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About the HEALTH PRESS

The Health Press is an open-access and peer-reviewed public health bulletin published by Zambia National Public Health Institute (ZNPHI). It was founded with the mission of offering a forum for the exchange and dissemination of health-related research and knowledge in Zambia and around the world. Its goals include spreading information on Zambia's public health security status and guide policy direction on health security in the country. The issue of the Health Press typically includes a research article, outbreak investigation, field notes and epidemiological bulletin. A new issue is published quarterly online and can be accessed at https://thp.znphi.co.zm/index.php/thehealthpress.

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FOREWORD

It is my pleasure to present the Quarter 1, 2026 issue of The Health Press. This issue brings together timely epidemiological analyses, outbreak investigations, and surveillance insights. These contributions reflect Zambia's continued commitment to strengthening public health security through evidence-based action. They also highlight the critical role of data and field epidemiology in guiding policy and response.

The editorial, Confronting the Rising Cancer Burden in Zambia: A Call for System Strengthening, draws attention to the growing burden of cancer in Zambia and globally. It places cancer within the broader health security agenda. It calls for stronger early detection systems, improved access to diagnosis and treatment, and sustainable financing. It also emphasises the importance of robust cancer surveillance and patient-centred care.

This issue includes a detailed investigation of an anthrax outbreak at the wildlife–human interface in Mosi-oa-Tunya National Park. The study provides important insights into zoonotic disease transmission and environmental risk factors. It also demonstrates the application of the 7-1-7 framework in assessing the timeliness of detection, notification, and response. The findings highlight the need for a coordinated One Health approach across human, animal, and environmental health sectors.

The issue also presents an investigation of a scabies outbreak in a school in Lusangazi District. This article highlights the continued burden of neglected tropical diseases. It shows how overcrowding and poor hygiene can drive transmission. It reinforces the importance of improving living conditions and strengthening hygiene practices in schools and communities.

A surveillance summary of priority diseases and events for the first quarter of 2026 is also included. The data show strong performance of the Integrated Disease Surveillance and Response system. Reporting completeness and timeliness remain high across provinces. At the same time, trends in cholera, diarrhoeal diseases, and malaria show that important public health challenges remain. These require sustained attention and targeted interventions.

The contributions in this issue demonstrate the value of locally generated evidence. They reflect the dedication of frontline health workers, researchers, and public health practitioners. Their work continues to inform action and protect communities.

I commend the authors, peer reviewers, and editorial team for their commitment to scientific rigor. I encourage policymakers, practitioners, researchers, and partners to engage with the findings in this issue. The evidence presented should guide action to improve health outcomes for all Zambians.

Prof. Roma Chilengi

Director General - Zambia National Public Health Institute

Editorial

Confronting the Rising Cancer Burden in Zambia: A Call for System Strengthening

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Introduction

In February each year, the global health community marks World Cancer Awareness Week, a dedicated period of advocacy, education, and reflection on one of the most pressing non-communicable disease challenges of our time. The 2026 theme, "United by Unique," placed people at the centre of cancer care, recognising that individuals experience cancer differently and that health systems must respond to these diverse needs. For Zambia, this message is both timely and urgent, given the growing burden of cancer and the persistent inequities in access to care.

The Rising Global Cancer Burden

Cancer is now one of the leading causes of morbidity and mortality worldwide. Globally, an estimated 20 million new cancer cases were recorded in 2022, with 9.7 million deaths, making it the second leading cause of mortality worldwide (1). By 2050, projections suggest this figure will rise to 35 million cases annually, driven largely by population growth and ageing (1). In low- and middle-income countries, the burden is disproportionately high, driven by late-stage diagnoses, limited access to specialist care, underfunded health systems, and persistent knowledge gaps at the community level (2). The African continent faces a particular challenge: cancer incidence is rising, yet the infrastructure to respond to it remains critically under-resourced across many settings (3).

The Cancer Burden in Zambia

In Zambia, cancer represents a growing and often under-acknowledged public health crisis. According to the Global Cancer Observatory (GLOBOCAN) 2022 estimates, Zambia recorded approximately 13,000 new cancer cases and over 9,000 cancer-related deaths in that year alone (1). Cervical cancer remains the leading cancer among women, with Zambia recording one of the highest age-standardised incidence rates globally, exceeding 65 per 100,000 women (4). This is largely attributed to the high prevalence of human papillomavirus (HPV), elevated HIV co-infection rates, and historically limited access to screening and vaccination services (5). Breast cancer ranks as the second most common cancer among women, while Kaposi sarcoma, which is closely linked to HIV, remains disproportionately prevalent relative to global averages (4).

Among men, prostate and oesophageal cancers feature most prominently. Prostate cancer is the leading cancer among Zambian men (4), with an age-standardised incidence rate of approximately 28 per 100,000, substantially higher than the global average of 15 per 100,000 (4). Oesophageal cancer, which is strongly associated with tobacco use, alcohol consumption, and nutritional deficiencies, contributes significantly to cancer mortality among men and is among the most lethal cancers in the sub-Saharan African context, where most cases present at an advanced, inoperable stage (6).

The intersection of cancer with communicable diseases, particularly HIV and tuberculosis, further complicates the picture. Zambia's generalized HIV epidemic elevates the risk of several infection-related cancers, including cervical cancer, Kaposi sarcoma, and non-Hodgkin lymphoma (7). The burden of TB, as reflected in national surveillance data, creates additional complexity for patients whose symptoms may overlap or whose care pathways may be fragmented across disease programmes.

Progress in the National Response

The Government of the Republic of Zambia has made important strides in establishing a policy and structural foundation for cancer control. The National Cancer Control Programme, operating within the Ministry of Health, has developed strategic frameworks to guide prevention, screening, treatment, and palliative care (8). The expansion of HPV vaccination through the national immunisation programme targeting adolescent girls represents one of the most cost-effective cancer prevention interventions available and positions Zambia alongside global efforts to reduce cervical cancer incidence over the coming decades (9).

Cancer diagnosis and treatment services, once almost entirely confined to the University Teaching Hospital (UTH) in Lusaka, are being progressively extended to provincial hospitals (10). The Zambia National Cancer Registry continues to improve data quality and coverage, which is fundamental to planning and accountability. Efforts to train health workers in early cancer recognition, strengthen pathology capacity, and expand radiotherapy infrastructure are underway, though significant gaps remain in scale and sustainability.

Zambia is also increasingly engaged in regional and international partnerships aimed at strengthening cancer capacity. These collaborations offer opportunities to access specialised training, diagnostic technologies, and treatment modalities that would otherwise be inaccessible to most of the population. Sustaining and deepening these partnerships, while anchoring them in domestic financing and governance, is essential for long-term progress.

Persistent Health System Gaps

Despite this progress, significant gaps persist. Diagnostic capacity remains limited in many provinces, with pathology and imaging services concentrated in a few urban centres. Radiotherapy and specialised oncology services are still insufficient to meet national demand.
Human resource constraints continue to affect service delivery, particularly in rural areas where shortages of trained personnel are most pronounced. According to the 2022-2026 National Cancer Control Strategic Plan, Zambia only has 17 Pathologists, translating into 1 pathologist per 2 million population (11).

Financing also remains a major barrier, as cancer care is costly and often requires long-term treatment, placing a heavy burden on both households and the health system. Less than 1% of cancer services in the country are funded by the Government, against the desired 5% of the annual health care budget (11).

Referral systems are often inefficient, and coordination across levels of care remains weak. As a result, patients frequently experience delays that reduce the likelihood of successful treatment.

Call to Action

World Cancer Awareness Week serves as a call to action for all stakeholders. Zambia's response should focus on several key priorities.

First, the Ministry of Health and its partners must strengthen early detection across all provinces. Screening and awareness of warning signs for common cancers should be integrated into primary health care visits at every level of the health system. Community health workers, who are often the first point of contact for many Zambians, should be equipped and supported to conduct initial cancer risk assessments and facilitate timely referrals.

Second, the government and its partners should prioritise financing of cancer services. Cancer treatment is costly, and without adequate domestic investment and sustainable health financing mechanisms, the gap between need and access will continue to widen. Zambia's engagement with innovative health financing approaches, including health insurance frameworks and public-private partnerships, should explicitly incorporate cancer as a priority condition.

Third, data must drive decisions. Robust cancer registration, timely reporting, and disaggregated data on incidence, stage at diagnosis, treatment uptake, and survival are essential for accountability and planning. The Zambia National Cancer Registry must be adequately resourced, and its outputs routinely used to inform policy.

Fourth, stigma must be addressed directly. Cancer carries social stigma that delays care-seeking and compounds suffering. Community engagement, health literacy campaigns, and culturally sensitive communication are not peripheral to cancer control; they are central to it (12).

Finally, multisectoral and multidisciplinary collaboration is not optional. Cancer control demands a coordinated, whole-of-government, whole-of-society approach: linking preventive health with oncology, connecting mental health services to cancer care, and embedding cancer prevention within broader development agendas.

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Article One

Epidemiological Investigation of an Anthrax Outbreak at the Wildlife-Human Interface in Mosi-oa-Tunya National Park, Zambia, October-November 2025

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Abstract

Introduction: Anthrax is an acute zoonotic disease caused by Bacillus anthracis, primarily affecting herbivores, but also carnivores and humans through contaminated meat or environments. On 30 October 2025, a dead hippopotamus from Mosi-oa-Tunya National Park was fed to 36 captive lions, causing morbidities and mortalities, prompting an outbreak investigation. The objectives were to confirm the outbreak, assess the timeliness of detection, notification, and response, map wildlife cases, and evaluate knowledge and practices among at-risk populations.

Methods: A descriptive case series investigation was conducted from 16-20 November 2025, and characterized the outbreak by time, place, and host (animal/person). Tissue, soil, swabs, and water samples were collected and cultured to isolate B. anthracis. Timeliness was assessed using the 7-1-7 metrics by reviewing patient health records, veterinary reports, and key informant interviews. Wildlife case distribution was mapped using Quantum Geographic Information System (QGIS 3.44.7). A structured questionnaire was used to collect data on knowledge and practices. Data were cleaned in Microsoft Excel and analysed in Stata 17. Bloom's taxonomy scale was used to assess knowledge and practices, with ≥60% score regarded as adequate.

Results: A total of three confirmed wildlife cases and 13 suspected wildlife cases, with ten epidemiologically linked (probable) human cases were identified. The outbreak detection occurred exactly 7 days after emergence. Notification was done 6 days after detection, while public health responses were completed 10 days post-notification. Sixteen (16) wildlife cases were identified, and a spot map was generated. The case fatality rate (CFR) in captive lions was 42.9% (3/7). Among the 25 respondents (80% male; 60% <40 years; 40% livestock farmers, 60% wildlife facility workers), knowledge about anthrax was high, with 76% (19/25) having heard of the disease, 72% (18/25), and 64% (16/25) knew it affects wildlife and livestock, respectively. Overall, 60% (15/25) were aware of human infection and vaccination as means of livestock protection. Only 28% (7/25), however, practiced safe carcass disposal, and 48% (12/25) reported handling or consuming potentially contaminated meat.

Conclusion: The outbreak was characterized by delayed notification and response. High-risk community

practices were also observed. We recommend the implementation of coordinated, multisectoral risk communication and community engagement on safe carcass disposal.

Keywords: Anthrax, knowledge, practices, outbreak, Zambia

Background

Anthrax is an acute, fatal, zoonotic bacterial disease caused by the spore-forming, gram-positive bacterium called Bacillus anthracis (1). A defining feature of the pathogen is its ability to form spores that can persist in the environment for decades, creating long-term hotspots for infection (2). All warm-blooded animals are susceptible to B. anthracis; however, herbivores easily get infected due to grazing low on the ground in contaminated soils (3). Carnivores and humans on the other hand can become infected through exposure to contaminated environments or consumption of infected meat. In humans, the clinical presentation varies by route of exposure, manifesting primarily as cutaneous anthrax (through broken skin), gastrointestinal anthrax (through ingestion), or pulmonary anthrax (through spore inhalation) (4).

Climatic factors such as seasonal rainfall and temperature fluctuations play a pivotal role in the occurrence of anthrax outbreaks, apart from physiological stress and population density of hosts (5). Heavy rains can concentrate and deposit spores onto grazing areas and water sources, while drought forces animals to graze closer to contaminated soil (6). The long-term persistence of B. anthracis in the environment is largely determined by soil characteristics, particularly alkaline, calcium-rich soils, which favor spore survival (5).

Globally, anthrax is a priority pathogen in 65 countries, with 20,000-100,000 human cases occurring annually, posing a high risk particularly to communities in low and middle-income countries that are heavily dependent on livestock and wildlife for subsistence (2,3). This is because of low levels of awareness coupled with limited routine veterinary services.

In Sub-Saharan Africa, outbreaks are most common in the Congo Basin (Cameroon, Central African Republic, Democratic Republic of the Congo, Republic of the Congo, Equatorial Guinea and Gabon) and neighboring countries (7).

In Zambia, anthrax is recognized as an endemic threat, with persistent foci of infection documented in the Luangwa valley ecosystem and also in Southern and Western provinces. Outbreaks in these regions are typically precipitated by cycles of flooding and drought, which expose anthrax spores to grazing animals. The situation is exacerbated by critical gaps in surveillance systems, low livestock vaccination coverage, and poor carcass handling practices (8).

On 30 October 2025, a dead hippopotamus (Hippopotamus amphibius) was found in Mosi-oa-Tunya National Park. Its meat was fed to 36 lions (Panthera leo) at a private game facility on 31 October 2025, about 10 Km away from Mosi-oa-Tunya National Park. By November 6, 2025, seven lions began to show symptoms, which included facial swelling, loss of appetite, lethargy, and difficulty in breathing. This situation led to an outbreak investigation conducted from 16 November 2025 to 20 November 2025, which aimed to confirm the anthrax outbreak and to assess the promptness of detection, notification, and response. The study also aimed to map the distribution of wildlife cases and assess the knowledge and practices related to anthrax among the at-risk population around the park. These were exposed to the hippopotamus through handling of the carcass or consumption of meat.

Methods

Study Design Setting

The Mosi-oa-Tunya National Park, in Zambia's Southern Province, is located 12 km from Livingstone city. It spans about 66 km² along the Zambezi River (Zambia-Zimbabwe border). It lacks a game management area and hosts elephants, lions, antelopes, zebras, giraffes, warthogs, buffaloes, crocodiles, hippopotamuses, monkeys, birds, and fish. It is open all year-round, featuring the Victoria Falls, a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site, drawing more than 300,000 visitors annually. It is part of the Kavango-Zambezi (KAZA) Transfrontier Conservation Area (9). Figure 1 below shows the Mosi-oa-Tunya National Park in Livingstone District, where the study was conducted.

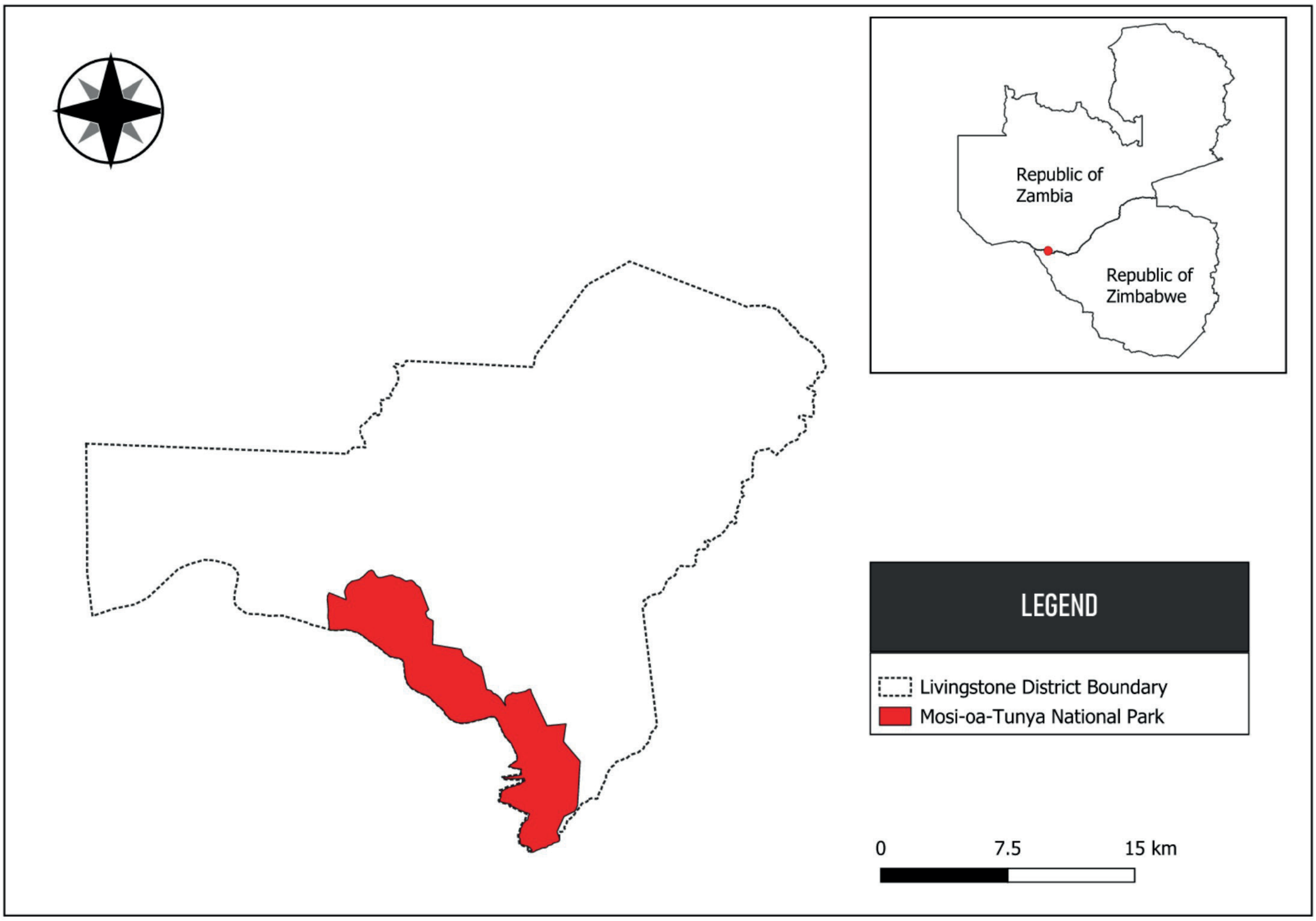

Figure 1: Map of the Study Site for an Investigation of an Anthrax Outbreak at the Wildlife-Human Interface in Mosi-oa-Tunya National Park, Zambia, October-November 2025.

Case Definitions

The case definitions we used were guided by the World Health Organization (WHO) and the World Organization for Animal Health guidelines (WOAH) (10,11).

Human Anthrax Cases

Suspected human anthrax case: Any person with acute illness showing one of the clinical forms-cutaneous (skin lesion evolving to a black eschar with edema), gastrointestinal (nausea, vomiting, anorexia, followed by fever), or pulmonary (viral-like respiratory symptoms rapidly progressing to breathing difficulty and fever)-between 1 October 2025 and 16 November 2025 residing in communities around Mosi-oa-Tunya National Park.

Probable human anthrax case: A suspected case with an epidemiological link to a confirmed case or exposure but without laboratory confirmation.

Confirmed human anthrax case: It is a clinically and epidemiologically compatible case that is laboratory-verified by isolation of B. anthracis from tissue or clinical specimens, detection of B. anthracis DNA by PCR, or other laboratory evidence such as anthrax toxins or serological confirmation.

Animal Anthrax Cases

Suspected animal anthrax case: Any animal found dead suddenly or within 24 hours of onset of illness exhibiting blood-stained, edematous fluid or exudate from external orifices in or around Mosi-oa Tunya National Park between 1 October 2025 to 16 November 2025.

Probable animal anthrax case: A suspected case with an epidemiological linkage to a confirmed case.

Confirmed animal anthrax case: An animal case that is a clinically and epidemiologically compatible case in which B. anthracis is isolated from clinical specimens (blood, tissues), or detected through culture and isolation, detection of B. anthracis DNA by PCR, or other laboratory evidence such as anthrax toxins or serological confirmation.

Study Design and Population

We conducted a descriptive case series study, purposively enrolling 25 individuals who were exposed to a dead hippopotamus through handling or consumption of its meat. 16 wildlife of Mosi-oa-Tunya National Park were also identified through case search and included in the study.

Data Collection

Swabs and tissues were collected from wildlife and one human. Environmental samples collected included soil and water. The samples were transported at 4°C in sterile leak-proof containers to the Central Veterinary Research Institute (CVRI) laboratories in Choma and Lusaka for analysis. To assess timeliness, review of reports from the District Veterinary Office and Department of Wildlife and National Parks was conducted alongside key informant interviews from health, veterinary and wildlife authorities. A review of patient health records was also done. In addition, the Global Positioning System (GPS) coordinates were collected for all wildlife mortalities. A structured questionnaire was generated using Kobo Toolbox to capture key information on knowledge and practices pertaining to anthrax among community members around the Mosi-oa-Tunya National Park.

Laboratory analysis

Samples were processed at CVRI laboratories in Choma and Lusaka using guidelines stipulated in the World Organization for Animal Health Manual of Diagnostic Tests and Vaccines for Terrestrial Animals Chapter 3.1.1 (12).

Culture and isolation were conducted in biosafety level 2 (BSL-2), utilizing Biosafety level 3 (BSL-3) practices. 5% sheep blood agar plates were inoculated with smears of tissues and swabs and incubated aerobically at 37°C for 24 hours. The cultured colonies were then observed using a magnifying glass for identification of characteristic colonies measuring 0.3-0.5 cm, appearing grey-white, non-hemolytic with ground-glass texture and "Medusa head" edge curling. This was done in biological safety cabinets using N95 respirators, double gloves, and gowns. The samples and cultures were then autoclaved at 121°C for 60 minutes before disposal to prevent environmental contamination.

Data Analysis

The 7-1-7 metrics were used to assess timeliness, where detection is expected to be ≤7 days post-emergence, notification ≤1-day post-detection and early response activities completed in ≤7 days post-notification (13). The GPS coordinates for all wildlife cases were exported to Microsoft Excel and cleaned. The Quantum Geographic Information Systems (QGIS 3.44.7) was used to develop a spot map utilizing the GPS coordinates for the wildlife cases. For the assessment of knowledge and practices, the data were imported into STATA version 17 for descriptive analysis. Bloom's taxonomy was used to classify respondents' knowledge and practice levels. Each "Yes" response scored 1 point (correct), while "No" or "Don't know" scored 0 for each knowledge or practice question. The sum of the "Yes" scores was calculated and used as the numerator, while the denominator was the total number of respondents who answered each question, respectively. This was then multiplied by 100 to find the percentage score. A score of ≥60% was considered an adequate level (14).

Ethical consideration

The Zambia National Public Health Institute (ZNPHI) has a waiver for outbreak investigations stipulated in the ZNPHI Act No. 19 of 2020 to generate quick evidence for informed public health decision-making. However, approval was obtained from Livingstone District Health Office and health facility staff to review patient medical records. All participants gave verbal consent, and their data were handled with strict confidentiality and anonymity throughout the investigation. Non-maleficence was ensured to both humans and animals during the study.

Results

Out of the 25 respondents, 80% (20/25) were male and 20% (5/25) were female, while 60% (15/25) were below 40 years old. Among these participants, livestock farmers were 40% (10/25), while wildlife facility workers were 60% (15/25). Table 1 below shows the demographic characteristics of the individuals who participated in this study.

Table 1: *Demographic Characteristics of Respondents in an Anthrax Outbreak Investigation at the Wildlife-Human Interface in Mosi-oa-Tunya National Park, Zambia, October-November 2025 (n=25)*

Demographic Characteristics	Number (%)
Age	
<40	15 (60%)
>40	10 (40%)
Gender	
Female	5 (20%)
Male	20 (80%)
Occupation	
Livestock farmers	10 (40%)
Wildlife farm workers	15 (60%)

The findings of this study showed that 76% (19/25) of the respondents had eaten hippopotamus meat while 24% (6/25) didn't. Furthermore, 60% (15/25) confirmed handling hippopotamus carcass and 40% (10/25) didn't. The study revealed that 40% (10/25) reported illness, while 60% (15/25) remained asymptomatic. All the symptomatic respondents were treated with ciprofloxacin 500mg (q12) orally for 7 days before the investigation was conducted. Table 2 below summarizes the symptoms reported by the respondents during the investigation.

Table 2: *Symptoms reported among the Respondents in an Anthrax Outbreak Investigation at the Wildlife-Human Interface in Mosi-oa-Tunya National Park, Zambia, October-November 2025 (n=25)*

Symptom	Number (%)
Fever and chills	6 (24%)
Stomach pain	5 (20%)
Nausea and vomiting	1 (4%)
Diarrhea	1 (4%)
Sore or black eschar	1 (4%)
Sore throat	1 (4%)
Hoarseness of voice	1 (4%)
Pain when swallowing	1 (4%)
No symptoms	15 (60%)

A total of 23 samples were collected, which included seven tissues, six soil samples, two water samples, eight animal swabs and one human swab. Three tissue samples, one from a lion and two from hippopotamuses, tested positive for anthrax. However, the only human swab from a wound (presenting with a black eschar) tested negative despite being epidemiologically linked to the index wildlife case through the opening of the carcass and consumption of meat. Nine out of the ten respondents presented with compatible symptoms of gastrointestinal anthrax and one respondent presented with cutaneous anthrax. Furthermore, all of them were epidemiologically linked to the dead hippopotamus, which tested positive for B. anthracis through contact with the carcass or consumption of meat. Therefore, the investigation identified 10 probable human anthrax cases.

The anthrax outbreak was detected on 6 November 2025, exactly 7 days after the emergence of the outbreak on 30 October 2025, meeting the 7-1-7 target's detection threshold of ≤7 days. However, an outbreak report was submitted to the National Livestock Epidemiology and Information Center (NALEIC) on 12 November 2025, 6 days after the detection of the outbreak, indicating delayed notification. Implementation of early response activities was completed on 22 November 2025, 10 days after notification of the outbreak. The response activities included active search for human and wildlife cases, sample collection, alerting nearby health facilities of the outbreak (Maunga and Mosi-oa-Tunya health facilities), reminder of case definition to health facility workers, risk communication and community engagement (RCCE), and assembling the One Health team for implementation of control and preventive measures. Figure 2 below summarizes the 7-1-7 metrics assessment through review of health records and reports and interviews with health workers, veterinary staff and wildlife authorities.

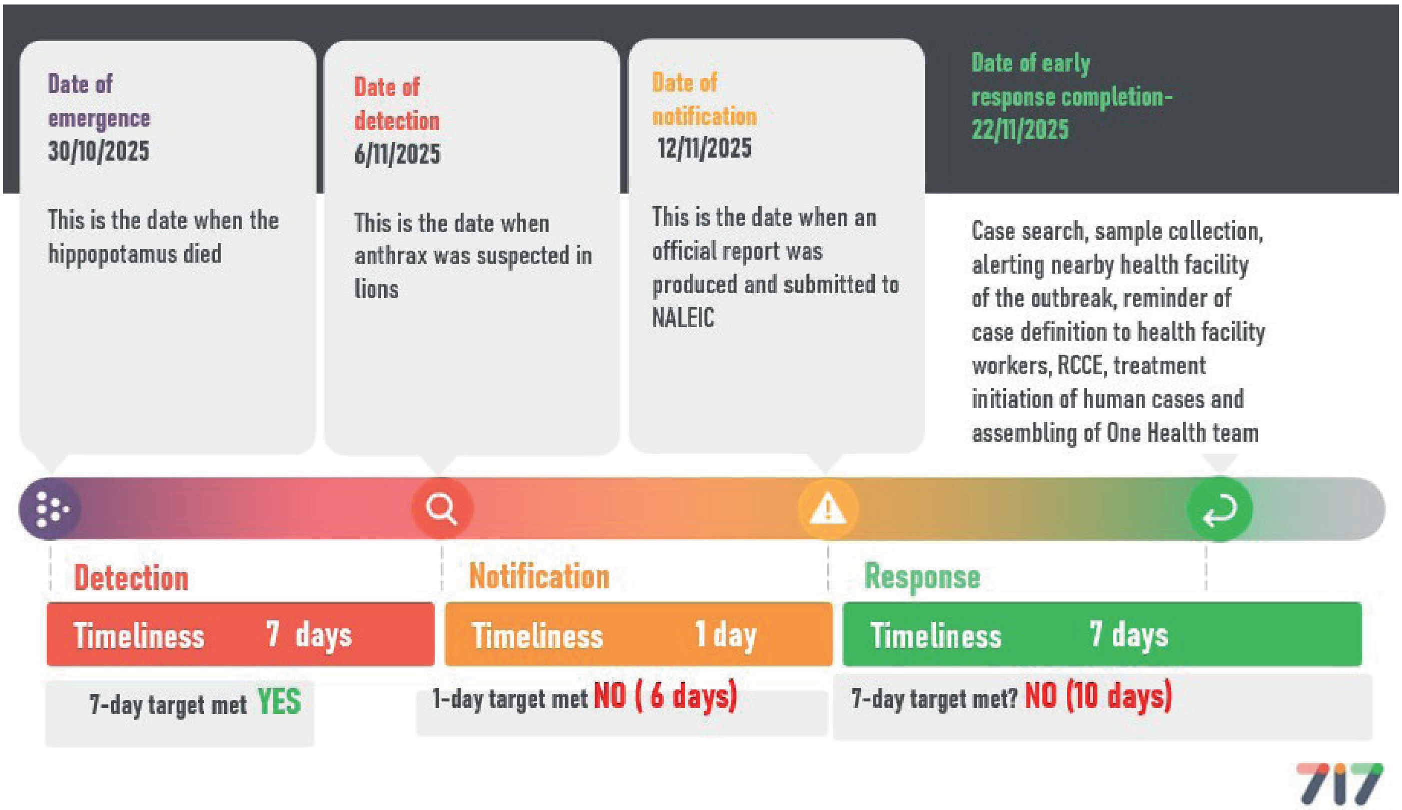

Figure 2: Summary of the assessment of the timeliness of detection, notification and response using the 7-1-7 metrics during an Anthrax Outbreak, Livingstone District, 2025.

During the investigation, we identified strong clinical suspicion or awareness of case definition of anthrax by the wildlife veterinarian as an enabler to early detection of the outbreak. On the other hand, One Health information sharing failure was identified as a bottleneck for delayed notification. Multi-agency coordination failure and risk communications delay were bottlenecks identified for delayed response. Table 3 below is a summary of the bottlenecks and enablers of detection, notification and response regarding the anthrax outbreak in Mosi-oa-Tunya National Park.

Table 3: Bottlenecks and Enablers of anthrax Detection, Notification and Response, Livingstone District, 2025.

Metric	Delay	Bottleneck/Enabler	Comment
Detection	Met the target	Strong clinical suspicion or awareness of case definition by wildlife veterinarian	The wildlife veterinarian had good suspicion of anthrax based on 7 captive lions showing facial edema, inappetence, recumbency and dyspnea
Notification	Did not meet the target	One Health information sharing failure	Immediate reporting to responsible authorities and One Health stakeholders was not done on time despite knowing that anthrax is a notifiable zoonotic disease
Response	Did not meet the target	Multi-agency coordination failure	There was delayed assembly of One Health response team involving MOH*, DVS†, and DNPW§ due to absence of pre-existing district-level coordination
		Risk communications delay	Late implementation of RCCE activities to high-risk communities

**MOH-Ministry of Health, †DVS-Department of Veterinary Services, §DNPW-Department of National Parks and Wildlife, RCCE- Risk Communication and Community Engagement*

Among the 36 captive lions at the private game facility, seven had presented with facial and oral swelling, loss of appetite (inappetence), recumbency (lying down and reluctance to move) and labored breathing (dyspnea). Three mortalities out of the seven suspected cases died, representing a Case Fatality Rate (CFR) of 42.9% (3/7).

Wildlife mortalities totaling 16 were recorded in Mosi-oa-Tunya National Park and the private game facility exhibiting blood-stained, edematous fluid or exudate from external orifices. These included four hippopotamuses (H. amphibius), three lions (P. leo), five buffaloes (Syncerus caffer), two zebras (Equus quagga), and two warthogs (Phacochoerus africanus). Three tissue samples had tested positive for anthrax, indicating three confirmed cases and 13 suspected cases in wildlife. Figure 3 below shows the distribution of the wildlife mortalities in Mosi-oa-Tunya National Park and the private game facility identified during the investigation.

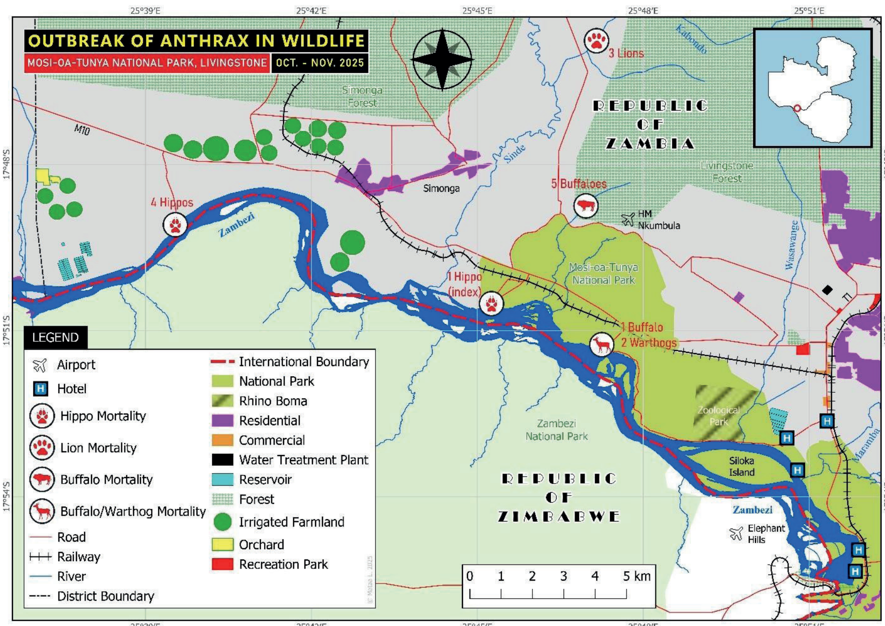

Figure 3: Distribution of wildlife mortalities in Mosi-oa-Tunya National Park and private game facility, Livingstone District, 2025.

The epidemic curve for this outbreak showed a temporal clustering of cases occurred 6 to 7 days after exposure. Figure 4 below is epidemic curve showing the number of human and wildlife cases per day and the date of onset of clinical signs in Livingstone District.

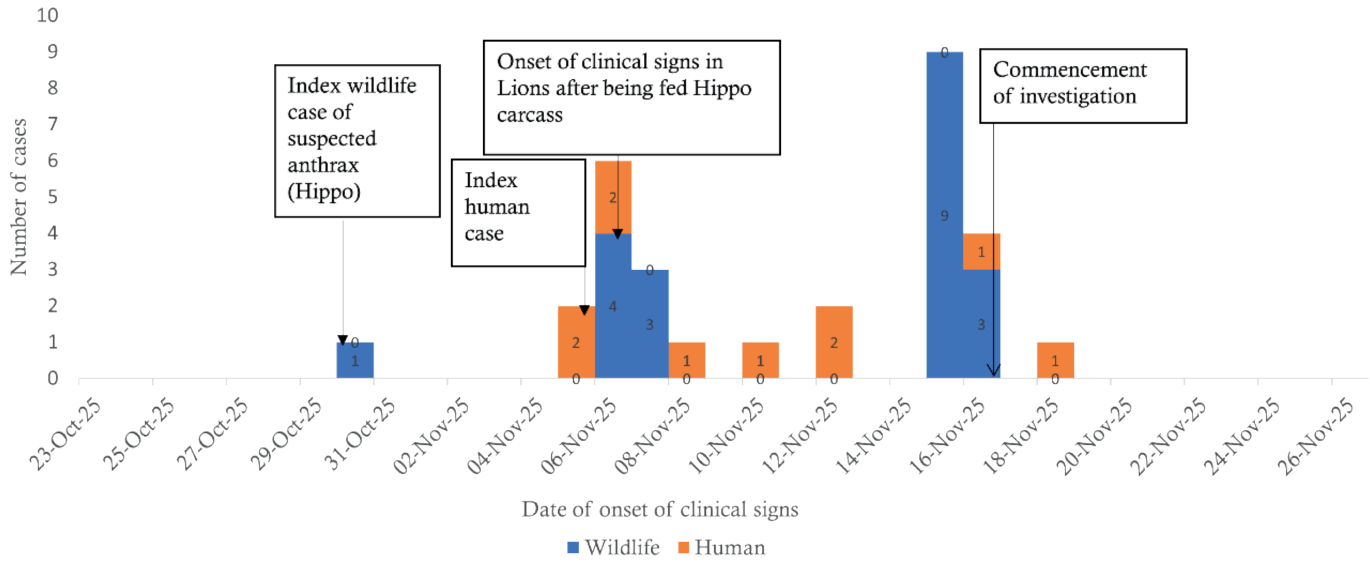

Figure 4: Epidemic curve of the anthrax outbreak in Mosi-oa-Tunya National Park and adjacent communities in Livingstone District, October-November 2025.

In terms of knowledge assessment regarding anthrax among the respondents, 76% (19/25) had heard of anthrax, 72% (18/25) were aware that it affects wildlife, 64% (16/25) knew it affects livestock. Additionally, 60% (15/25) recognized that anthrax can infect humans, and 60% (15/25) had knowledge that vaccination of livestock can prevent anthrax infection. Table 4 below shows the knowledge questions asked to the respondents and the frequencies in terms of response, as well as the score assessment.

Table 4: Knowledge about anthrax among respondents, Livingstone District, 2025.

Question	Yes n (%)	No n (%)	Don't know n (%)	Score Assessment
Have you heard about anthrax?	19 (76)	6 (24)	0 (0)	Knowledgeable
Does anthrax affect game?	18 (72)	5 (20)	2 (8)	Knowledgeable
Does anthrax affect livestock?	16 (64)	7 (28)	2 (8)	Knowledgeable
Does anthrax affect humans?	15 (60)	8 (32)	2 (8)	Knowledgeable
Does vaccination prevent anthrax?	15 (60)	4 (16)	6 (24)	Knowledgeable

In terms of practices concerning anthrax, safe carcass handling was low at 28% (7/25) of respondents, veterinary consultation was high at 84% (21/25), and 48% (12/25) of the respondents consumed potentially contaminated meat. Table 5 below shows the practice questions asked to the respondents and the frequencies in terms of response as well as the score assessment.

Table 5: Practices regarding anthrax among respondents, Livingstone District, 2025.

Practice	Yes n (%)	No n (%)	Score Assessment
Do you handle animal carcasses that die suddenly with precaution?	7 (28%)	18 (72%)	Low practice of safe carcass handling
Do you consult veterinary staff when your animals are sick?	21 (84%)	4 (16%)	High consultation rate with veterinary staff
Do you eat meat sourced from animals that died of unknown cause?	12 (48%)	13 (52%)	High-risk behavior in consuming unknown meat

Discussion

This investigation confirmed an anthrax outbreak at the wildlife-human interface of Mosi-oa-Tunya National Park. The failure to isolate B. anthracis from the human swab could be as a result of prior antibiotic treatment which was administered five days before sample collection underscoring the critical importance of collecting specimens for laboratory investigation before initiating antimicrobial therapy (2). Despite the lack of laboratory confirmation in the human cases, a strong epidemiological link was established through direct handling and consumption of the contaminated hippopotamus carcass which was a confirmed positive case, followed by anthrax compatible symptoms. This finding agrees with most of the anthrax outbreaks in Zambia affecting humans and livestock, where these cases primarily originate from wildlife (15). For instance, between 1 June to 28 July, 2023, 26 people in Sinazongwe District were infected with anthrax after consuming contaminated hippopotamus meat (16).

The practice of carcass scavenging as a disposal method, while economically motivated, is discouraged because of its potential to transmit pathogens to other animals and the ecosystems they are part of (17). This investigation revealed the transmission of B. anthracis from a dead hippopotamus to lions at a private game facility after being fed the meat. Anthrax being an infectious zoonotic disease requires careful adherence to protocols laid down in Chapter 4.13 of the Terrestrial Animal Health Code on disposal of dead animals (18). It recommends incineration as the ideal method of disposal of an anthrax carcass. Where this method is not possible, deep burial is the alternative. Unlike burial, burning has the advantage of destroying anthrax spores and reducing the number of spores available in the environment and, therefore, reducing the chance of spores resurfacing later.

This outbreak investigation serves as a compelling case study for the One Health approach in achieving the 7-1-7 targets. It demonstrates the complex links between environmental health, animal health, and human health in the successful control of Zoonoses. The investigation revealed critical bottlenecks in the notification and response system, including One Health information sharing failure, multi-agency coordination failure and risk communications delay, which delayed notification and intervention. These gaps are similar to findings in a retrospective observational study conducted in Brazil, Ethiopia, Liberia, Nigeria, and Uganda reviewing timeliness of detection, notification and response of public health events (13). Addressing these gaps requires the establishment of coordinated One Health committees that integrates wildlife authorities, veterinary services, human health sectors, environmental sectors and other relevant sectors to enable rapid detection, notification and joint response of zoonoses.

The wildlife cases of anthrax in Mosi-oa-Tunya National Park were mostly distributed along the Zambezi River and the outbreak occurred at the onset of the rain season, supporting the known ecology of this disease (19). During this period, flooding and soil disturbance expose dormant spores, while short and sparse vegetation forces herbivores to graze closer to the ground because grasses are short and sparse, and there is increased movement and mixing of animals in search of pasture and drinking water (20). This climatic and environmental situation increases the likelihood of spore ingestion and creates a high-risk interface where wildlife, livestock, and humans converge around shared water and pasture resources (21). Additionally, the Zambezi River serves as a natural corridor for wildlife movement and a shared resource for communities, particularly within the KAZA, one of the world's largest conservation zones. This outbreak therefore poses a high-risk for transboundary transmission of anthrax to Angola, Botswana, Namibia and Zimbabwe.

Finally, the assessment of community knowledge and practices revealed high knowledge about anthrax and low safe practices despite the small sample size. This means that high levels of awareness regarding anthrax risks did not translate into safe behaviors, aligning with studies conducted around national parks and pastoral communities, where economic pressure, food insecurity, and cultural norms drive continued consumption of contaminated meat, despite awareness of the zoonotic risk (15,22,23). The high level of veterinary consultation in this study, however, suggests a trusted entry point for tailored risk communication and community engagement (RCCE), livestock vaccination, and community-based surveillance, for anthrax prevention and control, while embracing the One Health approach (3,24).

Conclusion

This investigation confirmed the anthrax outbreak. It was characterized by delayed notification and response. The wildlife cases were distributed along the Zambezi River, with high-risk community practices despite high knowledge among sampled high-risk respondents.

Recommendations

Based on this investigation, MOH, DVS, DNPW and other relevant stakeholders should consider establishing a functional One Health coordination platform for formalized reporting and a multi-agency response plan for Zoonotic diseases. They should also consider enforcement of carcass disposal in accordance with Chapter 4.13 of the Terrestrial Animal Health Code. Moreover, targeted RCCE campaigns should be undertaken by a One Health team to promote safe handling and disposal of suspected anthrax carcasses. The MOH, DVS and DNPW should advocate for transboundary collaboration within the KAZA on the implementation of anthrax control and prevention measures.

Limitations

The findings of this study must be interpreted within the context of several limitations, including the lack of laboratory confirmation for the epidemiologically linked human cases. The small sample size of 25 participants limits the generalizability of the knowledge and practices assessment to the wider community and different settings. Additionally, the potential for recall bias exists in the self-reported data, and the delay in the investigation may have compromised the quality of environmental samples. Furthermore, prior antibiotic treatment before specimen collection may have reduced laboratory confirmation in human cases.

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Contributors

Mathews Sichalwe and Humphrey Banda developed the protocol and led the outbreak investigation. Benson Bowa and Brian Musalo were responsible for sample collection, while Benson Bowa conducted the laboratory analysis. Mathews Sichalwe, Mwendalubi Hazyondo and Conrad Chibale Collected data through questionnaire administration to community members. Data analysis and initial manuscript drafting were undertaken by Mathews Sichalwe, Humphrey Banda, and Paul Mulopa. Nyambe Sinyange, Dabwitso Banda, Gregory Bwalya, and Liywaali Maata conducted data quality checks. All authors reviewed and approved the final version of the manuscript.

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Article Two

Investigation of Scabies Outbreak at Sandwe Primary School in Lusangazi District, Zambia

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Abstract

Introduction: Scabies is a preventable neglected tropical disease caused by infestation with Sarcoptes scabiei. It has a global prevalence ranging from 0.3% to 46.0%. We investigated an outbreak of scabies at Sandwe Primary School in Lusangazi District to determine its magnitude, identify cases, and implement prevention and control measures.

Methods: The investigation was conducted between 30 March and 5 April 2022. A case was defined as any school child presenting with an intensely pruritic rash affecting at least one typical site, with or without visible burrows or a positive skin scraping. We reviewed health facility registers, interviewed learners, conducted clinical examinations, collected skin scrapings, and performed environmental assessments. Data were analysed using descriptive statistics, and attack rates were calculated with 95% confidence intervals.

Results: A total of 26 cases were identified among learners aged 4-17 years. Most cases were male (73%). The overall attack rate was 4.5% (26/578). Boarders were more affected than day scholars, accounting for 58% of cases. Skin scrapings were positive for Sarcoptes scabiei ova in 54.5% (6/11) of samples. Key risk factors included sharing sleeping spaces, clothing, bath sponges, and close contact with infected individuals. Overcrowding and inadequate sleeping facilities contributed to transmission.

Conclusion: A propagated scabies outbreak occurred in a school setting, predominantly affecting male boarders. Control measures included health education, mass treatment with scabicides, and environmental disinfection. We recommend decongestion of sleeping spaces and improvement of boarding infrastructure.

Introduction

Scabies is a neglected tropical disease that remains a major public health problem in resource-limited settings, despite being preventable and treatable. It is an ectoparasitic skin disease caused by Sarcoptes scabiei var. hominis, resulting in an intensely pruritic skin eruption. It is among the most common dermatological conditions in developing countries and contributes significantly to the burden of skin diseases (1).

Globally, scabies is estimated to affect more than 200 million people at any given time, with approximately 400 million cases occurring annually. Prevalence ranges from 5% to 50%, particularly in overcrowded and resource-poor settings (1,2).

Typical clinical features include superficial burrows, intense itching (especially at night), and a generalized rash affecting areas such as the wrists, elbows, axillae, groin, buttocks, and interdigital spaces (3-5). Scabies can lead to secondary bacterial infections, including impetigo, sepsis, renal complications, and rheumatic heart disease (3,6).

The disease imposes a substantial burden through stigma, social isolation, absenteeism from school, and sleep disturbances. Outbreaks are commonly reported in crowded settings such as schools, boarding facilities, and institutional environments.

On 30 March 2022, an alert of approximately 15 suspected scabies cases was received from Sandwe Rural Health Centre, all originating from Sandwe Primary School. On 5 April 2022, a district team visited the school to investigate the outbreak. The objectives were to determine the magnitude of the outbreak, identify cases, implement control measures, and prevent future occurrences.

Methods

Study Design and Setting

A descriptive outbreak investigation was conducted between 30 March and 5 April 2022 at Sandwe Primary School in Lusangazi District, Eastern Province, Zambia. The investigation was undertaken following notification of suspected scabies cases from Sandwe Rural Health Centre.

Case Definition and Case Finding

A case was defined as any pupil attending Sandwe Primary School between March and April 2022 who, on clinical examination, presented with an intensely pruritic rash affecting at least one typical site (e.g., wrists, elbows, axillae, groin, or interdigital spaces), with or without visible burrows or a positive skin scraping.
Cases were identified through review of outpatient department (OPD) registers at the health facility, active case search at the school, and clinical examination of learners using standard skin assessment procedures. All identified cases were recorded in a line list.

Data Collection

Data were collected through record reviews, interviews with affected learners, clinical examination, and environmental assessment. Information obtained included demographic characteristics, clinical presentation, and potential exposures such as sharing of sleeping spaces, clothing, and bathing materials. Skin scrapings were collected from a subset of suspected cases and examined for the presence of Sarcoptes scabiei ova to support clinical diagnosis. An environmental assessment of classrooms, dormitories, bathing areas, and water and sanitation facilities was conducted to identify conditions that could facilitate transmission.

Data Analysis

Data were entered in excel and analyzed using descriptive statistics. Frequencies and proportions were generated for key variables. The overall attack rate was calculated using the total school population as the denominator.

Ethical Considerations

Permission to conduct the investigation was obtained from the Lusangazi District Health Office and the District Education Board Secretary (DEBS). Assent was obtained from all learners who participated in interviews and examinations. All data were anonymized and handled confidentially.

Results

Outbreak Detection and Case Identification

Review of outpatient department (OPD) registers at Sandwe Rural Health Centre indicated an increase in cases recorded as skin infections, with most originating from Sandwe Primary School. Initial reports identified 15 suspected cases from Grades 7 and 9 (Table 1). Subsequent active case-finding and clinical examination at the school identified additional learners presenting with pruritic skin rashes on the arms, legs, chest, and inguinal regions. A total of 26 cases were identified, with no hospitalizations or deaths reported.

Magnitude of the Outbreak and Demographic Characteristics

The overall attack rate was 4.5% (26/578) based on the total school population. Among the identified cases, 58% (15/26) were boarders and 42% (11/26) were day scholars. Of the 26 cases, 73% (19/26) were male, and 27% (7/26) were female. The majority of cases, 69% (18/26), were aged 12–17 years. Cases were evenly distributed across lower (Grades 1–7) and upper (Grades 8-9) classes, each accounting for 50% (13/26) of cases (Table 1).

Clinical Presentation

All cases (100%) presented with itching, and clinical examination identified burrows in all cases. The most commonly affected body sites were the feet (62%), groin (50%), arms (46%), and chest (38%). Less frequently affected areas included the armpits (31%) and buttocks (3.8%) (Table 1).

Laboratory analysis of skin scrapings from a subset of cases showed that 54.5% (6/11) were positive for Sarcoptes scabiei ova, supporting the clinical diagnosis.

Exposure and Transmission Factors

Interviews with affected learners revealed several potential transmission factors. These included sharing of sleeping spaces, clothing, bath sponges, and buckets, as well as close physical contact with affected individuals. Sharing of sackcloth used as bedding and bed spaces was commonly reported, particularly among boarders.

Environmental Assessment Findings

Environmental assessment revealed conditions conducive to transmission. Classrooms were overcrowded, with inadequate desks and benches, leading some learners to sit on the floor.

Dormitory conditions were suboptimal. Boys were accommodated in a classroom used as a dormitory, where 11 pupils slept on sackcloth without beds or mattresses, with 2-3 learners sharing a sleeping space. Ventilation was poor due to damaged windows. Girls were housed in semi-detected structures with poor ventilation, no lighting, and limited infrastructure.

Bathing facilities were inadequate, with shared use of a limited number of buckets and sponges. Although the school had a functional borehole providing safe water, handwashing facilities lacked soap.

Public Health Response

Control measures were instituted promptly. Affected learners were treated with scabicides, and antibiotics were administered to prevent secondary bacterial infection. Health education sessions were conducted to raise awareness on transmission, symptoms, and prevention. Active case finding and daily screening were implemented to identify new cases, and environmental hygiene measures, including cleaning and disinfection of sleeping spaces, were undertaken. Ongoing surveillance was maintained by the school and the health facility.

Table1: Demographic and Clinical Characteristics of scabies cases at Sandwe Primary March 2022

Characteristics	**Frequency (%)**
Sex	
Male	19 (73)
Female	7 (27)
Age	
7-11	3 (12)
12-17	18 (69)
18-24	5 (19)
Grade	
1 – 7	13 (50)
8 – 9	13 (50)
Learner type	
Day Scholar	11 (42)
Boarder	15 (58)
Presentation	
Itching	26 (100)
Burrows	26 (100)
Distribution of skin lesions	
Feet	16 (62)
Groin	13 (50)
Arms	12 (46)
Chest	10 (38)
Armpits	8 (31)
Buttocks	1 (3.8)

Discussion

The findings of the outbreak investigation have demonstrated that outbreaks of scabies are common in areas of poor sanitation and crowded living conditions. The findings compare to the findings of an investigation conducted in Kacharia district Ethiopia (12). Attack rate was higher among males than females, a finding which compares to the study conducted in Ghana and Ethiopia (13)(4,5,8) Another study conducted in Ethiopia revealed 49% of cases among the school going children, similarly, the outbreak in Sandwe occurred in a school with crowded conditions and poor sanitation in which the outbreak occurred in a school. Scabies spread/transmission was related to crowding in the classrooms and sleeping places, as evidenced by a higher number of cases among boarders than day scholars, as well as sharing of sleeping spaces and sponges(2-4,6,9,15). Sharing a bed, sleeping with a family member affected by scabies, was associated with scabies infestation (9), which corresponds with our findings, in which cases had a history of contact with scabies cases at home or at school due to overcrowding in the classrooms and dormitories. This may further be attributed to the contagious nature of scabies, and one of the commonest ways of transmission is through body contact, and mites easily pass from the infested person to a normal one (15). The most affected age group was 12-17 years old, a similar age range seen in other studies (15). This resonates with findings from studies conducted in Ghana and Ethiopia. A study conducted in Ethiopia showed a relationship between drought and the occurrence of skin infections such as scabies. This was not so at Sandwe were water supply was adequate (16), although water was adequate at Sandwe, utilization practices were poor(10,15,16). Another study conducted in Ethiopia, sharing bed spaces, overcrowding was associated with increased risk for scabies, similar to the study findings (7). The school was not a designated boarding school and lacked proper boarding school infrastructure, although it was designated as a weekly boarding school, which explains the type of sleeping spaces that contributed to the transmission. Although the outbreak investigation was on time, the number of cases may have been under-estimated due to non-reporting of mild cases. Transportation of samples outside of the district may have increased turnaround time. Small sample size, time-limited data analysis and interrogation of possible risk factors .

Conclusion

Although scabies remains a common neglected tropical disease, it can be eradicated through health education improving hygiene practices in communal places such as schools, classes, and dormitories. Diagnosis and confirmation of cases were based on expert examination of the cases and clinical findings. For future control of scabies, we recommended adequate supplies of medicated creams to the affected learners.

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Summary of Priority Diseases and Events in Zambia

Intergrated Disease Surveillance Report (IDSR) Timeliness and Completeness

Nationally, 44,512 health facilities and surveillance sites were expected to report to the IDSR system during Q1 2026. Reports are received and collated at the district and provincial levels before submission to ZNPHI. Timeliness and completeness of weekly reports are the primary indicators of surveillance system quality. Table 1 summarises completeness and timeliness rates by province for Q1 2026.

Table 1: IDSR report completeness and timeliness rates by province Q1 2026 (January–March 2026)

Province	Expected Reports (N)	Completeness* n (%)	Timeliness† n (%)	Met ≥80% Target?
Central	4758	4,689 (98.55%)	4,462 (93.78%)	Yes
Copperbelt	5473	5,381 (98.32%)	5,245 (95.83%)	Yes
Eastern	5473	5,414 (98.92%)	5,146 (94.03%)	Yes
Luapula	4199	4,137 (98.52%)	4,061 (96.71%)	Yes
Lusaka	2951	2,862 (96.98%)	2,632 (89.19%)	Yes
Muchinga	2184	2,184 (100.0%)	2,121 (97.12%)	Yes
Northern	4225	4,086 (96.71%)	3,803 (90.01%)	Yes
Northwestern	4602	4,461 (96.94%)	3,991 (86.72%)	Yes
Southern	6045	5,907 (97.72%)	5,679 (93.95%)	Yes
Western	4602	4,469 (97.11%)	4,176 (90.74%)	Yes

* *Completeness:* percentage of expected reporting health facilities/surveillance sites that submitted data regardless of submission timing. National target ≥80%.
† *Timeliness:* percentage of reporting health facilities/surveillance sites that submitted reports on time. National target ≥80%.

All 10 provinces met the ≥80% WHO/MOH target for both completeness and timeliness. Nationally, completeness was 97.9% and timeliness was 92.8%. Muchinga Province achieved the highest completeness at 100.0%, while North-Western Province recorded the lowest timeliness at 86.7%, though still well above the 80% threshold. These results indicate a high-quality surveillance system capable of reliably detecting and tracking disease events across Zambia.

Featured Diseases

1. Cholera

Description

Cholera is an acute diarrhoeal disease caused by infection with the bacterium Vibrio cholerae (1). It is transmitted through contaminated water and food and can cause severe dehydration and death within hours if untreated. Children, the elderly, and those with underlying health conditions are most at risk (1). Zambia has experienced recurrent cholera outbreaks, particularly in peri-urban areas with limited access to safe water, sanitation, and hygiene (WASH) infrastructure (2). Surveillance is essential to enable rapid case detection, outbreak response, and interruption of transmission (2).

Epidemiological Summary

During Q1 2026 (Weeks 1–13), a total of 768 suspected cholera cases were reported nationally, of which 150 were confirmed (19.5% confirmation rate). Thirteen deaths were recorded, representing a case fatality rate (CFR) of 8.67% (13/150). Lusaka Province was the primary hotspot, accounting for the majority of confirmed cases and deaths (Figure 1). Northern Province recorded a smaller cluster of cases. Cholera transmission was most intense during Weeks 3-11, with a peak of 145 suspected cases in Week 9, before declining toward the end of the quarter (Figure 2).

Figure 1: Distribution of suspected cholera cases by province, Q1 2026. Lusaka Province recorded the highest burden

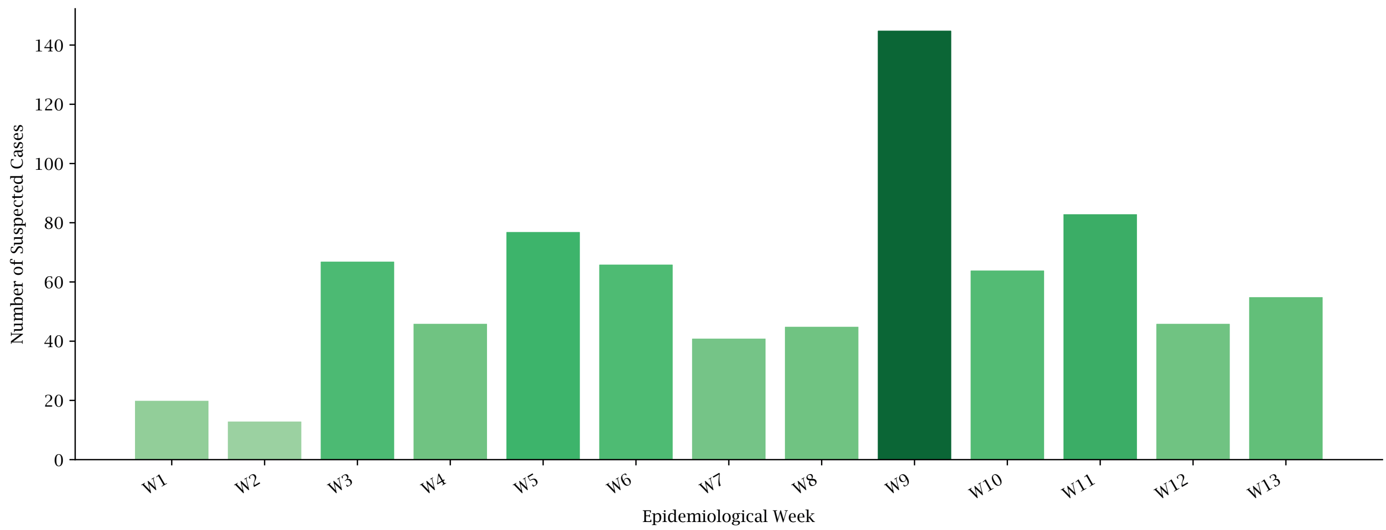

Figure 2: Weekly suspected cholera cases, Zambia, Q1 2026. Peak transmission was observed in Week 9.

Recommendations

- Provincial and district health teams in Lusaka should intensify active case finding, oral rehydration therapy (ORT) provision, and household water treatment promotion in affected communities.
- Water and sanitation authorities should conduct targeted water quality testing in cholera-affected areas to identify contamination sources.
- Health workers are advised to enforce standard precautions and report all suspected cases within 24 hours per IDSR protocols. More information is available at: www.znphi.co.zm

2. Diarrhoeal Diseases (Non-Bloody and Bloody)

Diarrhoeal diseases both non-bloody (acute watery diarrhoea) and bloody (dysentery) represent a significant proportion of the communicable disease burden in Zambia (3). Non-bloody diarrhoea is most commonly caused by viral and bacterial pathogens transmitted via the faecal-oral route, contaminated water, and poor food hygiene (4,5). Bloody diarrhoea (dysentery) is typically caused by Shigella species or enterohaemorrhagic Escherichia coli, and is associated with higher morbidity and risk of complications (6). Children under five years of age and communities with limited WASH access are most vulnerable (6). Both conditions share the same underlying risk factors and prevention strategies (4,5,6).

Epidemiological Summary Non-Bloody Diarrhoea

Non-bloody diarrhoea was the highest-burden non-malaria disease in Q1 2026, with 392,829 suspected cases reported nationally. Of these, 8,315 were confirmed and 21 deaths were recorded (CFR 0.25%). Copperbelt Province recorded the highest case concentration, followed by Eastern and Western provinces (Figure 3). Case counts remained consistently high throughout the quarter (approximately 27,000–34,000 cases per week), suggesting sustained endemic transmission rather than a discrete outbreak (Figure 4).

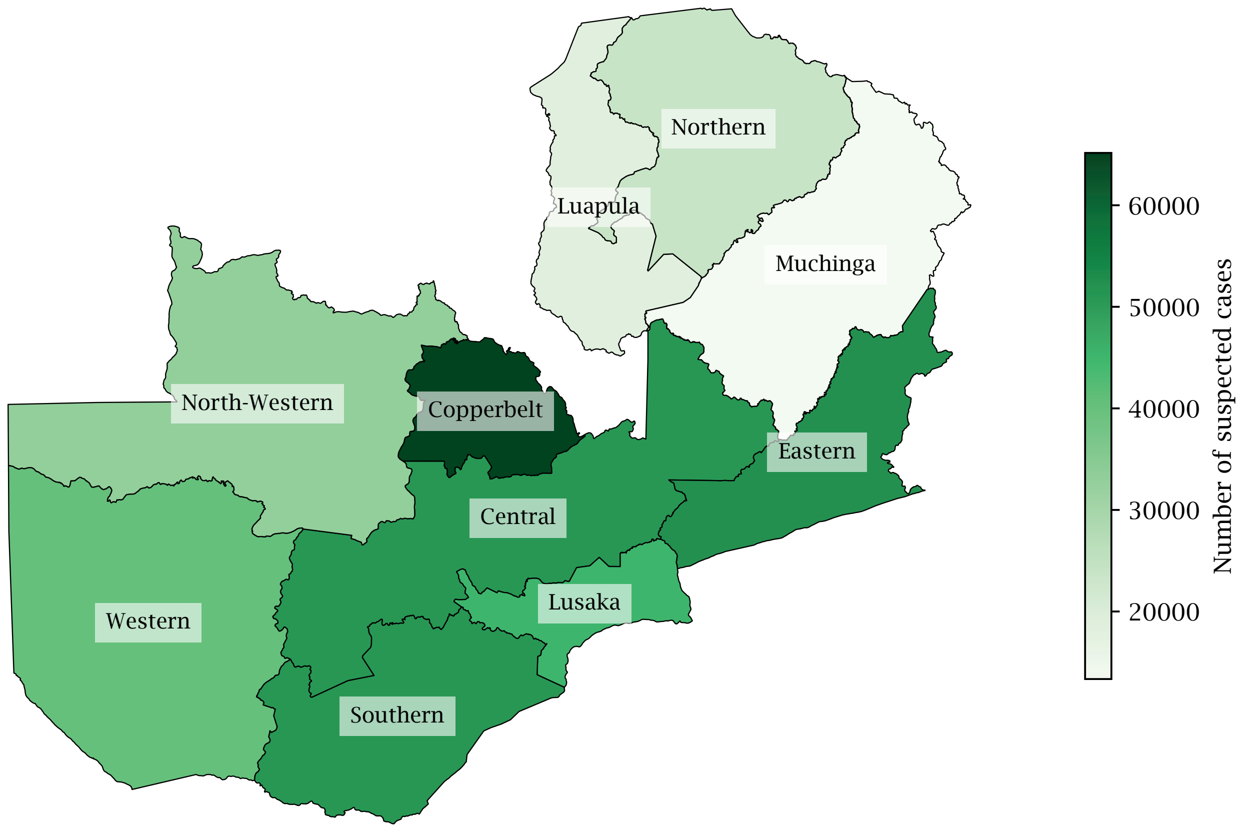

Figure 3: Distribution of suspected non-bloody diarrhoea cases by province, Q1 2026. Copperbelt Province recorded the highest burden.

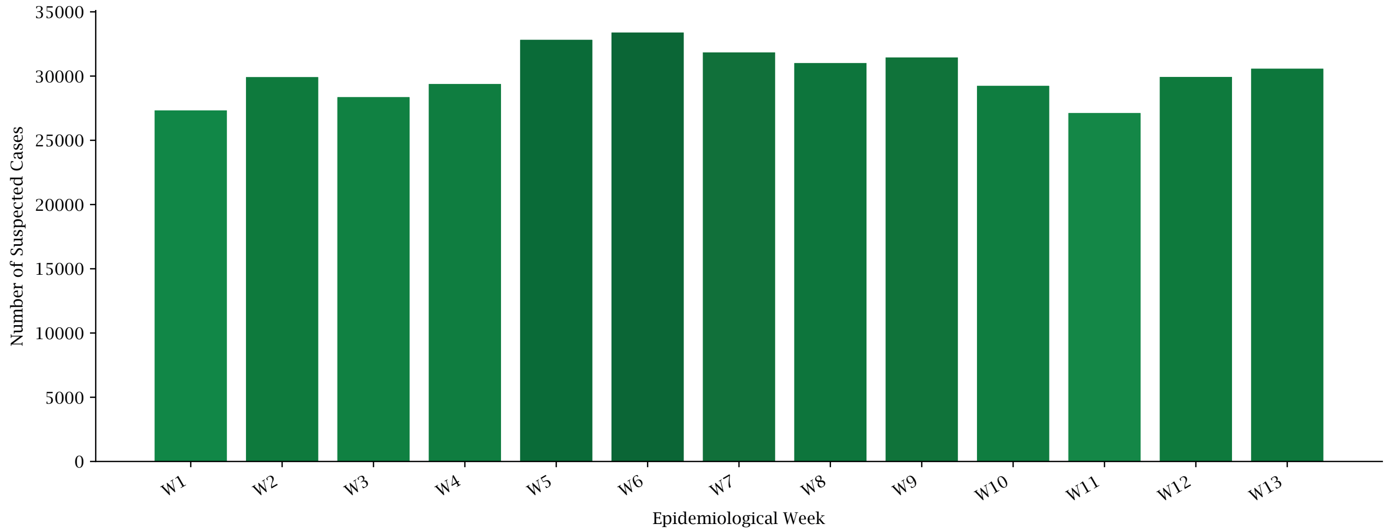

Figure 4: Weekly suspected non-bloody diarrhoea cases, Zambia, Q1 2026. Case counts remained consistently elevated throughout the quarter.

Epidemiological Summary Bloody Diarrhoea (Dysentery)

A total of 10,902 suspected bloody diarrhoea (dysentery) cases were reported nationally during Q1 2026. Notably, zero confirmed cases were recorded against this substantial suspected case count. This is an important surveillance signal that requires investigation; it may indicate a laboratory confirmation gap, inconsistent application of the case definition at facility level, or specimen collection and transport challenges. Eastern and Southern provinces showed the highest case concentrations (Figure 5). Cases were highest in Weeks 1-4 and declined progressively through the quarter (Figure 6).

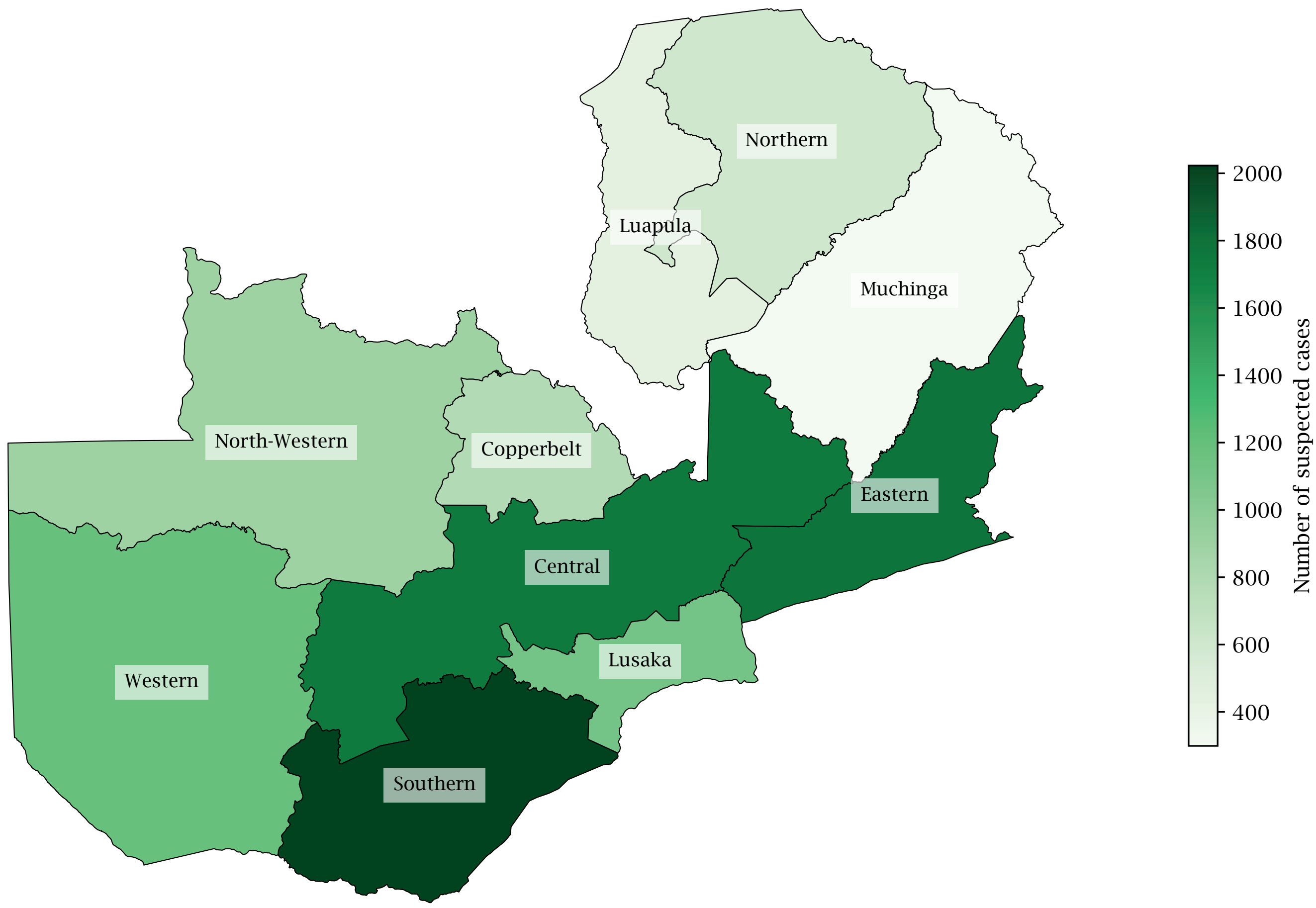

Figure 5: Distribution of suspected bloody diarrhoea cases by province, Q1 2026. Southern Province recorded the highest burden.

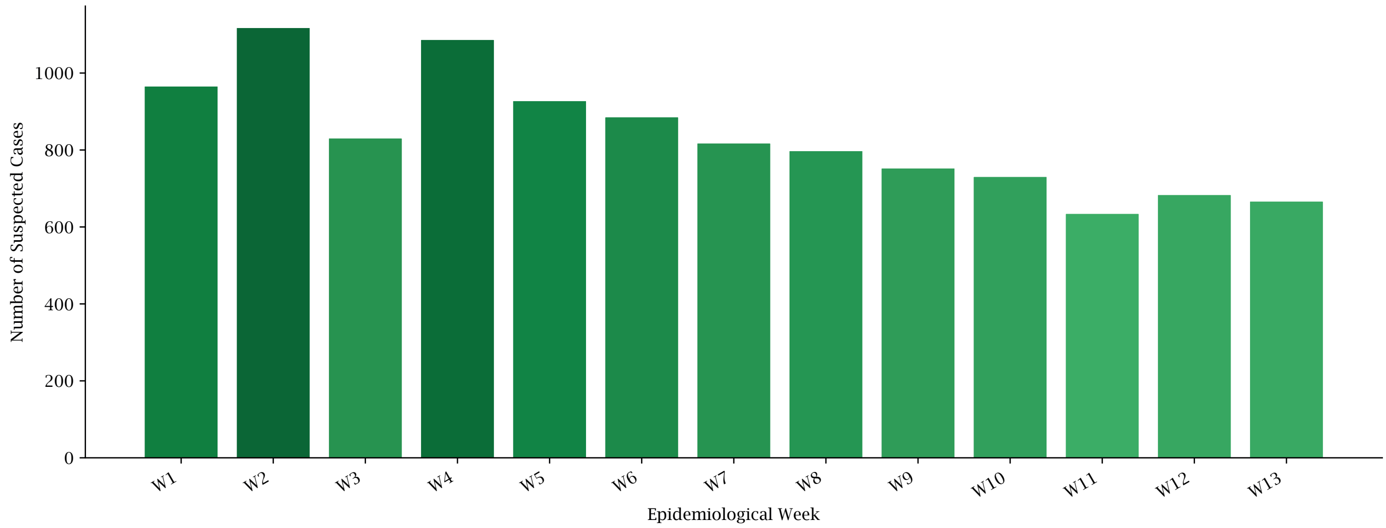

Figure 6: Weekly suspected bloody diarrhoea cases, Zambia, Q1 2026. A declining trend was observed from Week 2 onward

Recommendations

- Provincial health offices in Copperbelt, Eastern, and Southern provinces should intensify community WASH interventions and health education targeting safe food handling, handwashing with soap, and safe water storage.
- ZNPHI should investigate the zero-confirmation rate for bloody diarrhoea to determine whether it reflects a true epidemiological situation or a surveillance gap in laboratory testing and case definition application.
- Clinicians should collect stool specimens from suspected dysentery cases and submit to provincial laboratories to improve confirmation rates and guide antimicrobial stewardship.

3. Malaria

Description

Malaria is a life-threatening disease caused by Plasmodium parasites transmitted through the bites of infected female Anopheles mosquitoes (7). In Zambia, Plasmodium falciparum is the predominant species and is responsible for the most severe forms of the disease (8). Children under five years of age and pregnant women are at highest risk of severe malaria and death (9). Zambia's malaria transmission is seasonal, with peak transmission occurring during the rainy season (October to April) (8). Malaria remains the leading cause of morbidity and mortality in Zambia and is a priority disease under the National Malaria Elimination Programme (10).

Epidemiological Summary

Malaria was the dominant disease reported in Q1 2026, with 4,629,503 suspected cases, 2,480,259 confirmed cases (53.6% test positivity rate), and 272 deaths (CFR 0.01%). Copperbelt and North-Western provinces recorded the highest burden of suspected cases, while Lusaka and Southern provinces had relatively lower case counts (Figure 7). The weekly trend shows a progressive increase from approximately 265,000 suspected cases in Week 1 to a peak of approximately 415,000 in Week 9, consistent with the trajectory of Zambia's peak rainy season transmission. A slight decline was observed from Week 10 onward, signalling the beginning of the post-peak period (Figure 8).

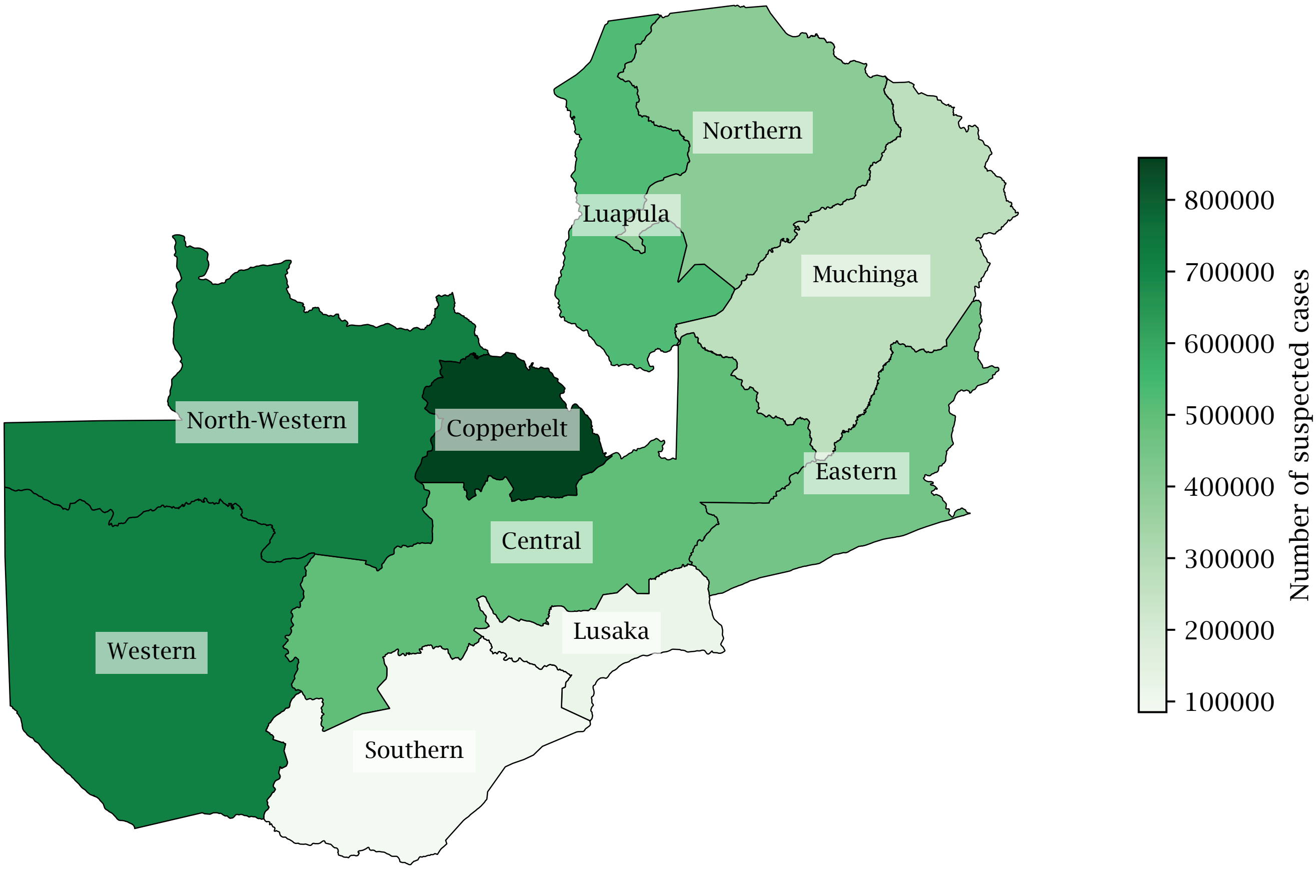

Figure7: Distribution of suspected malaria cases by province, Q1 2026. Copperbelt and North-Western provinces recorded the highest burden.

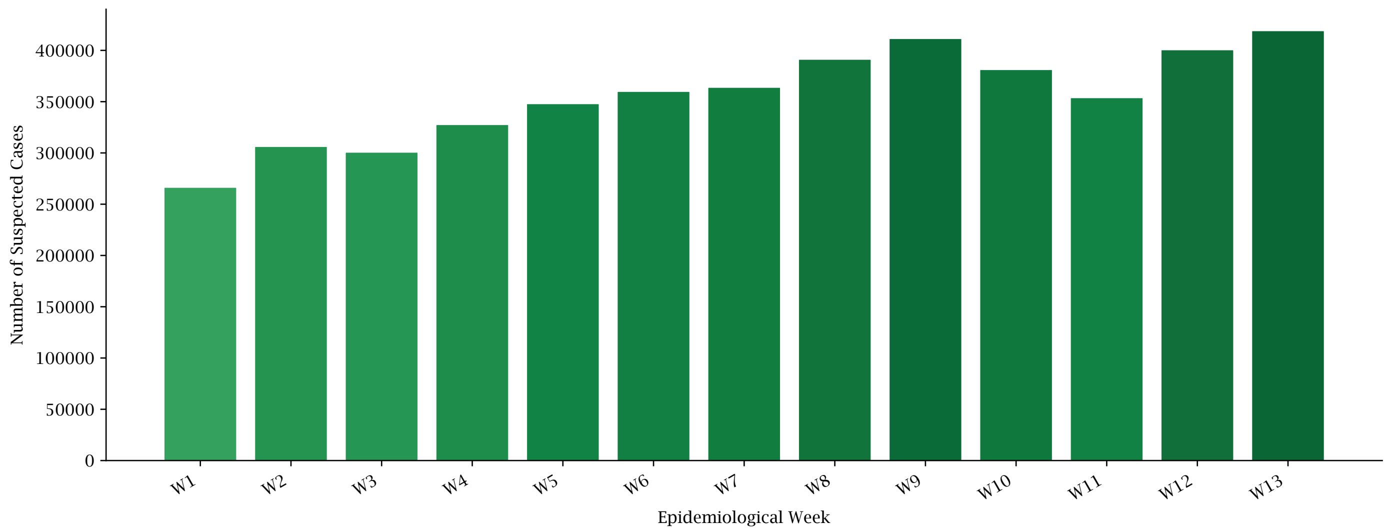

Figure 8: Weekly suspected malaria cases, Zambia, Q1 2026. Cases peaked in Week 9, consistent with peak rainy season transmission.

Recommendations

- Health facilities in high-burden provinces (Copperbelt, North-Western, Luapula, Western) should ensure adequate stocks of rapid diagnostic tests (RDTs) and artemisinin-based combination therapies (ACTs) ahead of the continued transmission season.
- Community health workers should reinforce insecticide-treated bed net (ITN) use and promote indoor residual spraying (IRS) uptake in targeted districts.
- Pregnant women and children under five should be prioritised for preventive interventions including

intermittent preventive treatment in pregnancy (IPTp) and seasonal malaria chemoprevention (SMC) where applicable.

4. Measles

Description

Measles is a highly contagious viral disease caused by the measles virus (genus Morbillivirus) (11). It is transmitted via respiratory droplets and can cause severe complications including pneumonia, encephalitis, and death, particularly in young children and immunocompromised individuals (11). Zambia is committed to the WHO African Region measles elimination target, and sustained measles transmission signals a vaccination coverage gap that requires urgent programmatic action (12). All suspected measles cases in children under 15 years are notifiable under Zambia's Integrated Disease Surveillance and Response (IDSR) system.

Epidemiological Summary

During Q1 2026, 912 suspected measles cases were reported nationally, with 34 confirmed and 2 deaths (CFR 5.88%). Western Province was the primary hotspot, accounting for the majority of cases consistent with the distribution seen in the province-level choropleth (Figure 9). The weekly epi curve shows two notable surges: a peak of 329 suspected cases in Week 3 and a second surge of 258 cases in Week 8, with relative decline in between and a third smaller increase in Week 13 (Figure 10). This bimodal pattern suggests either multiple transmission chains or incomplete outbreak containment following the initial surge.

Figure 9: Distribution of suspected measles cases by province, Q1 2026. Western Province recorded the highest burden, indicating a localised vaccination gap.

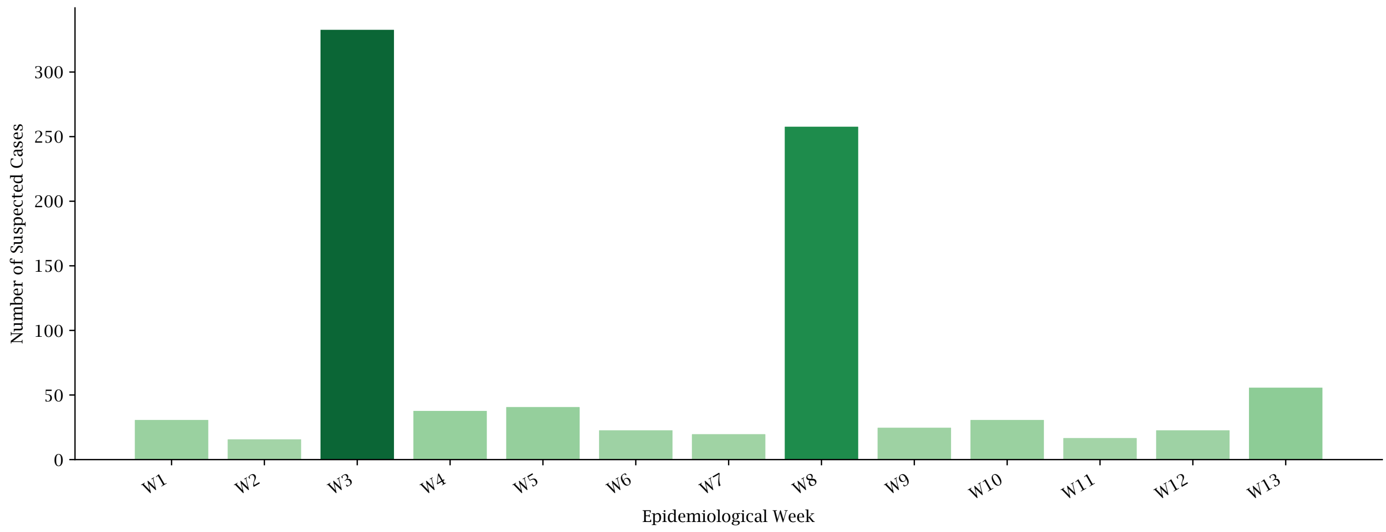

Figure 10: Weekly suspected measles cases, Zambia, Q1 2026. A bimodal pattern with peaks in Weeks 3 and 8 suggests ongoing transmission chains.

Recommendations

- The Western Province Health Office should conduct an immediate vaccination coverage assessment to identify under immunised populations and implement a targeted supplementary immunisation activity (SIA).
- All confirmed measles cases should be reported to ZNPHI within 24 hours and blood samples collected for laboratory confirmation and genotyping to characterise the circulating strain.
- Health workers are advised to administer vitamin A supplementation alongside measles treatment to reduce severity and mortality, per WHO guidelines (www.who.int/health-topics/measles).

5. Monkeypox (Mpox)

Description

Monkeypox (Mpox) is a viral zoonotic disease caused by the monkeypox virus (genus Orthopoxvirus) (13). It is transmitted to humans from animals (particularly rodents and primates) through direct contact with infected animals, contaminated materials, or through close human-to-human contact via respiratory droplets, skin lesions, or bodily fluids (13). Clinical presentation includes fever, rash, and lymphadenopathy (13). In July 2022 and again in August 2024, the WHO Director-General declared mpox a Public Health Emergency of International Concern (PHEIC) under the IHR, requiring heightened surveillance, case investigation, and reporting (14).

Epidemiological Summary

During Q1 2026, 128 suspected mpox cases were reported nationally, with 8 confirmed and 1 death (CFR 12.50%). Muchinga Province accounted for the highest number of suspected cases, with Western and Lusaka provinces also reporting clusters (Figure 11). The weekly epi curve reveals highest transmission in Weeks 1 and 3 (approximately 18-19 cases per week), with a general declining trend through to Week 11 (3 cases), followed by a resurgence in Week 12 (17 cases) (Figure 12). This resurgence warrants continued surveillance and investigation to identify whether it represents a new transmission chain.

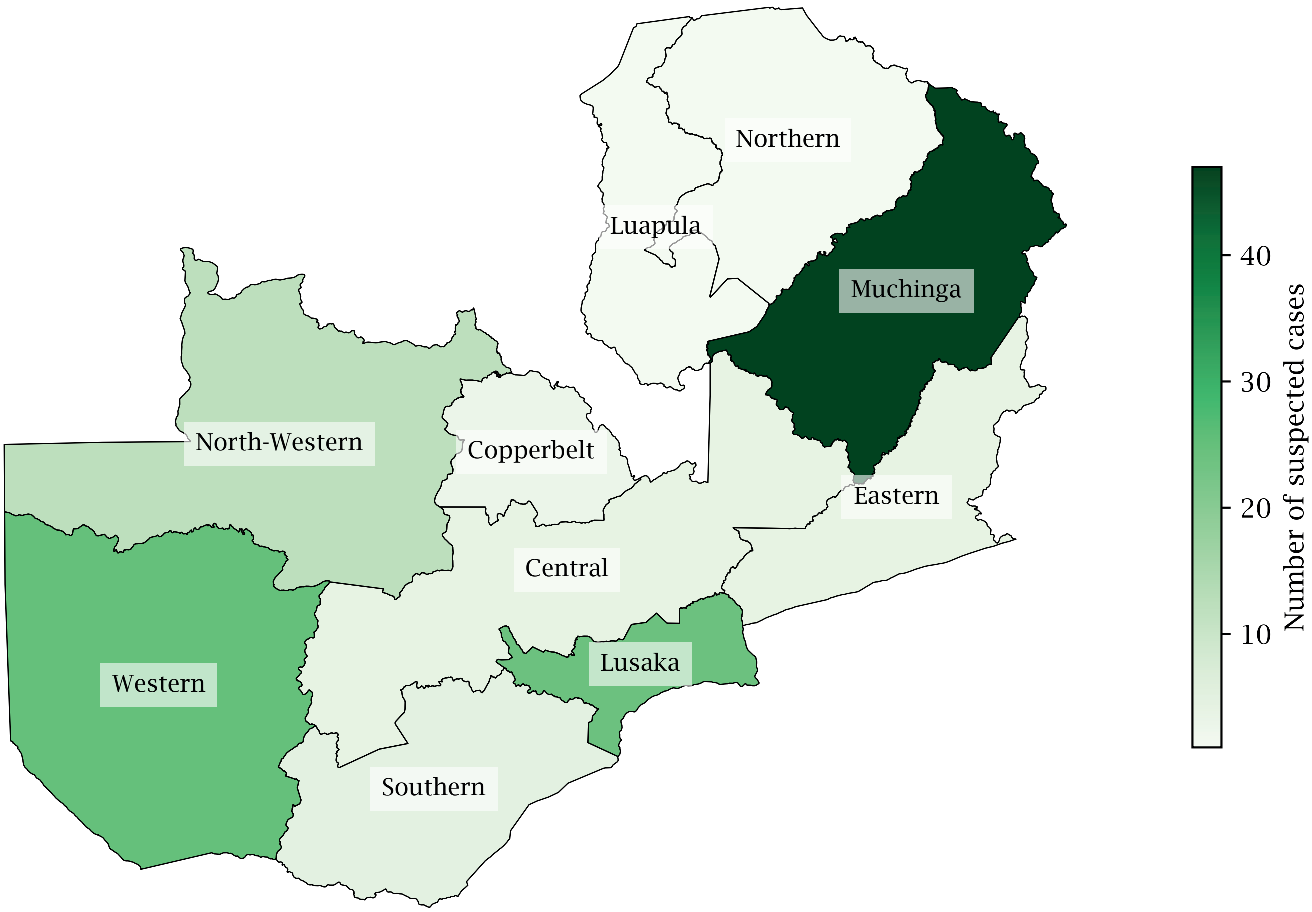

Figure 11: Distribution of suspected mpox cases by province, Q1 2026. Muchinga Province recorded the highest concentration of cases.

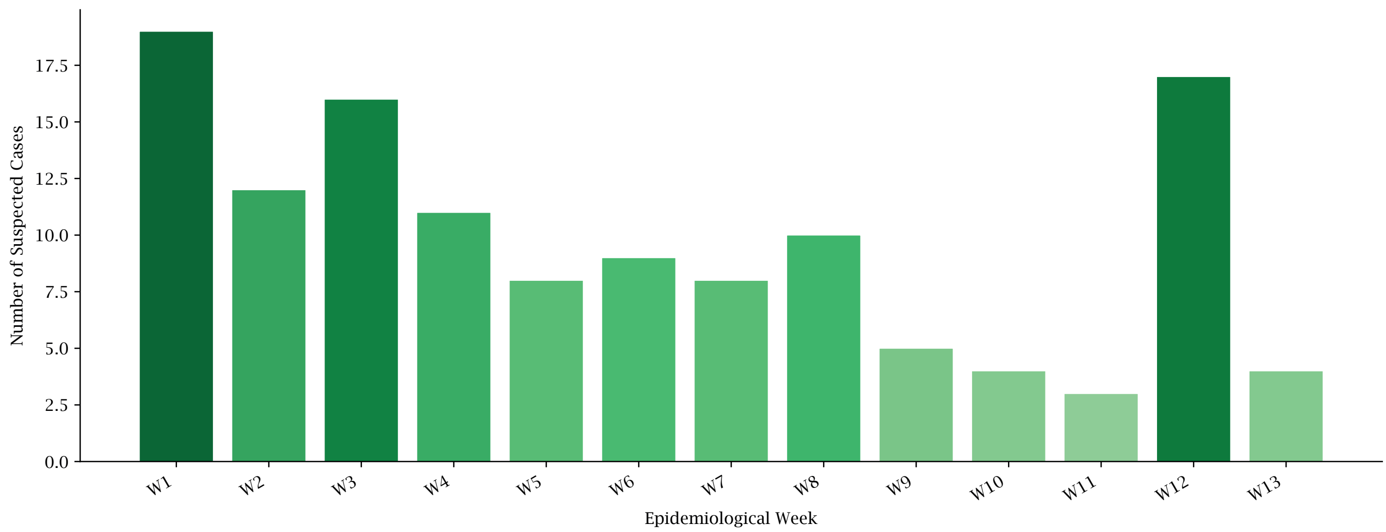

Figure 12: Weekly suspected mpox cases, Zambia, Q1 2026. A resurgence in Week 12 warrants continued surveillance.

Recommendations

- Muchinga Province health authorities should investigate the Week 12 resurgence to determine transmission source, identify new cases, and initiate contact tracing per ZNPHI mpox response guidelines.
- All suspected mpox cases must be reported to ZNPHI within 24 hours as required under the IHR. Specimens should be collected and submitted to the national reference laboratory for PCR confirmation.
- Health workers should implement standard infection prevention and control (IPC) measures including personal protective equipment (PPE) when managing suspected cases. For guidance, consult: www.who.int/health-topics/monkeypox.

Table of Reported Cases and Events

Table 2 provides a complete reference of all nationally reported IDSR diseases and events for Q1 2026 (Weeks 1-13, 29 December 2025–29 March 2026). Diseases are listed in alphabetical order. Case fatality rates are calculated as the number of deaths divided by the number of confirmed cases, multiplied by 100. A dash (...) indicates insufficient confirmed case data to calculate a meaningful rate.

Table 2: Nationally reported suspected and confirmed cases, deaths, and CFRs by disease/event Q1 2026 (January–March 2026)

Disease / Event	Suspected Cases	Confirmed Cases	Deaths	CFR* (%)
Acute flaccid paralysis (AFP) (suspected polio)	152	—	—	—
Acute viral hepatitis	27,388	1,472	12	0.82
Adverse event following immunisation (AEFI)	28	10	0	0.00
Anthrax	94	—	—	—
Bilharzia (Schistosomiasis)	6,663	776	0	0.00
Bloody diarrhoea (dysentery)	10,902	—	—	—
COVID-19	322	26	0	0.00
Cholera	768	150	13	8.67
Diarrhoea Non-Bloody	392,829	8,315	21	0.25
Dog bites	7,222	—	—	—
HIV	61,858	1,493	8	0.54
Human rabies	27	—	—	—
Influenza-like illness (ILI)	1,818	5	0	0.00
Malaria	4,629,503	2,480,259	272	0.01
Measles	912	34	2	5.88
Meningitis	135	31	13	41.94
Monkeypox (mpox)	128	8	1	12.50
Mumps	7,004	2,077	0	0.00
Neonatal tetanus	27	1	7	700.00
Plague	9	—	—	—
Scabies	8,887	205	0	0.00
Trypanosomiasis	248	23	1	4.35
Tuberculosis	8,637	261	2	0.77
Typhoid fever	2,085	76	1	1.32

** CFR = Case fatality rate: (number of deaths ÷ number of confirmed cases) × 100. '—' indicates insufficient confirmed case data to calculate a meaningful rate.*

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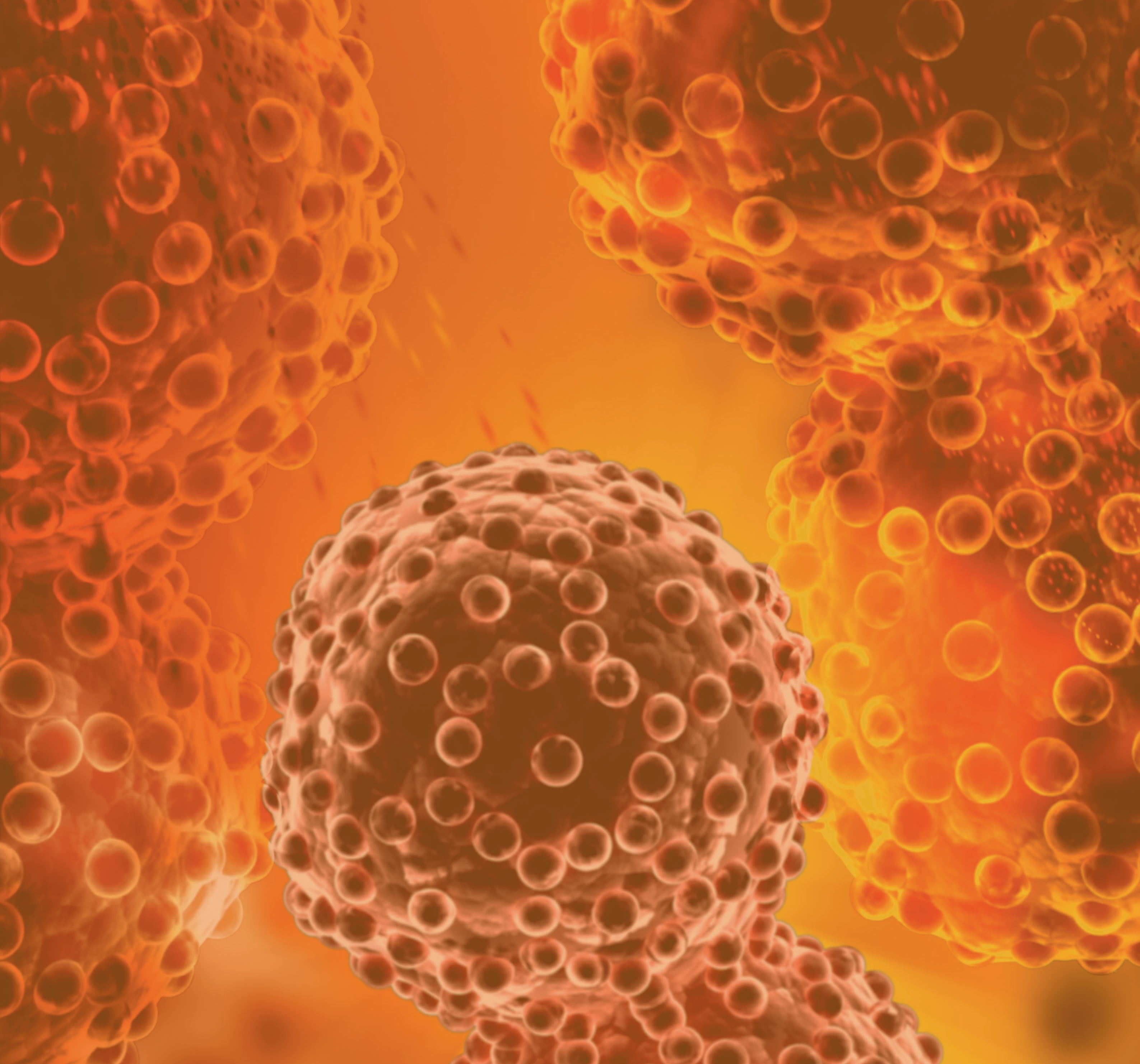

Data used was extracted from eIDSR on 21st April, 2026.
About eIDSR

The Electronic Integrated Disease Surveillance and Response System (eIDSR) is a disease surveillance system that is used to continuously and systematically collect, analyse, interpret, and visualize public health data. Data is collected at facility level and captured by district surveillance officers. The data reported in this bulletin was extracted from the system (except were indicated otherwise) on the aforementioned date.

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