



Confirmed cases of mpox in Santa Catarina: case profile and disease incidence, 2022–2024

Casos confirmados de mpox em Santa Catarina: perfil dos casos e incidência da doença, 2022-2024
Casos confirmados de mpox en Santa Catarina: perfil de los casos e incidencia de la enfermedad, 2022-2024

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ABSTRACT

Background and Objectives: Updated analyses of mpox data are essential to understand transmission patterns and the epidemiological profile of cases, providing evidence to support targeted and effective public health actions. This study aimed to describe the epidemiological profile of confirmed mpox cases and to analyze the incidence of the disease in the state of Santa Catarina, Brazil, from 2022 to 2024. **Methods:** A descriptive study was conducted using confirmed mpox cases reported in Santa Catarina between 2022 and 2024, obtained from Tabnet/DIVE. Absolute (n) and relative (%) frequencies of cases were described, and incidence rates and the evolution of the moving average were analyzed. The variables were analyzed using Stata software, version 14. **Results:** A total of 510 confirmed mpox cases were recorded during the study period, with most cases occurring in 2022 (85.5%). A moving average of 115 cases was observed during the period. A higher proportion of cases was observed among males (94.5%) and younger age groups, particularly those aged 20–39 years (79.2%). Higher incidence rates were also observed in Grande Florianópolis in 2022 (17.9 per 100,000 population). Most cases occurred among individuals who identified as homosexual (68.4%) and cisgender men (73.5%). The main reported route of transmission was physical contact (47.6%). **Conclusion:** Most cases occurred in 2022, with predominance among males, young adults, homosexual individuals, and cisgender men. This profile highlights the need to strengthen prevention and health communication actions targeted at the most affected groups, contributing to disease control.

Keywords: Mpox. Descriptive Epidemiology. Monkeypox virus. Health Profile. Public Health Surveillance.

RESUMO

Justificativa e Objetivos: A análise atualizada dos dados de mpox é essencial para compreender os padrões de transmissão e o perfil epidemiológico dos casos, fornecendo subsídios para ações estratégicas e eficazes, devidamente direcionadas. O objetivo deste estudo foi descrever o perfil epidemiológico dos casos confirmados de mpox e analisar a incidência da doença em Santa Catarina, no período de 2022 a 2024. **Métodos:** Estudo descritivo realizado com casos confirmados de mpox no estado de Santa Catarina, nos anos de 2022 a 2024, provenientes do Tabnet/DIVE. Foi realizada a descrição das frequências absolutas (n) e relativas (%) dos casos, análise das taxas de incidência e evolução da média móvel. As variáveis foram analisadas no software Stata 14. **Resultados:** Foram registrados 510 casos confirmados de mpox no período, com predominância no ano de 2022 (85,5%). Observou-se uma média móvel de 115 casos no período. Observou-se maior proporção de casos entre indivíduos do sexo masculino (94,5%) e nas faixas etárias mais jovens, especialmente entre 20 e 39 anos (79,2%). Também se observou maior incidência de casos na Grande Florianópolis em 2022 (17,9/100.000 habitantes). A maioria dos casos ocorreu em pessoas que se identificaram como homossexuais (68,4%) e homens cisgênero (73,5%). A principal forma de transmissão foi o contato físico (47,6%). **Conclusão:** A maioria dos casos ocorreu em 2022, com predomínio no sexo masculino, adultos jovens, homossexuais e homens cisgênero. Esse perfil reforça a necessidade de fortalecer ações de prevenção e comunicação em saúde direcionadas aos grupos mais afetados, contribuindo para o controle da doença.

Descritores: Mpox. Epidemiologia Descritiva. Monkeypox vírus. Perfil Epidemiológico. Vigilância em Saúde Pública.

RESUMEN

Justificación y Objetivos: El análisis actualizado de los datos sobre mpox es importante para comprender los patrones de transmisión y el perfil epidemiológico de los casos, contribuyendo a orientar acciones de salud pública. Este estudio tuvo como objetivo describir el perfil epidemiológico de los casos confirmados de mpox y analizar la incidencia de la enfermedad en el estado de Santa Catarina, Brasil, entre 2022 y 2024. **Métodos:** Estudio descriptivo realizado con los casos confirmados de mpox en Santa Catarina entre 2022 y 2024, obtenidos del sistema Tabnet/DIVE. Se describieron las frecuencias absolutas (n) y relativas (%) de los casos, así como las tasas de incidencia y la evolución de la media móvil. Los análisis se realizaron en el software Stata, versión 14. **Resultados:** Se registraron 510 casos confirmados, con predominio en 2022 (85,5%). La mayor proporción ocurrió en hombres (94,5%) y en adultos jóvenes de 20 a 39 años (79,2%). También se observó una mayor incidencia en la Gran Florianópolis en 2022 (17,9 por 100.000 habitantes). La mayoría de los casos correspondió a hombres cisgénero (73,5%) y personas que se identificaron como homosexuales (68,4%). El principal mecanismo de transmisión fue el contacto físico (47,6%). **Conclusión:** Los casos se concentraron en 2022 y predominaron en hombres jóvenes. Estos hallazgos refuerzan la necesidad de fortalecer acciones de prevención y comunicación dirigidas a los grupos más afectados para contribuir al control de la enfermedad.

Palabras Clave: Mpox. Epidemiología Descriptiva. Monkeypox virus. Perfil Epidemiológico. Vigilancia en Salud Pública.

INTRODUCTION

Mpox is a disease caused by the monkeypox virus (MPXV), which belongs to the genus Orthopoxvirus and the family Poxviridae, with two known viral clades.¹ It is a self-limiting, generally mild disease, with symptoms such as fever, headache, muscle pain, fatigue, acute skin/mucosal lesions, and lymphadenopathy, lasting from 2 to 4 weeks.²

Initially, the virus was predominantly found in regions of Central and West Africa, with sporadic cases reported in other locations, usually associated with travel to endemic areas.³ It is worth noting that, despite the common name, monkeys are not reservoirs of the virus.⁴

Since May 2022, the identification of mpox cases in non-endemic countries led the World Health Organization (WHO) to declare the disease a Public Health Emergency of International Concern (PHEIC).⁵ Despite the revocation of this classification in 2023, the increase in cases in the Democratic Republic of the Congo, especially related to sexual transmission, prompted a new public health emergency declaration in August 2024. By then, more than 116 countries had reported new cases, highlighting the global spread of the disease. Currently (June 2025), the World Health Organization has recognized that the increase in mpox cases observed in 2024 continues to meet the criteria for a Public Health Emergency of International Concern (PHEIC).

In Brazil, the first recorded case of mpox was on June 9, 2022, followed by outbreaks in several cities in the same year.⁷ Despite advances in the reporting and monitoring of mpox in Brazil, studies that delve into the profile of cases and the main epidemiological indicators of the disease are still scarce. When they do exist, they are usually limited to the first year of the epidemic, restricting the understanding of its evolution and possible changes over time.^{8,9} An investigation conducted in the population of Rio de Janeiro between June and November 2022 identified a higher incidence of the disease among cisgender men who self-identified as white and homosexual.⁸ Most cases presented mild symptoms, with progression to recovery without the need for hospitalization.⁸ Similar results were observed in a national study conducted in the same year, corroborating this epidemiological profile.⁹

Addressing mpox represents an emerging challenge that requires urgent and sustained measures over time to ensure an effective response to this public health emergency. The ongoing and up-to-date analysis of data is essential to understand transmission patterns and the epidemiological profile of cases, providing a solid basis for the formulation of strategic and effective public health actions. Understanding the dynamics of the disease over the years is essential to strengthen

epidemiological surveillance, guide targeted interventions, and protect the most vulnerable populations in the face of potential resurgences.

In this context, the objective of this study was to describe the epidemiological profile of confirmed mpox cases and to analyze the incidence of the disease in Santa Catarina from 2022 to 2024.

METHODS

Study design

This is a descriptive, retrospective epidemiological study based on secondary data from epidemiological surveillance.

Context and data source

The state of Santa Catarina, located in the Southern region of Brazil, had one of the highest Human Development Indexes (HDI 0.792) in the country in 2021. With 295 municipalities, high urbanization, and a diversified economy well integrated regionally, the state stands out on the national scene. Its geographic position between Paraná and Rio Grande do Sul, encompassing coastal areas, plateaus, and mountains, can influence both the organization of services and the health profiles observed across the territory.

For this study, the consolidated data were extracted from the *Tabnet* (application developed by DATASUS for the tabulation of different variables) of the state of Santa Catarina, where they are made available for public consultation by the Directorate of Epidemiological Surveillance (*Diretoria de Vigilância Epidemiológica - DIVE*).¹⁰ The information was accessed on December 23, 2024, covering the period from January 1, 2022, to December 21, 2024 (the last date the database was updated at the time of extraction).

For the calculation of epidemiological indicators, data from the Brazilian Institute of Geography and Statistics (IBGE) were incorporated, accessed through the *Tabnet* platform, made available by the Department of Informatics of the Unified Health System (SUS).¹¹

Only confirmed cases of mpox were included, defined as “positive/detectable” for the Monkeypox virus by molecular diagnosis (RT-qPCR and/or sequencing).¹² All records that did not meet the laboratory confirmation criterion were excluded, including discarded cases (negative result), inconclusive cases, those without an available laboratory result, cases still under investigation during the analyzed period, and those classified as lost to follow-up.

Variables

For the description of the case profile, the following variables were analyzed: sex at birth (male; female); gender identity (cisgender woman; cisgender man; transgender woman; transgender man; non-binary; not

applicable; unknown); sexual orientation (heterosexual; homosexual; bisexual; other; unknown); age group (0–9; 10–19; 20–29; 30–39; 40–49; 50–59; 60 or older); race/skin color (White; Black; Yellow/Asian; Mixed/Pardo; unknown); hospitalization (yes, due to clinical needs; yes, for isolation purposes; no; blank/unknown); sexual behavior (sex with men; sex with women; sex with men and women; not applicable; blank/unknown); HIV-positive status (yes; no; blank/unknown); unprotected exposure (yes; no; blank/unknown); physical contact (yes; no; blank/unknown); intimate contact (yes; no; blank/unknown); contaminated materials (yes; no; blank/unknown); case outcome (death from mpox; recovery; blank/unknown); and month/year of notification (calendar months and years 2022 to 2024).

Statistical methods

Quantitative variables were described using absolute (n) and relative (%) frequencies for each category.

Incidence rates were calculated as follows:

$$\text{Incidence rate} = \frac{\text{number of new cases during the period}}{\text{Population at risk during the same period}} \times 100,000 \text{ population}$$

In this equation, the number of new cases corresponds to the total new mpox records that occurred during the analysis period, while the population at risk corresponds to the total number of individuals susceptible to infection in the same geographic area and during the same period.

Crude incidence rates were calculated for the state and stratified by year of notification, sex, age group, and health macro-region (*Sul; Planalto Norte e Nordeste;*

Grande Oeste; Grande Florianópolis; Foz do Rio Itajaí; Vale do Itajaí; Meio Oeste; Serra Catarinense). In addition, the three-term centered monthly moving average of cases was calculated, corresponding to the arithmetic mean of the number of cases in the previous month, the current month, and the following month. This procedure smooths temporal fluctuations in the series, making it easier to visualize trends and patterns over the analyzed period. The data were exported to spreadsheets in Microsoft Excel and then submitted for analysis using Stata 14 software.

Ethical aspects

The data were analyzed in an anonymized manner, without any participant identification. Therefore, since they consist of publicly available data with no personal identifiers, submission for ethical review was not required, in accordance with Resolution No. 674 of May 6, 2022 (Art. 26, items III and V).

RESULTS

During the study period, 510 confirmed cases of mpox were recorded in the state of Santa Catarina. The highest number of confirmed cases was recorded in August (n=144) and September (n=148) 2022. Although surveillance officially began on January 1, 2022, in the system, the initial case records only occurred in July 2022. During the period, a moving average of up to 115 cases was observed (Figure 1).

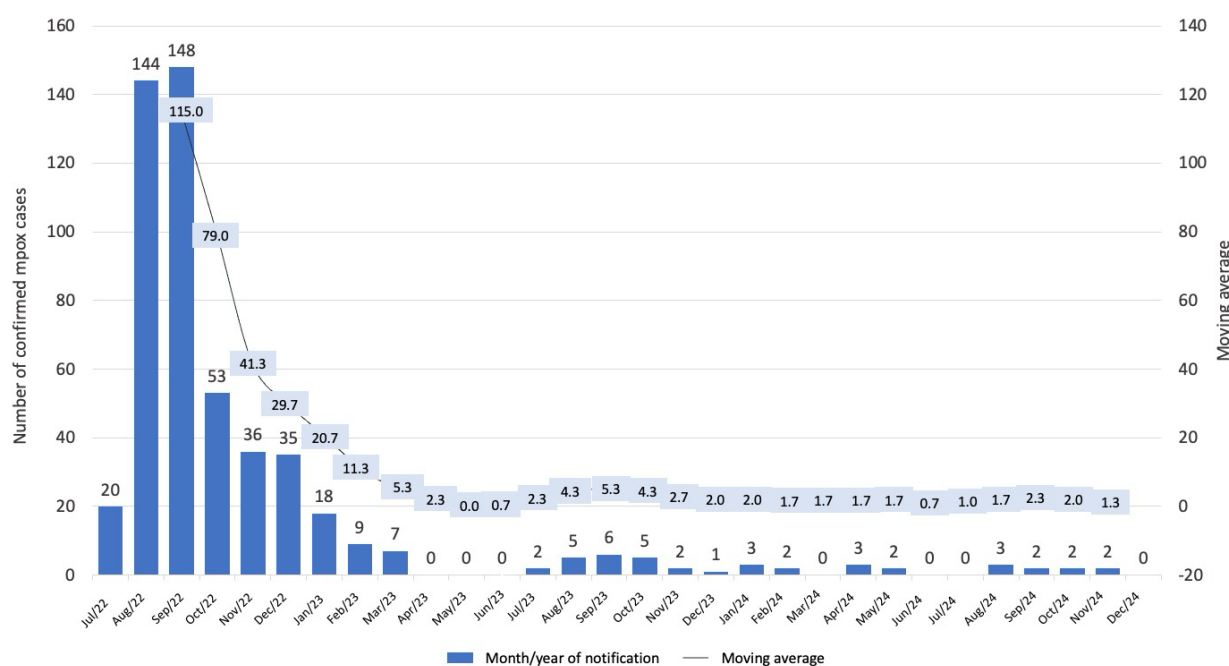


Figure 1. Description of the absolute number of confirmed mpox cases by month/year of notification and monthly moving average, Santa Catarina, 2022–2024. (n=510)

Over the three years analyzed, a predominance of cases was observed in males (94.5% of the total).

Regarding gender identity, 73.5% were cisgender men, while the most frequent sexual orientation was

homosexual (68.4% of cases), followed by heterosexual (16.3%). The majority of cases (79.2%) involved people aged 20 to 39 years, with 70.6% identified as white (Table 1).

Of the total confirmed cases, 26 (5.1%) required hospitalization, with 4.5% due to clinical needs. Regarding sexual behavior, most individuals reported having sex with men (66.7%), and 39.4% were people

living with HIV. Throughout the entire period, 63 cases (12.4%) reported a history of unprotected exposure, 243 (47.6%) had physical contact, and 76 (14.9%) reported intimate contact. In addition, 9.4% of the cases had a history of contact with contaminated materials. During the period, there was only one death from mpox, in 2022 (Table 1).

Table 1. Description of the absolute (n) and relative (%) frequencies of variables related to the sociodemographic profile, clinical characteristics, and exposure history of confirmed mpox cases by year of notification, Santa Catarina, 2022–2024. (n=510)

Variable	2022 N (%)	2023 N (%)	2024 N (%)	Total N (%)
Sex at birth				
Male	411 (94.3)	52 (94.5)	19 (100.0)	482 (94.5)
Female	25 (5.7)	3 (5.5)	0 (0.0)	28 (5.5)
Gender identity				
Cisgender woman	25 (5.7)	3 (5.4)	0 (0.0)	28 (5.5)
Cisgender man	318 (72.9)	41 (74.6)	16 (84.2)	375 (73.5)
Transgender woman	2 (0.5)	0 (0.0)	0 (0.0)	2 (0.4)
Transgender man	10 (2.3)	1 (1.8)	0 (0.0)	11 (2.2)
Non-binary	7 (1.6)	0 (0.0)	0 (0.0)	7 (1.4)
Does not apply	14 (3.2)	4 (7.3)	1 (5.3)	19 (3.7)
Unknown	60 (13.8)	6 (10.9)	2 (10.5)	68 (13.3)
Sexual orientation				
Heterosexual	72 (16.5)	11 (20.0)	0 (0.0)	83 (16.3)
Homosexual	296 (67.9)	36 (65.5)	17 (89.4)	349 (68.4)
Bisexual	36 (8.3)	5 (9.1)	1 (5.3)	42 (8.2)
Other	2 (0.4)	0 (0.0)	0 (0.0)	2 (0.4)
Unknown	30 (6.9)	3 (5.4)	1 (5.3)	34 (6.7)
Age group				
0 - 9	6 (1.4)	0 (0.0)	0 (0.0)	6 (1.2)
10 - 19	10 (2.3)	0 (0.0)	0 (0.0)	10 (2.0)
20 - 29	160 (36.7)	13 (23.6)	8 (42.1)	181 (35.5)
30 - 39	186 (42.6)	31 (56.4)	6 (31.6)	223 (43.7)
40 - 49	58 (13.3)	10 (18.2)	4 (21.0)	72 (14.1)
50 - 59	14 (3.2)	1 (1.8)	1 (5.3)	16 (3.1)
60 or more	2 (0.5)	0 (0.0)	0 (0.0)	2 (0.4)
Race/skin color				
White	312 (71.6)	38 (69.1)	10 (52.6)	360 (70.6)
Black	16 (3.7)	5 (9.1)	1 (5.3)	22 (4.3)
Yellow/Asian	10 (2.3)	4 (7.3)	3 (15.8)	17 (3.3)
Mixed/Pardo	63 (14.4)	7 (12.7)	4 (21.0)	74 (14.5)
Unknown	35 (8.0)	1 (1.8)	1 (5.3)	37 (7.3)
Hospitalization				
Yes, due to clinical needs	14 (3.2)	6 (10.9)	3 (15.8)	23 (4.5)
Yes, for isolation purposes	3 (0.7)	0 (0.0)	0 (0.0)	3 (0.6)
No	416 (95.4)	49 (89.1)	16 (84.2)	481 (94.3)
Blank/unknown	3 (0.7)	0 (0.0)	0 (0.0)	3 (0.6)
Sexual behavior				
Sex with men	286 (65.6)	38 (69.1)	16 (84.2)	340 (66.7)
Sex with women	45 (10.3)	4 (7.3)	0 (0.0)	49 (9.6)
Sex with men and women	38 (8.7)	10 (18.2)	2 (10.5)	50 (9.8)
Does not apply	1 (0.2)	3 (5.4)	1 (5.3)	5 (1.0)
Blank/unknown	66 (15.2)	0 (0.0)	0 (0.0)	66 (12.9)
Patient HIV-positive				
Yes	172 (39.4)	25 (45.5)	4 (21.1)	201 (39.4)
No	228 (52.3)	29 (52.7)	14 (73.7)	271 (53.1)
Blank/unknown	36 (8.3)	1 (1.8)	1 (5.2)	38 (7.5)
Unprotected exposure^a				
Yes	57 (13.1)	5 (9.1)	1 (5.3)	63 (12.4)
No	319 (73.2)	45 (81.8)	15 (78.9)	379 (74.3)
Blank/unknown	60 (13.7)	5 (9.1)	3 (15.8)	68 (13.3)
Physical contact^b				
Yes	210 (48.2)	21 (38.2)	12 (63.2)	243 (47.6)
No	200 (45.8)	29 (52.7)	5 (26.3)	234 (45.9)
Blank/unknown	26 (6.0)	5 (9.1)	2 (10.5)	33 (6.5)
Intimate contact^c				
Yes	69 (15.8)	4 (7.3)	3 (15.8)	76 (14.9)
No	297 (68.1)	46 (83.6)	14 (73.7)	357 (70.0)
Blank/unknown	70 (16.1)	5 (9.1)	2 (10.5)	77 (15.1)
Contaminated materials^d				
Yes	43 (9.9)	4 (7.3)	1 (5.3)	48 (9.4)
No	314 (72.0)	48 (87.3)	15 (78.9)	377 (73.9)
Blank/unknown	79 (18.1)	3 (5.4)	3 (15.8)	85 (16.7)

Abbreviation: ^aClose and prolonged exposure, without respiratory protection, to a probable or confirmed mpox case; ^bDirect physical contact, including sexual contact, with unknown individuals and/or multiple partners in the 21 days prior to the onset of signs and symptoms; ^cHistory of intimate contact, including sexual contact, with a probable or confirmed mpox case in the 21 days prior to the onset of signs and symptoms; ^dContact with contaminated materials, such as bedding, towels, or shared utensils, belonging to a probable or confirmed mpox case in the 21 days prior to the onset of signs and symptoms.

In 2022, the state recorded a total rate of 5.6 cases per 100,000 population, which decreased considerably to 0.7/100,000 in 2023 and 0.2/100,000 in 2024. Regarding sex, the incidence rate was 10.7 cases per 100,000 males, while among females it was 0.6/100,000. The 30–39 age group had the highest incidence rate, with 14.2 cases per 100,000 population. Regarding the health macro-regions, *Grande Florianópolis* had the highest rate in 2022 (17.9/100,000), followed by *Foz do Rio Itajaí* (12.6/100,000). In 2023, this pattern reversed: *Foz do Rio Itajaí* recorded the highest incidence rate (2.7/100,000), surpassing *Grande Florianópolis* (1.5/100,000), although both rates were substantially lower. Additionally, it is noteworthy that the *Meio Oeste* region did not record any confirmed cases in the three years analyzed (Table 2).

Table 2. Mpox incidence rates (per 100,000 population) in the state, by year, sex, health macro-region, and age group, Santa Catarina, 2022–2024.

Incidence rate	2022	2023	2024
State			
Santa Catarina	5.6	0.7	0.2
Sex			
Male	10.7	1.3	0.5
Female	0.6	0.1	0.0
Age group			
0 - 9	0.6	0.0	0.0
10 - 19	1.0	0.0	0.0
20 - 29	13.0	1.1	0.7
30 - 39	14.2	2.3	0.4
40 - 49	5.1	0.9	0.3
50 - 59	1.5	0.1	0.1
60 or more	0.2	0.0	0.0
Health macro-region			
Sul	0.1	0.3	0.0
Planalto Norte e Nordeste	2.4	0.1	0.3
Grande Oeste	0.8	0.1	0.0
Grande Florianópolis	17.9	1.5	0.6
Foz do Rio Itajaí	12.6	2.7	0.6
Vale do Itajaí	3.2	0.4	0.1
Meio Oeste	0.0	0.0	0.0
Serra Catarinense	0.3	0.0	0.0

Abbreviation: Incidence rates calculated per 100,000 population.

DISCUSSION

During the period, 510 cases of mpox were confirmed in Santa Catarina, most of them in 2022. Incidence was higher among young adults and in *Grande Florianópolis*. Cases predominated among individuals identifying as homosexual, those who had sex with men, and with physical contact as the main route of transmission.

The profile observed in Santa Catarina is consistent with findings from investigations conducted in Rio de Janeiro, Minas Gerais, and at the national level in 2022, which identified a higher frequency of cases among males, particularly cisgender and homosexual men.^{8-9,13} The findings confirm the persistence of this epidemiological pattern over time in the state. Identifying the most affected groups is essential to guide public policies and surveillance and prevention

actions. However, although cases are more concentrated in these population segments, it is important to emphasize that anyone who has close physical contact with an infected individual can acquire the infection, regardless of their sexual orientation. It is crucial that these strategies do not reinforce prejudice or stigmatize LGBTQIAP+ populations.¹⁴ Researchers have highlighted the existence of effective alternatives for developing disease prevention policies that do not stigmatize vulnerable groups.¹⁵ Among these strategies are avoiding messages that portray sexuality negatively, reinforce dominant sexual norms, or assign socially punitive blame to infected individuals. Thus, it is recommended that guidance aimed at the general public does not include suggestions of partial sexual abstinence, such as reducing the number of partners, or total sexual abstinence, except for individuals in the active phase of infection or during the period immediately following recovery.¹⁵

Regarding health regions, the *Grande Florianópolis* region had the highest incidence of mpox, followed by the *Foz do Rio Itajaí* region in 2022, which was expected due to the higher population density. These findings are supported by other researchers who found that population density plays a crucial role in the spread of the disease, in addition to urban centers.¹⁶⁻¹⁸ Cities with higher risk tend to have high population density, a high migration rate, and numerous connection hubs, facilitating the spread of the virus.¹⁶ In the Canadian context, mpox incidence was also higher in areas with a high concentration of migrants and visible minorities, greater residential instability, and among males.¹⁷

Still, despite the reduction in the number of cases and the incidence between 2022 and 2024, it is crucial to maintain constant vigilance. During this period, the state of Santa Catarina developed a state contingency plan to respond to the public health emergency caused by mpox.¹⁹ Among the main measures are the monitoring and immediate notification of suspected and confirmed cases, the performance of laboratory diagnosis in reference laboratories, the training of primary and specialized care professionals, and the adoption of biosafety measures to control infection in healthcare services. The plan also includes risk communication strategies, ensuring access to medications and supplies, and protecting healthcare professionals, especially through the use of personal protective equipment.¹⁹ All these measures may have contributed to the reduction in the number of cases in the state by enabling timely detection, appropriate case management, and the interruption of transmission chains.

In addition, in Brazil, efforts have been made to prevent infection and interrupt the transmission chain of mpox, including the introduction of vaccination starting in 2023. According to the Ministry of Health, the

vaccination strategy focuses on protecting people at higher risk of developing severe forms of the disease, such as people living with HIV/AIDS (PLHIV), laboratory professionals at risk of occupational exposure, and individuals who have had high-risk contact with suspected or confirmed cases, in post-exposure prophylaxis situations.²⁰

Preliminary data from the first Brazilian study on mpox vaccination, with an emphasis on safety, showed consistency with clinical trials, supporting the vaccine's safety profile.²¹ A total of 9,596 cases of the disease were recorded, with 49,000 doses distributed, of which 14,395 (31%) were administered. A total of 65 adverse events were reported, representing 4.5 cases per thousand doses administered.²¹ Despite the progress made, significant gaps are still observed globally in vaccine distribution, the availability of drug therapies, and regional equity.²² In this context, researchers have also warned about the emergence of new viral lineages, especially Clade Ib, characterized by rapid spread in the Democratic Republic of the Congo and higher transmissibility among people, indicating a dynamic and concerning evolutionary scenario for the control of mpox.²³ Thus, the decrease in incidence should be interpreted in light of the disease's dynamic epidemiological scenario, which may be characterized by inequalities in access to control measures and the emergence of new viral lineages.

A limitation of this study is the use of secondary data from health information systems, which are inherently subject to reporting errors, such as inconsistencies, omissions, and varying degrees of incompleteness in variables essential for characterizing the cases. Although some variables showed a low proportion of missing values, it is important to emphasize that any level of incompleteness can affect the analysis and interpretation of the results. In addition, the use of data from surveillance systems may be subject to underreporting and potential information bias, resulting from errors in recording, classification, or completion of variables in the reporting system. Finally, as this is a descriptive study, the results presented do not allow for establishing causal relationships between the variables analyzed. Nevertheless, the use of secondary data is justified by its relevance for the continuous monitoring of the epidemiological situation and by the possibility of large-scale analyses with broad territorial coverage.

As a strength, this study represents a contribution to strengthening mpox epidemiological surveillance in the state of Santa Catarina by providing an updated overview of case distribution, their epidemiological profiles, and incidence patterns. The results obtained provide important technical support for the planning, implementation, and evaluation of actions for prevention, early detection, rapid response, and containment of new cases, as well as supporting

communication strategies and the training of healthcare services. Such evidence can also guide public policies that are more equitable and responsive to the needs of the most vulnerable populations.

Finally, it is concluded that mpox cases were concentrated among males, particularly younger individuals, especially among homosexuals, with physical contact being the most likely mode of transmission. Between 2022 and 2024, a reduction in the incidence of the disease and in the moving average of cases was observed in the state. Although a reduction in incidence and the number of cases was observed over the analyzed period, this scenario does not eliminate the need to maintain active and sensitive epidemiological surveillance. The findings of this study contribute to expanding knowledge about the case profile and the distribution of the disease in the state, potentially supporting the planning and strengthening of monitoring, prevention, and health communication strategies—especially targeted at the most affected groups—as well as aiding the timely detection of new cases and rapid response to possible changes in mpox transmission patterns.

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AUTHORS' CONTRIBUTIONS

Regina Célia Santos Valim contributed to project management, introduction, methodology, discussion, interpretation and description of results, conclusions, and review. **Danúbia Hillesheim** contributed to project management, literature review, writing of the abstract, introduction, methodology, discussion, interpretation and description of results, conclusions, review, and statistical analysis. **André Silva Wagner** contributed to writing the abstract, methodology, interpretation of results, conclusions, review, and statistical analysis. **Ana Luíza Curi Hallal** contributed to project management, writing of the abstract, introduction, methodology, discussion, interpretation and description of results, conclusions, and review.

All authors approved the final version to be published and are responsible for all aspects of the work, including ensuring its accuracy and integrity.

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