

## PERFIL DE MORTALIDADE POR CÂNCER DE COLO DO ÚTERO NO PERÍODO DE 2005-2014

### MORTALITY PROFILE FOR CERVICAL CANCER IN THE PERIOD 2005-2014

### PERFIL DE MORTALIDAD PARA EL CÁNCER CERVICAL EN EL PERIODO 2005-2014

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#### RESUMO

**Objetivo:** Identificar o perfil de mortalidade por câncer de colo do útero no Brasil. **Método:** Estudo de série histórica, com utilização de dados secundários provenientes do banco de dados do Instituto Nacional do Câncer, disponíveis no *site* do Departamento de Estatística do Sistema Único de Saúde. **Resultados:** Observou-se um aumento do número de óbitos por câncer de colo do útero no país no período estudado; contudo, por meio da análise das taxas, percebe-se um declínio da mortalidade no país, no estado e no município. Foi encontrado maior número de mortalidade entre 50 e 59 anos de idade, no país e no estado. Com relação às taxas de mortalidade, estas tiveram destaque a partir dos 80 anos de idade nas três esferas políticas administrativas. **Conclusão:** Os achados sugerem a necessidade de esforços no aprimoramento e ampliação das estratégias preventivas que atendam às necessidades da população nos três âmbitos, no intuito de diminuir a incidência de mortalidade pelo câncer de colo do útero.

**Descritores:** Neoplasias do colo do útero; Mortalidade; Saúde da mulher.

#### ABSTRACT

**Objective:** To identify the mortality profile of cervical cancer in Brazil. **Method:** A historical series study, using secondary data from the National Cancer Institute database, available on the Unified Health System Department of Statistics website. **Results:** There was an increase in the number of cervical cancer deaths in the country in the period studied; however, through the rates analysis, a decline in mortality in the country, state and municipality was noticed. It was found a higher number of mortality between 50 and 59 years in the country and in the state. Regarding to the mortality rates, these were highlighted from the age of 80 onwards in the three administrative policy areas. **Conclusion:** The findings suggest the need for efforts to improve and expand preventive strategies that meet the population needs in all three areas, in order to reduce the incidence of cervical cancer mortality.

**escriptors:** Uterine cervical neoplasms; Mortality; Women's health.

#### RESUMEN

**Objetivo:** Identificar la mortalidad por cáncer de cuello uterino en Brasil. **Método:** Estudio de serie histórica, con utilización de datos secundarios de la base de datos del Instituto Nacional del Cáncer, disponible en el sitio *web* del Departamento de Estadística del Sistema de Salud. **Resultados:** Hubo un aumento en el número de muertes por cáncer de cuello uterino en el país durante el período de estudio; sin embargo, por el análisis de las tasas, se observa un descenso de la mortalidad en el país, el estado y el condado. Se encontró mayor número de mortalidad entre 50 y 59 años de edad en el país y el estado. Con respecto a las tasas de mortalidad, estas se han destacado a partir de los 80 años de edad en las tres esferas políticas administrativas. **Conclusión:** Los resultados sugieren la necesidad de esfuerzos en la mejora y ampliación de las estrategias de prevención que satisfagan las necesidades de la población en las tres áreas, con el fin de reducir la incidencia de la mortalidad por cáncer de cuello de útero.

**Descriptores:** Neoplasias del cuello uterino; Mortalidad; Salud de la mujer.

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## INTRODUCTION

Cervical cancer represents an important public health problem. The estimates for 2016 are 16,340 new cases of this neoplasm in Brazil, with a risk of 15.85 cases every 100,000 women and with perspective to occupy the fourth place among the most common types of cancer among women in the 2016-2017 biennium, losing to non-melanoma skin, breast and bowel cancers. Related to less favorable socioeconomic conditions, cervical cancer usually starts at 30 years and its risk increases rapidly until 50 years or more<sup>(1)</sup>.

Despite slowly advancing, this type of cancer shows high rates of incidence and mortality in the female population, mobilizing health professionals and managers to develop actions aimed at improving the health indicators of this population. In this regard, the strengthening of Women's Health in Brazil should occur through the implementation of public policies and effective cervical cancer screening<sup>(2)</sup>.

The infection by the human papillomavirus (HPV) is the main risk factor for developing cervical cancer and represents one of the most common sexually transmitted diseases in the world. Persistent HPV infections can lead to the development of progressive intraepithelial lesions. If not detected and treated appropriately and in a timely manner, it can evolve into the neoplasm<sup>(1)</sup>.

The preventive examination is the most effective action for early detecting cervical cancer, since it allows tracing the disease at early stages, providing treatment and cure for women in a timely manner. Furthermore, primary health care offers the examination<sup>(3)</sup>. Nevertheless, the screening success relates to conditions of access to health services and early diagnosis<sup>(4)</sup>.

According to guidelines of the Ministry of Health, screening should be carried out from 25 to 64 years, in women who have already begun sexual activity, and, after two annual tests with negative results, next tests should be performed every three years. It should be interrupted after 64 years, without previous history of preneoplastic injuries and two consecutive negative tests over the past five years<sup>(5)</sup>.

Therefore, considering the high incidence of cervical cancer, the questioning in relation to the mortality profile of this type of cancer in Três Passos-RS, in the state of Rio Grande do Sul, and in Brazil emerged. Since the municipality of Três

Passos is the workplace of one of the researchers, who works at a Family Health Strategy (FHS) performing cervical cancer screening through cytopathological examination, the concern with respect to mortality from this type of neoplasm arose.

To answer the question, the purpose of the study was to identify the profile of mortality from cervical cancer in Três Passos, in Rio Grande do Sul, and in Brazil in the period from 2005 to 2014. Understanding the situation of the mortality from this neoplasm will allow understanding the pattern of occurrence and evolution in different locations, as well as evaluating screening programs.

## METHODS

This is a descriptive, retrospective study of historical series<sup>(6)</sup> that use secondary data, obtained from the database of the National Cancer Institute (INCA), available on the Unified Health System Statistics Department website (DATASUS), on mortality from cervical cancer.

Data collection occurred in November 2016 and the selected period was from 2005 to 2014, a historical series of 10 years (from January 2005 to December 2014 = 10 years). The used variables were: cervical malignant neoplasm (International Code of Diseases – IDC 10 C53), time, location (Brazil, Rio Grande do Sul, Três Passos), and age group according to place of occurrence.

According to the last census, carried out in 2010, the municipality of Três Passos has an estimated population of 24,640 inhabitants, being 12,214 women and, among them, 6,684 are part of the target population for cervical cancer screening, aged 25 to 64 years<sup>(7)</sup>.

Data analysis occurred through descriptive statistics of absolute frequency.

The mortality study by temporal trend analysis is a source of information to support decision-making policy and helps assessing the impact of implemented preventive measures<sup>(4)</sup>.

The study complied with the ethical aspects provided by Resolution #466/2012, for the use of secondary data. Since INCA and DATASUS are secondary databases in public domain, an assessment of the Ethics Committee was not necessary.

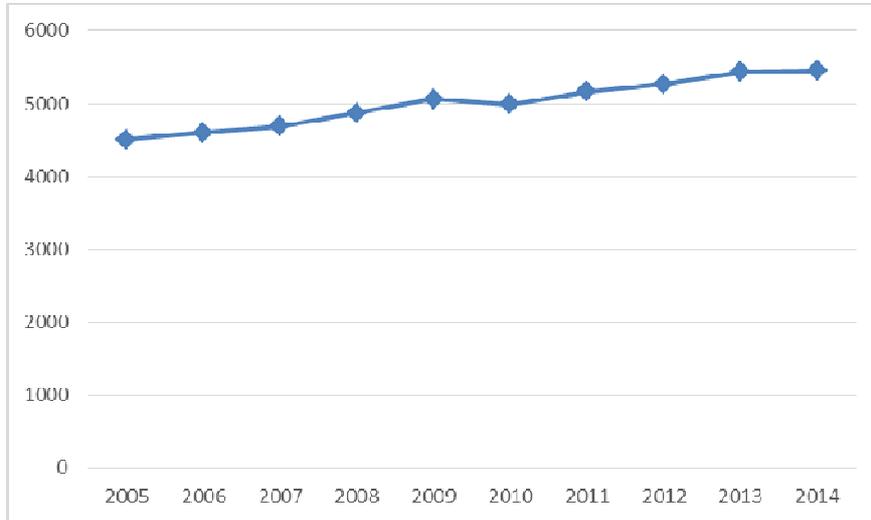
## RESULTS AND DISCUSSION

Data are presented by figures to illustrate the mortality from cervical cancer among the

three political-administrative spheres. Figure 1 shows the proportional mortality from cervical cancer in women, in Brazil<sup>(8)</sup>.

Deaths from cervical cancer in Brazil increased between 2005 and 2014. In 2005, 4,506 deaths were recorded. In 2014, 5,448 deaths from cervical cancer were recorded in the country.

Figure 1 – Non-adjusted proportional mortality from cervical cancer, women, Brazil, between 2005 and 2014.



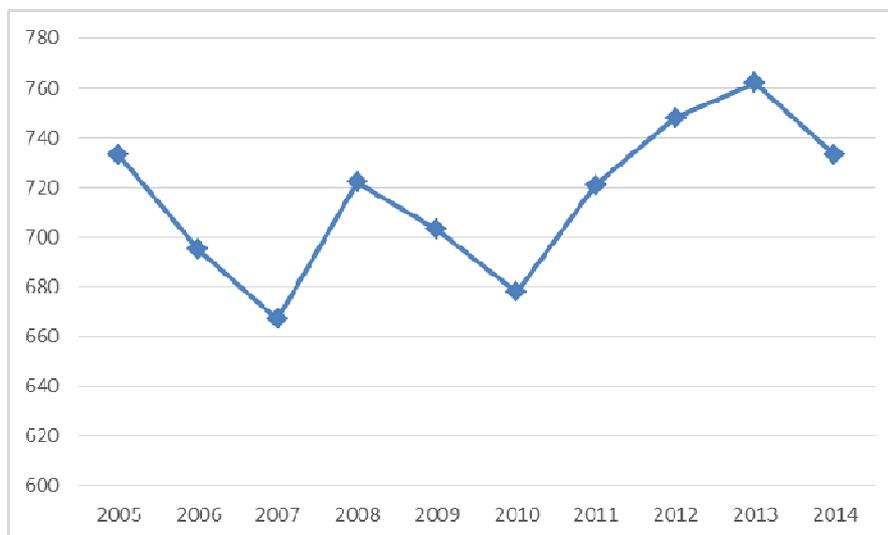
Source: INCA/Datasus/MH, 2016.

The increased number of deaths from cervical cancer in the country may relate to the epidemiological transition process currently happening, with increase in the number of chronic diseases, including cancer, which directly influences the increased mortality from this type of neoplasm<sup>(9,10)</sup>. This epidemiological transition is characterized by the decrease in records of

communicable diseases and an increase in non-communicable chronic diseases. Added to this, people are living longer. This longevity relates to the emergence of chronic diseases, such as cancer.

Figure 2 shows the proportional mortality from cervical cancer in women, in southern region<sup>(8)</sup>.

Figure 2 – Non-adjusted proportional mortality from cervical cancer, women, Southern region, between 2005 and 2014.



Source: INCA/Datasus/MH, 2016.

The Southern region, in 2005, recorded 733 deaths from cervical cancer, which decreased to 667 in 2007. Importantly, this number increased considerably in 2013, with 762 deaths, decreasing a little in 2014, and returning to 733 deaths, the same number found in 2005. Therefore, the studied years show a strong oscillation, in opposition to the country's parameter, which follows a trend of linear increase. Such a difference between the studied years could have occurred due to underreporting of mortality cases.

According to an analysis of mortality projections in Brazil until 2030, rates shall reduce, especially in the southern region. This reduction may be explained by the reduction of risks for developing cervical cancer. Nonetheless, Northern and Northeastern regions have the highest rates, indicating that mortality relates to the poorest regions in Brazil. Due to regional differences, controlling the disease in the country represents a challenge<sup>(11)</sup>.

According to mortality rates of the five most frequent primary locations found in INCA<sup>(8)</sup> between 2005 and 2014, cervical cancer occupies the third place among cancers with the highest mortality numbers in Brazil, behind only breast and bronchial/lung cancers. Adjusting the rates for 100,000 women, in 2005, there was a percentage of 5.29 deaths from cervical cancer. In 2014, this percentage was 4.88. In this way, the analysis of the rates shows that mortality in the country decreased. This information differs from that previously presented on the proportional mortality from cervical cancer in women, in Brazil, in the same period.

In Rio Grande do Sul<sup>(8)</sup>, mortality from cervical cancer occupies the fifth place, behind

breast, bronchial and lung, colon, and pancreatic cancer. Similarly to the country, the number of deaths decreased during this period: 5.4 deaths per 100,000 women in 2005, and 4.08 in 2014.

In Três Passos<sup>(8)</sup>, cervical cancer does not occupy a significant place because it is not among the five most frequent neoplasms, unlike the situation in the country and in Rio Grande do Sul.

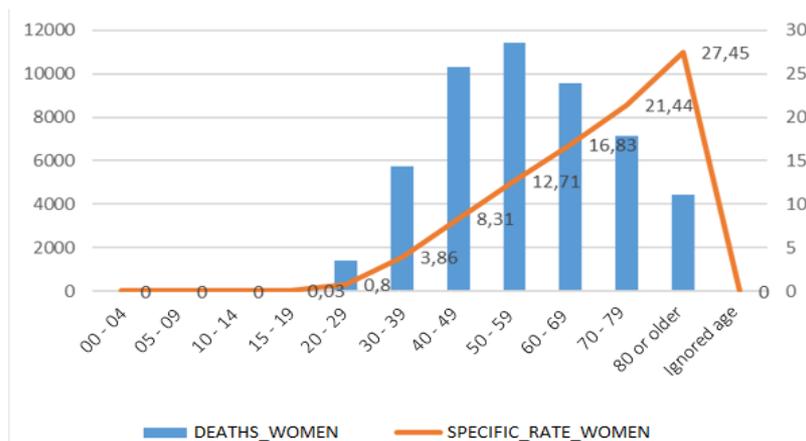
These trends reflect the measures through the tracking and control of Pap smear HPV transmission adopted mainly after 2004<sup>(4)</sup>. In addition, the structuring of the ESFs in the municipality allowed provide extensive coverage for the population.

The downward trend in rates of mortality from cervical cancer in the country, in Rio Grande do Sul and in Três Passos is similar to the one observed in a study of historical series held in a municipality in Minas Gerais, which found a decrease in the mortality from this neoplasm. According to a trend analysis, the result suggests an ongoing process of epidemiological transition, with persistence of high rates of cervical cancer<sup>(9)</sup>.

Rates of mortality from cervical cancer have significant fluctuations over time, influenced by the conditions of access to health services for primary prevention against HPV, as well as secondary prevention for screening and early diagnosis. Thus, it is complex to detect whether cancer mortality rates in Brazil increased or progressively decreased and to estimate their values through time-series analysis<sup>(4)</sup>.

Figure 3 shows the rates of mortality from cervical cancer, gross and adjusted by age, for 100,000 women in Brazil<sup>(8)</sup>.

Figure 3 – Rates of mortality from cervical cancer, gross and adjusted by age, by world and Brazilian populations in 2010, per 100,000 women, Brazil, between 2005 and 2014.



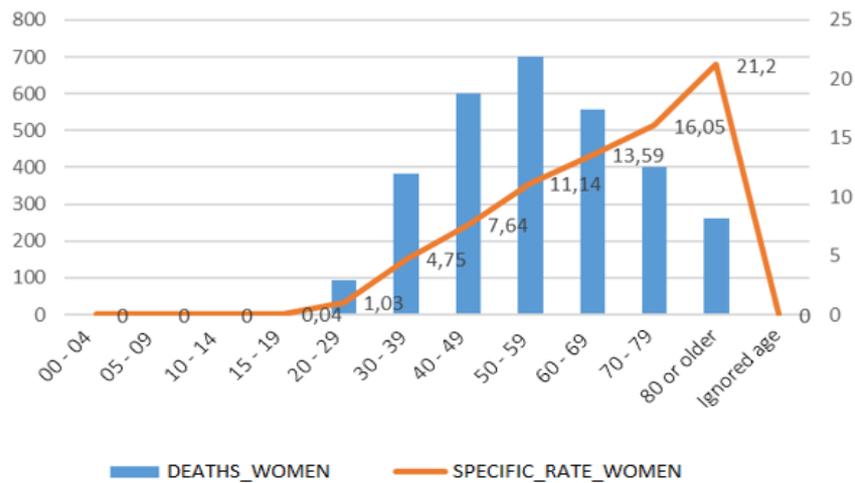
Source: INCA/Datasus/MH, 2016.

In Brazil, the difference between the number of deaths and death rates by age stands out. The number of mortality records was higher between 50 and 59 years old, with 11,423 deaths, equivalent to a rate of 12.71. At 80 years or more, there were 4,456 deaths, with a rate of 27.45. Such a difference may occur due to the smaller number of women aged 80 years or more.

Therefore, this difference becomes significant for evaluation, which leads to the understanding that more women aged 80 years or more die from this neoplasm in the country.

Figure 4 shows the rates of mortality from cancer of the cervix, gross and adjusted by age, per 100,000 women, in Rio Grande do Sul<sup>(8)</sup>.

Figure 4 – Rates of mortality from cancer of the cervix, gross and adjusted by age, by world and Brazilian populations in 2010, per 100,000 women, Rio Grande do Sul, between 2005 and 2014.

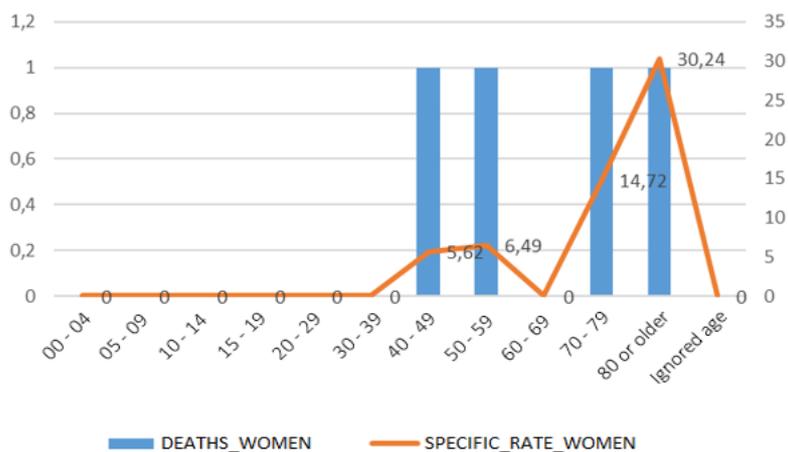


Source: INCA/Datasus/MH, 2016.

In Rio Grande do Sul, proportions are similar to those of the country regarding the number of deaths and mortality rates. The largest number of deaths occurred between 50 and 59 years old, with 699 deaths recorded. With 80 years or more, there were 261 deaths.

Figure 5 shows the rates of mortality from cervical cancer, gross and adjusted by age, per 100,000 women, in the city of Três Passos<sup>(8)</sup>.

Figure 5 – Rates of mortality from cancer of the cervix, gross and adjusted by age, by world and Brazilian populations in 2010, per 100,000 women, Três Passos-RS, between 2005 and 2014.



Source: INCA/Datasus/MH, 2016.

In Três Passos, four deaths were recorded in the same studied period and, in the same way as in the country and in the state, the highest mortality rate was at 80 years or older. However, the reduced number of deaths registered in the municipality during the series of 10 years stands out. Such a difference can relate to underreported mortality cases in the city in the studied period. It can also relate to the need for treatment and hospitalization in other municipalities that are reference for cancer cases; being the mortality registered where it occurred, records in the place of origin decrease.

The age represents a risk factor for the occurrence of cancer due to its relationship with the biological aging process<sup>(4)</sup>. In this way, the analysis of mortality by age groups shows association with aging<sup>(9)</sup>. A study showed an increase in the mortality rate for cervical cancer from the age group of 40 to 49 years. The age groups from 60 to 69 years and from 70 years concentrated 46.4% of deaths in the period from 1999 to 2006<sup>(12)</sup>. Thus, one can consider that elderly women have a higher mortality rate for cervical cancer.

When studying the age-specific mortality rates during certain period, they reflect some effects related to year of death and birth and characterize mortality changes over time<sup>(4)</sup>. In this way, there is also influence of demographic transitions on mortality rates.

The analysis of mortality from cervical cancer highlights some aspects, arising from the implementation process of the program aimed at Women's Health over the years. Ordinance #874/13 deserves attention, which included the National Policy for Cancer Prevention and Control in the Health Care Network of people with chronic diseases within SUS, bringing guidelines related to cancer prevention<sup>(13)</sup>.

Within this perspective, in Três Passos, the implementation of services and programs related to women's health and fighting cancer followed the chronology for implementing policies at national level.

A cross-sectional study conducted in Campinas, Brazil, with 2,220,298 smear tests, showed that Pap smear test is effective to prevent high-degree cytological squamous intraepithelial lesions, squamous cell carcinoma, adenocarcinoma in situ and invasive

adenocarcinoma when performed within intervals smaller than five years<sup>(14)</sup>.

Despite the effectiveness of smear tests, as well as forecast of reduction in mortality rates, these are still high. In the state of Rio Grande do Norte, projections showed reduction in mortality rates from 5.95 per 100,000 women (2006-2010) to 3.67 (2026-2030). However, the absolute number of deaths shall increase 22%. Even with the best mortality indicators, this result remains smaller than expected<sup>(10)</sup>.

In this context, issues related to access to health services hinder screening and early diagnosis, as well as prevent women from receiving treatment in a timely manner. This difficulty affects mainly women with lower socioeconomic conditions and that rely exclusively on public health services<sup>(9)</sup>. Therefore, the quest for universality of access to health services and effective early screening are priorities for improving indices of mortality from cervical cancer.

## CONCLUSION

This study showed that rates of mortality from cervical cancer in Brazil, in the state of Rio Grande do Sul and in the municipality of Três Passos reduced, resulting from measures adopted in the early screening of this cancer. It also identified greater mortality rate at 80 years or more, which may relate to aspects involving epidemiological and demographic transition in the country.

The profile of mortality from cervical cancer identified in this study emerged from data informed by INCA. Therefore, it may have limitations due to the quality of the generated information. However, the measures of prevention and control, held at health services, allow reducing mortality from this neoplasm.

New studies should be carried out for analysis of mortality in small municipalities. Most studies on mortality from cervical cancer concentrate in capital cities or states of the country, with little information on mortality profile in small municipalities.

The findings suggest the need for efforts to improve and expand preventive strategies within public health policies in order to cover a greater number of women in health promotion actions. Thus, the strengthening of the cervical cancer control program in the country, as well as access

to health services, are considered priorities for reducing mortality continuously over time.

This study may facilitate the development of public health actions that meet the population's needs at the three levels, in order to reduce the incidence of mortality from cervical cancer.

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