENTERS

Health centers have received multiple names throughout history, which in general, have co-existed over time. For example, in Argentina they are known as health centers, peripheral centers, dispensaries, first aid centers, aid stations, community health posts or Quick Response Center (UPA in Spanish) [*Unidad de Pronta Atención*]. This shows that institutions not only include rules, but also semiotics, which builds a frame of meanings and significance that guides the actions and interpretations of the subjects (individually and collectively). On the contrary, hospitals keep their names over time and only change the adjectives used to describe them; however, those adjectives do not affect their identity.

In the United States, public dispensaries were established in Philadelphia, New York, Boston, and Baltimore at the end of the 18th century, and grew slowly in the following century. At the beginning, they were created to provide services and homemade medicines to poor patients, based on the idea of charity. They also played an important role in the education of medical students, which contributed to their expansion given the need for internship places for future doctors. However, their growth sparked conflicts between the public and private sectors.⁽¹⁾ Thus, a generalist doctor wrote:

If a doctor sees his or her patients in a clinic three times a week for 52 weeks daily treating five patients on average, each of whom could pay a moderate fee, for example one dollar (yet this is a small average), what has he done? He/She has

simply deprived the medical profession of 780 dollars in one year.⁽¹⁾

The fear that dispensaries could be used by people who could afford a medical appointment resulted in the employment of social workers to control and prevent this “abuse.”⁽¹⁾ Several studies showed that between 2% and 12% (at most) of people who attended the health center could have paid for the visit.^(1,66) The fear of patients’ abuse in the use of dispensaries disguised another form of abuse: that of the professionals, who not always treated patients in the best way, subjecting them to long wait times. Specialists, contrary to generalist doctors, championed the practice in the dispensaries, as they were a place to gain experience and conduct experiments. Patients, since then, have no advocates.

In the first decades of the 20th century, the community health center movement began, reaching its peak in the 1930s, and declining since then.⁽⁶⁶⁾ This movement was characterized for providing access to all outpatient services, having qualified staff, reaching a high level of participation of the assisted population and having a strong articulation with other community resources.⁽⁶⁶⁾ The movement represented a response to the low impact of State programs and the increase in the population due to the migratory flow – particularly in Europe – that brought in unqualified workers that joined the industrial and commercial development as workers or artisans.⁽⁶⁶⁾ Ignoring the native language, poverty, and bad working conditions gave way to different neighborhoods, where immigrants gathered in accordance with their nationality or ethnicity, which caused new ways of solidarity that safeguarded their cultural identities.⁽⁶⁶⁾ This social movement and the immigrants’ living conditions caused rejection and concern in a great part of the American population that looked at the migrants as a threat to their lifestyles. This social situation was problematized by social workers, who were the first to help migrants and to highlight the role of poverty as the cause of the existing

problems, which did not deny the moralizing nature of many of their actions.⁽⁶⁶⁾

The first response from the State was the development of new programs, following the production of knowledge in which the environment and individual health were the main discussions. All of this contributed to an increase in qualified staff.⁽⁶⁶⁾ The implementation of these programs gave rise to other problems: lack of coordination of programmatic actions, overlapping of actions aimed at the same population, remoteness from the populations to be assisted, multiplicity of uncoordinated organizations, acknowledgment that the population's problems were neither simple nor their solutions easy, the ordinary citizens' ignorance about the existence of these programs, the services they provided or where they could obtain them.⁽⁶⁶⁾ In 1914, the Commissioner of Health of the City of New York stated: "*several offices send their representatives to the same district, sometimes to the same house, resulting in unnecessary loss of time and energy to the detriment of the citizens.*"⁽⁶⁶⁾ [Own translation] Nothing has changed since then in relation to programmatic structures and the Commissioner's statement remains valid.

The previous descriptions supported the idea that medical services and social assistance should be provided in the same place. The necessity of proximity of the health centers to the population responded to the cultural characteristics of the migrants, especially of women. The long waits, the need of taking care of their children, and the language barrier complicated their attendance to the care centers, which not only affected their health but also the official programs lost contact with that central agent for the provision of medical care to the family group.⁽⁶⁶⁾

In 1911, medical care of the mother-child population was delivered in a "block-by-block program" for Polish migrants, which became a relevant experience.⁽⁶⁶⁾ This program involved 33 blocks and 16,000 people, and about 350 to 400 mothers with their children. This experience was short and was repeated in 1917 in a community organization that also had control over the problems that

afflicted the community.⁽⁶⁶⁾ Every action carried out in these communities was previously approved by the district people. These experiences, in an area of New York, were very interesting as local democracies (self-government) when managing health matters.⁽⁶⁶⁾ Although not everything was sunshine and rainbows, the opposition came from the Mayor, the head of public charity, and the conservative groups, who saw in these experiences a "Red Scare" and everything ended in 1920. Afterwards, other experiences related to different situations were carried out, but they always succumbed to political changes, and therefore, never managed to last over time.

The Flexner Reform⁽¹⁸⁾ limited the growth of dispensaries that had expanded due to the proliferation of medical schools. It was at that moment that dispensaries began to transform themselves into units of outpatient care in hospitals and, starting in 1920, they started charging a fee for the visit.⁽¹⁾

The fortitude and stability of hospitals throughout history, based on medical power, contrast with the vulnerability of health centers; however, these centers started to replicate in other cities. Winslow, in 1919, stated that health centers were the most notable event in the evolution of public health in the United States.⁽⁶⁶⁾

In 1920, the Health Ministry of the United Kingdom presented the "Report on the future provision of medical and allied services," known as the "Dawson Report," in which a central role was given to health centers.⁽¹⁴⁶⁾ The report was written in a post-war setting, after the First World War, and had 38 pages, divided into seven sections, where it is important to highlight that the word hospital was not mentioned on the titles, and could only be found in section V, taking up less than two pages.⁽¹⁴⁶⁾

The end of the First World War brought along a great development of health centers with a great support of the American Red Cross. At the beginning of 1920, there were 72 centers in 49 communities in the United States; seven cities had more than one, 33 were run by the public administration; 27

were under private control, and 16 were controlled by a mixed administration; and the Red Cross was involved in 19 of them.⁽⁶⁶⁾ In 1930, there were 1,511 centers and their main financing source came from the public sector and their actions were essentially preventive. In 1932, William Welch, from the Public Health School at the Johns Hopkins University, created the Health Districts in Baltimore. These Health Districts expanded their geographical medical coverage and included health care services.⁽⁶⁶⁾ The increase in the number of health centers may be considered a success, but it was also a reason for its decline, because very different types of actions were carried out under their name, which ultimately discredited them.⁽⁶⁶⁾

In 1927, Michael Davis defined the health center as “an organization which provides, promotes, and coordinates medical services and related social services for a specified district.” This was more wish than reality. Medical care was rarely incorporated, and the term “health center” was at the time applied very loosely to child welfare stations, settlement houses, hospital outpatient departments, and tuberculosis and venereal clinics. Consequently, statistics suggesting there were hundreds of such centers must be judged skeptically.⁽¹⁾

George Rosen understands that, in the United States, the downfall of health centers was caused indirectly by a decrease in poverty (after all, they had been designed to treat diseases suffered by the poor); migratory restrictions; the inclusion of migrants’ children into society, who mastered the language and the culture of the United States; the lack of integration of preventive measures and curative measures in the health centers; the social work’s loss of their community gaze to focus on individual cases; and – last but not least – the resistance of political groups, doctors and, the charity organizations themselves.⁽⁶⁶⁾

In 1946, health centers had a major boost from John Grant, a Rockefeller Foundation official, who stated that the health center of

the future was about to be created.⁽⁶⁶⁾ At the end of the 1960s, Grant himself encouraged the Pan American Health Organization to translate and publish a Spanish version of the Dawson Report.⁽¹⁴⁷⁾

In 1952, Henry Sigerist⁽¹⁴⁸⁾ gave five conferences at the London School of Hygiene & Tropical Medicine of the University of London. At the time, he had already changed his idea about health insurance, which he came to consider as “rigid and in the hands of vested interests” with a “type of hypertrophied health service,” [own translation] hence, the need to “look for new roads.” On one of those conferences, titled “The Changing Models of Healthcare” he stated the following:

The best way to fully utilize the current medical technology is to organize groups of physicians, teams that practice medicine in health centers. What a family needs the most is not a family doctor, but a health center. These centers should be close to the people. In industrial zones, they may be at the service of a factory or a group of factories, or a residential district. The complete freedom to choose a doctor is fictitious. In rural areas, there is no great possibility of choice, how do people in the cities choose their doctor? People go to local doctors as a rule, the doctor that they can afford; and in the outpatient service of a hospital there is not much possibility of choice either; the patient may be treated by an advanced medical student.⁽¹⁴⁹⁾ [Own translation]

In 1970, the president of the AMA, in light of the criticism of medical power, stated: “Organized medicine should not be focused solely on the private interests of its members [...] It should be concerned and is concerned with social matters, such as sexual education, alcoholism, and air pollution.”⁽¹⁾ [Own translation] In 1971, 19 years after Henry Sigerist’s lecture, the AMA called to support the neighborhood health centers, given that professionals could be paid their fees for service, salary or training as they might decide, and

he proposed: “If we managed to give back the wide medical care to the population centers, neighborhoods, and have medical care available 24 hours a day, seven days a week, the people will tell Congress that the present system does not need to be restructured.”⁽¹⁾ The fact that the AMA accepted other payment methods for medical work and recovered health centers evidenced the threat felt by the American medical corporations by the medical-industrial complex, and the unrest and complaints from the civil society and the social movements against the medical power.

The promise made in the Declaration of Alma Ata in 1878, for integral and unified health care that would prioritize the first level of care vanished like the vodka that they drank to celebrate. The only thing left was the certainty of Mario Testa’s question (not so innocent) about whether the declaration proposed primary or primitive health care.⁽⁵⁴⁾ Health centers in the United States, as highlighted by George Rosen, were functional for responding to the poverty situations of the time, but no more than that, as the future of medicine was in the flourishing markets that were beginning to arise, which had hospitals as the headquarters of the new medical industry.⁽⁶⁷⁾

The future of health centers in the United States is widely known by the health workers in most Latin American countries, regardless of whether or not they had read George Rosen’s text⁽⁶⁶⁾ as they had already experienced their decline at some point in their working life. It may be surprising that this happened in the United States in the first decades of the 20th century, and that it bore a strong resemblance to other experiences conducted in several Latin American countries, even to this day.

Evidence shows that health centers are the natural place where artisanal health workers should practice their work. As stated by José Renán Esquivel, the father of Panamanian pediatrics, “diseases are not found in hospitals but rather in the community.”⁽¹⁵⁰⁾ [Own translation] Therefore, we ask ourselves if the deconstruction of the hospital-centered culture was possible. Why not return

to communal relationships, in which health centers become the new pillars of science and personalized human relationships with the different collectives in their territories? Can health costs be transformed into a social investment? All these questions are weak on the public agenda, which does not deny the existence of several experiences that, at different times, had tried (and still try) to move forward in this direction.

FINAL THOUGHTS: A DIFFICULT CROSSROAD TO RESOLVE

Why did the promise of a future without diseases go unfulfilled, and why did science begin creating them instead? The root of modern reason and its ideas of progress and wealth were based on science and technology. This rationalization process impacted on social action, making it more instrumental (technical knowledge), limiting humanization and, faced with the illusion of a better future, causing disappointment, which shows the sinister side of the promise of progress.^(11,151)

Therefore, it is necessary to incorporate into the analysis ideological and cultural dimensions which will help us to understand how medicine in the United States evolved from the mid-19th century – when it was a practice with no actors, no relevant institutions and no legitimacy – to the mid-20th century when it became a powerful corporation, impossible to be regulated and with a high level of social consensus.⁽¹⁾ We have to take into account here, not only the development of a profession (medicine) and an institution (the hospital), but also a deep cultural revolution that involved situations, such as birth, death, body control, and the attention and care of ailing patients.⁽¹⁾ Throughout the entire process, medicine became an extremely complex field, made up of interests and capitals underpinned by specialized knowledge, techniques, and conceptions of “the normal,” which constructed the idea of health as a matter of private life.⁽¹⁾ This transformation was oriented toward the predominance of the

therapeutic over prevention and promotion; hospitals, thus, became the most appropriate place to treat people and their conditions.⁽¹⁾ For all these reasons health professionals are at a crossroad, where they have to choose between providing services only to those who can afford them or to those who need them — a dilemma that should not be limited solely to health professionals but that requires a wider social debate.

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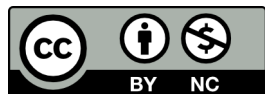
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