# Control of cervical cancer in Minas Gerais in the mid-1900s: the Belo Horizonte Hospital of Gynecology

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Abstract

This article discusses the structuring of the Hospital of Gynecology in Belo Horizonte, Minas Gerais, which was founded by the gynecologist Clóvis Salgado in 1939 as part of efforts to control cervical cancer. Created as a space for practical teaching in the School of Medicine, the hospital was a pioneer in introducing colposcopy in the state and establishing a structure specifically for care and diagnosis. This analysis investigates how promoting and attempting to assert diagnostic technologies were important in organizing this institution and its professional staff. The hospital firmly established itself in terms of activities to control cervical cancer by disseminating colposcopy as a technique, establishing dialogs with similar national institutions, and participating in exchanges with German science.

Keywords: Hospital of Gynecology; cervical cancer; colposcopy; scientific institutions.

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The objective of this article is to discuss the structuring of the Hospital of Gynecology in Belo Horizonte, Minas Gerais, as a space for practical teaching of this specialty in the medical school, specifically considering its activities to control cervical cancer in this Brazilian city in the mid-twentieth century. Our main argument is the institution's efforts to organize these activities not only established a structure for the hospital, but also solidified the model of care for patients with this disease.

Women's cancers, particularly cervical cancer, were on the agenda in discussions of health in various Brazilian institutions in the mid-twentieth century. During this period, the diffusion of new technologies for early diagnosis of this disease encouraged interest in the subject among the medical community as well as the organization of spaces for detection, treatment, and research. Early diagnosis was the main goal of the doctors involved, considering of the limits of medicine in treating cancer. During the 1920s, two diagnostic technologies were developed in parallel and had an impact on the detection, treatment, and guidance for activities to control cervical cancer: cytology[1] and colposcopy.[2] The former was developed in the United States by the pathologist George Nicholas Papanicolaou, and the latter in Germany by the gynecologist Hans Hinselmann.

Research in the social studies of science has addressed issues related to the control of cervical cancer, emphasizing topics that include problems with standardized readings of cytological slides, difficulties recruiting and training cytology technicians (Casper, Clarke, 1998), the organization of screening campaigns, and controversies regarding the cost and effectiveness of these programs (Hakama et al., 1985). This work has focused on cytology as a technique for early diagnosis and the organization of cancer detection campaigns.

Recent studies have discussed other variables related to the disease, such as alternative diagnostic technologies and different models of care associated with local realities and contexts. Some examples include work by Eraso (2010) and Teixeira and Löwy (13 jun. 2011) involving the concepts of the "Latin American exception" and "triple model," respectively. In general, cytology was the main method used during campaigns to prevent cervical cancer during the first half of the twentieth century in Europe and the United States, while colposcopy was more restricted to Germany and German-speaking nations. But in Latin American countries like Argentina, Chile, and Brazil, this technology was used as a front-line tool for examinations to detect cervical cancer lesions, establishing what the literature has termed the Latin American exception in activities to control this disease (Eraso, 2010). The so-called triple model was identified in the work of Teixeira and Löwy (13 jun. 2011) as a specific cervical cancer prevention method in Brazil up to the 1960s that consisted of combined use of colposcopy, cytology, and biopsy[3] during outpatient examination of all patients.

In analyzing the structuring of policies to control cervical cancer in Brazil and the introduction and dissemination of diagnostic technologies, historical production on this topic has highlighted specific characteristics of the national scenario and dialogs with other countries such as Germany and the United States (Lana, Teixeira, 2015; Lana, 2012, 2016). The organization of activities related to this disease and discussions among experts led to the formation of a prevention network through specialized publications, professional associations, staff training initiatives, and scientific exchange. This network included the

Hospital of Gynecology in Minas Gerais, the Institute of Gynecology at the College of Medicine in Rio de Janeiro, and the Aristides Maltez Hospital in Bahia. These institutions, with their own specific characteristics, became spaces to control this disease in their regions and institutionalize a specific model for action that was reinforced in Brazil until the 1970s, with colposcopy as the leading strategy to control cervical cancer (Lana, 2012).

During the mid-twentieth century, most organized cervical cancer care was provided by the medical schools, which created spaces for gynecological care linked to the respective department of gynecology. These were generally outpatient clinics that served the general public and also were the site of studies on new cases and treatment. Notable among these spaces for care during this period was the Hospital of Gynecology in Belo Horizonte (MG), founded in 1939 by the gynecologist and politician from that state, Clóvis Salgado,[4] for practical instruction in gynecology at the Medical School at the University of Minas Gerais. The hospital was a pioneer in introducing colposcopy in the state and creating a structure specifically for care and diagnosis of cervical cancer in the country.

In our analysis of the Hospital of Gynecology, we will investigate how promoting and attempting to assert diagnostic technologies were important to structuring this institution and establishing care guidelines. The introduction of these technologies, such as the colposcope, required adaptations to the specific surroundings as well as discussions and activities to identify the potential of these new techniques. Since new technologies do not emerge ready for use, some strategies are important in their establishment and entrenchment, such as forming a professional body of institutions and scientific discourse (Blume, 1992). The diagnostic potential of the colposcope also influenced the development of the model to control this disease (the triple model), shaping guidelines for professional activities and for spaces providing cervical cancer care.

Within the context of our analysis, early diagnosis of cervical cancer was the main strategy used by doctors involved with the disease, and their main control strategy. When we use the term "control" for a chronic degenerative disease such as cancer, we draw on the definition by David Cantor (2007), who understands this term to mean the task of identifying the disease or the risk of its development as early as possible and referring the patient to medical care to begin treatment immediately; control in this sense was not related to strategies to prevent illness, but rather early detection.

During the process of institutionalization at the Hospital of Gynecology, we will examine the model of care that was implemented and efforts to expand it through preventive outpatient clinics and the construction of knowledge, as well as organizing patient records. In this the concept of institutionalization is understood as the process of establishing, developing, and strengthening scientific activities during a particular historic period (Figueirôa, 1997). According to Figueirôa, it is possible to establish a network to support activities in which the most visible components are scientific institutions, but other elements are also present, such as the scientific "community" and government interests. From this perspective, institutionalization is seen as a process of building scientific practice and discourse and organizing strategies and strengthening professional groups.

From the points discussed above, our analysis begins with a discussion of the organization of the Hospital of Gynecology and activities in this institution to control

cervical cancer. Next, we will analyze the establishment of the model implemented in this hospital, with colposcopy as the central activity, and exchanges that took place when the inventor of colposcopy came to Brazil.

## The Hospital of Gynecology: teaching gynecology and organizing a model to control cervical cancer

The Medical School of Minas Gerais was founded in 1911. At that time, Santa Casa in Belo Horizonte was the space used for practical training for new doctors. The chair of gynecology was Hugo Werneck, a physician from Rio de Janeiro who began his medical practice in Belo Horizonte in 1907, at a time when this specialty for the most part was still dominated by surgeons. By the early 1930s, Werneck was a major reference in medicine in the city; much of his reputation stemmed from his activities providing care at Santa Casa and as a professor and director of the medical school (Marques, 2003).

After Werneck's death in 1935, a competitive process was held to name the new chair of gynecology. One of the most likely candidates for the position was Lucas Machado, a physician who worked under Werneck and took over nearly all his patients after his death, along with his gynecology classes at the medical school and the gynecology service at Santa Casa. But the winning candidate was Clóvis Salgado, a Minas-born physician who received his training and established his professional practice in Rio de Janeiro, with Machado in second place. Once established as chair, Salgado faced difficulties carrying out the practical part of his new position in the outpatient clinic at Santa Casa de Misericordia, which according to Marques (2003) was not only where a group linked to Machado worked, but also one of the main centers for Catholic physicians in Belo Horizonte. Furthermore, disputes and rumors of manipulation swirled around Salgado's hiring process, which were reported by the press of the time and discussed in assemblies at the university (Marques, 2003).

Rita Marques examined the controversy surrounding Salgado and the competitive process, and argues that these issues led to the depiction of this event as a watershed in women's health care in the city. This is because Werneck's "natural successor" was isolated in Santa Casa at the same time that Clóvis Salgado was confined to the school of medicine, only teaching theoretical classes as the new chair of gynecology. Practical classes continued to be taught at Santa Casa by Lucas Machado, who was authorized to teach them as a lecturer (Marques, 2003).

In response to these difficulties involving the use of Santa Casa for practical training, and in order to renovate the chair of gynecology while encouraging specialized training and research, Salgado established the Hospital of Gynecology, which was attached to the school of medicine and inaugurated on August 27, 1939. The first floor of the building held outpatient clinics, wards, and a laboratory. The second floor was reserved for public assistance. The hospital operated at this facility from 1939 to 1955, when it was transferred to the medical school's newly established Hospital das Clínicas. When the gynecology department was transferred to the main building, the hospital was then remodeled to treat infectious and tropical diseases and renamed the Carlos Chagas Hospital. In the 1970s, the Carlos Chagas Hospital was then transformed into a basic care unit; after treating

tropical diseases, the hospital returned to its original function and became an outpatient gynecology clinic for the Hospital das Clínicas, which it remained until 2008. During 2008 activities to demolish the old clinic building began in order to start construction on what is now the Jenny de Andrade Faria Institute for Elderly and Women's Health Care (Instituto Jenny de Andrade Faria de Assistência à Saúde do Idoso e da Mulher), which opened in 2010 (Marques, 2011).

Clóvis Salgado returned to the Hospital of Gynecology and served as its first director until 1955. Besides creating a structure for women's care that was directly linked to the School of Medicine, one of the purposes of the hospital was to train specialists to work in healthcare for women. Salgado encouraged a more preventive approach to women's medicine and less invasive treatments, particularly surgeries (Marques, 2003). This approach can be seen as one of the driving forces to establish a service at the hospital to care for patients with cancer, with early diagnosis as a prevention strategy. Within this context, prevention was the only strategy for controlling this disease, and was the main initiative among Brazilian physicians with regard to cervical cancer.

Specifically in terms of cervical cancer, according to the physicians of that time colposcopy was the technique that was most in line with the precepts described above for early diagnosis and prevention (Rocha, 1955). As a technology to detect cancer lesions, colposcopy offered a rapid response to examinations and boosted the likelihood of intervention in this disease. In Minas Gerais, the first known colposcope was acquired by Clóvis Salgado for his private clinic in 1934. When he became chair of gynecology in 1936, he moved this device to the medical college. Use of the colposcope was still restricted, however, since specific training was required to master the technique and interpret potential alterations that could be seen in the cervix. At that time there were very few colposcopes in Brazil, and no physicians in Minas Gerais had this training (Salgado, Rieper, 1970).

The German Hans Hinselmann, who developed the technique,[5] argued that he or his direct disciples should train professionals in using the device, because in his opinion the specific details of the technique could not be grasped through texts and illustrations alone (Hinselmann, 1952). João Paulo Rieper was the first Brazilian physician to train directly with Hinselmann in Germany, and became the main disseminator of this technology in Brazil.[6]

Rieper began working in the Institute of Gynecology in Rio de Janeiro in 1940. This space for outpatient care at the University of Brazil School of Medicine was established in 1930 by the physician Arnaldo de Moraes. It became a reference in cervical cancer activities in Brazil, and for pioneering the introduction and dissemination of diagnostic technologies and professional training (Lana, 2016).

Rieper also became a reference in training colposcopy technicians in Brazil, driven by the policy at the Institute of Gynecology to create extension courses for specialized training of gynecologists (Lana, 2016). The medical graduates included Alberto Henrique da Rocha, a physician from Minas Gerais who began as an assistant in the Hospital of Gynecology in 1941. In 1947, he published his lecturer's thesis entitled *The Contribution of Colposcopy to Gynecological Diagnostics* in order to take a teaching chair at the university. Rocha was trained as a colposcopist after he joined the hospital as a physician. When he began utilizing this method he highlighted the difficulties involved, and in showing the

institutional relations of the period he underscored the importance of practical training with Rieper in Rio de Janeiro, reporting that:

> Since 1941 my attention has focused on the study of colposcopy, performing colposcopies in the outpatient gynecological clinic. Until 1943 I had no practical results with the method, and concluded that I needed to learn directly from a technician experienced in recognizing colposcopic images. Encouraged by Professor Clóvis Salgado to undertake intensive work in order to be equipped with the true value of this method, I was fortunate to do an internship in the magnificent service of Professor Arnaldo de Moraes, where I gained my first insights and the experience needed to begin, learning the secret of interpreting colposcopic images from João Paulo Rieper according to the teachings of Hinselmann (Rocha, 1955, p.41).

Rocha's statement reinforces the importance of practical colposcopy training with professionals directly connected to Hinselmann, as well as the role of the Institute of Gynecology in this training. This institute was a pioneer in Brazil, not only in introducing the technology but also for training professionals in its use. From this space in Rio de Janeiro, an institutional exchange in activities to control this disease developed in the mid-1900s, which included the Hospital of Gynecology in Belo Horizonte. The network that formed (as noted at the beginning of this text) called for the organization of a diagnostic model specifically for this disease and helped put it on the agenda for health policies in the country, particularly starting from the 1960s (Lana, 2012).

In a publication by Clóvis Salgado and Alberto Henrique da Rocha in the *Anais Brasileiros de Ginecologia*, they stressed the practical value of this technology, in a clear defense of its use in outpatient clinics. According to Salgado, Rocha, and Junqueira (1949, p.79):

> In the fight against cervical cancer, the colposcopic method plays a crucial role. Periodic examination of every woman at an age when this cancer tends to appear, as is currently widespread, will be incomplete and flawed if the colposcope is not used. Hidden cancers will pass unnoticed.

They added that

> the technique developed by Hinselmann stands out for permitting diagnosis during the asymptomatic stages of the disease, by identifying what are known as the matrix zones. This phase can be long, which allows risk to be identified through systematic and periodic examinations, from a position of preventive gynecology. And once it is discovered in early stages, cervical cancer can be definitively cured through a benign operation (Salgado, Rocha, Junqueira, p.86).

Colposcopy at the Hospital of Gynecology was indicated as the main diagnostic method because in most cases, it permitted identification of the tumor during its earliest phase. Based on the American literature devoted to this technology, Alberto Henrique Rocha published an article advocating the method and noting its main critiques. He summed up the three main criticisms of colposcopy in the American literature at that time: the high cost of the device, time spent performing the examination, and the significant experience and practice required on the part of the colposcopist. He also defended colposcopy against these same criticisms, saying they were consistent with the implementation of the technique in private

clinics. In specialized clinics and centers to combat cancer, acquisition of equipment and professional training did not present obstacles to the widespread use of this technology, since these spaces have better organized infrastructure, and were able to bear the costs of device acquisition, conduct the exams, and train staff (Rocha, 1946). In his defense, Rocha highlighted the role of the Hospital of Gynecology in organizing activities to control cervical cancer, with colposcopy in a central role. His discourse shows the importance of the clinics linked to Brazilian medical colleges in establishing the physical structure for health care and, specifically in our discussion here, in disseminating and consolidating colposcopy as a technique for early detection. In this sense, we can argue that the technology spurred the organization of care models and the corps of professionals, to the same extent that the structuring of care spaces influenced the ways that this technology was introduced and disseminated within activities to control cervical cancer in Brazil.

For political reasons, this technology was only introduced and disseminated in the US from the 1950s and 1960s, and was subjected to harsh criticism from doctors there with regard to its applicability and functionality in diagnosing cervical cancer. In the United States, cytology spearheaded campaigns for early detection; Hinselmann's method spread tentatively through that country during the latter half of the twentieth century, and was seen as a complement to cytology in order to boost its diagnostic effectiveness (Lana, Teixeira, 2015).

At the Hospital of Gynecology, colposcopy was one of the pillars that structured and organized efforts there. This technology was the main response found by Brazilian physicians during the 1940s to view the cervix and achieve early diagnosis of this disease. After Rocha's work, the Hospital of Gynecology became a reference in disseminating the use of the colposcope in Belo Horizonte. The organization of projects at the Hospital of Gynecology confirmed and solidified the diagnostic model that was implemented in Brazil, which marked the specific characteristics of efforts to control this disease in the country. Within this model, colposcopy was the primary diagnostic technique, together with cytology and biopsy in a specific detection strategy: the triple model (Teixeira, Löwy, 13 jun. 2011). These actions involved these three tools to examine all the women who sought care, regardless of their complaints or symptoms. This was the hallmark of the network to prevent cervical cancer in Brazil at that time, and brought together different institutions as noted above.

Even though colposcopy was the primary diagnostic technique, cytology was also part of the preventive model used in the Hospital of Gynecology at that time. Cytology gained popularity in the hospital through the work of Iracema Baccarini,[7] who began working there in the 1940s, and joined the Department of Pathological Anatomy at the Medical School as an assistant professor in 1954. In 1952 the Histopathological Section Laboratory was created for the study of atypical cervical epithelial cells, to serve as a center for education and research related to the prevention of cervical cancer. Starting in 1957, the laboratory expanded to become a national center for education, granting scholarships to train new professionals (Salgado, 1964).

Professional training at the medical school's Hospital of Gynecology was advocated for students from the beginning of their education. Particularly with regard to teaching

colposcopy, basic knowledge on the technology and the technique was introduced to medical students with a general class on colposcopy, and practical lessons on its use in examinations to detect cervical cancer. Starting in 1958, specialized graduate courses were created with assistance from the federal government via the Brazilian Federal Agency for Support and Evaluation of Graduate Education (CAPES) that awarded grants to newly trained physicians; these full-time courses lasted six months and addressed colposcopy and cytology. In discussing the implementation and operation of these courses, Clóvis Salgado (1963) reported that in 1963 twenty physicians had completed the course, physicians who had received their medical degrees at the same institution as well as those from other regions of the country.

To expand care for cancer patients in Belo Horizonte, in 1942 Salgado implemented the Red Cross Service, which functioned within the Hospital of Gynecology. From the start, this service incorporated colposcopy into routine consultations. In 1944, the Brazilian Red Cross Cancer Post was established to address women's cancers. This unit acted as a preventive outpatient clinic to diagnose female cancers, particularly cervical cancer in its early stages (Salgado, 1963).

The inauguration of the Red Cross Cancer Post featured prominent names in Brazilian medicine: Herculano Teixeira d'Assumpção, president of the Red Cross; Alfredo Balena, director of the Medical School of Minas Gerais; Clóvis Salgado, director of the Hospital of Gynecology and secretary general of the Red Cross; and Alberto Henrique da Rocha, colposcopist in the Gynecology Clinic and secretary of the Red Cross. In his speech at the event, Clóvis Salgado explained the goals and services for the institution, saying that an awareness campaign was needed to alert the population of the dangers of the disease in order to make cervical cancer control activities effective. The goal was to spread knowledge about the early signs of the disease and the need for periodic examinations, principally among patients from 35 to 50 years of age, a group in which the incidence of cancer was higher (Salgado, 1963).

In the agreement between the Hospital of Gynecology and the Brazilian Red Cross[8] in Minas Gerais, the hospital provided the physical space, the diagnostic equipment, and the professionals, while the Red Cross was responsible for publicity and public education activities to spread the news that cancer in its early stages was more likely to be cured. These efforts involved radio lectures, publications in local newspapers, interviews, and scientific communications to medical societies, all involving cancer education to reinforce the importance of medical examinations for early diagnosis. In Salgado's view, these initiatives were productive and had a direct on the higher numbers of women who sought medical care at the institution during the 1940s and 1950s, consequently leading to more diagnoses (Rocha, 1955).

Since work began at the Hospital of Gynecology, patient visits were recorded in outpatient records that allowed professionals to monitor the procedures performed and patient progress. The organization of patient records allowed the construction of a type of documentary field in this hospital, which provided a dimension that extended beyond therapeutic interventions. Not only was it a space for treatment, the hospital was also a place to record and accumulate data and to develop knowledge.

These records made it possible to monitor the disease and the patient, and also construct knowledge through discussions generated by this material. In discussing changes in clinical knowledge that resulted from the development of hospitals, Foucault (2000) argues that these spaces transformed the scale of analysis for doctors: by observing from the patient's bedside, medicine began to accumulate a long series of cases to be analyzed, discussed, and compared. In the development of this new medical science, one element remained essential, expanding and becoming more sophisticated over the centuries: the systems to permanently record patients and their illnesses, their treatments as well as medical diagnoses. The first records were techniques to identify patients and data to collect and transmit information related to institutional movement.

The organization of patient records at the Hospital of Gynecology created a documentary archive at the institution, which formed a basis for patient monitoring and clinical research by this group. This material and the studies it produced were used as sources to develop and publish care data in medical journals of that time, demarcating the territory in which these professionals worked and publicizing their activities.

The clinical patient records at the Hospital of Gynecology followed a basic model for all visits. In the earliest record sheets, the first portion consisted of patient identification and included personal data like name, color, age, marital status, home address, and occupation. The second part was reserved for medical issues, and was where the signs and symptoms presented by the patient were recorded, through a description of the current illness. Next, elements of the patient's medical history were described, such as personal health background and obstetric and family information. After the initial data were collected and recorded, exams were conducted, primarily general and then gynecological examinations. Both the procedures and the results were described in the patient records. The last section of notes included the patient's diagnosis and therapeutic indications. For return visits or assessment of treatment outcomes there was an additional sheet where these items were described, along with any other points considered relevant (Documentação Clínica Ginecológica: Ambulatório – Cememor/Belo Horizonte/MG).

Starting in 1955, the records began to be more detailed, according to the diagnostic technology used and results found. The diagnostic section was divided into two parts: clinical diagnosis and definitive diagnosis. The former section included space for data related to the examinations performed. The definitive diagnosis section described the patient's disease; in cases where cervical cancer was detected, it also included the stage and treatment recommendations. The last section described treatment, and included more detailed data on hospitalization such as dates and procedures performed gynecological (Documentação Clínica Ginecológica: Ambulatório – Cememor/Belo Horizonte/MG).

During the first four years that the Hospital of Gynecology and the Red Cross Cancer Post operated, 11 cases of cervical cancer were identified among the 1,100 patients examined, an average of one confirmed case for every hundred colposcopies performed. An article by Alberto Henrique da Rocha publicizing this data credited the technology for these diagnoses, since as he said, there was no suspicion of malignancy in any of the patients examined in the clinical exam; they all sought care for other reasons, and had no reason to suspect cervical cancer. This confirmed the role of the colposcope in early identification

of abnormalities, even when symptoms were absent, in Rocha's defense of the technique (Rocha, 1946).

At the end of the first decade of these efforts, Clóvis Salgado indicated that 1,600 patients had been served and more than 2,000 colposcopies conducted. He defended colposcopy as an important method among the diagnostic tools used in gynecology. According to a report by Salgado, Alberto Henrique Rocha, and Moacir Junqueira, this technology was used in routine care for patients who presented symptoms of cancers as well as those who went to the clinic for general complaints. In both cases, colposcopy was used to identify suspicious lesions on the cervix as early as possible (Salgado, Rocha, Junqueira, 1949).

The Cancer Post functioned on the premises at the Hospital of Gynecology, and was open every day from 8 to 10 in the morning. The service was open to the female public in general. It was headed by the physician Alberto Henrique da Rocha, and managed by Clóvis Salgado (Salgado, Rocha, Junqueira, 1949). The clinic was organized according to the basic precepts shared by physicians of that time regarding outpatient care to prevent cervical cancer. This prevention involved exams for early diagnosis using colposcopy, cytology, and biopsy together. The creation of outpatient spaces was one of the characteristics of the institutions that worked to control this disease during the mid-twentieth century. The motive was to provide rapid care focused on women, which allowed the identification of lesions that could lead to cervical cancer or even diagnosed the early stages of this disease.

In Belo Horizonte, cervical cancer emerged as one of the deadliest cancers. Cervical cancer was considered to have "major social importance, since it affects women during a phase of their lives when they are most useful to their families and society" (Rocha, 1946, p.468). Medical discourse in Minas Gerais emphasized the social role of women in the formation of the family, and justified activities to control this disease. Within the context of Rocha's statement, women gradually began to go to the doctor more often, which corresponded to the presence of more professionals and places for care in the city. These factors expanded visions about women who, despite being more closely linked to private space that justified concerns about reproductive health, began to occupy other scenarios which until that time had been dominated by religious conservatism. In this way, although women's value was considered in terms of maternity, medicine prioritized women's health as a whole (Marques, 2003).

The studies and consultations that took place at the Hospital of Gynecology and the Red Cross Cancer Post followed the guideline to seek early diagnosis as the main strategy for controlling cervical cancer. On the topic of early diagnosis, Alberto Henrique Rocha (1955, p.43) stated that

> often the first symptoms perceived by the patient coincide with a cancer that is already advanced. The disease could remain silent, progressing insidiously, without any sign, until the first hemorrhage emerged as a result of the ulceration of the tumor, already quite infiltrated. Knowledge of the first clinical symptoms was not a sufficient guarantee of early diagnosis.

By defending early diagnosis, Rocha stressed the need to create outpatient clinics equipped with diagnostic technologies to perform periodic examinations on women,

regardless of whether symptoms were present. Following the guidelines for preventive outpatient clinics, Rocha argued that they should be equipped with technologies and also have qualified professional staff in order to permit precise therapeutic procedures and monitor patients. The general guideline for these services was systematic examination of every woman who sought care, regardless of her complaints or symptoms (Rocha, 1955).

In this sense, the Cancer Post fulfilled the function proposed by Rocha. At that time, cancer care responded to the growing incidence of the disease, and the increasing number of women who died after diagnosis. Since the disease was often diagnosed only after it had reached irreversible stages, the goal of outpatient care according to Rocha (1955, p.44) was to "permit prophylaxis of cervical cancer by discovering and treating initial lesions, and diagnosing asymptomatic as well as already invasive cancer." The Cancer Post was an extension of the work at the Hospital of Gynecology, but of a specific type: it addressed activities to control cancer, particularly cervical cancer.

Continuing this line of work, and in order to further specialize care for patients suspected to have cancer, an outpatient clinic to prevent genital cancer was founded in 1965 within the Red Cross Cancer Post, another partnership between the Red Cross and the Hospital of Gynecology. At the end of this outpatient clinic's first year, it had registered just over seven hundred visits. During these visits, the triple model was used with all the women who sought care at this service, and the care data and reports justified this examination routine as safe because of the outcomes of diagnosis and treatment (Cló, Salomé, 1967).

In an attempt to reach even more women, letters were sent to specific target audiences such as wives and widows of military police officers and elementary school teachers. Agreements were established with the Minas Gerais State Association of Primary School Teachers and state law enforcement to provide the clinic's services to those associated with these institutions. Still, doctors continued to lament the low numbers of women reached by the service, even though services were free. The report for the clinic's first year of operations cited a 13% participation rate among the audience targeted by the agreements described above, despite one to three letters sent to each potential patient inviting her to come to the clinic. The argument was that the number of patients who did come for examinations was so small that it hampered disease control as well as clinic operations (Cló, Salomé, 1967).

According to Alberto Rocha (1955), it was necessary to publicize the importance of periodic examinations among the female population, starting from marriage. During the first half of the twentieth century, Minas Gerais had a unique characteristic, namely a strong Catholic tradition and associated cultural traits. Rita Marques used the personal archive of the gynecologist Hugo Werneck (cited at the beginning of this text) to examine patients' letters to this physician, and maintains that rather than worrying about legitimizing their techniques, "ladies' doctors" in Minas Gerais needed to be more concerned with their images, within social standards of respectability. Along these lines, many of the letters were sent by husbands or fathers seeking consultations for problems experienced by their daughters and wives, which they themselves reported. Marques states that women's hesitance to come to doctors' offices and especially hospitals stemmed from three combined factors: modesty related to their religious background, resistance among their fathers and

husbands to examination by third parties, and in-home childbirth traditions involving midwives and folk medicine to "cure" illness (Marques, 2003).

In this context, we can say that medical activities, especially in gynecology, involved cultural issues. This can be perceived in the concerns expressed by professionals in the Hospital of Gynecology and its offices related to use of a discourse that was more focused on the role of women within the family. As seen in the reports cited here, one of the main strategies in legitimizing activities to control cervical cancer was to raise awareness about the importance of periodic examinations as a means of prevention and cure for this disease. To encourage patients to seek care and boost adherence, the campaigns by the Red Cross and Hospital of Gynecology involved "first-aid volunteers" who were responsible for surveying patients and referring all women in the age groups considered to be higher risk to the Cancer Post. This strategy allowed them to reach more of the target audience, and developed more respect for the work done at this institution (Salgado, 1964).

By the late 1940s, therapeutic guidelines for cervical cancer generally took a more conservative approach, prioritizing monitoring and periodic new exams, which corresponded to the guidelines established by Clóvis Salgado with regards to women's medicine. As cancer control activities became more established as a means of prevention, more cases of the disease in less advanced stages were diagnosed. This increase was the result of diagnostic exams as well as the activities carried out by the Hospital of Gynecology and Cancer Post through the care they provided and awareness campaigns. These activities helped to organize and strengthen the Hospital of Gynecology as a space for women's care as well as for vocational education and training.

Training in colposcopy was among the points most emphasized by the medical community, since clinics to prevent cervical cancer could only be established with a sufficient quantity of professionals to conduct periodic and systematic examinations. A study published by Rieper and Salgado in the 1970s noted that there were still relatively few colposcopists (Salgado, Rieper, 1970); in the 1940s, when training of these professionals began in Brazil, there were even fewer, which led to the initiatives to organize training courses described above. The process of training and dissemination of the technique was also driven by dialog and the presence of Hinselmann himself in spaces that provided cervical cancer care during the mid-twentieth century

## Hinselmann in Belo Horizonte

The Hospital of Gynecology in Belo Horizonte was one of the spaces that catalyzed and disseminated colposcopy as a technology to diagnose cervical cancer in Brazil, along with other institutions such as the Institute of Gynecology in Rio de Janeiro that comprised a network of care and control for this disease at the time (Lana, 2016). The process of disseminating this technology (which took place in the hospital in Minas Gerais through care visits and training courses) was accentuated by Hans Hinselmann's trips to the country; he stopped in Belo Horizonte to hold training courses and emphasize the importance of this technique in early detection strategies.

These trips represented a rapprochement between Brazilian and German science with regards to the role of colposcopy in diagnosing cervical cancer.

After the end of the First World War, Germany made efforts to resume scientific activities with Latin American countries. In addition to science, the Germans saw Brazil's potential to provide raw materials and absorb excess industrial production (Sá et al., 2009). From the 1920s, this process can be seen in the dissemination of Spanish- and Portuguese-language periodicals that highlighted German scientific achievement, research funding, scientific voyages, and the creation of medical societies to raise funds for such activities and bring together these professionals (Sá, Silva, 2007).

The closeness between Latin American and German science seen during the first half of the twentieth century is one reason behind the introduction and diffusion of colposcopy in Latin America at the same time that this tool was developed in German territories. The development of colposcopy as a diagnostic method in countries like Brazil reflects a tangle of political interests and local initiatives that acknowledge the healthcare configurations of each country (Eraso, 2010; Teixeira, Löwy, 13 jun. 2011). One milestone of the closer relations between Brazilian physicians and German science that also represents the transfer of colposcopy as a diagnostic technology is Hinselmann's trips to Latin America. He visited the region at a time when his scientific credibility in Germany had been damaged by his imprisonment after accusations of having performed involuntary sterilizations on gypsy women in Nazi concentration camps. His first scientific activity after his release was this voyage to the Americas, and Hinselmann himself saw this effort as a new incentive in his career to strengthen the use of this tool in diagnosing cervical cancer (Hinselmann, 1952). His presence consequently represented an attempt to assert his technology and create closer relations with South American doctors.

Hinselmann came to Brazil three times. First, in 1949, he was invited by Arnaldo de Moraes to reorganize the Pathology Laboratory at the College of Medicine in Rio de Janeiro and give lectures on colposcopy and advances in diagnosing cervical cancer. During this visit, the Brazilian Society of Gynecology held an extraordinary session in December 1949 in honor of his presence. During the session, Hinselmann (1952) spoke about his work in colposcopy and commended the importance of exchange with Brazil.

His first course in Brazil took place in December 1949 in Rio de Janeiro. Soon after completing the colposcopy course at the Institute of Gynecology, Hinselmann continued to Belo Horizonte, where he was received by Clóvis Salgado and Alberto Henrique da Rocha. His trip to Minas Gerais did not involve training courses; instead, he went to see how colposcopy was being used in the region and to endorse the utilization of this tool in activities to control cervical cancer. On the second day of his visit to Belo Horizonte he visited the outpatient clinic at the medical school's Hospital of Gynecology where the Red Cross Cancer Post was also located. At that time he demonstrated the method and answered questions from the professionals who were present. After examining the work conducted there, Hinselmann stated he was impressed by the statistical data on the colposcopies performed at the institution since 1940. He noted that the Cancer Post had been able to perform exams on all the women who sought care, and consequently was able to detect a significant number of cases in the initial stages of tumor development. Hinselmann further

highlighted the work carried out at the hospital in terms of establishing colposcopy as a diagnostic technique, professional training efforts involving activities from the earliest years of medical study, and the education of and role played by Alberto Rocha throughout this process (Hinselmann, 1952).

At the School of Medicine in Minas Gerais, Hinselmann spoke on early diagnosis of cervical cancer. Soon after the lecture, Clóvis Salgado commented on his presence in Belo Horizonte and contributions in the fight against cancer. According to Salgado (quoted in Rocha, 1955, p.40):

> For the Hospital of Gynecology at our college, Professor Hinselmann's brief visit to Belo Horizonte was decisive in enhancing colposcopy as an early method that is indispensable to the early identification of cervical cancer. Based on his visit we were able to equip the clinic with the modern colposcope models ... which has greatly facilitated acceptance of the colposcopic method, given the enormous ease brought to the learning technique with the significant and notable improvements in the devices that emerged in Germany after the war.

Hinselmann's work was praised at the institution for making it possible to diagnose asymptomatic cancer. In his research, he demonstrated that the period between the earliest cellular changes and the appearance of symptoms was long enough to permit a secure diagnosis through periodic and systematic examinations, and interventions could subsequently target the tumor before it grew and expanded to neighboring tissues and organs. In the vision corroborated by the physicians in Minas Gerais, colposcopy ensured a true prophylaxis for this disease (Rocha, 1955).

The records of Hinselmann's visit to the School of Medicine in Minas Gerais in 1949 highlight his contribution in building the local doctors' experience with the colposcopic method. His lectures aroused greater interest in the use of the technique as well as the work carried out in the hospital. For the Hospital of Gynecology that was the college's gynecology clinic, Hinselmann's visit to Belo Horizonte was decisive in enhancing colposcopy as an indispensable method for identifying cervical cancer in its earliest stages. His visit also made it possible to equip the hospital with more updated colposcopy devices, mainly in terms of improvements in lighting and temperature control, which facilitated its acceptance and diffusion. One example of the dissemination of this technique is seen in a report of 32 gynecologists trained as a result of Hinselmann's visit, and the introduction of colposcopes (through a campaign by the Hospital of Gynecology) in welfare institutions in Belo Horizonte that provided gynecological care (Rocha, 1955).

During the years preceding his visit to South America, Hinselmann served as the director of the Department of Gynecology at Hamburg-Altona in Germany from 1940 to 1946. Shortly afterward he was accused of the forced sterilization of six gypsy women during the Nazi regime without official permission (Halioua, 2010). He was sentenced to three years in prison and a fine; after leaving prison he did not have permission to work in hospital services, but he continued his research in colposcopy and histopathology in his private office (Powell, 2004). His trip to Latin America was his first re-entry into the global scientific scenario after his imprisonment, and he viewed it as a contribution to his career and a sort of renewal after the political retaliation stemming from the war (Hinselmann, 1952).

His presence in Belo Horizonte firmly established the status of this technology he developed and strengthened power relations at the Hospital of Gynecology, as well as its role in the control of cervical cancer in Brazil. Hinselmann's visit marked interaction between Brazilian and German science and burnished the prestige of the Brazilian gynecologists involved in efforts to control this disease.

## Final considerations

During the mid-twentieth century, colposcopy aroused great enthusiasm among Brazilian physicians in terms of its ability to reduce the mortality associated with cervical cancer in Brazil via early detection. From the perspective of early diagnosis, and with colposcopy taking the lead in activities to control this disease, institutional spaces (generally related to university departments) were established to prevent cervical cancer.

The Hospital of Gynecology in Belo Horizonte was notable among these spaces, along with other institutions such as the Institute of Gynecology in Rio de Janeiro, in implementing a model that would be the hallmark in Brazilian approaches to controlling cervical cancer: the triple model. As a space for care and for teaching gynecology at the medical college, the hospital invested in training and in the production of knowledge through organizing outpatient records, establishing itself as an important source of care for patients with gynecological cancer in Belo Horizonte.

In analyzing this institution, we can discuss the ways that health and cervical cancer control in Brazil were organized and became an object of study in specific institutional spaces. At the Hospital of Gynecology, colposcopy was implemented as the main strategy for prevention, in line with the network with which the hospital dialogued. This institution became one of the main bastions for the use and dissemination of this technology in Brazil. In this sense, the hospital established itself as a place for reflection, appropriation, and resignification of scientific ideas and medical technologies.

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## NOTES

[1] In 1917, analysis of cells present in vaginal smears led Papanicolaou to note the existence of rhythmic phases of the sexual cycle. His continued studies in the late 1920s confirmed that cancerous cells in the vaginal contents could be detected through microscopic analysis of cells obtained by swabbing (Löwy, 2010).

[2] Colposcopy is a gynecological examination technique that permits visualization of the lower genital tract region (the vulva, vagina, cervix, and uterus in women) using a device called a colposcope, which expands and illuminates the area to be examined. This technique was described in 1925 by Hans Hinselmann in Germany. Over time, colposcopy has evolved from an early method to diagnose cervical cancer to a more comprehensive examination that allows various pathologies affecting this region to be diagnosed and treated (Salgado, Rieper, 1970).

[3] Biopsy or histopathological examination involves removing a portion of tissue for detection and diagnosis of diseases (Mandal, 27 fev. 2019).

[4] Clóvis Salgado da Gama, son of Luís Salgado Lima and Virginia da Gama Salgado, was born in Leopoldina (MG) on January 20, 1906, and died in Belo Horizonte on July 25, 1978. He received his degree in medicine in 1929. He served as director of the Hospital das Clinicas and the Medical School at the University of Minas Gerais. Alongside his medical practice, Salgado also served as lieutenant governor of Minas Gerais in 1950, and became governor in 1955. He was also Minister of Education and Culture under Juscelino Kubitschek and Minas Gerais State Secretary of Health from 1967 to 1971. For more information, see Monteiro (1994).

[5] Hans Hinselmann was born on August 6, 1884, in Neumünster, Germany. He studied medicine at Heidelberg as well as Kiel, where he graduated in 1908. In 1909 he began his specialization in gynecology in Jena, transferred to Giessen in 1910, and concluded this specialization in Bonn in 1911. His early publications addressed varied gynecology topics such as thrombosis of the blood vessels in the placenta, sexual ethics and education of young people, and eclampsia. His most notable work involved the development of the colposcope to detect cancerous lesions on the cervix. In a biography of Hinselmann, John Powell (2004) estimated that he published roughly 300 works throughout his career.

[6] João Paulo Rieper received his medical degree in Germany in 1933, while he was in the country acting as the first secretary of the German Ibero-American Medical Academy. Through the academy, he helped welcome Latin American teachers and students in the country. It was during this period that he began his studies with Hans Hinselmann. Rieper returned to Brazil in 1939 and was unable to return to Germany after the Second World War began. The following year, his German medical degree was recognized by the University of Brazil School of Medicine in Rio de Janeiro (Documents from Academia Médica Germano-Ibero-Americana, archived at Geheimes Staatsarchiv Preussischer Kulturbesitz).

[7] Iracema Baccarini was born in 1912 in the city of Lorena, São Paulo. She received her medical degree from the Medical School at the University of Minas Gerais in 1942, specializing in gynecology and obstetrics. She was the first woman to teach at the college and to defend a doctoral thesis (see Maia, 14 nov. 2002).

[8] The Brazilian Red Cross was founded on December 5, 1908; from its formation, its main objectives were to help the wounded on the field of battle during wartime and to provide medical assistance to victims of disasters and chronic diseases during peacetime. In Minas Gerais, the institution was officially founded on October 22, 1914. It was restructured in 1942, under the leadership of Clóvis Salgado. For more information, see: <http://www.cruzvermelhasm.org.br> and <http://www.cvbmg.org.br>.

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