REVISTA SAÚDE E TECNOLOGIA
Revista Científica Multidisciplinar | Journal Health and Technology – JHT – ISSN 2764-7625
v.8, n.2, 2026

EPIDEMIOLOGICAL PROFILE OF DENGUE DURING THE PANDEMIC PERIOD IN THE STATE OF MATO GROSSO: ANALYSIS OF THE YEARS 2020 TO 2022

PERFIL EPIDEMIOLÓGICO DA DENGUE EM PERÍODO PANDÊMICO NO ESTADO DE MATO GROSSO: ANALISE DOS ANOS 2020 À 2022

PERFIL EPIDEMIOLÓGICO DEL DENGUE DURANTE EL PERÍODO PANDÉMICO EN EL ESTADO DE MATO GROSSO: ANÁLISIS DE LOS AÑOS 2020 A 2022

Elisangela Souza de Jesus [1], Solange da Silva Lima [2], Dayane Caetano Oliveira [1], Dominique Le Bourlegat [3], Edson Thiago da Silva Lopes[1], Alexandra de Oliveira Ramos[2], Tatiane Gomes de Almeida [2]

e8269
https://doi.org/10.71328/jht.v8i2.69
PUBLISHED: 09/2026

ABSTRACT
Dengue is a public health problem in Brazil, particularly in tropical regions such as Mato Grosso, where environmental conditions favor the proliferation of Aedes aegypti. During the COVID-19 pandemic, changes in healthcare organization, population behavior, and epidemiological surveillance may have influenced disease occurrence and reporting. This study aimed to analyze the epidemiological profile of dengue in Mato Grosso between 2020 and 2022. This was an observational, descriptive, retrospective study based on secondary data concerning reported dengue cases and deaths. Incidence and mortality rates were analyzed according to municipality, sex, and age group to identify vulnerable populations and territories at greater risk. Heterogeneity in disease distribution was observed. In 2020, the highest incidence rates occurred in Planalto da Serra (10,193/100,000 inhabitants), Ribeirãozinho (5,574), Sinop (4,653), and Feliz Natal (4,648). In 2021, the highest rates were recorded in Itaúba (8,728/100,000 inhabitants), Marcelândia (6,352), Paranaitá (5,323), and Santa Rita do Trivelato (5,108). The highest mortality rates were recorded in 2020 in Novo Mundo, Chapada dos Guimarães, Peixoto de Azevedo, and Brasnorte, and in 2021 in Jauru, Colíder, Porto Alegre do Norte, and Matupá. Mean incidence and mortality rates were higher among females. The highest incidence was concentrated among individuals aged 5–39 years, whereas adults over 60 years had the highest mortality rates. It is concluded that epidemiological surveillance, case investigation, monitoring, and prevention and control strategies targeting high-risk municipalities and population groups must be strengthened.

KEYWORDS: Dengue. Epidemiology. Pandemics. COVID-19.

RESUMO
A dengue constitui um importante problema de saúde pública no Brasil, especialmente em regiões tropicais como o estado de Mato Grosso, que apresenta condições ambientais favoráveis à proliferação do vetor Aedes aegypti. Durante a pandemia de COVID-19, mudanças na dinâmica dos serviços de saúde, no comportamento populacional e nos sistemas de vigilância epidemiológica podem ter influenciado o padrão de ocorrência e notificação da doença. Nesse contexto, o presente estudo teve como objetivo analisar o perfil epidemiológico da dengue no estado de Mato Grosso durante o período pandêmico, entre os anos de 2020 e 2022.Trata-se de um estudo epidemiológico, observacional, descritivo e retrospectivo, realizado a partir de dados secundários referentes aos casos notificados e óbitos por dengue registrados no estado. Foram

[1] Graduando(a) em Enfermagem pela Universidade do Estado de Mato Grosso, Cáceres/MT. Enfermeira. Docente no curso de enfermagem na Universidade do Estado de Mato Grosso- Cáceres/MT.
[2] Enfermeira Doutora, Docente no curso de enfermagem pela Universidade do Estado de Mato Grosso, Cáceres/MT.
[3] Graduada em Medicina pela Universidade De Cuiabá- UNIC.

This article is published on an open-access basis under the **Creative Commons Attribution 4.0 International License (CC BY)**, which permits unrestricted use, distribution, and reproduction in any medium, provided that the original author and source are properly credited.

REVISTA SAÚDE E TECNOLOGIA
Revista Científica Multidisciplinar | Journal Health and Technology – JHT – ISSN 2764-7625
v.8, n.2, 2026

analisadas as taxas de incidência e mortalidade segundo municípios, sexo e faixa etária, buscando identificar os grupos mais vulneráveis e os territórios de maior risco. Os resultados demonstraram importante heterogeneidade na distribuição da doença entre os municípios mato-grossenses. Em 2020, as maiores taxas de incidência foram observadas nos municípios de Planalto da Serra (10.193/100 mil habitantes), Ribeirãozinho (5.574/100 mil habitantes), Sinop (4.653/100 mil habitantes) e Feliz Natal (4.648/100 mil habitantes). No ano de 2021, destacaram-se Itaúba (8.728/100 mil habitantes), Marcelândia (6.352/100 mil habitantes), Paranaitá (5.323/100 mil habitantes) e Santa Rita do Trivelato (5.108/100 mil habitantes). Em relação à mortalidade, os maiores coeficientes registrados em 2020 ocorreram nos municípios de Novo Mundo, Chapada dos Guimarães, Peixoto de Azevedo e Brasnorte. Já em 2021, os maiores índices foram identificados em Jauru, Colíder, Porto Alegre do Norte e Matupá. A análise sociodemográfica evidenciou maior taxa média de incidência e mortalidade no sexo feminino. As maiores incidências concentraram-se na população entre 5 e 39 anos de idade. Os idosos acima de 60 anos apresentaram as maiores taxas de mortalidade. Diante desses achados e do aumento das notificações a partir de 2020, destaca-se a necessidade de intensificar as ações de vigilância epidemiológica, especialmente a investigação dos casos, o monitoramento contínuo dos agravos e a implementação de estratégias de prevenção e controle direcionadas aos grupos populacionais e municípios de maior risco.

DESCRITORES: Dengue. Epidemiologia. Pandemia. COVID-19.

RESUMEN
El dengue constituye un problema de salud pública en Brasil, especialmente en regiones tropicales como Mato Grosso, donde las condiciones ambientales favorecen la proliferación de Aedes aegypti. Durante la pandemia de COVID-19, los cambios en la organización de los servicios de salud, el comportamiento de la población y la vigilancia epidemiológica pudieron haber influido en la aparición y notificación de la enfermedad. Este estudio tuvo como objetivo analizar el perfil epidemiológico del dengue en Mato Grosso entre 2020 y 2022. Se realizó un estudio observacional, descriptivo y retrospectivo, basado en datos secundarios sobre casos notificados y defunciones por dengue. Se analizaron las tasas de incidencia y mortalidad según municipio, sexo y grupo etario, con el propósito de identificar poblaciones vulnerables y territorios de mayor riesgo. Se observó heterogeneidad en la distribución de la enfermedad. En 2020, las mayores tasas de incidencia se registraron en Planalto da Serra (10.193/100.000 habitantes), Ribeirãozinho (5.574), Sinop (4.653) y Feliz Natal (4.648). En 2021, se destacaron Itaúba (8.728/100.000 habitantes), Marcelândia (6.352), Paranaitá (5.323) y Santa Rita do Trivelato (5.108). Las mayores tasas de mortalidad se registraron, en 2020, en Novo Mundo, Chapada dos Guimarães, Peixoto de Azevedo y Brasnorte; y, en 2021, en Jauru, Colíder, Porto Alegre do Norte y Matupá. Las tasas medias de incidencia y mortalidad fueron mayores entre las mujeres. La mayor incidencia se concentró en individuos de 5 a 39 años, mientras que las personas mayores de 60 años presentaron las tasas de mortalidad más elevadas. Se concluye que es necesario fortalecer la vigilancia epidemiológica, la investigación de los casos, el monitoreo y las estrategias de prevención y control dirigidas a los municipios y grupos poblacionales de mayor riesgo.

DESCRIPTORES: Dengue. Epidemiología. Pandemias. COVID-19.

This article is published on an open-access basis under the **Creative Commons Attribution 4.0 International License (CC BY)**, which permits unrestricted use, distribution, and reproduction in any medium, provided that the original author and source are properly credited.

REVISTA SAÚDE E TECNOLOGIA
Revista Científica Multidisciplinar | Journal Health and Technology – JHT – ISSN 2764-7625
v.8, n.2, 2026

INTRODUCTION

Dengue is currently the most emerging arboviral disease, posing serious risks to public health worldwide, particularly in tropical countries where climatic conditions favor the proliferation of the Aedes aegypti mosquito, the main vector of the disease (BRASIL, 2023). It is an acute, dynamic, and systemic viral disease that can manifest in either a mild or severe form, depending on factors such as dengue virus infection, the presence of chronic diseases, and previous infections with the etiological agent (BRASIL, 2016).

The factors influencing dengue transmission in Brazil and the Americas are similar and include population growth and the level of infrastructure, characterized by the unplanned expansion of urban centers (BRASIL, 2009). According to a study conducted by Agência Brasil in early 2021, the high number of dengue cases is primarily associated with inadequate basic sanitation. In addition, Brazil is constantly experiencing climate change, an important factor that also favors the proliferation of the Aedes aegypti mosquito (BRASIL, 2021).

Dengue epidemics in Brazil occur seasonally, particularly between March and June, coinciding with increased rainfall. Failures in vector control measures targeting Aedes aegypti contribute to the rise in the number of dengue cases (BRASIL, 2009). Similarly, respiratory diseases have a higher incidence during seasonal periods, especially in the colder months (AZEVEDO et al., 2017). Currently, the syndrome that has raised concerns among health authorities and may coincide with dengue infection is COVID-19, a disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). This virus spreads rapidly and was first identified in an outbreak in December 2019, causing severe forms of pneumonia and other complications, such as hypoxia, fever, and dyspnea (WORLD HEALTH ORGANIZATION, 2020).

The World Health Organization declared a public health emergency of international concern on January 30, 2020, due to the significant increase in coronavirus infections (WHO, 2020). Mascarenhas et al. (2020) suggested that the decrease in the number of reported dengue cases in 2020 was directly related to the onset of the COVID-19 pandemic. This reduction most likely occurred because of the population's fear of seeking medical care and becoming infected with SARS-CoV-2. Yan et al. (2020) observed that diagnosis using rapid tests that produced false-positive results for dengue in patients infected with SARS-CoV-2 contributed to more severe clinical progression, delaying appropriate and effective treatment and potentially facilitating the spread of COVID-19.

Dengue and COVID-19 share similar clinical characteristics, making them difficult to distinguish (MASCARENHAS et al., 2020). Mulinari et al. (2021) emphasized that the

This article is published on an open-access basis under the **Creative Commons Attribution 4.0 International License (CC BY)**, which permits unrestricted use, distribution, and reproduction in any medium, provided that the original author and source are properly credited.

simultaneous occurrence of dengue and SARS-CoV-2 infections places additional strain on the Brazilian Unified Health System (Sistema Único de Saúde—SUS), which, in addition to managing an endemic dengue disease, must address a newly emerging viral infection with high transmissibility and potentially fatal outcomes. Lorenz et al. (2020) highlighted the need to raise healthcare professionals' awareness regarding the clinical suspicion and notification of cases. They further noted that gaps in healthcare delivery and limited knowledge about the effects of dengue and COVID-19 coinfection in the same individual may also contribute to overburdening health services.

Therefore, this study aimed to assess the epidemiological profile of dengue during the COVID-19 pandemic in the state of Mato Grosso, Brazil, from 2020 to 2022, analyzing dengue incidence and mortality rates in municipalities across the state, as well as their distribution according to age group and sex.

METHODOLOGY

This was an observational epidemiological study assessing dengue incidence and mortality rates, using a quantitative analytical approach and data collected between 2020 and 2022 to investigate their relationship with the COVID-19 pandemic.

An observational study is a type of epidemiological study design in which variables of interest are assessed in a sample or population without researcher intervention in the disease process or its determinants. When conducted analytically, observational studies compare groups to establish associations through statistical inferences (CAMARGO; SILVA; MENEGUETTI, 2019). Statistical definitions and the ANOVA and Tukey tests were used. These methods are based on statistical principles connecting the Fisher–Snedecor and studentized probability distributions and can be applied without additional assumptions (OLIVEIRA; NAUMOVA, 2021).

The study was conducted in the municipalities of the state of Mato Grosso, located in the Central-West region of Brazil. According to the Brazilian Institute of Geography and Statistics (Instituto Brasileiro de Geografia e Estatística—IBGE), the state had an estimated population of 3,658,813 inhabitants. Mato Grosso is the third-largest Brazilian state, covering approximately 903,208 km². Its total urbanized area is 1,244.20 km², and it comprises 141 municipalities, with Cuiabá as its capital. The state has extensive uninhabited areas, which directly influence its population density, estimated at 4.05 inhabitants/km² (IBGE, 2022).

The study used dengue-related data from the state of Mato Grosso for the years 2020, 2021, and 2022, based on notification records available in the TabNet Win32 3.0 database of the Notifiable Diseases Information System (*Sistema de Informação de Agravos de Notificação*—

This article is published on an open-access basis under the **Creative Commons Attribution 4.0 International License (CC BY)**, which permits unrestricted use, distribution, and reproduction in any medium, provided that the original author and source are properly credited.

SINAN). The data were obtained from the electronic database of the Department of Informatics of the Brazilian Unified Health System (*Departamento de Informática do Sistema Único de Saúde*—DATASUS), operated by the Brazilian Ministry of Health.

The collected data corresponded to annual dengue cases reported in the state of Mato Grosso. SINAN records of cases reported in 2020 and subsequently entered into the platform were also included. Mean dengue incidence and mortality rates were determined for the state and its municipalities according to age group and sex. For the calculation of incidence rates, the numerator consisted of newly reported cases of the disease, while the denominators were the population figures provided by IBGE. Mortality rates were calculated using the number of deaths recorded over a one-year period as the numerator and the population of the respective location as the denominator, expressed per 100,000 inhabitants. The data were organized using Microsoft Excel spreadsheet software.

Ethics Committee approval was not required because the study used publicly available, open-access data obtained from the DATASUS and IBGE websites. Therefore, the study did not involve personal identification or risks to individuals and complied with applicable ethical principles.

RESULTS

Dengue Incidence and Mortality in Brazil

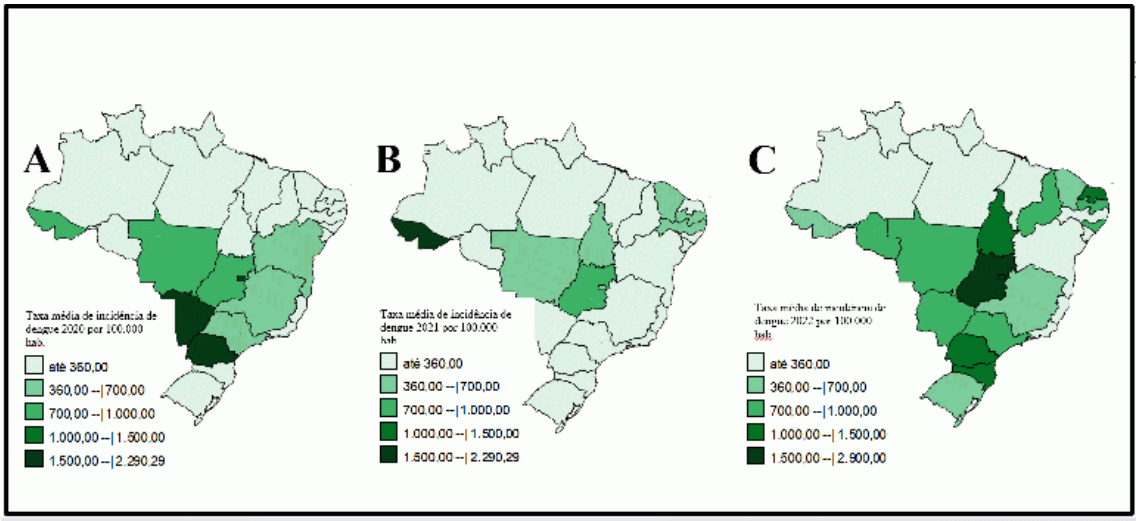
Between 2020 and 2022, a total of 2,882,331 dengue notifications were recorded in the DATASUS database in Brazil. Of these, 658,570 were laboratory-confirmed cases based on positive serological tests for the disease. The number of deaths attributed to dengue during the period reached 1,910, corresponding to an average of 636 deaths per year.

Among the Brazilian federative units, the highest mean incidence rates were observed in the Federal District (1,531.16 per 100,000 inhabitants), Goiás (1,507.93 per 100,000 inhabitants), Paraná (1,309.37 per 100,000 inhabitants), Mato Grosso do Sul (1,042.36 per 100,000 inhabitants), Acre (967.17 per 100,000 inhabitants), Mato Grosso (866.89 per 100,000 inhabitants), and Tocantins (667.68 per 100,000 inhabitants). These states and the Federal District presented the highest incidence rates during the 2020–2022 period. An epidemic is characterized by an increase in disease occurrence above expected levels in a given population and geographic area (BRASIL, 2022). Statistical analysis using the ANOVA and Tukey tests showed that dengue incidence rates did not differ significantly among 2020, 2021, and 2022, remaining relatively similar across the three years.

This article is published on an open-access basis under the **Creative Commons Attribution 4.0 International License (CC BY)**, which permits unrestricted use, distribution, and reproduction in any medium, provided that the original author and source are properly credited.

Mean mortality rates were also higher in Goiás (1.13 per 100,000 inhabitants), Paraná (0.97 per 100,000 inhabitants), Mato Grosso do Sul (0.90 per 100,000 inhabitants), Mato Grosso (0.46 per 100,000 inhabitants), and Acre (0.44 per 100,000 inhabitants). The state of Amapá did not record any dengue-related deaths during the study period. Statistical analysis showed no significant differences in mean dengue mortality rates among the years 2020, 2021, and 2022.

Figure 1. Dengue incidence in 2020 (**A**), 2021 (**B**), and 2022 (**C**) by Brazilian federative unit.



Source: Figure prepared by the author based on data from DATASUS/TABWIN (2023). Dengue Incidence and Mortality in Mato Grosso.

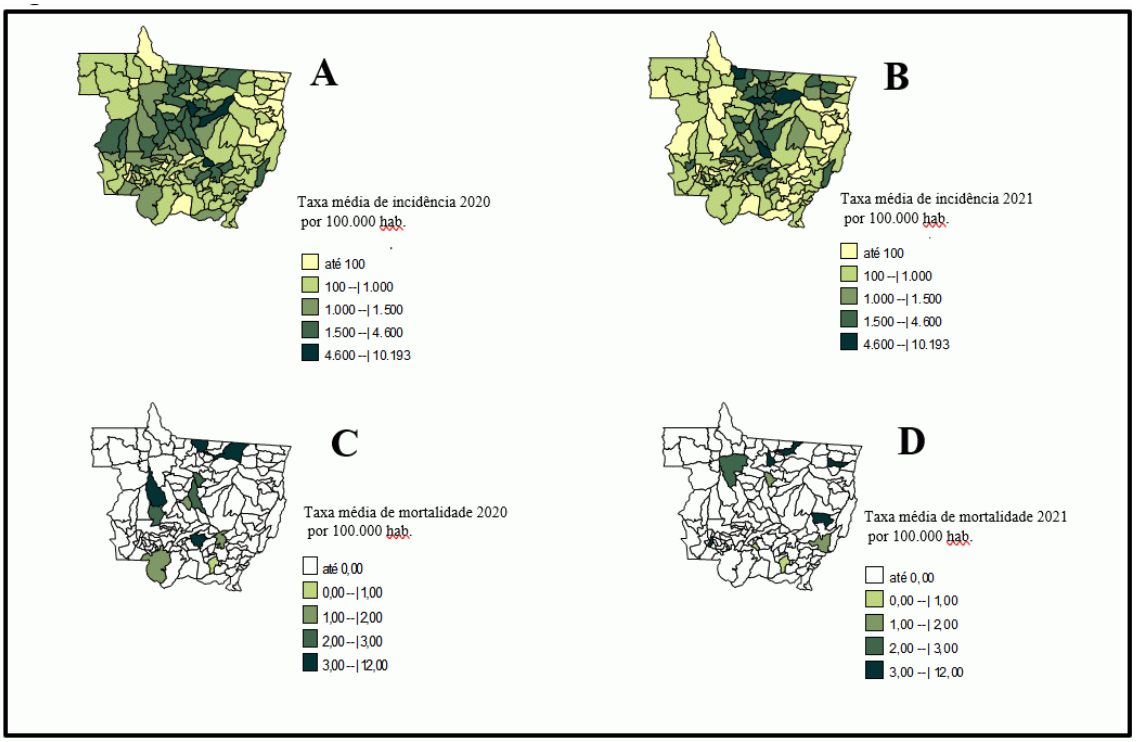
Between 2020 and 2022, 92,955 new dengue cases were recorded in the state of Mato Grosso, according to DATASUS data, along with approximately 51 deaths attributed to the disease during the same period. This represented an increase of approximately 733% compared with 2019, when 11,110 new cases were reported.

The municipalities with the highest dengue incidence rates in the state in 2020 were Planalto da Serra, Ribeirãozinho, Sinop, and Feliz Natal, in descending order, with rates of 10,193, 5,574, 4,653, and 4,648 per 100,000 inhabitants, respectively (Figure 2A). A total of 13 municipalities presented incidence rates below 100 per 100,000 inhabitants. In 2021 (Figure 2B), the municipalities with the highest incidence rates were Itaúba, Marcelândia, Paranaitá, and Santa Rita do Trivelato, with rates of 8,728, 6,352, 5,323, and 5,108 per 100,000 inhabitants, respectively. Conversely, approximately 25 municipalities had incidence rates below 100 per 100,000 inhabitants in the same year.

This article is published on an open-access basis under the **Creative Commons Attribution 4.0 International License (CC BY)**, which permits unrestricted use, distribution, and reproduction in any medium, provided that the original author and source are properly credited.

In 2020, the highest dengue mortality rates in the state of Mato Grosso were observed in the municipalities of Novo Mundo (10.68 per 100,000 inhabitants), Chapada dos Guimarães (8.98 per 100,000 inhabitants), Peixoto de Azevedo (5.66 per 100,000 inhabitants), and Brasnorte (4.97 per 100,000 inhabitants) (Figure 2C). However, 130 municipalities recorded no deaths, making it impossible to calculate mortality rates based on the DATASUS database. In 2021 (Figure 2D), the municipalities of Jauru, Colíder, Porto Alegre do Norte, and Matupá presented the highest mortality rates, at 11.94, 8.86, 7.78, and 5.88 per 100,000 inhabitants, respectively. As in the previous year, no dengue-related deaths were recorded in 131 municipalities, making it impossible to calculate mortality rates. Incidence and mortality rates for 2022 could not be calculated because municipal demographic data from IBGE for that year were unavailable.

Figure 2. Dengue incidence in 2020 (A), incidence in 2021 (B), mortality in 2020 (C), and mortality in 2021 (D) by municipality of residence in Mato Grosso.



Source: Figure prepared by the author based on data from DATASUS/TABWIN (2023).

3.2 Dengue Incidence and Mortality by Sex

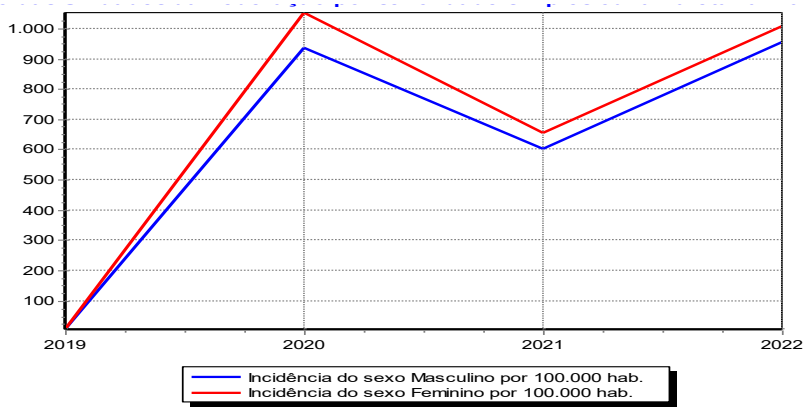
In the state of Mato Grosso, 92,955 dengue notifications were recorded between 2020 and 2022, including 45,095 among males, 47,811 among females, and 49 cases with sex

This article is published on an open-access basis under the **Creative Commons Attribution 4.0 International License (CC BY)**, which permits unrestricted use, distribution, and reproduction in any medium, provided that the original author and source are properly credited.

information recorded as unknown. Of these notifications, 51 cases resulted in death, comprising 23 males and 28 females.

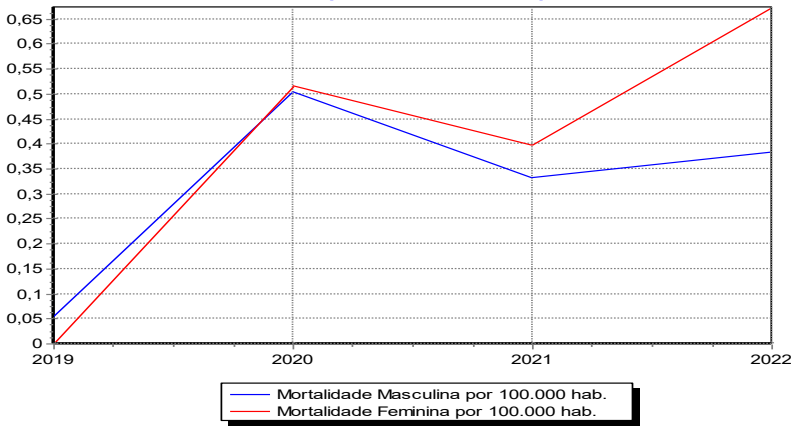
Throughout the study period, the highest incidence rates were observed among females, reaching 1,052.07 per 100,000 inhabitants in 2020, 653.41 per 100,000 inhabitants in 2021, and 1,006.19 per 100,000 inhabitants in 2022, as shown below.

Figure 3. Mean dengue incidence rate by sex in Mato Grosso, from 2020 to 2022.



Source: Figure prepared by the author based on data from DATASUS/TABWIN (2023).

Figure 4. Mean dengue mortality rate by sex in the state of Mato Grosso, from 2020 to 2022.



Source: Figure prepared by the author based on data from DATASUS/TABWIN (2023).

Mortality rates were also higher among females, with values of 0.62 (2020), 0.40 (2021), and 0.67 per 100,000 inhabitants (2022). Among males, the corresponding values were 0.50 (2020), 0.33 (2021), and 0.38 per 100,000 inhabitants (2022). Statistical analysis using the *t*-test

This article is published on an open-access basis under the **Creative Commons Attribution 4.0 International License (CC BY)**, which permits unrestricted use, distribution, and reproduction in any medium, provided that the original author and source are properly credited.

showed similar incidence and mortality rates between the sexes; therefore, no statistically significant difference was observed between the two means during the years analyzed.

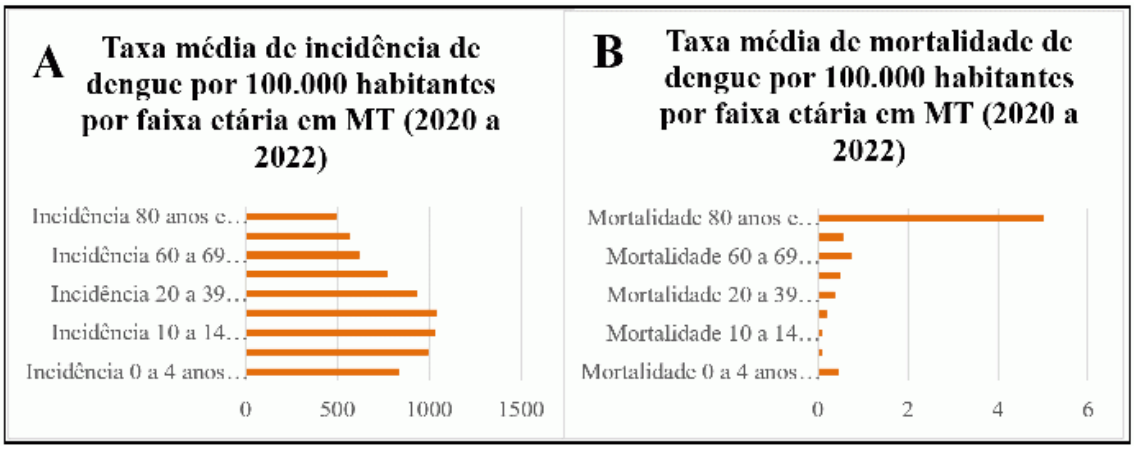
Incidence and Mortality by Age Group

During the study period, the age group with the highest number of cases was the population aged 5–39 years, as shown in **Figure 5**. This group accounted for 57,494 reported cases according to the DATASUS database, representing a 742% increase in the number of new cases compared with 2019, when 6,826 notifications were recorded in the same age group.

The highest mean incidence rate was observed among individuals aged 5–39 years, ranging from 933.6 to 1,042.01 per 100,000 inhabitants. The lowest incidence rate was observed among older adults aged over 60 years, with mean values ranging from 495.9 to 620.1 per 100,000 inhabitants. However, this age group presented the highest mean mortality rates: 0.66 among individuals aged 60–69 years, 0.87 among those aged 70–79 years, and 4.87 among individuals aged 80 years or older, per 100,000 inhabitants.

Statistical analysis revealed a significant difference in mean incidence and mortality rates between individuals aged 10–14 years and those aged 80 years or older.

Figure 5. Mean dengue incidence rate per 100,000 inhabitants by age group in the state of Mato Grosso, from 2020 to 2022 (**A**); mean dengue mortality rate per 100,000 inhabitants by age group in the state of Mato Grosso, from 2020 to 2022 (**B**).



Source: Figure prepared by the author based on data from DATASUS, organized in an Excel spreadsheet (2023).

This article is published on an open-access basis under the **Creative Commons Attribution 4.0 International License (CC BY)**, which permits unrestricted use, distribution, and reproduction in any medium, provided that the original author and source are properly credited.

DISCUSSION

This study contributes to understanding dengue patterns in the state of Mato Grosso during the COVID-19 pandemic, from 2020 to 2022. Dengue is one of the major public health problems in tropical and subtropical regions, particularly in areas facing significant public health challenges (TERRA, 2017). The Central-West region ranks third among the Brazilian regions with the highest number of reported suspected dengue cases (BRASIL, 2023).

The state of Mato Grosso recorded the highest number of suspected dengue cases in recent years, particularly during the COVID-19 pandemic period (2020–2022), with 92,955 reported cases according to the Notifiable Diseases Information System (SINAN). Based on DATASUS data, 52,088 of these reported cases received a final diagnosis of dengue according to laboratory confirmation criteria, while 28,030 had a positive dengue IgM serological test.

The highest incidence rates by municipality of residence in Mato Grosso during the study period were observed in Planalto da Serra, Ribeirãozinho, Sinop, Feliz Natal, Itaúba, Marcelândia, Paranaitá, and Santa Rita do Trivelato. Regarding mortality rates, the highest values were recorded in the municipalities of Novo Mundo, Chapada dos Guimarães, Peixoto de Azevedo, Jauru, Colíder, Porto Alegre do Norte, and Matupá. The municipality of Cáceres presented an incidence rate of 1,014 per 100,000 inhabitants in 2020, followed by 155 per 100,000 inhabitants in 2021. In 2020, only one dengue-related death was recorded, and no deaths were reported in the following year.

Regarding the sociodemographic profile, higher incidence and mortality rates were observed among females, consistent with findings from other studies (LETTRY; TOBIAS; TEIXEIRA, 2021; SOUZA; PAIXÃO; OLIVEIRA, 2018). Barreto (2018) highlights that the predominance among females may be associated with sociocultural factors and women's greater length of stay in household environments, which may represent important settings for exposure to dengue infection. In contrast, men may seek healthcare services less frequently, resulting in fewer reported cases.

The age group most affected by dengue comprised children and young adults aged 5–39 years. However, the highest mortality rate was observed among older adults aged over 60 years, with 16 cases progressing to death. According to Abe (2012), children's vulnerability to the effects of dengue requires further investigation and a deeper understanding of the disease. The high mortality observed among older adults may be related to the greater prevalence of chronic diseases and comorbidities, as well as the continuous use of anticoagulant and

This article is published on an open-access basis under the **Creative Commons Attribution 4.0 International License (CC BY)**, which permits unrestricted use, distribution, and reproduction in any medium, provided that the original author and source are properly credited.

immunosuppressive medications, which may predispose patients to unfavorable clinical outcomes and increase the likelihood of severe dengue (DE OLIVEIRA, 2017).

In this context, the study provides relevant information on the epidemiological scenario in the state of Mato Grosso, enabling health managers and professionals to reassess dengue control strategies and to optimize the allocation and use of available resources and supplies.

CONCLUSIONS

Considering the epidemiological dynamics of dengue in Brazil and the increase in reported cases since 2020, epidemiological surveillance should conduct activities such as the continuous investigation and monitoring of the temporal evolution of diseases and health conditions. These actions are essential for detecting changes in occurrence patterns, outbreaks, and epidemics, while promoting healthcare and implementing measures capable of controlling transmission and reducing disease magnitude, severity, and mortality. Araújo et al. (2021) emphasize that the national evolution of dengue raises important questions regarding the management and health policies adopted by the Brazilian Unified Health System (SUS) to control the epidemic.

In addition to the health measures against COVID-19 recommended by the World Health Organization (WHO), it is necessary to understand the impacts of the pandemic on the management of other diseases, such as dengue. The simultaneous control of both diseases requires the implementation of strategies and awareness-raising initiatives aimed at eliminating breeding sites of the dengue vector, as well as adopting biosafety measures to prevent COVID-19 transmission.

REFERENCES

ABE, Adriana Helena M.; MARQUES, Solomar; COSTA, Paulo Sérgio Sucasas da. Dengue em crianças: da notificação ao óbito. **Revista Paulista de Pediatria**, São Paulo, v. 30, n. 2, p. 263-271, 2012. DOI: https://doi.org/10.1590/S0103-05822012000200017.

ARAÚJO, Renato Kennedy Souza et al. Dengue fever in the Federal District, and the challenges in the midst of the pandemic. **Research, Society and Development**, [S. l.], v. 10, n. 17, p. e221101724588, 2021. DOI: https://doi.org/10.33448/rsd-v10i17.24588. Disponível em: https://rsdjournal.org/rsd/article/view/24588. Acesso em: 13 set. 2026.

AZEVEDO, Jullianna Vitorio Vieira de et al. Análise das variações climáticas na ocorrência de doenças respiratórias por influenza em idosos na região metropolitana de João Pessoa-PB. **Sociedade & Natureza**, Uberlândia, v. 29, n. 1, p. 123-135, 2017. DOI: https://doi.org/10.1590/1982-451320170409.

This article is published on an open-access basis under the **Creative Commons Attribution 4.0 International License (CC BY)**, which permits unrestricted use, distribution, and reproduction in any medium, provided that the original author and source are properly credited.

BARRETO, Valeska Pereira. **Análise da situação epidemiológica das arboviroses dengue, chikungunya e Zika no estado do Rio Grande do Norte**. 2018. Dissertação (Mestrado em Enfermagem) – Universidade Federal do Rio Grande do Norte, Natal, 2018.

BRASIL. Ministério da Saúde. Secretaria de Vigilância em Saúde. Coordenação-Geral de Desenvolvimento da Epidemiologia em Serviços. **Guia de vigilância em saúde: volume 2**. 6. ed. Brasília, DF: Ministério da Saúde, 2023.

BRASIL. Ministério da Saúde. Secretaria de Vigilância em Saúde. Departamento de Emergências em Saúde Pública. **Guia para investigações de surtos ou epidemias**. 2. ed. Brasília, DF: Ministério da Saúde, 2022.

BRASIL. Ministério da Saúde. Secretaria de Vigilância em Saúde. Departamento de Articulação Estratégica de Vigilância em Saúde. **Guia de vigilância em saúde**. 5. ed. Brasília, DF: Ministério da Saúde, 2021. 1.126 p. E-book.

BRASIL. Ministério da Saúde. Secretaria de Vigilância em Saúde. Departamento de Vigilância das Doenças Transmissíveis. **Dengue: diagnóstico e manejo clínico: adulto e criança**. 5. ed. Brasília, DF: Ministério da Saúde, 2016. E-book.

BRASIL. Ministério da Saúde. Secretaria de Vigilância em Saúde. Departamento de Vigilância Epidemiológica. **Diretrizes nacionais para prevenção e controle de epidemias de dengue**. Brasília, DF: Ministério da Saúde, 2009.

CAMARGO, Luís Marcelo Aranha; SILVA, Rodrigo Pereira Martins; MENEGUETTI, Dionatas Ulises de Oliveira. Research methodology topics: cohort studies or prospective and retrospective cohort studies. **Journal of Human Growth and Development**, São Paulo, v. 29, n. 3, p. 433-436, 2019. DOI: https://doi.org/10.7322/jhgd.v29.9543.

DE OLIVEIRA, Iago Augusto Gomes et al. Avaliação de óbitos e internações por dengue em idosos no estado de Goiás no ano de 2017. In: **CONGRESSO DE GERIATRIA E GERONTOLOGIA DO UNIFACIG**, 2020. Anais [...]. [S. l.]: UNIFACIG, 2020. v. 1, n. 1.

INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA. **Cidades e estados**. Rio de Janeiro: IBGE, 2022. Disponível em: https://www.ibge.gov.br/cidades-e-estados.html. Acesso em: 20 nov. 2023.

LETTRY, Tainá Cristina Rodrigues Nascimento; TOBIAS, Gabriela Cristina; TEIXEIRA, Cristiane Chaves. Perfil epidemiológico de dengue em Senador Canedo-Goiás, Brasil. **Revista Uningá**, Maringá, v. 58, p. eUJ3722, 2021. DOI: https://doi.org/10.46311/2318-0579.58.eUJ3722.

LORENZ, Camila; AZEVEDO, Thiago Salomão de; CHIARAVALLOTI-NETO, Francisco. COVID-19 and dengue fever: a dangerous combination for the health system in Brazil. **Travel Medicine and Infectious Disease**, [S. l.], v. 35, artigo 101659, 2020. DOI: https://doi.org/10.1016/j.tmaid.2020.101659.

This article is published on an open-access basis under the **Creative Commons Attribution 4.0 International License (CC BY)**, which permits unrestricted use, distribution, and reproduction in any medium, provided that the original author and source are properly credited.

MASCARENHAS, Márcio Dênis Medeiros et al. Ocorrência simultânea de COVID-19 e dengue: o que os dados revelam? **Cadernos de Saúde Pública**, Rio de Janeiro, v. 36, n. 6, e00126520, 2020. DOI: https://doi.org/10.1590/0102-311X00126520.

MULINARI, Ana Maria et al. Perfil epidemiológico da dengue em tempos de pandemia da COVID-19 em Montanha-ES. **HU Revista**, Juiz de Fora, v. 47, p. 1-7, 2021. DOI: https://doi.org/10.34019/1982-8047.2021.v47.34733. Disponível em: https://periodicos.ufjf.br/index.php/hurevista/article/view/34733. Acesso em: 31 maio 2022.

OLIVEIRA, Valdemar; NAUMOVA, Marina. Contradições lógicas nos testes One-Way ANOVA e Tukey-Kramer Multiple Comparisons com mais de dois grupos de observações. **Symmetry**, Basel, v. 13, n. 8, artigo 1387, 2021. DOI: https://doi.org/10.3390/sym13081387.

SOUZA, Camila Lima; PAIXÃO, Rosana Silva; OLIVEIRA, Márcia Valéria. Dengue: aspectos epidemiológicos de um surto ocorrido em Barra da Estiva, Bahia, Brasil, em 2014. **Revista Baiana de Saúde Pública**, Salvador, v. 41, n. 4, p. 981-993, 2018.

TERRA, Marcelo Ribeiro et al. *Aedes aegypti* e as arboviroses emergentes no Brasil. **Revista Uningá Review**, Maringá, v. 30, n. 3, 2017.

WORLD HEALTH ORGANIZATION. **Doenças epidêmicas emergentes e reemergentes representam uma ameaça contínua à segurança da saúde global**. Genebra: World Health Organization, 2020.

YAN, Guang et al. Covert COVID-19 and false-positive dengue serology in Singapore. **The Lancet Infectious Diseases**, London, v. 20, n. 5, p. 536, 2020. DOI: https://doi.org/10.1016/S1473-3099(20)30158-4.

This article is published on an open-access basis under the **Creative Commons Attribution 4.0 International License (CC BY)**, which permits unrestricted use, distribution, and reproduction in any medium, provided that the original author and source are properly credited.