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## ANALYSIS OF THE HIV/AIDS MORTALITY RATE IN THE MUNICIPALITY OF BELÉM

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### ABSTRACT

Mortality rates from HIV/AIDS in Brazil have tended to stabilize since 2000, with increased survival after the advent of ART. However, the resolution of mortality from this disease was not equal among all regions. This study enables the analysis of the high and persistent mortality rate in Belém-PA and compares it with others in Brazil. **Methods:** Epidemiological, cross-sectional, descriptive-analytical study with a quantitative approach. Data were obtained from DATASUS and from the Ministry of Health's HIV/AIDS Epidemiological Bulletin, from August 2019 to July 2020. **Results:** An upward trend was analyzed in the HIV/AIDS mortality rate, from 2008 to 2018, in Belém-PA, similar to what happened in the capitals of the North and Northeast. It was analyzed that from 2008 to 2018, most deaths were male; in the age group from 30 to 39 years old; and with a level of education from 8 to 11 years. **Conclusion:** Health care for patients with HIV/AIDS is not universal and equitable in Brazil, hindering access to diagnosis and treatment. It is necessary to improve health support and adopt additional preventive strategies.

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## INTRODUCTION

Mortality from HIV/AIDS is a Public Health problem that affects different segments of the population. The disease emerged in the 1980s and, since then, efforts have been made to fight this epidemic, mainly because it is one of the main causes of death in Brazil (Reis; Cruz; 2007). In 1996, after the enactment of Law No. 9,313/96, the Brazilian government proposed to guarantee the free distribution of all antiretroviral drugs through the Unified Health System (SUS) (Coutinho; O'Dwyer; Frossard, 2018). The results of studies on the association between Antiretroviral Therapy (ART) and mortality from AIDS have shown, since 1996, an increase in survival and, consequently, a reduction in mortality from this cause<sup>1</sup>. In 2013, as a new way to contain the AIDS epidemic, treatment was started for all people living with HIV (PLHIV), regardless of their immune status, as assessed by their CD4<sup>+</sup> count. At the beginning of this epidemic, the causes of death most described in the death certificate were opportunistic infectious diseases, such as tuberculosis, candidiasis and other mycoses; toxoplasmosis; pneumonias and other diseases of the respiratory system; and HIV-associated malignancies. After ART, the benefits were both at the population and individual levels, with increased survival and improved quality of life. And, over time, the disease underwent changes in its clinical course, as well as temporal, sociodemographic and geographic changes (Rezende, 2012). When comparing the mortality rates from AIDS in the country between 2004 and 2013, the drop of 6.6% in the risk of death was evident: in 2004, the mortality rate was 6.1 deaths/100 thousand inhabitants, and in 2013, 5.7/100 thousand inhabitants (Cunha; Cruz; Torres, 2016).

In general, mortality from HIV/AIDS in the country has a tendency to stabilize, as shown by the standardized rates practically unchanged since 2000. However, this apparent stability of mortality hides a complex situation with localized epidemic processes, affecting certain regions and/or populations at higher risk, with at least a third of Brazilian states presenting standardized AIDS mortality rates (APPD) above the national average or exhibiting mortality in rising rates, despite efforts to expand national coverage with antiretrovirals (Paula, 2018). Therefore, despite the reduction in mortality from HIV/AIDS in the country, some regions showed a high number of deaths from the disease. The city of Belém-PA has had one of the highest mortality rates in recent years, reaching, in 2018, the second place in the ranking of Brazilian capitals with the highest rate of deaths from HIV/AIDS. This disease is a worrying public health problem in Brazil, due to the high costs generated by it, such as medication, hospitalization and loss of active labor. For this reason, AIDS and HIV infection were included in the National Compulsory Notification List of diseases, in the years 1986 and 2014, respectively. This is essential for epidemiological knowledge of the disease, based on the insertion of these data in the Information Technology Department of the Unified Health System (DATASUS) (Lins, 2019). The needs of the majority of the Brazilian population remain systematically unmet when strategies on HIV/AIDS or public policies are established, because there is social vulnerability, where structural factors have led to the advance of the epidemic, such as material conditions of existence, sexuality, citizenship, race/color, among others, imposing on the State the implementation of policies and/or combat actions in a social and not merely sanitary perspective (Maia, 2019). The

resolution of mortality from HIV/AIDS was not equal between the regions of the country, even after the implementation of antiretroviral treatment (Lins, 2019). This study makes it possible to analyze the high and persistent mortality rate in the city of Belém and compares this capital with others in Brazil.

## METHODS

This is an epidemiological, cross-sectional, descriptive-analytical study with a quantitative approach. Data were obtained from the DATASUS online platform and the HIV and AIDS Epidemiological Bulletin, from the Department of Chronic Diseases and Sexually Transmitted Infections, from the Health Surveillance Secretariat, from the Ministry of Health (DCCI/SVS/MS), based of the Mortality Information System (SIM), from August 2019 to July 2020. Descriptive analyzes of deaths due to HIV/AIDS were conducted between 2008 and 2018 for the capitals of the Federative Units (UF) of Brazil. According to the sociodemographic characteristics, the analysis of proportional mortality from HIV/AIDS included the following variables: sex, age group, marital status, education.

## RESULTS

The trend analysis according to DCCI/SVS/MS data points to an increase in the mortality rate (4/100,000) due to HIV/AIDS, from 2008 to 2018, in the municipality of Belém (Figure 1).

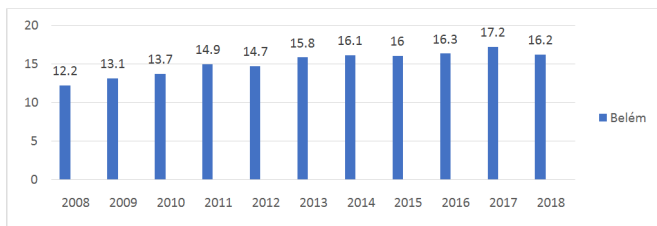


Figure 1. Mortality coefficients per 100 thousand inhabitants due to HIV/AIDS, in Belém/PA from 2008 to 2018, according to the DCCI/SVS/MS

According to data from DCCI/SVS/MS, Belém follows an increasing trend along with most capitals in the Northeast and unlike all those in the Midwest, South and Southeast of the country. The municipality of Belém leads the ranking of increase in the mortality rate, in relation to the other municipalities analyzed, followed by Aracaju (2.9/100,000) and Macapá (2.2/100,000) (Figure 2). Furthermore, in 2018, Belém is in second place in the position of municipalities with the highest mortality rates, losing to Porto Alegre.

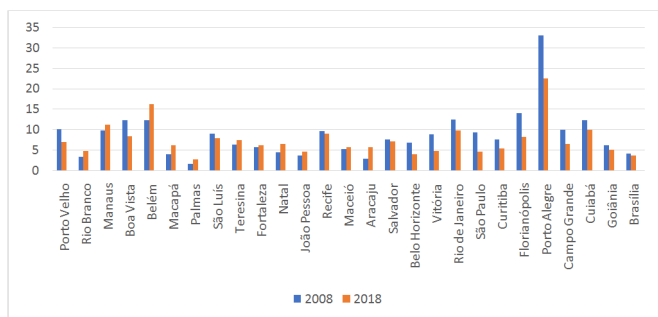


Figure 2. Mortality coefficients per 100 thousand inhabitants due to HIV/AIDS, according to capitals of residence by year of death, from 2008 to 2018, according to the DCCI/SVS/MS

When considering the proportional distribution of mortality from AIDS, according to sociodemographic characteristics in the city of Belém/PA, from the years 2008 and 2018, mortality from AIDS is predominantly male and there was an increase in the number of

deaths in men of 117 (2008) to 176 (2018). It was also analyzed that the number of deaths remains high in females (Figure 3).

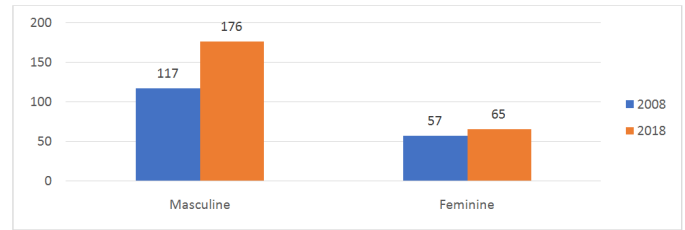


Figure 3. Number of deaths per residence, due to HIV, by sex, in the years 2008 and 2018, in the city of Belém/PA. Source: DATASUS

The AIDS mortality pattern, according to age group, showed a concentration of deaths in the 20 to 49 age group, corresponding to the productive and reproductive ages of the population. In the same way as the analysis by sex, an increase in mortality was analyzed, from 2008 to 2018, in all age groups, especially the age group above 50 years, which increased significantly, from 18 cases to 51, comparing the years analyzed (Figure 4).

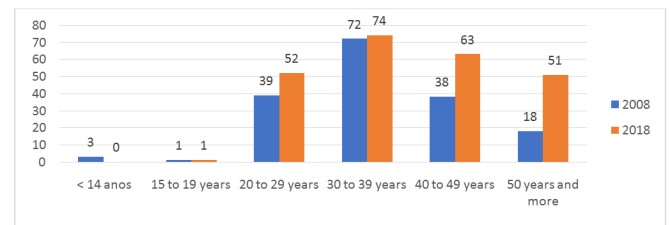


Figure 4. Number of deaths per residence, due to HIV, by age group, in the years 2008 and 2018, in the city of Belém/PA. Source: DATASUS

As for education, the increase in deaths with an education level of 8 to 11 years should be highlighted, from 42 in 2008 to 84 in 2018. Also increasing mortality in the population with no education level, with 1 to 3 years of schooling and 12 years or more. While, with 4 to 7 years of schooling, mortality decreased from 71 cases in 2008 to 65 in 2018 (Figure 5).

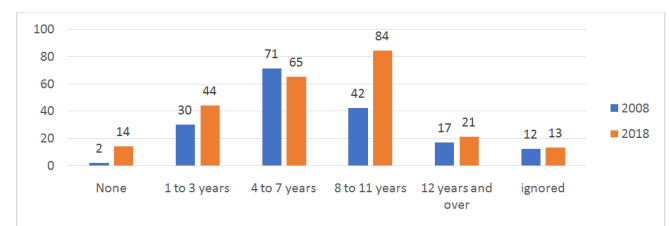


Figure 5. Number of deaths per residence, due to HIV, according to educational level, in the years 2008 and 2018, in the city of Belém/PA. Source: DATASUS.

Another variable analyzed was marital status, in which there was a greater predominance of deaths from AIDS among single people, both in 2008 and in 2018, this year with 155 cases (Figure 6).

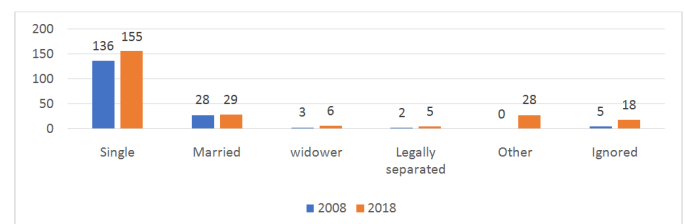


Figure 6. Number of deaths per residence, due to HIV, according to marital status, in the years 2008 and 2018, in the city of Belém/PA. Source: DATASUS

## DISCUSSION

The set of results revealed that in the period from 2008 to 2018, the mortality rate due to HIV/AIDS in the Municipality of Belém-PA, was maintained high and with an upward trend, even with the advance of prevention and distribution of medicines for all people living with HIV (PLHIV), as containment measures in Brazil (Coutinho; O'Dwyer; Frossard, 2018). To a lesser degree, other capitals also had a higher mortality rate in 2018 compared to 2008, such as Rio Branco, Manaus, Macapá and Palmas, constituting the majority of states in Northern Brazil; in addition to the capitals of the Northeast, such as Teresina, Fortaleza, Natal, João Pessoa, Maceió and Aracaju, also making up the majority of this region. With all capitals in the other regions, Midwest, Southeast and South, with a drop in the mortality rate, comparing the same period. There are potential explanations for this picture that deserve investigation. With the Health Care System in Brazil, which distributes ART free of charge, better mortality indicators are expected. However, several factors can interfere with the process. According to a study published by the Revista Brasileira de Epidemiology, one of the main ones is the low level of HIV testing, which leads to the lack of knowledge about the positivity and, consequently, the non-search for treatment. Another factor of great importance is the low adherence to ART among those who follow up in reference services<sup>5</sup>. Such factors are a consequence of the inequality between Brazilian regions and capitals in the health care provided (Guimarães, 2017).

Most HIV deaths in the city of Belém-PA affect the male population. Corroborating this fact, a study carried out in Monte Carlo-MG, in 2018, states that men have low awareness about the importance of accessing prevention and care services, compared to women. Furthermore, many tend to consider themselves "invulnerable", rejecting the possibility of becoming ill, consequently leaving them susceptible to illness (Trindade, 2019). It was identified, in Belém, that deaths from HIV in all age groups tended to increase in 2018 compared to 2008. The greatest number of deaths remains in the 30 to 39 age group, in second place is the 40 to 49 years old and, in third place, those aged between 20 and 29, all together making up the economically active population. The age group that deserves more attention is the over 60 years, which had the greatest increase in deaths than the others, with a significant number in 2018. In the study in Monte Carlo-MG, there was a growing increase in HIV/AIDS among the elderly and this puts into discussion that greater access to medication for erectile disorders has contributed to the increase in the transmission of Sexually Transmitted Infections (STIs). In addition, the physiological changes of aging determine a lower capacity of the elderly's immune system, making them more susceptible to infections and less responsive to the aggressor agents. However, non-specific symptoms such as asthenia and anorexia, common at this stage of life, make early diagnosis difficult and soon delay treatment (Trindade, 2019). There is a predominance of low education in people who died of HIV in the capital of Pará, similar to what was found in a study in Northeastern Brazil, carried out between 2006 and 2016, indicating the population's vulnerability due to lack of information and less access to prevention (Lins, 2019). Therefore, this corroborates with the analyzes already carried out on low HIV testing and low adherence to ART treatment.

The same study in the Northeast also analyzed that most deaths occurred in the single population as in the present study, inferring a risky behavior with multiple partners without preventive measures (Lins, 2019).

## CONCLUSION

Health care for patients with HIV/AIDS is not universal and equitable in Brazil, and can be seen in the analysis carried out in the capitals of the Federative Units (UF), making access to diagnosis difficult and, consequently, a late start to treatment. It is therefore necessary to improve health support and adopt additional preventive strategies, covering all segments of the population, especially men, elderly, less educated and single segments, to reduce the number of infections, to increase the number of tests for HIV and to educate the population about the importance of adherence to treatment.

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