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Measles outbreak: Experience at a pediatric hospital in Buenos Aires City

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ABSTRACT

Introduction. Measles is a potentially serious and highly contagious febrile exanthematous disease. In 2025, 36 cases of measles were confirmed in Argentina. The objective of this study is to describe the confirmed cases at a pediatric hospital during the outbreak from February to June 2025, as well as the control and containment measures implemented.

Population and methods. A retrospective, descriptive study of confirmed measles cases at a pediatric hospital.

Results. Of the 190 patients evaluated for febrile exanthematous illness, 8 cases of measles were confirmed in children aged 9 months to 10 years. Four cases were linked to exposure in a waiting room, and four required hospitalization; no deaths were reported. All patients were susceptible. None had a history of travel. Based on the 8 confirmed cases, 933 contacts were identified, among whom 6 secondary cases were detected. Contact tracing and containment measures were implemented.

Conclusions. The outbreak involved 8 confirmed cases. Epidemiological surveillance enabled the identification of 6 secondary cases and the timely implementation of control and containment measures.

Keywords: *measles; disease outbreak; contact tracing.*

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INTRODUCTION

Measles is a potentially serious and highly contagious febrile exanthematous disease. Up to 30% of cases may develop complications, including diarrhea, pneumonia, otitis, and conjunctivitis. Subacute sclerosing panencephalitis (SSPE), a degenerative neurological disease, can occur up to 10 years after infection.[1]

In the Americas region, several countries reported measles outbreaks in 2025.[2] This resurgence is occurring at a time when most countries have not met the target of more than 95% coverage for the second dose of the measles vaccine.[3]

According to data from the fourth special report by the Observatory on Children and Adolescents of the Sociedad Argentina de Pediatría, vaccination rates for first-year-old children have dropped by between 9 and 15 percentage points, and coverage for the second dose of the MMR vaccine stands at just 46%.[4]

Low vaccination coverage and high transmissibility facilitated the introduction and spread of the disease in our country. On February 1, 2025, the Ministry of Health issued an alert following the emergence of a measles case in a girl from Russia[5] and on April 7, a measles-mumps-rubella (MMR) vaccination campaign was announced in the Buenos Aires Metropolitan Area (AMBA, by its Spanish acronym) to break the chain of transmission, protecting vulnerable groups, and strengthening herd immunity.[6]

The 2025 measles outbreak posed a challenge for pediatricians, given the lack of cases in recent years.

OBJECTIVES

To describe the demographic and clinical characteristics, as well as the course of confirmed measles cases, and the containment and outbreak-control measures implemented at Hospital de Niños Pedro de Elizalde during the 2025 outbreak.

POPULATION AND METHODS

A descriptive observational study was conducted on patients with a confirmed diagnosis of measles, based on PCR testing of nasopharyngeal secretions and/or urine, who were seen at Hospital de Niños Pedro de Elizalde from February 1 to June 1, 2025.

Definitions

Confirmed case: a suspected case with a positive PCR test for measles in nasopharyngeal secretions or urine.

Contact: Any patient who was in the same waiting room as the confirmed case or passed through the waiting room within two hours of the confirmed case's departure.

Secondary case: a confirmed case whose symptoms began between 7 and 21 days after exposure to a confirmed case.

Medical records were used as the data source.

The analysis examined age, the need for hospitalization, vaccination status, the source of infection, and the chain of transmission.

During hospital triage, patients with fever and a rash were identified, provided with face masks, and immediately isolated. When a febrile exanthematous illness was suspected, the National Health Surveillance System was notified within 24 hours, alerting the relevant local health authority to conduct an outbreak investigation and trace contacts, including secondary cases, family members, and schoolmates.

This study was approved by the Ethics Committee of the Hospital de Niños Pedro de Elizalde (registration no. 16405).

RESULTS

From February 1 to June 1, 2025, 190 patients with febrile exanthematous illness were treated at Hospital de Niños Pedro de Elizalde; 8 cases of measles were confirmed.

The age range was 9 months to 10 years, with a median of 29 months. Three patients were under 1 year of age, and two of them had a history of respiratory illness. None had received two doses of the measles component. Clinically, 8 out of 8 patients presented with a runny nose and fever at the onset of symptoms, followed by a rash; 7 out of 8 had conjunctivitis; and 4 out of 8 had gastrointestinal symptoms (vomiting and/or diarrhea). Four patients required hospitalization and developed lower respiratory symptoms during their course of illness. To date, there have been no deaths or patients with sequelae.

The B3 genotype was identified in 7 cases; this is the same variant identified in the index case reported in February, which originated in Russia (*Table 1*).

After each case was confirmed, the matching patients were temporarily identified in the waiting room for up to two hours after the case had left. This procedure was repeated for each of the

Table 1. Confirmed cases of measles. Epidemiological characteristics

Case	Age	Place of residence	Vaccines	Date of visit	Date of fever	Date of rash	Hospitalization	Source of contagion	Genotype
1 (M)	9 m	Bs. As.	0	03-01-25	02-23-25	02/27/25	No	Home	B3
2 (M)	2 y	Bs. As.	1	03-10-25	03-07-25	03/07/25	Yes	Home	B3
3 (M)	9 y	CABA	0	03-12-25	03-10-25	03/12/25	No	Hosp.	NT
4 (M)	10 y	Bs. As.	0	03-25-25	03-22-25	03/26/25	Yes	Hosp.	B3
5 (M)	11 m	Bs. As.	0	04-07-25	04-04-25	04/09/25	Yes	Hosp.	B3
6 (F)	11 m	Bs. As.	0	04-11-25	04-07-25	04/09/25	Yes	Hosp.	B3
7 (F)	3 y	CABA	1	04-28-25	04-27-25	04/27/25	No	ND	B3
8 (M)	2 y	Bs. As.	0	05-13-25	05-07-25	05/11/25	No	ND	B3

M: male; F: female; m: months; y: years; Bs. As.: Buenos Aires province; CABA: Autonomous City of Buenos Aires (by its Spanish acronym); HOSP.: hospital; ND: no data; NT: not typified.

8 cases, yielding a total of 933 contacts. Among those contacts, 6 secondary cases were detected, whose symptoms began between 7 and 21 days after exposure.

Susceptible contacts were vaccinated —defined as those who had not received the full two-dose schedule of a vaccine containing a measles component after their first birthday.

As part of the measures implemented at Hospital de Niños Pedro de Elizalde, 92 patients and their companions received the MMR vaccine within 72 hours of exposure. In addition, 31 patients (infants under 6 months of age and immunocompromised individuals) received post-exposure immunoglobulin. It should be noted that, following the immediate notification of the confirmed case, coordination with the regional health authority was initiated, and follow-up of each case and their contacts was activated. No secondary cases were detected among healthcare personnel. Outpatient contacts were vaccinated by the health authority corresponding to their place of residence.

DISCUSSION

Among the 8 confirmed cases, half required hospitalization and developed respiratory involvement during the course of the disease, as described in the literature.[1]

Measles can occur in both individuals who have received two doses of the vaccine and those who are incompletely vaccinated.[1] In our series, all patients were susceptible. In the case of 9- and 10-year-old schoolchildren, the lack of MMR vaccination may be due to their starting school at the onset of the pandemic in 2020, when vaccination rates nationwide dropped by more than 10 percentage points.[7]

In Argentina, between 2019 and 2020, the largest measles outbreak since the elimination of endemic circulation was recorded, with 174 confirmed cases.[8] During the 2025 outbreak, 36 cases were confirmed in the country,[9] 8 of which were treated at our hospital. From the investigation of each case, it emerged that 4 cases had a history of exposure in the waiting room in the absence of any other identified source. As described by Saldana Resendes *et al.*,[10] upon confirmation of measles cases, control measures were immediately implemented, including telephone contact with high-risk exposed individuals to ensure the timely administration of gamma globulin.

Hernández-Aceituno's study describes a measles outbreak that occurred in a hospital waiting room, highlighting the critical role of vaccination. The number of contacts identified from the index cases is comparable to that observed in our cohort, where, on average, approximately 100 contacts must be evaluated for each case of measles. Unlike the study reported, no secondary cases have been recorded among healthcare personnel at our hospital.[11]

This measles outbreak in Argentina reflects the global epidemiological situation, particularly in the Americas. This experience reinforces existing evidence of the disease's high contagiousness, low vaccination coverage in the population, and that measles vaccination is the most important strategy for curbing the disease.

Optimal vaccination coverage reduces the number of susceptible individuals and limits disease spread. Furthermore, the implementation of effective outbreak control—including timely contact tracing in waiting rooms and in-home, school, and workplace settings, as well as the timely isolation of susceptible individuals—contributes decisively to containing the outbreak.

In this regard, our findings suggest that although a single case of measles requires evaluating a large number of contacts, this strategy is key to curbing its spread.

Difficulties were identified in obtaining vaccination history records or up-to-date information on patients' place of residence, which may have limited the proper identification of at-risk individuals. Likewise, the decline in vaccination coverage observed in recent years in our setting, driven by the pandemic and the spread of anti-vaccine rhetoric, has likely increased the number of susceptible individuals and hindered the effectiveness of outbreak control strategies, particularly timely contact tracing.

Active surveillance, adequate vaccination coverage, and contact tracing and isolation are essential to preventing the spread of measles. ■

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