

# Biosecurity strategies of healthcare workers in the care for people with HIV/AIDS (1986-2006)

*Estratégias de biossegurança dos trabalhadores da saúde no cuidado às pessoas com HIV/AIDS (1986-2006)*

*Estrategias de bioseguridad de los trabajadores de salud en personas con VIH/SIDA (1986-2006)*

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## ABSTRACT

**Objective:** Identify biosecurity strategies for healthcare workers of a Reference Hospital in infectious disease, in the care of people with HIV/AIDS for the period 1986-2006. **Methods:** A descriptive study with qualitative socio-historical perspective that used oral history interviews for the twenty-three healthcare workers. **Results:** From the Bardin's analysis, two categories emerged: search for knowledge about the beginning of the AIDS epidemic; and the change in the work process - biosafety strategy to minimize work related accidents. **Conclusion:** We concluded that it was necessary and correct to invest in safety through educational and preventive actions that promote cultural transformations, which produced greater symmetry between healthcare workers, especially in nursing; they praised self-care in caring for the people, regardless of their HIV positive diagnosis.

**Keywords:** Biosafety; Acquired Immunodeficiency Syndrome; Health Personnel; Occupational Health; History.

## RESUMO

O objetivo deste estudo foi identificar as estratégias de biossegurança utilizadas pelos trabalhadores da saúde de um hospital referência em doença infectocontagiosas, no cuidado às pessoas com HIV/AIDS, no período de 1986 a 2006. **Métodos:** Trata-se de um estudo descritivo qualitativo com perspectiva sócio-histórica que utilizou a História Oral para a realização de entrevistas com 23 trabalhadores da saúde. **Resultados:** Apartir da análise de conteúdo de Bardin emergiram duas categorias: Busca pelo conhecimento sobre a AIDS no início da epidemia; e mudança no processo de trabalho: estratégia de biossegurança à minimização do acidente de trabalho. Conclui-se que foi necessário e correto investir na segurança por meio de ações educativas e preventivas que promoveram transformações culturais, que produziram maior simetria entre os trabalhadores da saúde, sobretudo da enfermagem, e enalteceram o cuidado de si, no cuidado às pessoas, independente do seu diagnóstico soropositivo para o HIV.

**Palavras-chave:** Biossegurança; Síndrome da Imunodeficiência Adquirida; Profissionais da saúde; Saúde do trabalhador; História.

## RESUMEN

**Objetivo:** Estudio cualitativo con perspectiva socio-histórica, cuyo objetivo fue identificar las estrategias de bioseguridad utilizadas por trabajadores de salud de un Hospital Referencia en enfermedades infectocontagiosas, en el cuidado a las personas con VIH/SIDA, en el periodo de 1986-2006. **Métodos:** Se utilizó la historia oral para la realización de entrevistas con 23 trabajadores de salud. **Resultados:** Apartir del análisis de contenido de Bardin, emergieron dos categorías: búsqueda del conocimiento sobre SIDA al inicio de la epidemia; mudanza en el proceso laboral - estrategia de bioseguridad para la disminución del riesgo de accidente de trabajo. **Conclusión:** Se concluye que fue necesario y acertado invertir en la seguridad, a través de acciones educativas y preventivas que promovieron transformaciones culturales y produjeron mayor simetría entre los trabajadores de salud, sobre todo en enfermería, quienes enaltecieron el cuidado de sí, en el cuidado a otras personas, independientemente del diagnóstico seropositivo para VIH.

**Palabras-clave:** Bioseguridad; Síndrome de Inmunodeficiencia Adquirida; Personal de Salud; Salud Laboral; Historia.

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## INTRODUCTION

The interest on this topic stems from the existence of numerous risks found in work environments that can affect the worker's health and physical integrity. Among the risks, the biological aspect is what most affects the worker's health, since most of the time they perform procedures involving exposure to blood, among other body fluids<sup>1</sup>.

How the health workers perceive biological risks and take care of themselves, brings to the fore the importance of debating and adopting strategies of biosafety and to include them in the discussion of the expanded concept of health, which involves thinking about the quality of life. Caring for oneself, still involves questions about behaviors and possibilities, the example of the adoption of the biosafety measures, with a view to promoting the worker's health, well-being and quality of life<sup>2</sup>.

In this context, in the midst of the emergence of AIDS and with it, the possible occupational transmission by HIV virus, resulting from an accident at work involving exposure to biological material appears to concern the Center of Disease Control (CDC) by hygiene and safety at work<sup>3</sup>. Since then, recommendations in order to protect the professionals were recommended and periodically reviewed, changed, considering the innovation of knowledge and the epidemiology of the disease<sup>4</sup>.

The ceaseless quest for knowledge on AIDS and its real form of transmission, as well as the change in the work process, with the adoption of techniques and methods recommended strategies were effective biosafety the elimination and/or minimization of occupational risks, experienced by the health workers, the Hospital Nereu Ramos (HNR), the context of this study, located in the City of Florianopolis/SC.

It is believed that the biosafety strategies when reliable and applicable are of paramount importance and essential prerequisites to health workers as part of their care practice. Given the context and pondering the themes exposed, it was decided to conduct this study which aims to:

- To identify the biosafety strategies used by healthcare workers of a Reference Hospital in contagious diseases, in the care for people with HIV/AIDS, in the period 1986 to 2006.

The option to (re) construct the history of this period, 1986 to 2006, it should be the first reported case of AIDS in the city of Florianopolis and the cutout end until 2006, it is justified by the closure of the Clinic for STD/AIDS of Florianopolis, in virtue of the decentralization of the AIDS service in the municipality. The desire for a study with healthcare workers, guiding them by their stories and memories, regarded as important for understanding that the memories and experiences, in the care practice to patients with HIV/AIDS, during the course of the epidemic, reveal their care modalities. In addition, it enables revealing how much the healthcare workers, especially in nursing have invested, have developed strategies with a view on improving conditions as well as individual and collective protection in the workplace.

## METHODOLOGY:

It is a socio historical study with a qualitative approach, which used the Oral History (OH) method as the source for data collection. The story focuses on oral interviews with people who attended, witnessed, participated in events in a given social context<sup>5</sup>.

The OH, to be used as a method-source, has opened a space in history for those who have had no voice on their own history, in the care for patients with HIV/AIDS, during the course of the epidemic, through their memories. They were interviewed, in the period from March 1996 to October 2011, four physicians, eight nurses, four nursing technicians, three nursing assistants, a dentist, a nutritionist, a social worker and a psychologist, totaling 23 (twenty-three) health workers who participated, experienced, directly or indirectly, in the care for people with HIV/AIDS, hospitalized at HNR, in the period 1986 to 2006. The inclusion criteria were: healthcare workers who worked in the care of patients with HIV/AIDS during the study period, which had a good memory on the development of their working practices in caring for people with HIV/AIDS, and they had availability and interest to participate in the study.

The selection of individuals to participate in the research was conducted from a request made to the Department of Human Resources of HNR, and on the recommendation of the already interviewed workers themselves. All the interviews were previously scheduled, according to the availability of the interviewee, while respecting the place, date and time, they suggested. The interviews took place in private homes, and workplaces of the study subjects. The data collection was terminated upon the saturation of data.

After the data collection process, they were transcribed, in order to preserve the reliability of the reports. The transcription and organization of the reports obtained by interview constituted the ordination of the data and the classification occurred from exhaustive readings and re-readings, in order to group/compile provisionally possible utterances. In this trajectory, we tried to identify relevance structures and perform the re-grouping by topics, as established by the content analysis of Bardin<sup>6</sup>, in which the following categories emerged: - Quest for knowledge on AIDS at the beginning of the epidemic; and - Change in work process: biosafety strategy minimizing work accidents. These categories bring to light, biosafety strategies identified by healthcare workers in the care of patients with HIV/AIDS early in the epidemic.

Furthermore, the research was submitted to the Committee for Ethics in Research with Human Beings (CEPSH) of the Federal University of Santa Catarina and approved, under protocol N<sup>o</sup>. 920/10. The subjects who agreed to participate in the study signed a Free and Informed Consent Term (FICT). To ensure anonymity, the study subjects were identified by letters concerning the professional categories and by numbers, in order to follow the chronological order that worked in HNR (for example, doctor M1, nurse E3, nursing technician TE2, nursing auxiliary AE1, dentist D1, social assistant AS1).

## RESULTS AND DISCUSSION

At this time, we present the results of this investigation from two discursive clusters, allowing the reader to envision the path of data analysis in the search for understanding the evolution of healthcare practices, biosafety strategies of healthcare workers for people with HIV/AIDS hospitalized in HNR, during the study period.

The vast majority of interviewed professionals is coming from the state of SC; age ranged from 46 years to 70 years, with an average of 58 years, having worked in direct or indirect care next to patients with HIV/AIDS, in HNR for a period of 2 to 37 years, with an average of 19.5 years.

### Quest for knowledge on AIDS at the beginning of the epidemic

In this category some issues were raised by the healthcare workers, such as considering biosafety strategies used in the care for people with HIV/AIDS, at the beginning of the epidemic. They highlighted the interest by the studies, knowledge on AIDS, as well as the sharing of such knowledge among health professionals from HNR and other institutions in Santa Catarina (SC).

The emergence of AIDS in Santa Catarina was marked by astonishment, fear, stigma for a large part of civil society, included its own health professionals, faced with the unknown. Because, until then the forms of knowledge produced on AIDS had a connotation of disease translated by anguish, panic and rejection<sup>7</sup>.

Thus it was necessary to study, seek knowledge about the actual form of HIV transmission, because when you know what you are working with a sense of protection becomes more prevalent. The facts are seen from the following statements:

*All of us were scared with that new disease. Hence a measure to make us feel more secure was studying to understand a little more about the disease, what is the care that we should have (D1).*

*We had to study, prioritize to know AIDS better, care with our safety. Because in the beginning we didn't know anything (TE1).*

*Everything was new, so we met to dispel doubts, we begin to learn from each other, we were attuned to everything, for our safety (AS1).*

*I participated in nursing and doctor meetings and this team integration was very good. The exchange of knowledge among professionals in the beginning of the epidemic was fundamental for the protection of the team (P1).*

*The whole team had to prioritize, study, develop strategies for our safety, hence gather to discuss the cases, to know more about the disease, the precautions (E3).*

In addition to the incessant search for knowledge about the disease, its forms of transmission until then little known, the reports also mention the importance of the multidisciplinary team in safer working conditions.

The new, the unknown, such as the development of AIDS, generates fear, fear, insecurity by healthcare workers, in the context of the care provided to people with HIV/AIDS. AND in this context, the lack of knowledge on AIDS and especially the real form of transmission of the virus, left the healthcare worker more vulnerable to risks involving exposure to biological material potentially contaminated<sup>8</sup>. Therefore, the search for knowledge, as well as the integration, the joint work between the different professional categories were fundamental strategies for a greater protection of workers, in the course of their work activity.

Some healthcare workers until they know the risks in their work environment, but in a generic way and this knowledge is not transformed into a safe action for prevention. The occupational risks may be or be hidden by the lack of knowledge and/or information, this situation in which the worker even suspected its existence<sup>9</sup>. In this regard we believe that the healthcare worker should seek knowledge, show their interested in learning, as well as share, discuss with their colleagues about the work team doubts, anxieties associated with the risks, those which are associated with the care for people with HIV/AIDS.

The teamwork is carried out by a group of people who together communicate, dialog, share and consolidate knowledge so the plans are carried out, future decisions are influenced and actions are certain<sup>10</sup>. In this study, the teamwork, while confronting the emergence of AIDS in HNR was essential so healthcare workers together could acquire more knowledge, discuss and share it, as well as the possible risks encountered in the work environment and thus propose actions, strategies for greater security, in the care for people with the disease.

Regarding to the sharing of knowledge on AIDS, this without a shadow of a doubt was another important biosafety strategy used by healthcare workers, because more than the quest for knowledge it was necessary to socialize it. And the subjects of the study made very clear the importance of this sharing for their protection, as demonstrated the reports:

*The nurse and the doctor had more knowledge on AIDS and hence always passed the guidelines to everyone to avoid contamination (AE1).*

*With the admission of the first patient with AIDS, I drafted a list of minimum precautions and such, but all within the possibilities of the time, because we had no Internet. From thereon I stayed at the nursing station, I called and spoke to staff about the care, safety measures that they should have (E2).*

*I remember the nurse scavenging for the information on the disease and put on wall for team. Yeah, we learned*

*about AIDS in everyday life, including the care that we had to have with us (E3).*

It is possible to observe in the speeches the important role of the doctor and mainly of the nurse in sharing information, guidance on the precautions that the other members of the team should have to care for patients with HIV/AIDS.

The nurse, as a member and leader of the nursing team is the professional responsible for sharing their knowledge to that in harmony and complementarity with other health professionals, preserve the physical and mental integrity of the worker<sup>11</sup>. Still in this context and in agreement that health workers constantly need to guidelines regarding its protection, during the care of another, it is worth pointing out the importance of continuing education.

*Continuing education was fundamental to employee safety, because it re-educated, renewing the staff. It is, the completion of courses on biosafety was important to pass the guidelines, precautions (N1).*

*I think the recycling was essential to the safety of the workers. You need to work, reinforce the importance of the use of biosafety measures, through continuing education (M4).*

*Since I assumed the CCIH I always did trainings on biosafety measures, correct use of PPE. It is important recycle, orient the staff and skills were excellent opportunities to discuss, share knowledge among the team (E8).*

The continuing education with frequent updates about the standard precautions was of extreme importance for healthcare workers, in the context of their activities, since the Downgrade or the lack of it complicate the monitoring of scientific advance and the update of biosafety practices. The continuing education, from a cooperative work, allows those involved a continuous specialization, the sharing of information, experiences, as well as guidance<sup>12</sup>. We agree with the authors and we emphasize that this share should extrapolate the information and intervene with different strategies, given that some of the healthcare workers to know the biosafety measures, but does not employ them in a systematic and constant manner<sup>12</sup>. In this regard, it is up to healthcare services plan and implement specific guidelines to health workers for which the same embrace a safe professional exercise.

Even in this context of sharing knowledge on AIDS at the beginning of the epidemic, it is worth pointing out that such sharing was not adhered only to healthcare workers from HNR, but also to professionals of other healthcare services in the State of Santa Catarina, as shown in the following statements:

*We trained our team from Nereu and other sites. We shared the knowledge we had on AIDS, especially the precautions to be taken in patient care (M1).*

*We were an infectious reference. Then it was up to us to train, empower, and inform healthcare professionals on the important care for their own safety (E2).*

*As the team from a reference hospital we went to the cities in which the AIDS cases was appearing and we talked hours on the care and precautions (M2).*

The fact of the HNR being considered a hospital for contagious diseases has become the same reference also in AIDS treatment and professional training in the care. As soon as, the health professionals had to seek more knowledge and greater specialization for safe and proper execution of techniques and procedures necessary to care for patients<sup>2</sup>. In this context it is worth pointing out also that the HNR in assuming its role as a point of reference, made with that knowledge about AIDS, especially the biosafety measures, extrapolating the internal environment and would be socialized to other healthcare institutions in SC, where the first cases of the disease were appearing.

### **Change in the work Process: a strategy for biosafety in minimizing the work accident**

The adoption of the biosafety measures, with the use of Personal Protective Equipment (PPE), careful handling of sharps, non recapping of contaminated needles, dispose of them in an appropriate place, as well as attention, caution during procedures strategies were incorporated by the study subjects, which were characterized by a change in the work process that turn influenced the minimization of accidents with exposure to biological material.

With regard to the use of PPE, these with the emergence of AIDS, were adopted by the healthcare workers, being considered indispensable for their safety. And as you can see in the reports, the study subjects not only pointed out the use of sleeve as measure of biosafety, but also of other equipment, such as apron, cap, mask, among others, due to the lack of knowledge on the actual means of transmission of HIV early in the epidemic.

*I remember the first patient that I cared for, he was even indicated by the doctor. Hence, I am fantasized myself as a type of astronaut, I put on my cap and gloves, mask, protective goggles, a dust cover, everything that I had the right too... went in the doctor's office all vested (D1).*

*In the first patients who arrived with AIDS, as the disease was not well known, we all wore equipment. It was so ironic, it seemed that I would be entering a surgery room (AE1)*

*I would leave the nursing station with gloves and a mask, I always had them in my pocket. I created this routine for my safety (TE3).*

*At first we came to use a face shield, it was kind of welding helmet, only instead of being dark, it was white acrylic. Then you put it on and had that square thing there in front of you (NT4).*

It is possible to observe, from the reports, that with the advent of AIDS, there were various changes in the practical activities of healthcare workers, especially those related to dressing appropriately having as primary concern the fear of becoming infecting, and die. Because, until then, before the knowledge of HIV, the risks of accidents at work by biological material were underestimated, although notoriously could contribute to the transmission of many other contagious diseases transmitted by blood, which also to HIV, conferring important health hazards<sup>1</sup>.

With the advent of HIV the review of professional practice has become necessary, as the contagion by this virus causes a disease of high morbidity and mortality<sup>2</sup>. Therefore, the CDC in the United States of America published in 1987 the "Guide for prevention of transmission of HIV, hepatitis B virus in healthcare professionals", in which the precautions called Universal started to be recommended every time that if suspected or knew the infectious agent. However, this system had little efficacy in the prevention of transmission of infections caused by blood contamination, due to the impossibility of knowing as soon as the serological diagnosis of patient<sup>13,14</sup>.

Thus, in 1996, while maintaining the essence of consider the risk universal, the CDC advocated a new proposal, which has replaced the term "Universal Precautions" by SP "Standard Precautions", which included the use of personal protective equipment (glove, mask, eye protector and apron) whenever it is provided for contact with blood, semen, vaginal secretions, amniotic liquid, brain-spinal, pericardial, pleural and peritoneal, synovial, besides other body fluids with blood, regardless of the patient's serological status<sup>13</sup>.

Also in this context, with regard to the use of PPE, a study has identified that the 100 health professionals interviewed, 76 reported No change in professional practice with the advent of HIV/AIDS, being that these 52, i.e. 68.4% attributed answers referring to appropriate adornment, the use of PPE in order to protect themselves<sup>4</sup>.

The use of PPE, in accordance with the Regulatory Norm 06 is defined as an obligation of the worker, who must adopt it only with the purpose for which it is intended<sup>13</sup>. We agree with the authors, but we complement that makes necessary the presence also of Health Institution in this scenario, because it is necessary to go beyond, not simply provide PPE, it is necessary to increase awareness, empower, as well as listen to the anxieties, doubts of workers in relation to adoption and correct use of the biosafety measures.

In addition to the adoption of PPE, other strategies in professional practice of healthcare workers of the HNR were adopted, in consequence to the emergence of HIV/AIDS, the example of careful handling of sharps. This was mentioned as an important strategy of biosafety measures incorporated by the subjects of the study, which was characterized by a process of appropriate job, which in turn influenced the minimization of accidents at work with exposure to biological material, as seen in the following statements:

*An important security measure that nursing has adopted with the emergence of AIDS was the contempt of contaminated needles in resistant places. And started to no longer recap contaminated needles (M1).*

*It was necessary to develop strategies to work more safely. We brought Ninho, Nescau milk cans to put contaminated needles and we were warned to no longer recap needles (NT4).*

Note that with the emergence of AIDS there was a greater concern on the part of healthcare workers, especially by nursing in handling sharp objects and not recapping contaminated needles, as well as in contempt of them in an appropriate place.

Studies corroborate that in consequence the advent of AIDS, recommendation regarding the careful handling of sharp objects and pointy, were not recommended, as the recap, bend, break or remove needles from syringes and discard them in resistant containers immediately after use<sup>3,4</sup>. Since it is notorious how frequently occurring accidents involving sharps, such as needles and scalpel blades.

In this context, it is appropriate to mention a further study conducted at a university hospital in Brazil, which examined the situations of occurrences and trends of accidents with needle, showed that 15 to 35% of the accidents at work pointed out failures related to the procedure of care with the needles<sup>15</sup>. Another study, about the practice of recapping needles among health professionals, detected by means of the analysis of disposal containers, that more than 50% of the needles, were recapped and that approximately 46% of accidents relating to perforations were related to non recommended practices<sup>16</sup>.

Given the high number of accidents with biological material involving a sharp object, such as the causative agent, without a doubt, the proper handling of such objects became biosafety strategy essential to the proper work process. And in this context, it is spotted the importance also of the need for vigilance and ongoing training institutions, managers, in order to promote the adoption of such practices by the health workers, in order to provide a safe work environment<sup>17</sup>.

Even with respect to the change in the process of work by favoring the minimization of labor accidents involving biological material potentially contaminated, the study subjects embraced as measure and/or strategy for their safety, the importance of attention and caution during the procedures.

*I started to have the most attention, care during procedures, because attention was indispensable for our safety (NT4).*

*Thank God I never had an accident, but I was always very careful, cautious. It is important to make the procedure calm, carefully, safely, because it from there rarely would there be an accident (M2).*

*With certainty the attention, discipline, the bushy surveillance procedure implemented biosafety measures were fundamental in avoiding the accident (P1).*

The increased attention given by healthcare workers during the procedures involving exposure to organic material, it can be said that it was an important incorporation in professional practice as a result of AIDS, once the rush, carelessness, lack of attention, as were still being, aggravating factors for the occurrence of work-related accidents.

Calmness and attention are attitudes that should be adopted during the labor practice, in order to prevent work-related accidents, reinforcing the idea that the worker is also aware of its contribution in the prevention or occurrence of it.<sup>1</sup> We fully agree with the authors, therefore, more than recommendations, have the maximum of attention are attitudes, which assume no responsibility workers health in recognition of the importance of their involvement in the process of prevention of work-related accidents.

In addition to the use of PPE, non recapping of contaminated needles, the contempt of the same in a proper location, as well as the attention, caution, during the procedures involving blood and/or body fluids, such as strategies for biosafety, in the care for people with HIV/AIDS, it is appropriate to point out, that others were also the strategies developed and mentioned by some subjects of the study, which were essential to the appropriate and safe work process. As demonstrated in the statements:

*It was bizarre, the test tubes with blood were transported loose. Thus the nursing created a their own box to put the tubes. They were always ahead of the transformations (AS1).*

*With the emergence of AIDS, we had to adapt, organize the service, create strategies for our safety and for staff (E2)*

*In the Nereu location the did not have a lab, then the blood was taken by van inside of Styrofoam boxes to another laboratory. This is why the other two nurses and I were developing strategies for the safety of the staff, remember that we have created a box with supports for the test tubes (E3).*

It is said that history with their nursing knowledge and power has always been ahead in the organization of health services and this wasno different in HNR. The nurses had a fundamental role in order to resolve the complex issue for a care insurance, seeking thus solutions in relation to the material, equipment and especially organization of nursing service to act safely to patients with HIV/AIDS<sup>18</sup>.

The creation of an appropriate container for the safe conditioning of tubes of blood, mentioned by the subjects in the study, is an example of what the nursing, in consequence

to the emergence of AIDS had to innovate, create, develop strategies, finally organize the service, with a view to improving the conditions and protection in their work environment.

## CONCLUSION

The quest for knowledge about AIDS and its real form of transmission, sharing the same between the different professional categories, the change in the process of working with the adoption of the biosafety measures, to highlight the use of PPE, the proper handling of sharp material injuries, as well as the attention, caution waived during procedures involving blood and/or body fluids were biosafety strategies used by health workers as being essential to avoid and/or minimize the risks of work-related accidents involving biological material.

Moreover, the memories of the healthcare workers, on their practice of providing care to people with HIV/AIDS, in the period of the study were indicative of that prevention strategies to situations of vulnerability and risk to accidents at work with biological material included actions established between workers and services. These were still focused on the improvement of working conditions, in particular directed the organization of work, the supply of material with safety device, the deployment of educational programs, as well as raising awareness of the change in behavior of both workers and managers, once that isolated actions were considered ineffective for the minimization of such injuries.

Finally, we conclude the important role of the healthcare worker, especially nursing, which in the course of their work, along with the service of biosafety, acknowledged the possible risks which were exposed, in order to avoid them. And in this context was of utmost importance the work in team, the commitment of all those involved, as well as the recognition of these nursing, which was a category primordial the creation and implementation of strategies for the minimization of biosafety work accidents with exposure to biological material.

For as difficult as it may seem, it was precise and certain investing in safety of workers, through educational and preventative actions that promoted cultural transformations, which produced greater symmetry between the workers, have praised the care of the self, through the adoption of strategies for biosafety in providing service to people, regardless of their HIV diagnosis, with focus on health and quality of life of the worker, in the context of their work activity.

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