**Upsurge of measles in South Africa: A cause for concern?**

Sanobar Shariff 1,2, Burhan Kantawala 1,2, Rania Itani 1,3, Benjamin G Fleet1,4 ; Abubakar Nazir 1,5, Olivier Uwishema 1,6,7

1. Oli Health Magazine Organization, Research and Education, Kigali, Rwanda

2. Yerevan State Medical University, Yerevan, Armenia

3. Faculty of Medicine, Beirut Arab University, Beirut, Lebanon

4. Lancaster Medical School, Lancaster, UK

5. King Edward Medical University, Lahore, Pakistan

6. Clinton Global Initiative University, New York, USA

7. Faculty of Medicine, Karadeniz Technical University, Trabzon, Turkey

**Abstract:**

A massive upsurge in the number of measles cases has been recently reported from South Africa, with 382 confirmed cases spread across five regions: Gauteng, Limpopo, Mpumalanga, Free State, and North West. The number of daily cases has been growing, resulting in more throat swabs and blood samples being sent to the National Institute for Communicable Diseases (NICD) for polymerase chain reaction (PCR) and measles serology testing. A rapid response to control the outbreak has emerged. All parents and caregivers residing in South Africa have been urged to check their children’s and the populations’ measles vaccination status respectively. Plans for case management, and prevention of further spread, not only in the province but also to neighboring countries, will need external support and funding.

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**BACKGROUND**

Measles is an extremely infectious virus that primarily affects younger patients. These patients typically present with a fever, cough and distinctive rash. When an infected individual coughs or sneezes, the virus is disseminated via the air and can survive on items and surfaces for as long as two hours. Measles can cause life-threatening complications, including pneumonia and encephalitis, occasionally proving to be fatal. [2,3]

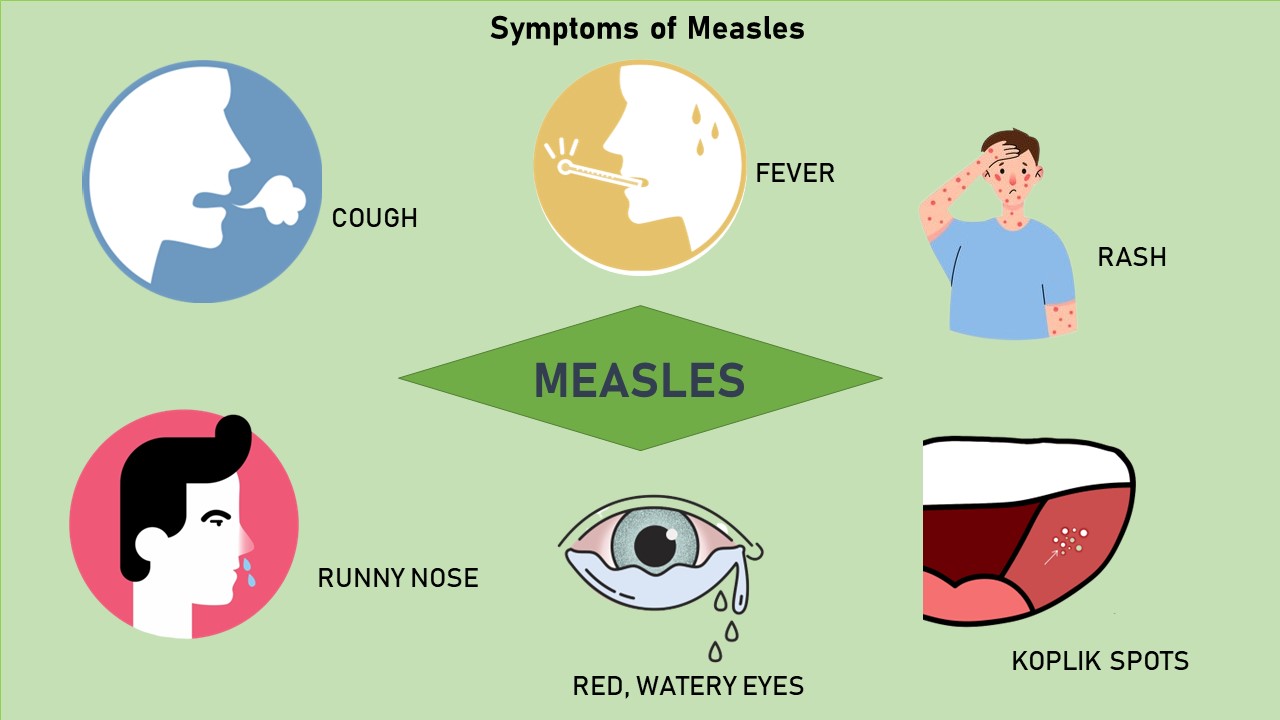


Figure 1: The common symptoms of measles.

The first reported outbreak of measles in South Africa occurred in the early 1900s. However, it is unknown precisely when the virus was first introduced into the nation. Since then, there have been several measles outbreaks in various regions across the nation, each with varying degrees of severity. As a result of inadequate vaccination rates and a general lack of awareness amongst the public, epidemics have unfortunately occurred in the country. This has resulted in the government and numerous health organizations beginning to implement various measures in an attempt to control such outbreaks. [4]

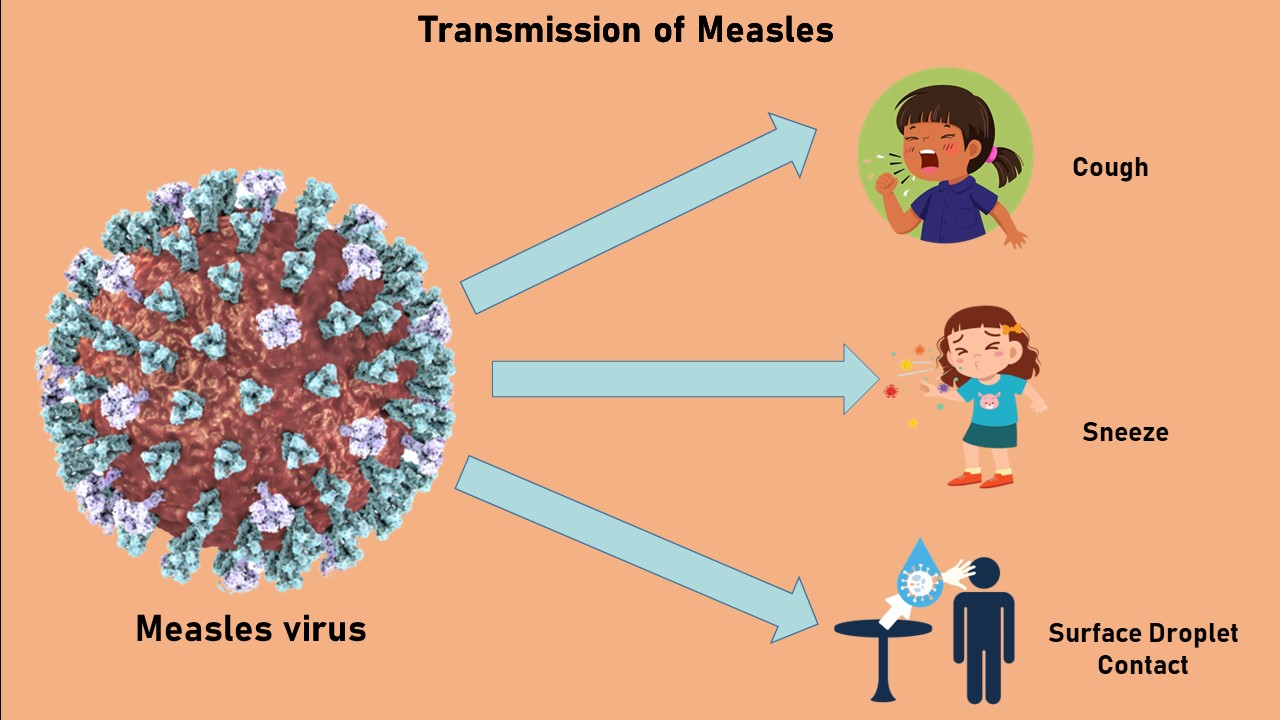


Figure 2: The modes of transmission of the measles virus.

South Africa is currently witnessing a daily rise in the number of confirmed measles cases. So far, five provinces have announced a measles outbreak: Mpumulanga, Limpopo, Gauteng, North West, and Free State. [5] Other effected provinces include Northern Cape (4 cases), Western Cape (5 cases), Eastern Cape (1 case) and Kwazulu-Natal (5 cases) (repeating the same information in the figure below? – might improve readability by just focusing on key outbreak areas and then having the additional areas included in the figure). [5] The most recent data, correct as of 14th January 2023, showed that 3326 serum samples were tested for measles by the National Institute of Communicable Diseases (NICD). [5] Out of the 397 positive samples, 382 samples were distributed amongst the five main outbreak provinces, with Mpumulanga having reported 79 confirmed cases, Limpopo 145 cases, Gauteng 18 cases, North West 125 cases, and Free State 15 cases (figure 3). [5] Fortunately, no deaths have been reported so far, but an increased hospitalization rate has become evident amongst children less than 1 year of age. [5]

Figure 3: The total number of confirmed measles cases in each affected province in South Africa as of 14th January 2023.

A rapid response to control the outbreak has emerged. All parents and caregivers residing in South Africa have been urged to check their children’s and the populations’ measles vaccination status respectively. [6] The vaccine should be administered as early as possible for those currently unvaccinated. [5,6] UNICEF South Africa is collaborating with local, national and international health authorities, including the World Health Organization (WHO), to identify the possible reasons hindering vaccination uptake in South Africa. [6] It has also allocated a multimedia messenger called “The Truck” to visit high risk areas in South Africa to improve awareness. [6] Furthermore, neighboring countries are advised to monitor their own measles cases and provide support for cross-border cities. [6] Lastly, the government has been encouraged to allocate more funding for measles vaccinations.

**Impact on the community**

Since measles is a disease that the WHO is aiming to eliminate , there is an increased level of disease surveillance. This enables rapid control of outbreaks which is a priority as outbreaks pose a great risk to public health and require a large amount of funding to control. A measles outbreak usually denotes the loss of the elimination strategy in the affected area. [7] This furthers the burden of the outbreak i.e., more resources are needed to manage it, and in addition, there is increased consumption of current resources. To counteract this, increased financial investments are required in order to support the healthcare system during the preparedness, response, and recovery stages. [7] These resources are used to increase the number of vaccination campaigns, adequate reporting and surveillance systems, trained personnel, and contact tracing systems. [7] Additionally, outbreaks usually occur in settings where there is disruption to the local healthcare system. Therefore, an important aspect of outbreak management is planning how to use the available personal within the affected area. [7] Plans for case management, and prevention of further spread, not only in the province but also to neighboring countries, will need external support and funding. [7] Vaccination is the gold standard for measles prevention. To control this outbreak, high risk communities should be identified, and more vaccination campaigns must be implemented there with the deployment of trained personnel for surveillance and case detection. [8] Affected children are subject to the complications associated with measles including encephalitis, pneumonia and blindness thus increasing measles-related morbidity and mortality. [8] Productivity of affected adults will decline due to increased absences from work creating economic issues for their families because of reduced income. [9,10] In addition, working parents might need to stay in the hospital whilst their child is sick further adding to the cost of hospitalization. [9]

This outbreak may pose a serious risk to health, therefore, increased surveillance, vaccination strategies and early case detection need to be deployed in order to prevent further morbidity and mortality.

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