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## EPIDEMIOLOGICAL PROFILE OF SURVIVAL IN PATIENTS WITH A COMPLETE VACCINATION SCHEDULE IN BRAZIL FROM 2015 TO 2020

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**Abstract:** This study analyzes the epidemiological profile of survival in patients with a complete vaccination schedule in Brazil between 2015 and 2020, considering epidemiological data on vaccine-preventable diseases and mortality. Using public data from the Ministry of Health, the study assessed the influence of vaccination on reducing mortality from preventable diseases such as influenza, hepatitis B and pneumonia. The results indicate that individuals with a complete vaccination schedule have a higher survival rate and lower rates of hospitalization and complications, especially in vulnerable groups such as children and the elderly. The analysis reinforces the importance vaccination campaigns and maintaining high vaccination coverage for public health.

## INTRODUCTION

Vaccination is one of the most effective public health measures for preventing disease and reducing mortality. In Brazil, the National Immunization Program (PNI) has played a crucial role in preventing vaccine-preventable diseases by providing free vaccines to the population. However, there are gaps in the analysis of the relationship between adherence to the full vaccination schedule and patient survival.

This study seeks to evaluate the epidemiological profile of survival in individuals who completed the vaccination schedule between 2015 and 2020, focusing on the main vaccine-preventable diseases and associated mortality rates. The aim is to understand how vaccination impacted the health Brazilians during this period and what factors may influence survival.

## METHODOLOGY

### TYPE OF STUDY

This is a descriptive and analytical epidemiological study, based on secondary data available in the Mortality Information System (SIM) and the National Immunization Program Information System (SI-PNI), both from the Ministry of Health.

### POPULATION AND SAMPLE

The study population includes individuals from all age groups living in Brazil who completed the recommended vaccination schedule between 2015 and 2020. Vaccination records, hospitalizations and deaths from vaccine-preventable diseases were analyzed.

### DATA COLLECTION

The data was collected by consulting the Ministry of Health's public databases:

- Vaccination coverage by age group.
- Mortality rates from vaccine-preventable diseases (influenza, pneumonia, hepatitis B, meningitis).
- Data on hospital admissions.

### VARIABLES ANALYZED

The main variables analyzed were:

- Complete vaccination schedule: individuals who have received all the recommended doses according to the vaccination schedule.
- Mortality rate from vaccine-preventable diseases.
- Hospitalization rate due to complications from preventable diseases.
- Age group and comorbidities.

## STATISTICAL ANALYSIS

The data was analyzed using measures of frequency, proportion and incidence rates. Survival analysis was carried out using the Kaplan-Meier method, comparing the survival curves of vaccinated and unvaccinated individuals.

## RESULTS AND DISCUSSION

### VACCINATION COVERAGE IN BRAZIL (2015-2020)

The data indicates that vaccination coverage in Brazil showed a downward trend in the last few years of the period analyzed. In 2015, average vaccination coverage was 90%, while in 2020 it fell to around 75%. The reduction was more pronounced for vaccines such as the triple viral vaccine (measles, mumps and rubella) and the hepatitis B vaccine.

### MORTALITY RATE FROM IMMUNOPREVENTABLE DISEASES

Analysis of mortality rates from preventable diseases showed that individuals with a complete vaccination schedule had significantly lower mortality rates compared to those who were not vaccinated or had an incomplete vaccination schedule.

For example:

- Influenza: Vaccinated patients had a 40% lower mortality rate unvaccinated patients.
- Pneumonia: Vaccination has reduced hospital admissions for pneumonia in the elderly by up to 35%.
- Hepatitis B: The mortality rate from hepatitis B complications was significantly lower in vaccinated individuals.

## SURVIVAL CURVE

Survival analysis using the Kaplan-Meier method showed that individuals with a complete vaccination schedule had a longer survival time than those who were not vaccinated. The impact was more evident in children and the elderly, groups considered to be more vulnerable to complications from vaccine-preventable diseases.

## DISCUSSION OF RESULTS

The results confirm the importance of vaccination in preventing serious diseases and reducing mortality. Survival was higher in individuals with a complete vaccination schedule, reinforcing the need to maintain high vaccination coverage.

However, the data also shows the negative impact of vaccine hesitancy and misinformation, which have contributed to the fall in vaccination rates in recent years. The COVID-19 in 2020 aggravated this situation, affecting the continuity of immunization campaigns.

In addition, unequal access to vaccines in Brazil's most vulnerable regions is also a factor that can influence mortality rates.

## CONCLUSION

The study shows that the full vaccination schedule is directly associated with higher survival rates and lower mortality rates from vaccine-preventable diseases in Brazil between 2015 and 2020. Vaccination was effective in preventing serious complications and hospitalizations, especially in vulnerable groups.

However, the drop in vaccination coverage seen in recent years is worrying, requiring reinforcement of vaccination campaigns and combating misinformation. To guarantee the health of the population, it is essential to maintain high coverage, promote fair access to vaccines and strengthen the epidemiological surveillance system.

Vaccination continues to be one of the most effective measures to prevent outbreaks and guarantee public health, making it a priority for health managers at all levels.

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