NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES
Division of the National Health Laboratory Service

COMMUNICABLE DISEASES

July 2022, Vol. 21 (7)

COMMUNIQUÉ

CONTENTS

Editor's Note:

Prof Lucille Blumberg

The declaration by the World Health Organization of monkeypox as a public health emergency of international concern (PHEIC) again places the spotlight on an emerging zoonotic disease. This time on a condition that has previously been well known as affecting persons living close to tropical rain forests in countries in west and central Africa. While the infection is not easily transmissible and mortality is low, morbidity is significant and there is concerning stigmatisation of infected persons. Although cross-protection from previous smallpox infection or vaccination has likely waned or is absent in persons born after the eradication of that disease in the 1970s, effective countermeasures for monkeypox do exist. Smallpox vaccines, especially new generation non-replicative ones, administered to risk groups may be effective in reducing acquisition and severity of infection. Their role in reducing transmission and in outbreak control is unknown. Equitable access by communities in endemic areas and LMIC to diagnostics, vaccine and therapeutic drugs is critical. Lessons especially around communication and knowledge sharing need to be taken from the HIV experience and applied to at-risk populations.

The report from the Centre for Respiratory Diseases and Meningitis highlights the influenza comeback. It will be important to look at severity of illness, and excess morbidity and mortality attributable to influenza as a consequence of its recent low incidence. It will be interesting to examine influenza vaccine uptake in risk groups and learn from COVID vaccine programmes.

The presentation of the typhoid situation shows the importance of genotyping and its role in describing outbreaks. Clusters of infection with genetically related strains of ***Salmonella typhi*** are being investigated, particularly in Gauteng and North West provinces, with recent increases in confirmed cases of enteric fever. Genotyping is a critical adjunct to more conventional epidemiology to inform appropriate interventions. New initiatives to strengthen these essential tools in resource-limited areas are in progress.

Rabies remains an ongoing problem, with foot and mouth disease outbreaks in livestock continuing to divert precious veterinary resources away from rabies control efforts. The key intervention to prevent human cases remains dog vaccination and until this is achieved, it is essential to ensure that communities and health workers are equipped with the knowledge and means for post-exposure prophylaxis (PEP). Referral of children for post-exposure prophylaxis, especially for bites on the head and neck, to a centre able to assess the risks and administer PEP correctly, is absolutely critical.

The 'Beyond our Borders' section mentions Ebola and Marburg virus diseases, dengue, and wild-type polio virus. It is clear that surveillance for communicable diseases of public health concern remains as important as ever. Climate disasters and ongoing conflicts are issues that will likely influence communicable disease risks in our world for some time to come.

Editorial comment by Prof Lucille Blumberg.

Measles outbreak in Tshwane district, Gauteng province, July 2022

From 01 May 2022 to 22 July 2022, the Tshwane district measles surveillance reported six laboratory-confirmed measles cases. Four of the six measles cases detected had an epidemiological link to the measles outbreak reported in the Tshwane district. Two laboratory-confirmed measles cases had no epidemiological link to the measles outbreak. Meanwhile, the last measles case detected with an epidemiological link to the measles outbreak date of onset was 26 May 2022.

The Tshwane district and Gauteng province health officials conducted a measles vaccination campaign targeting children under 15 years in schools and day-care centres in the area where the measles outbreak occurred. Children's vaccination cards should be checked to ensure measles vaccinations are up to date. Measles vaccine doses are given routinely at ages 6 and 12 months. It is never too late to vaccinate against the measles virus.

Measles surveillance needs to be strengthened, with suspected measles cases reported to the health authorities using the Notifiable Medical Condition (NMC) surveillance application found on the NICD website (https://www.nicd.ac.za/nmc-overview/overview/). All suspected cases require testing for measles IgM. Without a blood test, the measles virus cannot be differentiated from other rash illnesses, such as rubella. The blood samples collected for the measles IgM test should be shipped to the NICD labelled 'attention Measles Laboratory.'

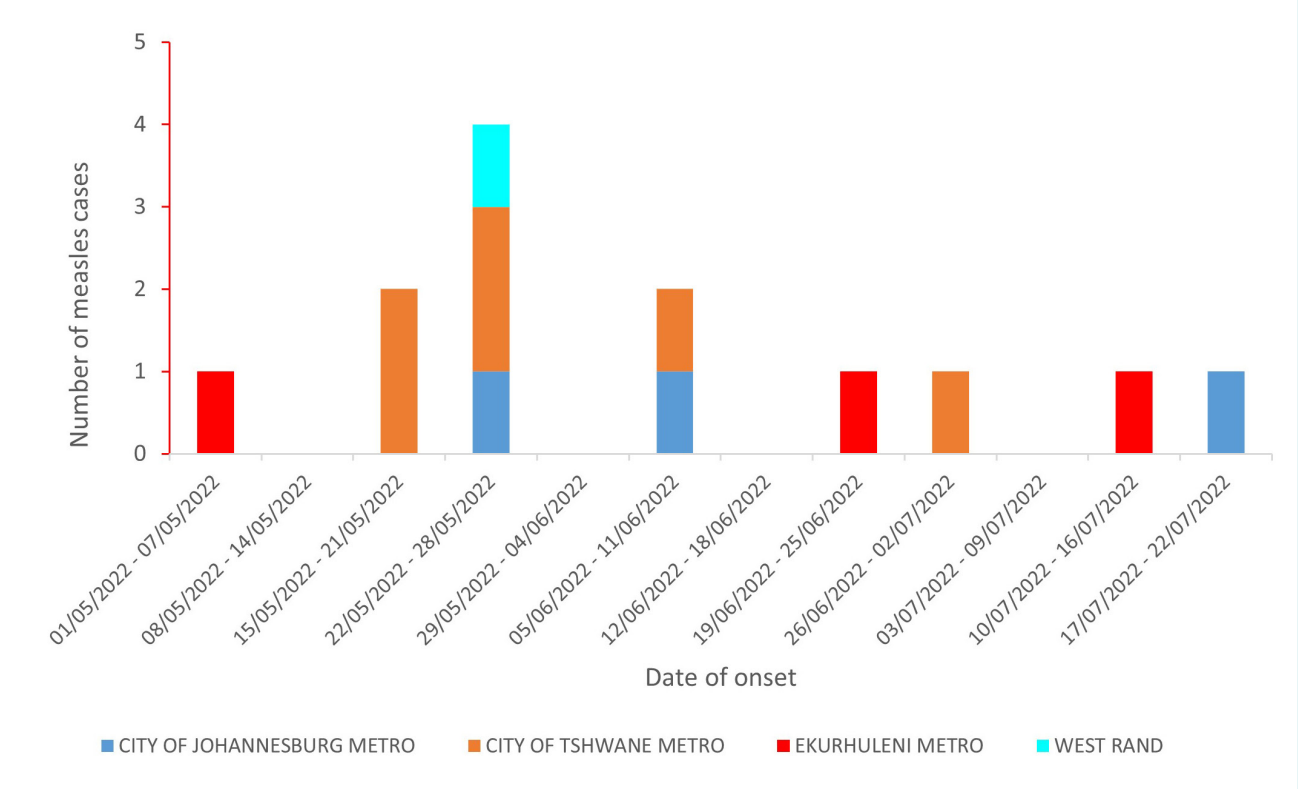

Figure 1. Gauteng Province measles epi curve, 01 May 2022 to 22 July 2022

Source: Centre for Vaccine and Immunology, NICD-NHLS; jackm@nicd.ac.za

ZOONOTIC AND VECTOR-BORNE DISEASES

Monkeypox - Multi-national outbreak

Since May 2022, a multi-country outbreak has been in progress with cases reported from 70 countries. On 22 July 2022, a total of 15 492 cases has been reported. More than 80 % of the cases have been reported in European countries and approximately 18 % in the Americas. Spain is currently most affected, reporting more than 3000 cases by 22 July 2022. Nearly all cases are reported in males. On 22 July 2022, the Director General of the World Health Organization declared the current multi-country monkeypox outbreak a Public Health Emergency of International Concern (PHEIC).

From 22 June 2022 to 26 July 2022 three cases of monkeypox have been confirmed in South Africa. The cases were reported from Gauteng (n = 1), Western Cape (n = 1) and Limpopo (n = 1) provinces and are males aged 30, 32 and 42 years. The cases are unlinked. No recent international travel history, was reported in either of these cases from Gauteng and Western Cape; however, the first case reported in Gauteng had close contact with an undiagnosed person with international travel history while the Western Cape case was reported as having possibly had unspecified contact with people who had international travel history due to his line of work. The third confirmed case reported on 10 July 2022 in Limpopo Province was an imported case involving a tourist who has since returned to his home country, Switzerland. Public health response measures were initiated.

Full genetic sequencing for the cases from Gauteng and Western Cape was conducted. The viral genomes clustered in the B.1 lineage of the Western Africa clade with other viral genomes associated with cases of the current multi-country outbreak. Even though the risk of monkeypox to the general South African public is considered low, healthcare workers should be on high alert and maintain a high index of suspicion for any individuals presenting with an unexplained acute rash or skin lesions AND one or more of the following signs or symptoms: headache, acute onset of fever (>38.5°C), lymphadenopathy (swollen lymph nodes), myalgia (muscle pain/body aches) and backache AND for which the following differential diagnoses are excluded: chickenpox, measles, bacterial skin infections, syphilis, molluscum contagiosum, allergic reactions and other locally relevant common cause of papular or vesicular rash. For more information on monkeypox preparedness and response activities, visit https://www.nicd.ac.za/diseases-a-z-index/monkeypox-2/.

Source: Centre for Emerging Zoonotic and Parasitic Diseases, NICD-NHLS; jacquelinew@nicd.ac.za

Rabies in South Africa - An Update

Two human rabies cases (one confirmed and one probable) in children were reported in South Africa between 21 June and 20 July 2022. These cases were reported from iLembe district of KwaZulu-Natal (KZN) Province (confirmed) and Nelson Mandela Bay municipality in the Eastern Cape (EC) Province (probable).

As of 20 July 2022, South Africa reported nine laboratory-confirmed (LC) and five probable (P) human rabies cases, which originate from the EC (LC=4; P=5), Limpopo (LPP) (LC=3) and KZN (LC=2).

From 2018 to date, the majority of human rabies cases have originated from the three aforementioned provinces (EC, KZN, and LPP) (Figure 2), and the source has been mostly dogs (Figure 3). The cases were predominantly in children under the age of 16 years, with males (n=55) being affected twice as much as females (n=29) (Figure 4).

Please visit www.nicd.ac.za for more information on rabies and how to prevent human cases.

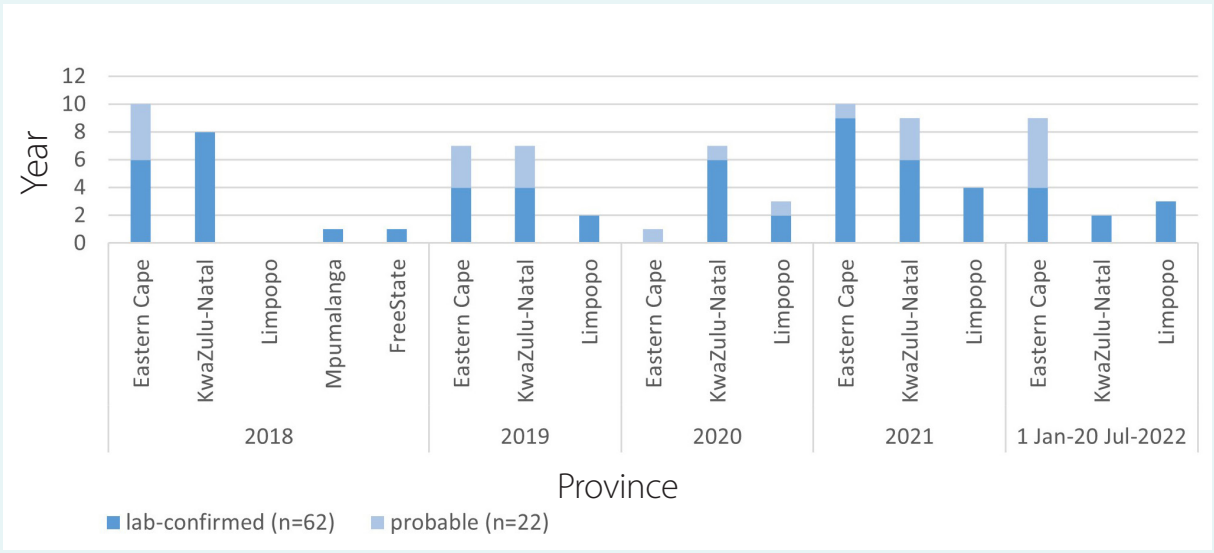

Figure 2. Provincial distribution of human rabies cases (n=84) in South Africa for the period from 2018 to 20 July 2022

ZOONOTIC AND VECTOR-BORNE DISEASES

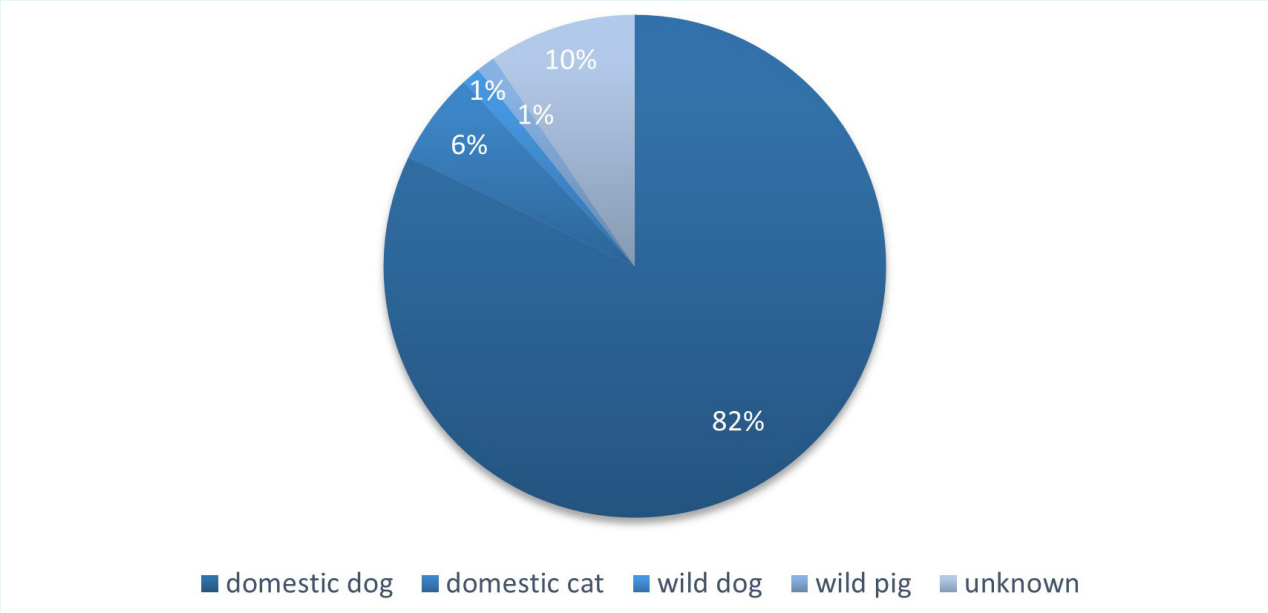

Figure 3. Animal source of human infection for rabies cases in South Africa for the period from 2018 to 20 July 2022.

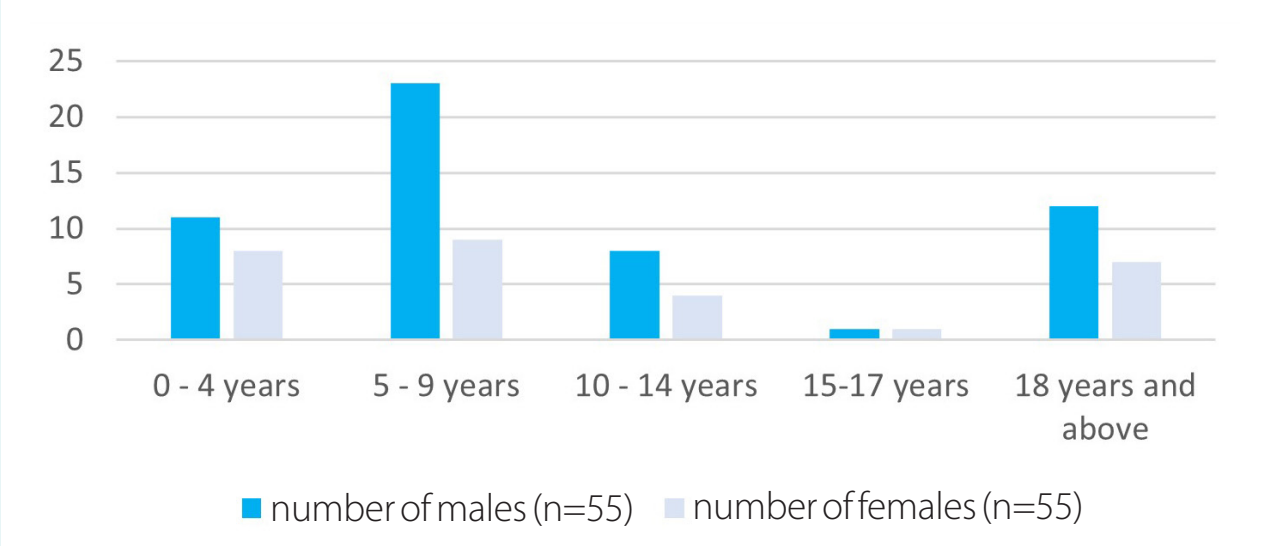

Figure 4. Age and gender distribution of human rabies cases in South Africa for the period from 2018 to 20 July 2022.

Source: Centre for Emerging Zoonotic and Parasitic Diseases, NICD-NHLS; jacqulinew@nicd.ac.za

ENTERIC DISEASES

Enteric fever in South Africa - An update

South Africa is endemic to enteric fever caused by ***Salmonella typhi***, although the prevalence of disease is much lower than in most other countries in Sub-Saharan Africa. It is a Notifiable Medical Condition, meaning that all laboratory-confirmed cases must be officially reported to the Department of Health. However, reported cases significantly underrepresent the true number of cases. The likelihood that enteric fever cases are identified and diagnosed depends on many factors, including how ill the patient is, how aware of the disease healthcare workers are, whether blood culture tests are done, and how accessible laboratory testing for blood cultures is. Blood culture tests are not performed at all levels of health care and are not a routine investigation in many South African healthcare settings; blood culture tests are usually performed only for selected patients who are admitted to hospital. This means that many cases of enteric fever are likely missed across the country, especially those cases with milder disease as well as cases in areas of the country where the necessary laboratory testing is not readily accessible.

The number of reported enteric fever cases in South Africa has declined over the last few decades, and larger outbreaks have become less common. The most recent large outbreak occurred in Delmas in 2005, with over 2900 cases.

After the outbreak in Delmas in 2005, the number of enteric fever cases in South Africa has remained stable with less than 150 cases per year (an average of 97 cases per year) – Figure 5.

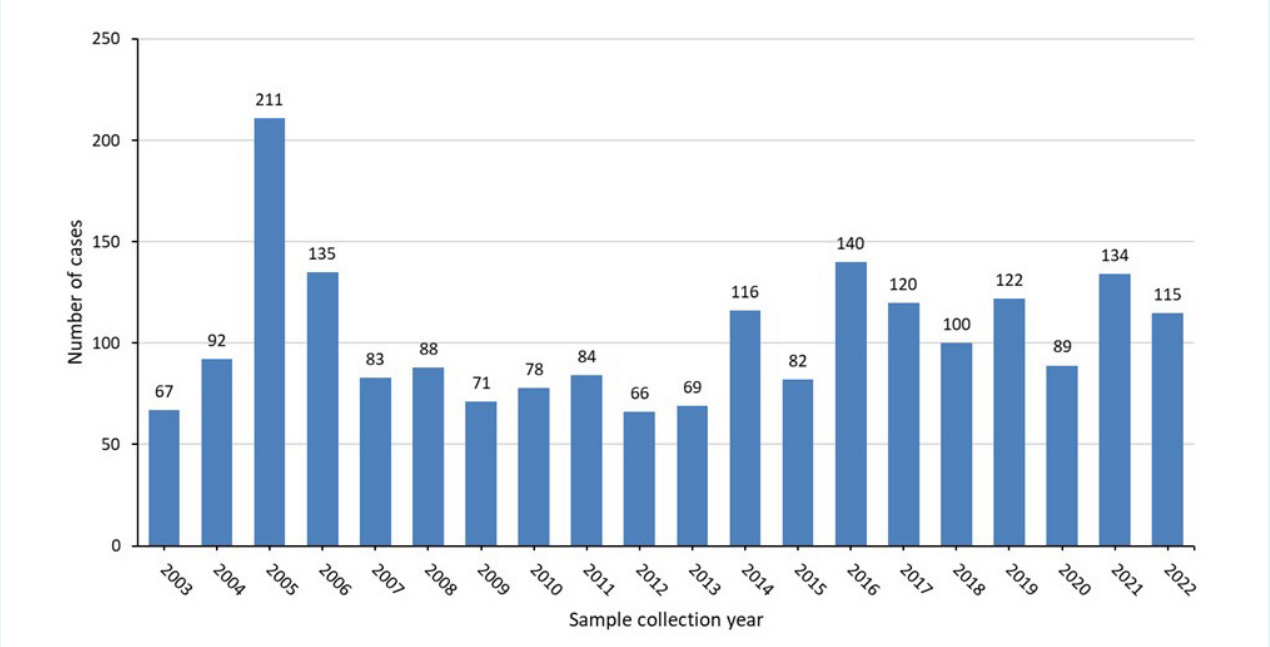

Figure 5. Laboratory-confirmed enteric fever cases, South Africa, 1 January 2003 – 20 July 2022.

Over the past decade (since 2012), Gauteng province usually reported the most cases per year followed by Western Cape, Mpumalanga and KwaZulu-Natal provinces (Figure 6).

ENTERIC DISEASES

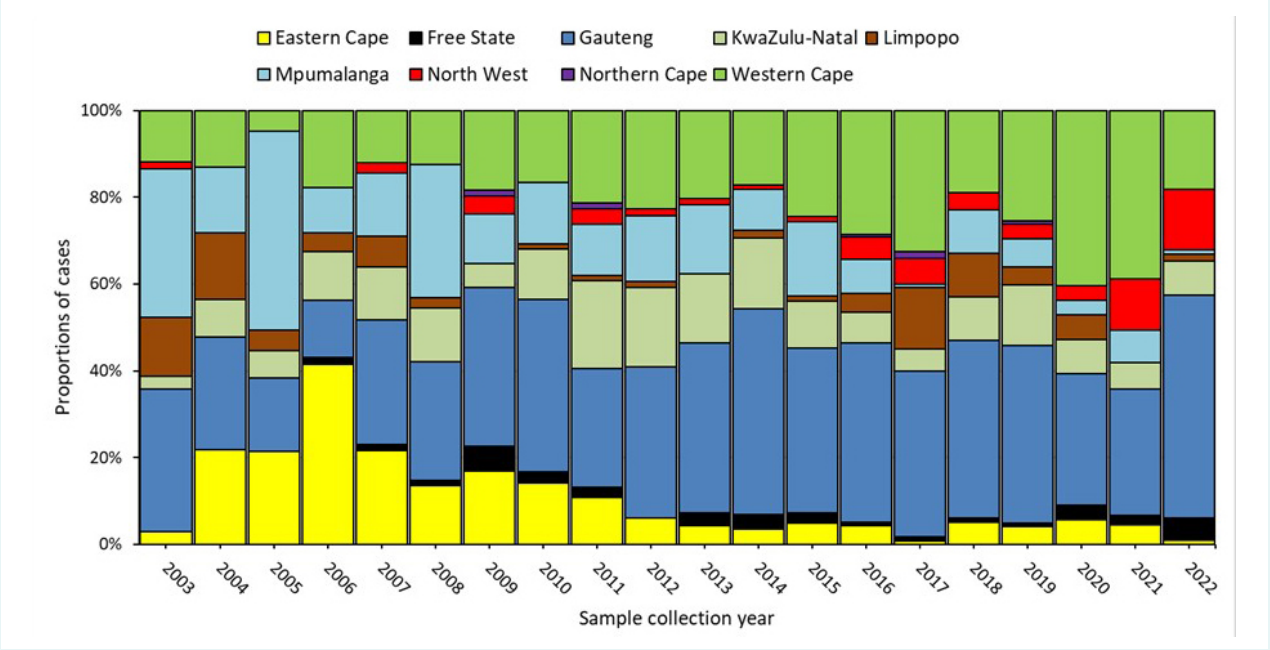

Figure 6. Proportion of laboratory-confirmed enteric fever cases by province, South Africa, 1 January 2003 – 20 July 2022.

During 2020 and 2021, the total number of enteric fever cases across the country (89 cases in 2020 and 134 cases in 2021) was similar to previous years. However, at a provincial level there was an increase in the number of cases reported from Western Cape and North West provinces in 2021, with a concurrent decrease in the number of cases reported from Gauteng (Figure 7).

For Western Cape province, the increase in cases for 2021 was clearly attributable to increased numbers of cases in only 3 districts (City of Cape Town Metro, Cape Winelands and Garden Route), and in North West province the increase was solely due to cases in a single district (Dr Kenneth Kaunda district). A notable increase in the number of cases reported from Gauteng province and district can be observed in the current year (2022) and cases continue to be reported from the North West province (Figure 7).

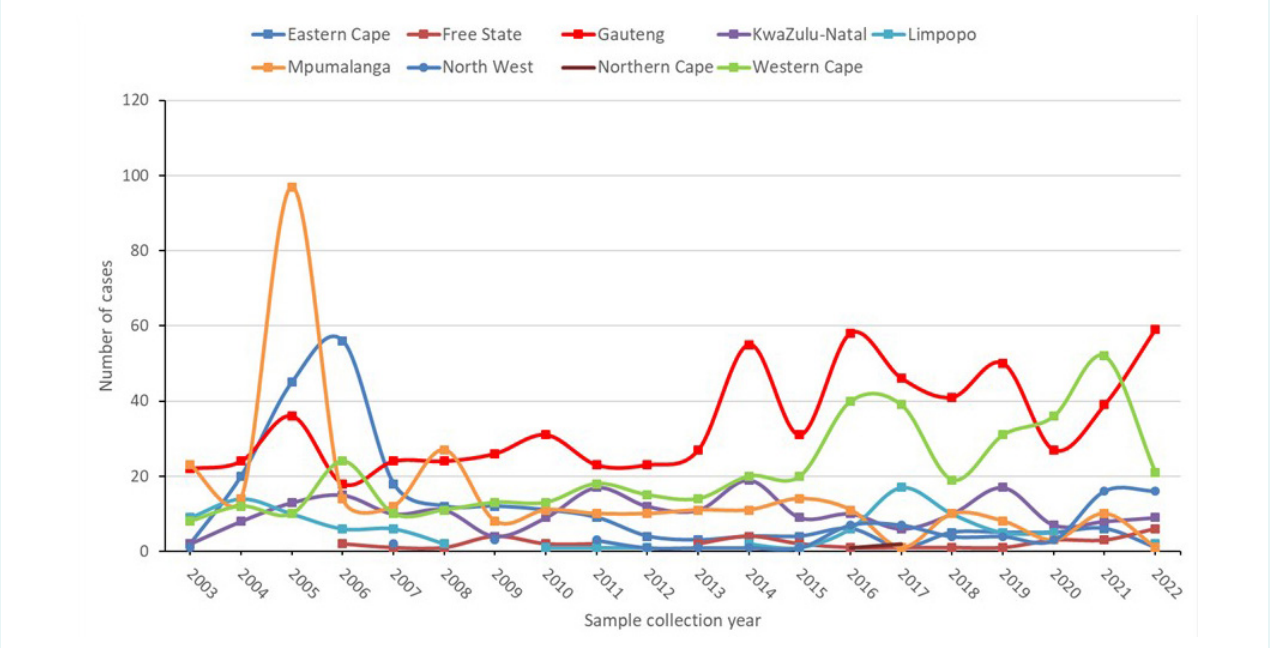

Figure 7. Enteric fever cases by province, South Africa, 1 January 2003 – 20 July 2022.

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Genomic surveillance

Public and private laboratories throughout the country submit *Salmonella typhi* isolates to the Centre for Enteric Diseases (CED), NICD, for further investigation. All isolates are investigated using whole-genome sequencing (WGS) and core-genome multilocus sequence typing (cgMLST) analysis. cgMLST analyses 3002 genes to assess genetic relatedness. A cluster is defined as a group of *Salmonella typhi* isolates that on cgMLST analysis differ from each other by ≤5 alleles – this means that they are highly genetically related. Unfortunately, not all isolates are received, so cases with missing isolates cannot definitively be linked to or excluded from clusters.

Enteric fever in South Africa: 2022

A total of 115 cases of enteric fever have been reported nationally in 2022 to date (20 July 2022) from eight different provinces. Gauteng province reported most cases (51%; 59/115), followed by Western Cape province (18%; 21/115) and North West (14%; 16/115) as shown on table 1 below. Of the 59 cases reported from Gauteng province 53% (31/59) were reported from the City of Tshwane Metro. Most (68%; 21/31) of the cases reported from Tshwane were seen between May and July 2022 (Figure 8).

Table 1. Enteric fever cases by province and year, South Africa, January 2020 – 20 July 2022.

Province	2020	2021	2022	Grand Total
Gauteng	27	39	59	125
Western Cape	36	52	21	109
North West	3	16	16	35
KwaZulu-Natal	7	8	9	24
Mpumalanga	3	10	1	14
Eastern Cape	5	6	1	12
Free State	3	3	6	12
Limpopo	5		2	7
Grand Total	**89**	**134**	**115**	**338**

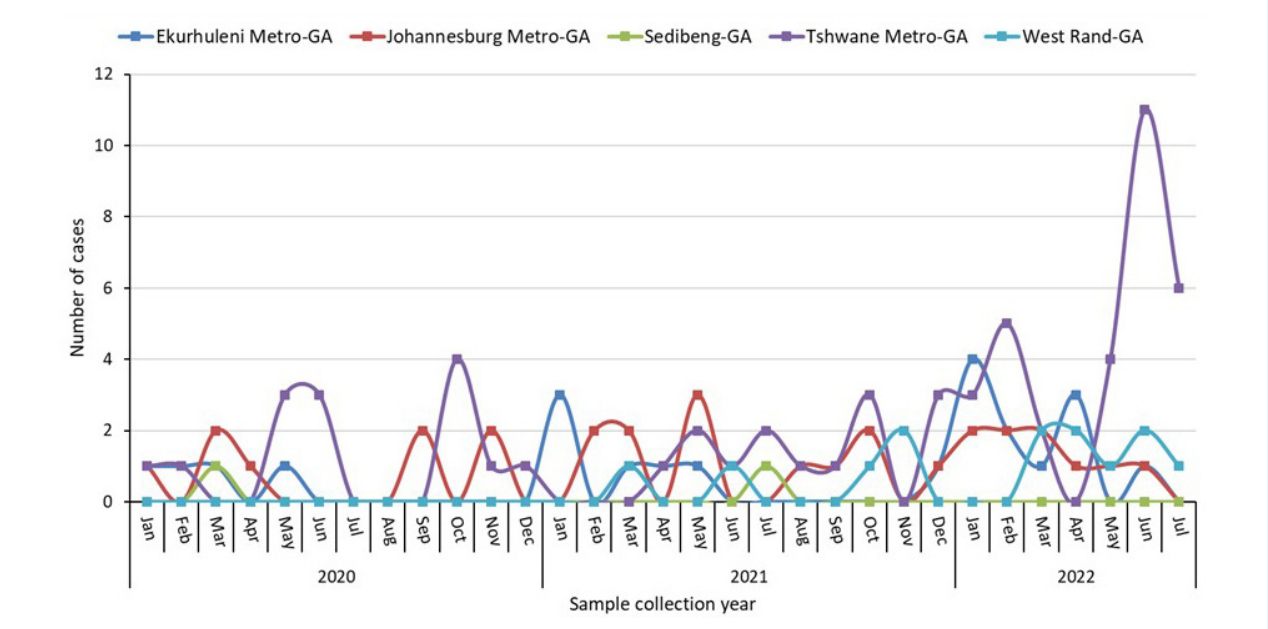

Figure 8. Enteric fever cases by district, Gauteng province, 1 January 2003 – 20 July 2022.

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Whole-genome-sequencing has not yet been completed for cases identified between May and July 2022.

Update on enteric fever clusters

i. Western Cape province

The Western Cape province reported more cases in 2021 than in any other previous years since 2003. The increase was mainly due to cases related to the three WGS clusters that were identified between 2020 and 2022. The current status of the three clusters in Western Cape province is summarised in Table 2. Since February 2022 no new case belonging to any of the three clusters has been identified, suggesting that the clusters are no longer active.

Table 2. Western Cape province Salmonella typhi clusters, January 2020 - 20 July 2022*

District	Number of cases	Date of first case	Date of most recent case
City of Cape Town	19	November 2020	February 2022
Cape Winelands	11	July 2020	May 2021
Garden Route	15	August 2020	February 2022
Grand Total	**45**	**July 2020**	**February 2022**

*The results of WGS and cgMLST analysis are still pending for isolates from recent cases detected in City of Cape Town Metro, so case numbers may change as these results become available.

ii. North West province

As of 20 July 2022 49 enteric fever cases belonging to the Klerksdorp cluster were identified, 13 (North West (n=9) and Gauteng (n=4)) new cases were identified since the last reported on 21 April 2022. While most of the cases hail from North West province (63%, 31/49), cases belonging to the cluster were identified in four other provinces, Gauteng (n=10), Mpumalanga (n=4), KwaZulu-Natal and Free State provinces with two cases each (Figure 9).

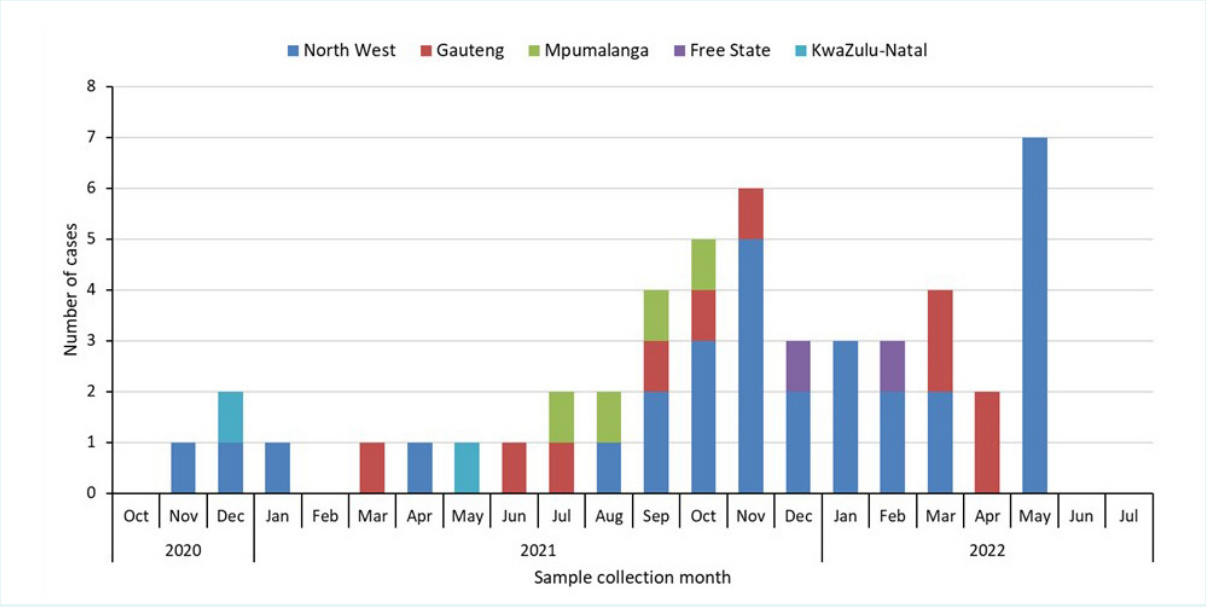

Figure 9. Klerksdorp cluster enteric fever cases by province, November 2020 – 20 July 2022 (N = 49).

iii. Gauteng province

Gauteng province accounted for over 50% of the cases reported nationally in the current year; with most cases reported from Tshwane Metro between May and July. Although WGS results are not yet available for these cases, investigations into the source of the increase in the number of cases from Tshwane are ongoing.

Ten cases belonging to the Klerksdorp cluster strain have been identified in Gauteng; with four new cases identified in the West

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Rand district since the last report on 21 April 2022. In addition, a slow growing cluster has been identified in the province. This has been labelled the 'Gauteng cluster' which now comprises of 25 cases (five new cases since last report). The first Gauteng cluster case was identified in January 2020 and the most recent case in April 2022, as shown in Figure 10.

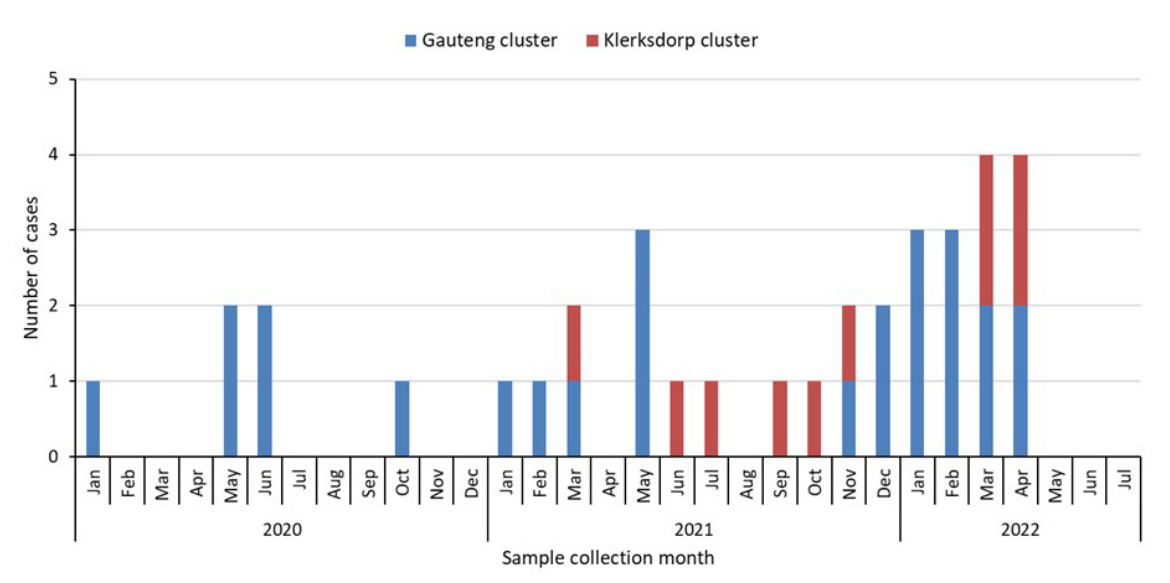

Figure 10. Gauteng province cluster cases, November 2020 – 20 July 2022 (N = 35)

Unlike the clusters in Western Cape and North West provinces, the cases in this cluster are not localised to a single district. A case diagnosed in Rustenburg, North West province, has also been linked to this cluster. The cases span a range of age groups between 1 and 44 years with the mean age of 26 years.

The relevant provincial and district departments of health are aware of all the above-mentioned clusters and outbreak investigations are ongoing. There is no evidence to suggest contamination of municipal water as the source of infection in any of the clusters. No likely or definite source(s) of infection have been identified for the Western Cape and Gauteng clusters so far. For the Klerksdorp cluster, contaminated water in an illicit underground gold mine in the City of Matlosana has been identified as a common source of infection for a subset of the cases. However, multiple concurrent patterns of transmission are likely occurring in this cluster, including ongoing exposure of miners working underground, where miners with acute illness or asymptomatic *Salmonella typhi* carriage cause persistent contamination of underground source(s) of drinking water and/or food. Infected miners (who are acutely ill, asymptomatic carriers, or are shedding during convalescence following acute illness), may then unknowingly transmit infection to household contacts through contamination of food or water in the home. Cases for which the source of infection or exposure is unknown have also been reported, suggesting community transmission. Infected persons who travel may become sources for new chains of transmission in other provinces.

Prevention and control of enteric fever

Healthcare workers countrywide should be aware of enteric fever, so that cases can be detected and treated appropriately. It is essential to follow up on all cases to ensure clearance of the organism and to screen household/close contacts for *Salmonella typhi*. Chronic carriers need to be identified and managed appropriately.

Preventive measures for the public include:

- **Hand hygiene:** Wash hands with soap and safe water before eating or preparing food, and after using the toilet or changing a baby's nappy.
- **Food safety practice:** Follow the World Health Organization's five keys to safer food: keep clean; separate raw and cooked; cook thoroughly; keep food at safe temperatures; and use safe water and raw materials.
- **Using safe water:** Contamination of municipal water is extremely unlikely to be the source of infection in any of these clusters. However, if people are concerned about the quality of water they use for drinking and cooking, then it is recommended to treat the water first by boiling it (place water in a clean container and bring to a boil for 1 minute) or treating it with household bleach (add 1 teaspoon(5mls) of household bleach (containing 3 to 5% chlorine concentration) to 20 litres of water, mix well and leave it to stand for at least 30 minutes before use).

RESPIRATORY DISEASES

COVID-19 in South Africa

From 3 March 2020 through to 16 July 2022 (week 28 of 2022), there were a total of 4 000 545 laboratory-confirmed COVID-19 cases detected in South Africa.

The majority of cases were from Gauteng province (33.1%), followed by the KwaZulu-Natal province (17.9%) and the lowest number of tests were conducted in the Northern Cape province (2.9%). In week 28 of 2022, Gauteng province reported the highest weekly incidence risk (5.8 cases per 100 000 persons), followed by Western Cape province (4.3 cases per 100 000 persons) and Northern Cape province (2.7 cases per 100 000 persons). The other provinces reported weekly incidence below 5.8 cases per 100 000 persons (Table 3 and Figure 11). Also in the past week, eight of nine provinces reported a decrease in weekly incidence risk. The decrease ranged from 0.2 cases per 100 000 persons (8.7% decrease) in Eastern Cape province to 1.1 cases per 100 000 persons (28.7% decrease) in Free State province. Northern Cape province had an increase of 1.2 cases per 100 000 persons (75% increase). The weekly incidence also continues to decrease in all age groups (Figure 12).

Individuals eligible for COVID-19 vaccines are encouraged to vaccinate and to get booster shots as indicated, in order to reduce severe disease and the spread of SARS-CoV-2. The COVID-19 vaccine schedule for people 50 years and above has been updated as of 5 June 2022, with the availability of additional booster doses nationally (https://sacoronavirus.co.za/2022/06/05/media-statement-government-offers-additional-booster-dose-for-people-50-years-and-older/).

With the reduction in SARS-CoV-2 case numbers, the National Institute for Communicable Diseases has made some changes to the weekly reports. The weekly testing report will no longer routinely include antigen testing data, this is because reporting of antigen tests is not consistent. In addition, testing rates and percentage testing positive by sub-districts, age group, and sex, and mean the number of days between the date of specimen collection and date of test result estimates has been removed from the weekly testing report. The weekly epidemiological brief will no longer routinely include detailed provincial breakdowns by district and age groups. The latest epidemiologic brief can be accessed at https://www.nicd.ac.za/diseases-a-z-index/disease-index-covid-19/surveillance-reports/weekly-epidemiological-brief/

Table 3. Number and cumulative/weekly incidence risk of laboratory-confirmed cases of COVID-19 and testing per 100 000 persons by province, South Africa, 3 March 2020 – 16 July (n = 4 000 545)

Province	Cumulative cases (n) (percentage, n/total cases in South Africa)	New cases[1] detected in week 28 of 2022 (10-16 July), n (percentage[2], n/total)	Population in mid-2021[3], n	Cumulative incidence risk (cases per 100 000 persons)	Incidence risk of new cases detected in week 28 of 2021 (cases/100 000 persons)	Tests[4] per 100 000 persons, 10-16July 2022
Eastern Cape	363 962 (9.1)	147 (7.4)	6 676 590	5 451.3	2.2	23.9
Free State	215 964 (5.4)	77 (3.9)	2 932 441	7 364.7	2.6	64.6
Gauteng	1 323 922 (33.1)	916 (45.9)	15 810 388	8 373.7	5.8	108.8
KwaZulu-Natal	716 616 (17.9)	269 (13.5)	11 513 575	6 224.1	2.3	64.4
Limpopo	159 579 (4.0)	45 (2.3)	5 926 724	2 692.5	0.8	9.8
Mpumalanga	202 052 (5.1)	114 (5.7)	4 743 584	4 259.5	2.4	51.7
North West	201 927 (5.0)	87 (4.4)	4 122 854	4 897.7	2.1	31.4
Northern Cape	115 246 (2.9)	35 (1.8)	1 303 047	8 844.4	2.7	49.0
Western Cape	701 277 (17.5)	307 (15.4)	7 113 776	9 858.0	4.3	55.9
Unknown						
Total	**4 000 545**	**1 997**	**60 142 978**	**6 651.7**	**3.3**	**61.6**

[1]New cases refer to cases whose samples were collected or received in the current reporting week
[2]Percentage=n/total number of new cases (specimen collected or received in current reporting week)
[3]2021 Mid-year population Statistics South Africa
[4]Data on number of tests conducted sourced from COVID-19 weekly testing report of the same reporting week

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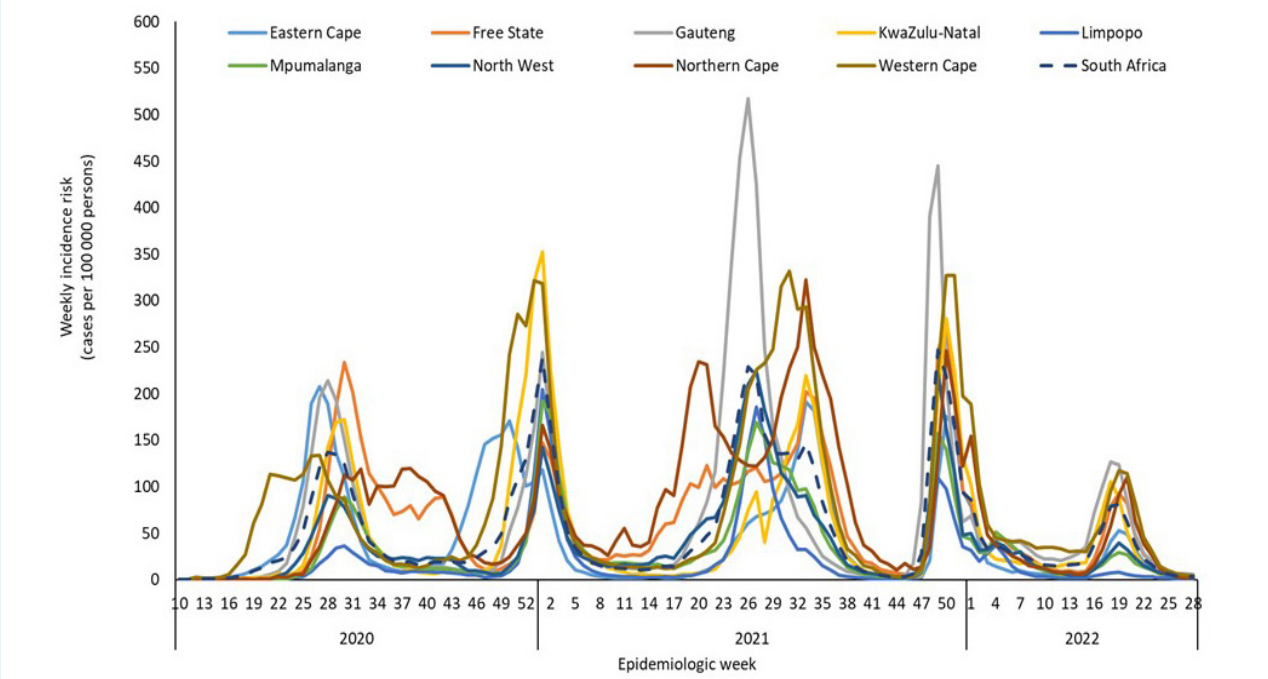

Figure 11. Weekly incidence risk of laboratory-confirmed cases of COVID-19 by province and epidemiologic week South Africa 3 March 2020 – 16 July 2022 (n = 4 000 545)

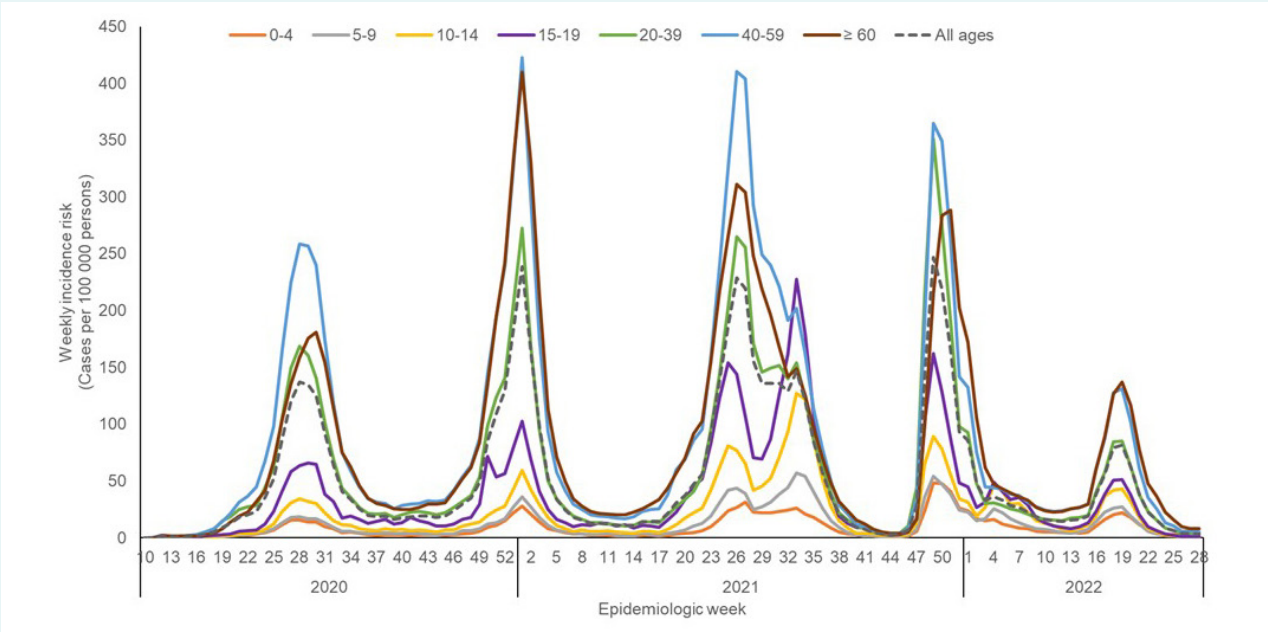

Figure 12. Weekly incidence risk of laboratory-confirmed cases of COVID-19 by age group in years and epidemiologic week South Africa 3 March 2020 – 16 July 2022 (n = 3 963 752, 36 793 missing age.)

Source: Centre for Respiratory Diseases and Meningitis, NICD-NHLS; nicolac@nicd.ac.za

RESPIRATORY DISEASES

Influenza season update

As of 3 January 2022 to 17 July 2022 (week 28), 228 cases of influenza have been detected from pneumonia surveillance (public hospitals) sentinel sites. Of these 142 (62%) were influenza A(H1N1) pdm09, 57 (25%) influenza A(H3N2), 7 (3%) influenza A (subtype inconclusive), 4 (2%) influenza A (pending results), 12 (5%) influenza B (Victoria), 3 (1%) influenza B (lineage inconclusive and 3 (1%) influenza B (pending results) (Figure 13). The 2022 influenza season started in week 17 (week starting 25 April 2022) when the detection rate among patients in pneumonia surveillance breached the epidemic threshold as determined by the Moving Epidemic Method (MEM) and in week 28, the impact was below the threshold (Figure 14). The entire 2022 seasonal wave so far was of low influenza activity, with a seasonal peak in week 25 (week starting 20 June 2022).

The majority of the cases were females (123/228, 54%), enrolled from Gauteng and Western Cape sentinel sites (53/228, 23% each), and were in children under 5 years old (104/228, 45%) (Figure 15).

In the majority of otherwise healthy young persons, influenza is an uncomplicated infection, and in rare events healthy individuals may present with severe influenza illness or complications. Complications of influenza, e.g. pneumonia, are more common in pregnancy, in persons over 65 years of age, those with other health conditions, for example, those affecting the heart or lung, diabetics, or persons with a weakened immune system. Clinicians are reminded to encourage patients at increased risk for severe influenza illness and complications to vaccinate for influenza.

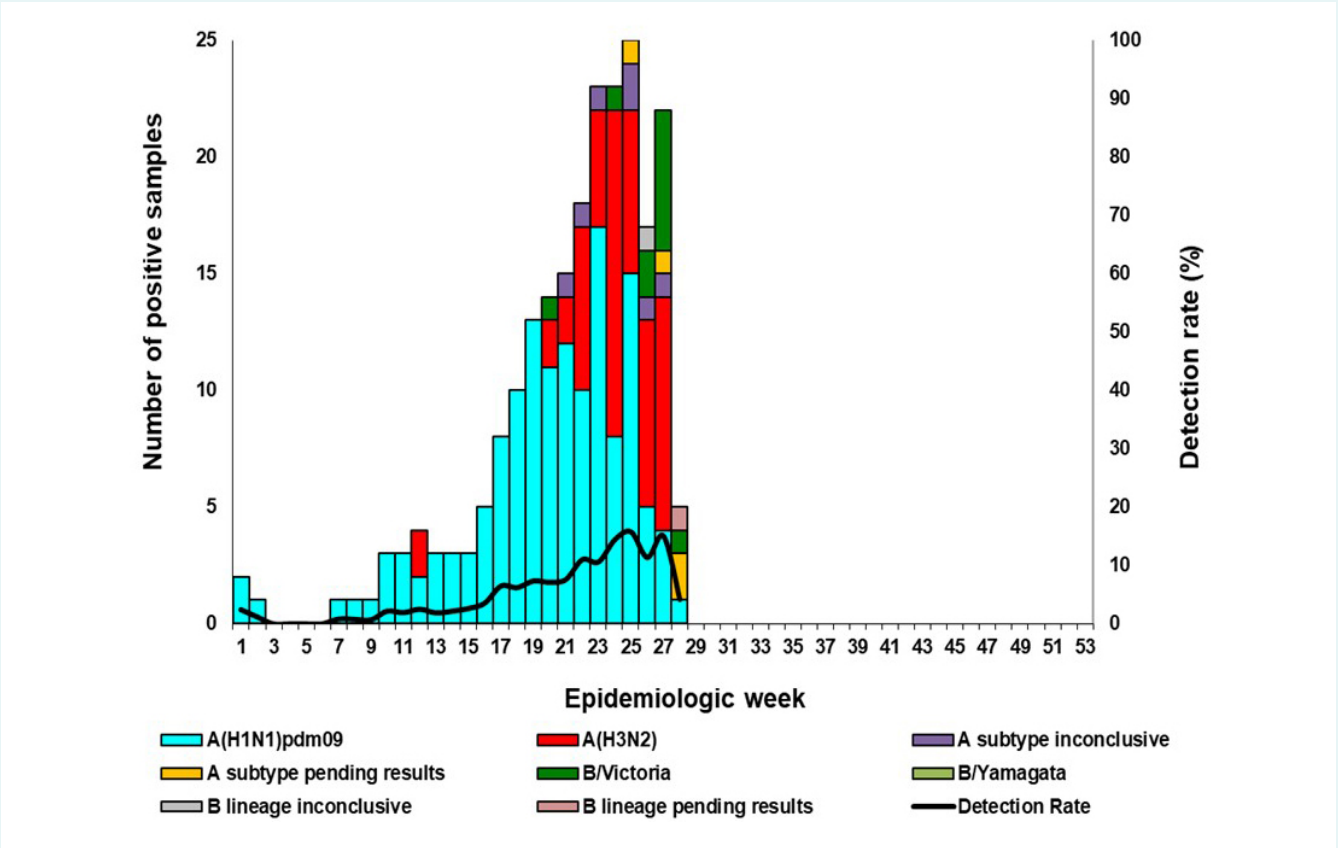

Figure 13. Number of influenza positive cases by influenza subtype and lineage and detection rate by week, pneumonia surveillance public hospitals, 03/01/2022 – 17/07/2022

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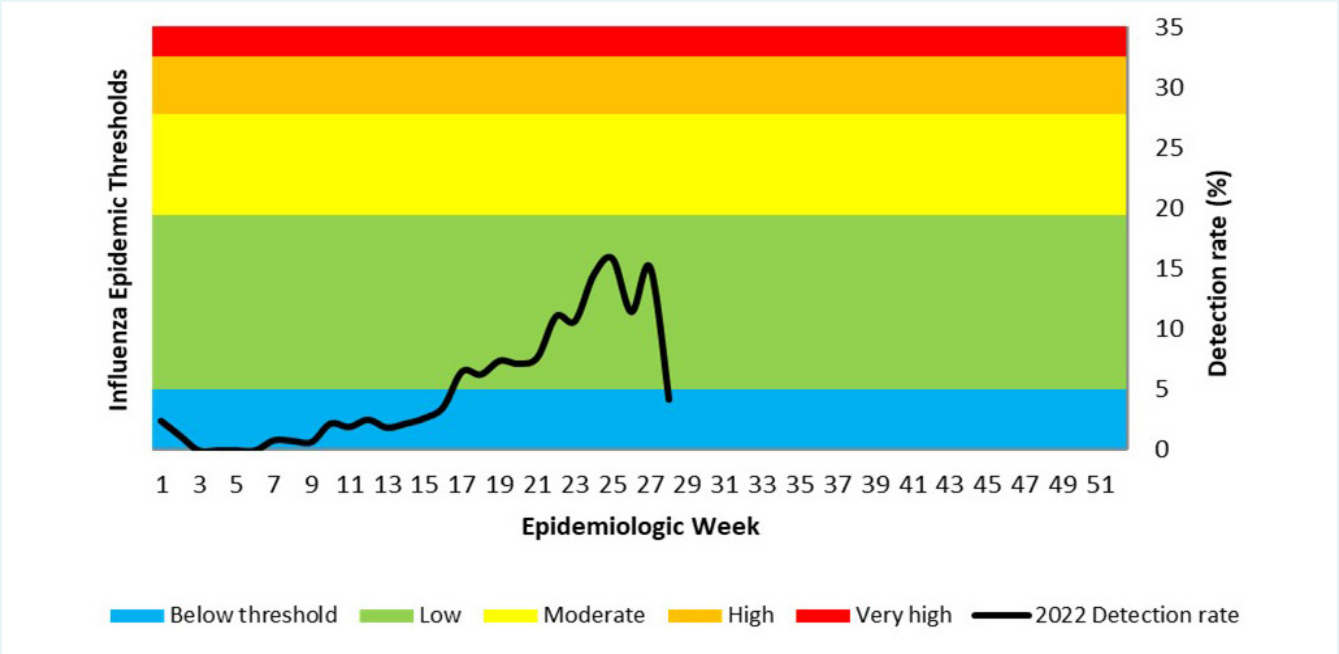

Figure 14. Influenza percentage detections and epidemic thresholds* among cases of all ages, pneumonia surveillance public hospitals, 03/01/2022 – 17/07/2022

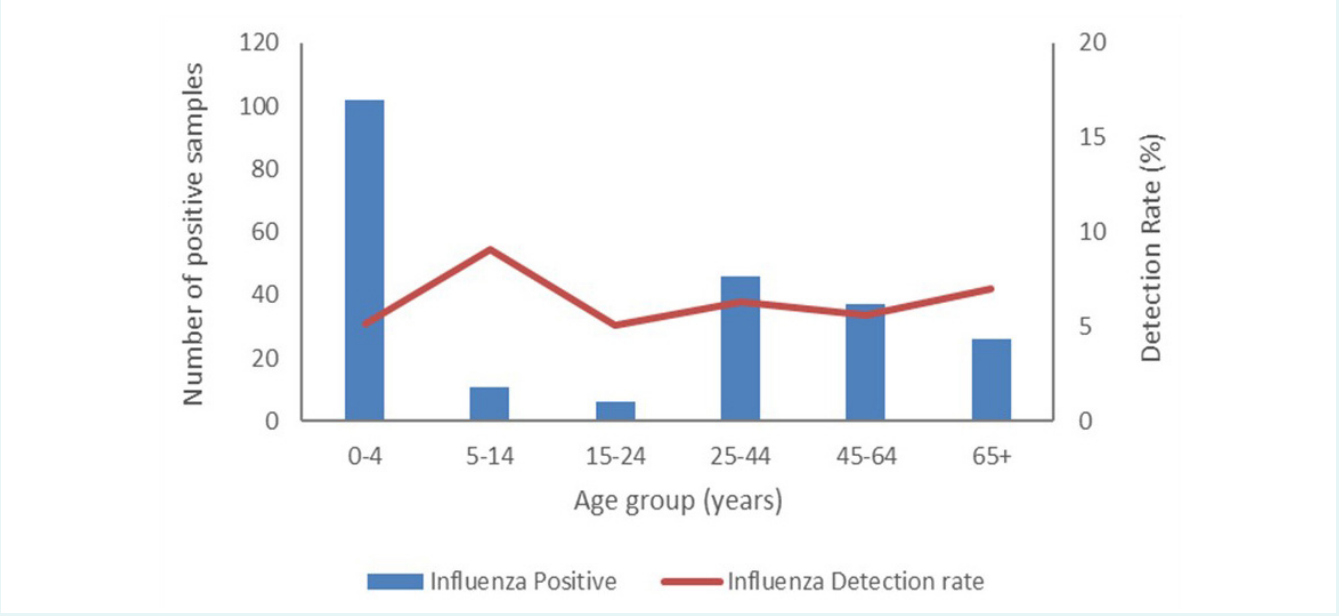

Figure 15. Number of patients (all ages) testing positive for influenza by age-group and detection rate, pneumonia surveillance public hospitals, 03/01/2022 – 17/07/2022

RESPIRATORY DISEASES

Respiratory syncytial virus (RSV) update

The 2022 RSV season which started in week 7 (week starting 14 February 2022) and peaked in week 17 (week starting 25 April 2022) ended in week 26 (week starting 27 June 2022). RSV activity among children <5 years is currently below the threshold level (Figure 16). As of week 28 of 2022, 720 RSV cases were detected among cases of all ages admitted with lower respiratory tract illness at pneumonia surveillance sentinel sites. Of which, RSV-A was 30% (215/720), RSV-B 67% (480/720), RSV-AB <1% (3/720), RSV subgroup inconclusive 2% (15/720) and RSV subgroup results were pending for 1% (7/720). The majority of RSV-positive cases were from the Western Cape province surveillance sites (308/720, 43%) and were in children below 5 years of age (663/720, 92%) (Figure 17 and Figure 18).

Occasional cases of RSV continue to be detected even though the season has ended and therefore clinicians are encouraged to think of RSV during their diagnosis process, especially for infants and elderly patients.

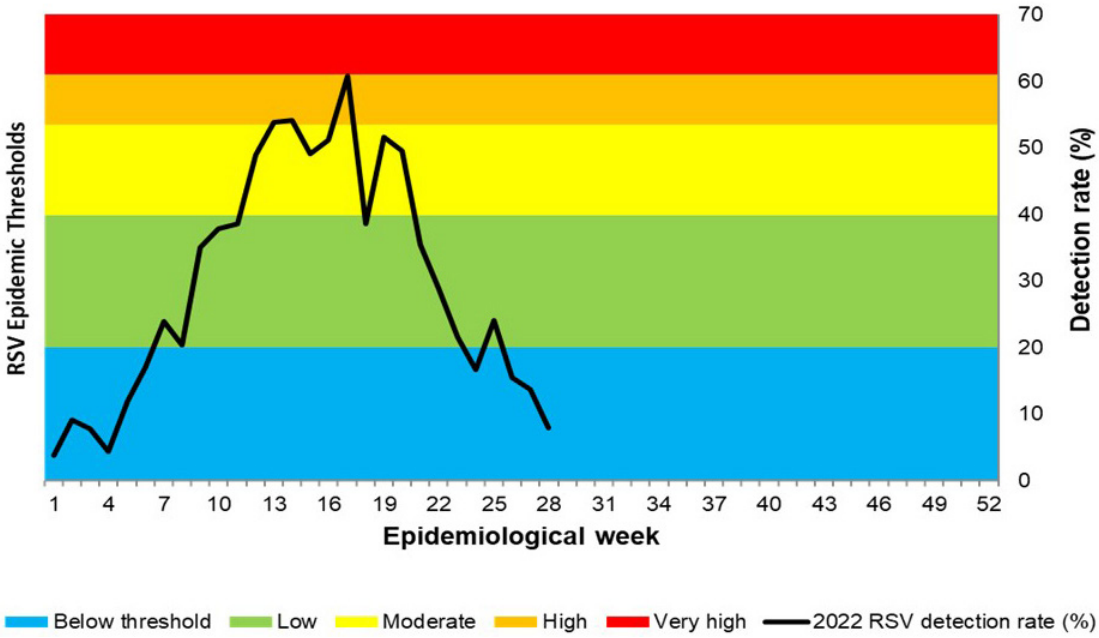

Figure 16. Respiratory syncytial virus (RSV) percentage detections and epidemic thresholds* among children aged < 5 years, pneumonia surveillance public hospitals, 03/01/2022 – 17/07/2022

RESPIRATORY DISEASES

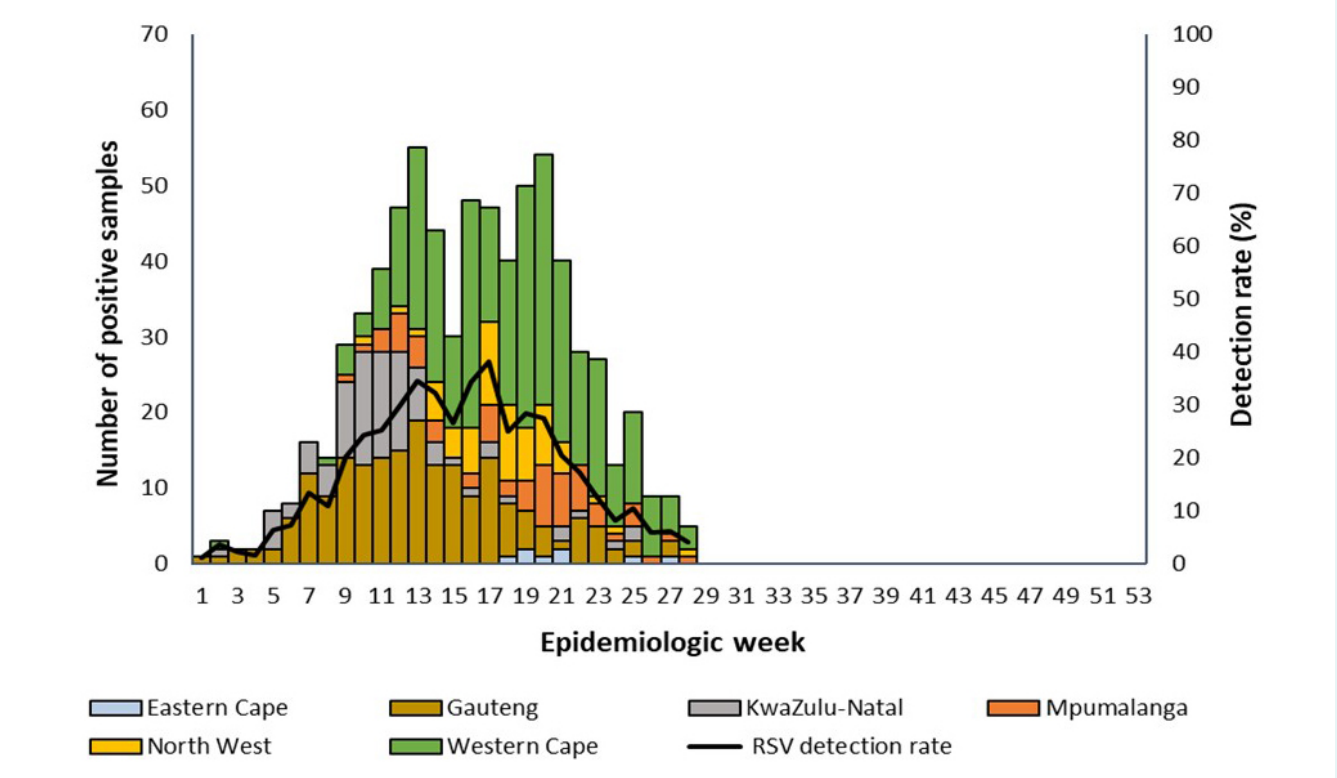

Figure 17. Number of patients (all ages) testing positive for respiratory syncytial virus by province and detection rate by week, pneumonia surveillance public hospitals, 03/01/2022 – 17/07/2022

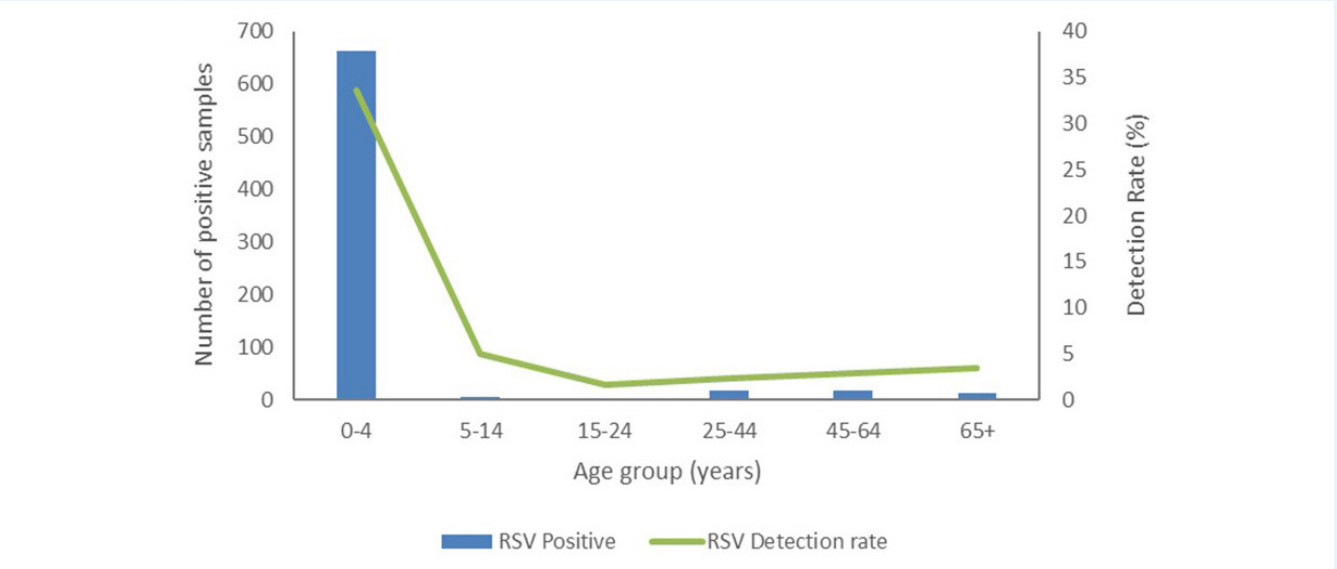

Figure 18. Number of patients (all ages) testing positive for respiratory syncytial virus (RSV) by age-group and detection rate, pneumonia surveillance public hospitals, 03/01/2022 – 17/07/2022

Source: Centre for Respiratory Diseases and Meningitis, NICD-NHLS; ThulisaM@nicd.ac.za

TUBERCULOSIS

Recovery of tuberculosis Xpert testing volumes – an update

The COVID-19 pandemic and associated restrictions disrupted routine healthcare services including screening and diagnosis of tuberculosis (TB). We previously reported TB Xpert MTB/RIF (Xpert) testing volumes and diagnosis in South Africa through June 2021. Here we provide an update through July 2022.

Monthly Xpert testing volumes dropped below the lower forecast bound in April 2020 and remained suppressed through August 2020 resulting in 448,000 (95% CI: 305,000 to 591,000) fewer Xpert TB tests than forecast during this period. The National Department of Health, guided by NICD's monthly TB testing surveillance reports, implemented a TB Recovery Plan to increase TB screening, diagnosis, and treatment outcomes. Test volumes subsequently recovered remaining within forecast bounds between September 2020 and November 2021. Since December 2021 monthly Xpert testing volumes have exceeded the upper confidence forecast bounds through June 2022, resulting in 374,000 (95% CI: 203,000 to 544,000) more tests conducted than forecasted in this 7-month period (Figure 19). The higher than forecast testing volumes were largely driven by Gauteng, KwaZulu-Natal, and Mpumalanga provinces which exceeded their upper provincial confidence bounds.

Nationally, the number of Xpert tests positive for TB has generally remained within the forecast bounds since October 2020. The percentage of testing positive has trended downwards close to the lower projection bound since February 2022.

TB testing volumes have recovered from the COVID-19 disruptions and have exceeded the upper forecast bounds from December 2021 through June 2022. The decline in the percentage testing positive suggests that at a national level the COVID-19-related impact on TB testing and diagnosis has largely resolved, though provincial differences remain.

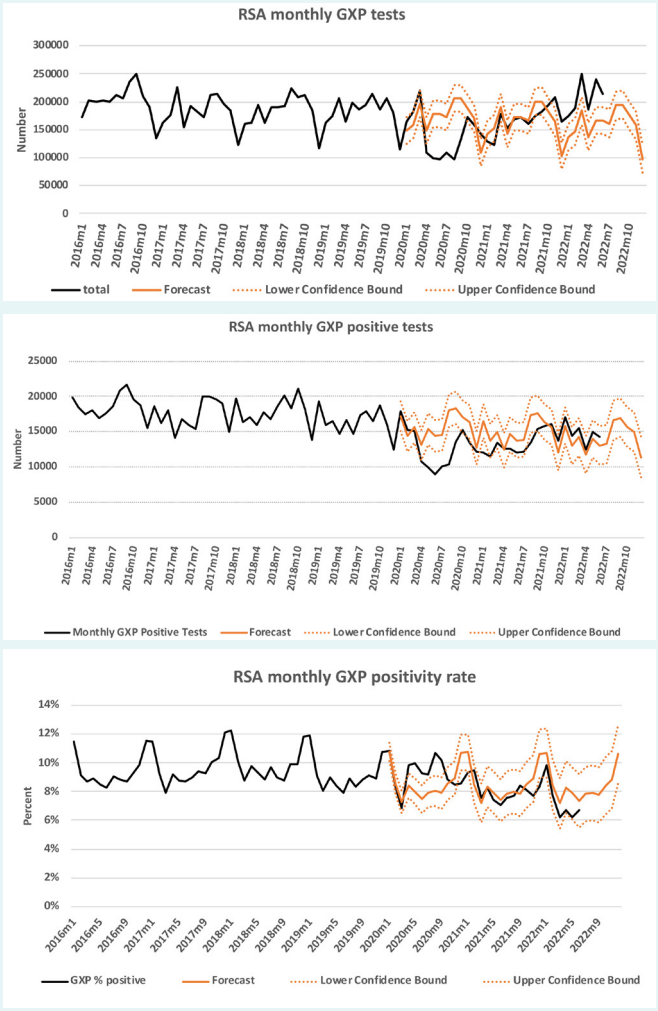

Figure 19. Forecast and observed counts of A) Xpert tests B) positive Xpert tests C) proportion of Xpert samples testing positive for tuberculosis in South Africa, January 2016 to June 2022

Source: Centre for Tuberculosis, NICD-NHLS; shaheedvo@nicd.ac.za

BEYOND OUR BORDERS

The 'Beyond our Borders' column focuses on selected and current regional and international diseases that may affect South Africans travelling outside the country.

Ebola virus disease – an update

On 4 July 2022, the Ebola virus disease (EVD) outbreak in the Democratic Republic of Congo (DRC) that affected the Mbandaka and Wangata health zones of the Equateur province, was declared over by the Ministry of Health (MoH). The declaration was made after there were no new cases reported 42 days (twice the maximum incubation period) after the burial of the last confirmed case, in keeping with WHO recommendations. The outbreak was initially declared on 23 April 2022 and was the third EVD outbreak in four years in the Equateur province.

There was a total of five cases, four laboratory-confirmed and one probable case, identified between 23 April and 4 July, with a case fatality ratio of 100%. The three health areas that were affected were all in Mbandaka City, namely, Mama Balako health area in Wangata health zone, as well as Libiki and Motema Pembe health areas in Mbandaka health zone.

The index case was a 31-year-old male who presented with symptoms of fever and headache and later died on 21 April 2022. The presence of the Ebola virus was detected in both blood and on an oral swab by RT-PCR and was confirmed by the reference lab, the National Institute of Biomedical Research (INRB), in Kinshasa. The four additional cases were all epidemiologically linked, with the last confirmed case having been reported on 19 May 2022. A total of 1076 contacts was identified and followed up for 21 days.

During the outbreak period, 12 214 (98%) of the 12 476 alerts that were reported were investigated and 1097 (9%) were classified as suspected cases of EVD. There were 8 health zones involved, with the majority of alerts (11 519) coming from Mbandaka City. Between 27 April and 3 July 2022, a ring vaccination strategy was implemented in the affected health zones, and 2104 persons, including 1307 frontline health workers, were vaccinated with the Ervebo vaccine.

WHO considers the re-emergence of EVD in the Democratic Republic of Congo to be a major public health concern. The country's ability to rapidly detect and respond to future outbreaks may be jeopardized by longstanding socio-economic problems, political instability, challenges in terms of epidemiological surveillance, as well as ongoing outbreaks of major infectious diseases, including COVID-19, cholera, and measles.

Source: https://www.who.int/emergencies/disease-outbreak-news/item/2022-DON398

Dengue fever – an update

As of July 2022, there has been an increase in dengue cases noted across the globe when compared to the same time last year. According to the Pan American Health Organisation (PAHO), the Americas are experiencing almost double the number of cases now, compared to 2021, which could be the result of several reasons, including the easing of lockdowns and travel restrictions. Similarly, the WHO reported an increase in cases across the majority of the Western Pacific Region with exceptions relating to China and the Pacific Island countries.

Dengue must be considered as a differential diagnosis in persons with acute febrile illness returning from endemic areas. Dermatological clinical manifestations are common such as an erythematous rash. Patients also commonly complain of myalgia and thrombocytopenia and lymphopenia are usually noted on blood tests. Most patients have a self- limiting illness and prevention of mosquito bites is key to reducing the risk of being infected.

https://www.healthmap.org/dengue/en/
https://www3.paho.org/data/index.php/en/mnu-topics/indicadores-dengue-en/dengue-nacional-en/252-dengue-pais-ano-en.html
https://www.who.int/news-room/fact-sheets/detail/dengue-and-severe-dengue

BEYOND OUR BORDERS

Marburg virus disease – Ghana

On 17 July 2022, Ghana declared its first-ever outbreak of Marburg virus disease after two laboratory-confirmed cases werere ported in the southern Ashanti region of the country.

The two cases were unrelated, but, presented to the same healthcare facility within days of each other. The symptoms exhibited by both patients included fever, chills, general malaise, bleeding from the nose and mouth and bloody stools, and both died shortly after presenting to the hospital. The first case was a 26-year-old male farm worker who had arrived from Bogoso (Western Region which is bordered by Côte d'Ivoire) on 24 June. He sought treatment on 26 June and died on 27 June. The second case was a 55-year-old male farm worker who lived in Bogyawe-Ankaase in the Bekwai Municipality, who presented to the same hospital on 28 June and died later that day. Blood samples were sent to Noguchi Memorial Institute of Medical Research (NMIMR) and both cases tested positive for Marburg virus by RT-PCR on 30 June. As of 19 July 2022, a total of 98 contacts, including healthcare workers and community members, have been identified and are in self-quarantine. Epidemiological investigations are ongoing; however, the source of this outbreak has yet to be identified.

This is only the second outbreak of Marburg in West Africa, following the single-case outbreak that was declared over in Guinea on 16 September 2021. Previous cases and outbreaks have been reported in other parts of Africa including Angola, the Democratic Republic of Congo, Kenya, South Africa (in a person who had recently travelled to Zimbabwe) and Uganda.

Marburg virus is highly virulent and is part of the same family as the Ebola virus. Marburg virus disease is a haemorrhagic fever that has a case fatality rate of up to 88%. The virus is initially transmitted to humans from exposure to Rousettus aegyptiacus fruit bat colonies, which are usually found in caves or mines. Human-to-human transmission happens through direct contact with bodily fluids of infected people and with contaminated surfaces and materials (e.g. bedding, clothing). The incubation period is between 2 and 21 days and signs and symptoms of the disease include acute-onset fever, severe headache and severe malaise, which can be followed by gastrointestinal symptoms. Haemorrhagic manifestations develop between days 5 and 7 and the majority of deaths occur after severe blood loss and shock, between 8 and 9 days after symptom onset.

There are currently no approved vaccines or antiviral treatments for Marburg virus disease; however, early supportive care and symptomatic treatment have been shown to improve survival. Potential treatments, including blood products, immune therapies and drug therapies, as well as candidate vaccines with phase 1 data are currently being evaluated.

Sources: https://www.who.int/news-room/fact-sheets/detail/marburg-virus-disease
https://www.afro.who.int/countries/ghana/news/ghana-declares-first-ever-outbreak-marburg-virus-disease-0
https://extranet.who.int/ihr/eventinformation/print/bulletin/41552-event-update-2022-07-19[20 Jul 2022 09:04:24]

Poliovirus – Mozambique, New York

On 15 May 2022, the Global Polio Laboratory Network (GPLM) confirmed the presence of a case of wild poliovirus type 1 (WPV1) in Mozambique. This is the second case of WPV1 in the South East region of Africa, following the confirmation of a case in Malawi in February. The Mozambique isolate is genetically linked to a strain of WPV1 detected in Pakistan in 2019, similar to the Malawi case, and indicates ongoing transmission in the sub-region of Africa. There is a high risk of international spread, especially across the South East region of Africa, due to large-scale migration, sub-optimal immunity, and surveillance gaps. Mozambique, in particular, has also been affected by the concurrent outbreak of seven cases of circulating vaccine-derived poliovirus type 2 (cVDPV2) since 2021.

A multi-country emergency outbreak response, involving Mozambique, Malawi, Tanzania, Zambia, and Zimbabwe, has been implemented in response to the WPV1 case in Malawi in February and aims to reach 23 million children. So far, more than 4,5 million children have been vaccinated with the bivalent oral poliovirus vaccine (bOPV) in Mozambique.

There has also been a case of vaccine-derived poliovirus (VDPV) in Rockland County, New York, which was confirmed by the CDC on 22 July 2022. This is the first confirmed case of polio in the US since 2013. The CDC reported that the virus was transmitted to the patient from an individual who received the OPV, a vaccine that has not been administered in the US since 2000.

Wild polioviruses have a significantly higher risk of a geographic spread than VDPVs; however, WHO recommends a comprehensive outbreak response to both strains as they are both capable of causing paralytic disease in children. WHO also advises that all countries strengthen surveillance for acute flaccid paralysis (AFP) cases and commence planned expansion of environmental surveillance, so that new virus importation may be rapidly detected and dealt with. All countries should also maintain high coverage levels of routine immunizations to minimise the consequences of any new virus importation.

Sources: https://www.who.int/emergencies/disease-outbreak-news/item/2022-DON395
https://rocklandgov.com/departments/county-executive/press-releases/2022-press-releases/rcdoh-vaccinates-18-people-against-polio-friday/

BEYOND OUR BORDERS

Figure 20. Current outbreaks/events that may have implications for travellers. Numbers correspond to text above. The red dot is the approximate location of the outbreak or event.

WHO AFRO UPDATE

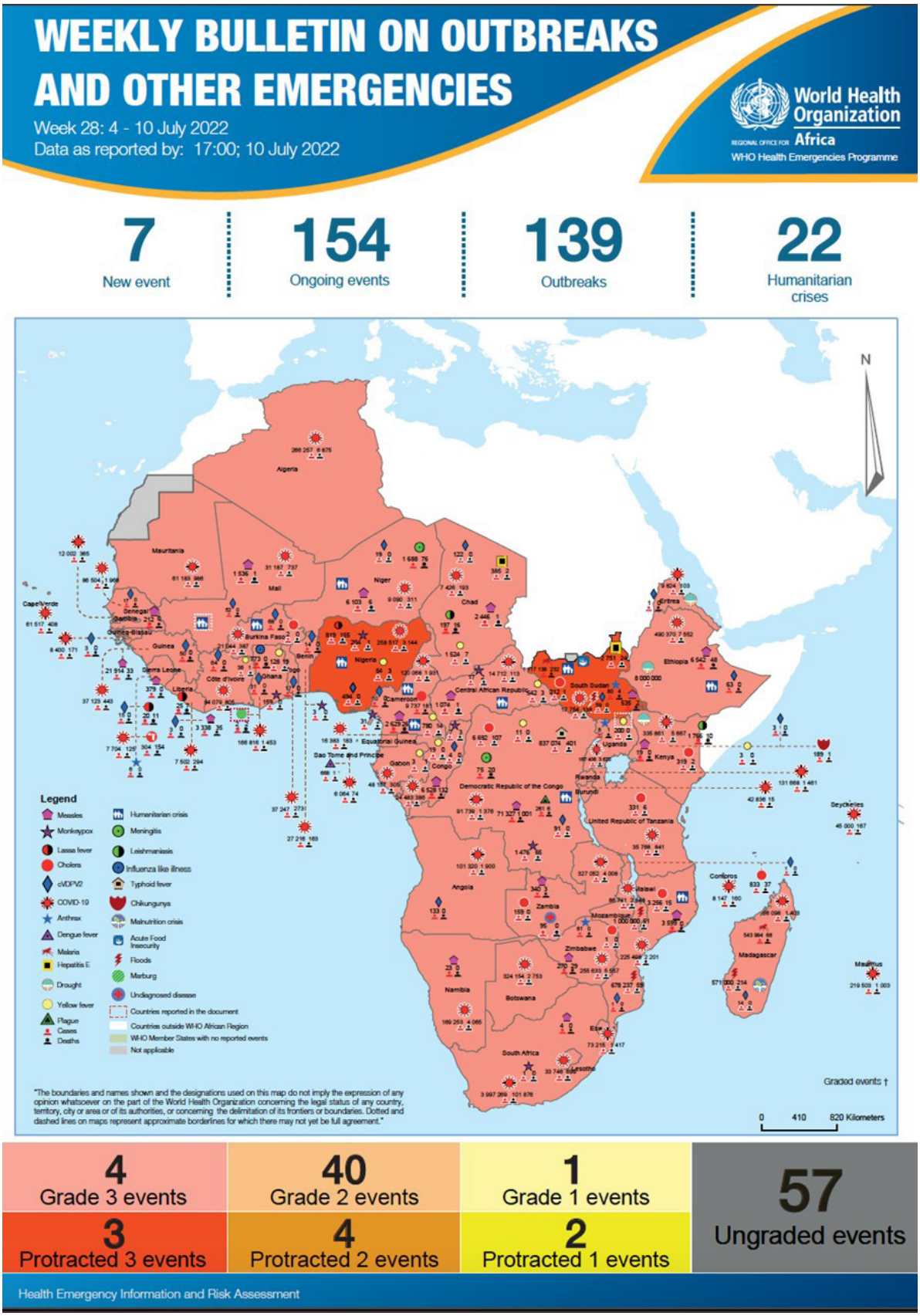

Figure 21. The Weekly WHO Outbreak and Emergencies Bulletin focuses on selected public health emergencies occurring in the WHO African Region. The African Region WHO Health Emergencies Programme is currently monitoring 140 events. For more information, see link below:
https://apps.who.int/iris/bitstream/handle/10665/352474/OEW11-0713032022.pdf