The Health Press

The Health Press - Zambia is Published by the Zambia National Public Health Institute in Zambia since January 2017

QUARTER 1

VOL 7 ISSUE 1

Email Editor: healthpress@znphi.co.zm
Website: http://znphi.co.zm/thehealthpress/
Suggested citation:
[Author surname] [Author Initial]. [Article title].
Health Press Zambia Bull 2017;7(1): [Inclusive page number]

Table of contents

EDITORIAL

Strength Through Collaboration: Empowering Public Health Security via Partnerships at Zambia's National Public Health Institute

ML Mazaba

Editor in Chief, The Health Press-Zambia, Zambia National Public Health Institute, Lusaka, Zambia
Correspondence: Dr Mazyanga Lucy Mazaba (Mazyanga.mazaba@znphi.co.zm)

Citation style for this article

Mazaba ML. Strength Through Collaboration: Empowering Public Health Security via Partnerships at Zambia's National Public Health Institute. Health Press Bull. 2023;07(1):3.

PARTNERSHIPS are an integral part of the Zambia National Public Health Institute (ZNPHI) strategies for advancing and safeguarding Public Health Security. The Institute which is a Statutory Body under the Ministry of Health works alongside key government agencies, national, and international organizations as well as non-state organizations to promote mutual strategies, research, and policies around disease surveillance, evidence-based prevention, and control of outbreaks/epidemics to? build core public health capacities to ensure that the country's population and those in the region and beyond are safeguarded?

The ZNPHI values its partnerships and collaborations. It is for this reason, the ZNPHI launched a Partnership Forum, a place where policy and technical leads share experiences and information for safeguarding public health Security.

The Partnership model is a globally acceptable impression and various countries and organizations across the globe are implementing it. Partnerships are a common mode of tackling large, complex, and expensive public health problems. complex health situations by leveraging the philosophies, resources, and experiences of different partners.

In a book edited by Michael R. Reich, it is emphasized that partnerships can produce innovative strategies and positive consequences for precise public health goals, and they can generate powerful mechanisms for addressing.

The response to the COVID-19 in Zambia and indeed other outbreaks and epidemics leveraged on the partnerships as a multisectoral response approach is emphasized. Evidently the success is alluded to in these bilateral and multilateral relations.

This issue publishes a perspective, some scientific articles, and a Public Health Bulletin section. The ZNPHI has in this quarter focused on responding through a multisectoral approach to COVID-19, cholera, and measles outbreaks.

Advancements in Surveillance and Disease Intelligence: A Perspective on the M-Health DHIS2 App

M Haketa, R Saeluzika-Mzungu, R Landson, ML Mazaba

Zambia National Public Health Institute, Lusaka, Zambia
Correspondence: Dr. Melissa Haketa (haketamelissa@gmail.com)

Citation style for this article

Haketa M, Saeluzika-Mzungu R, Landson R, Mazaba ML Advancements in surveillance and disease intelligence: A perspective on the M-Health DHIS2 App. Health Press Bull. 2023;07(1):4-5.

In the course of this year, the surveillance and disease intelligence (SDI) cluster has taken a notable step forward in harnessing the power of technology within the realm of public health. Presently, the SDI department is engaged in the comprehensive evaluation of the efficacy of a mobile health (M-Health) application, based on the DHIS2 platform, through a pilot study spanning five districts. Among these districts, namely Nakonde, Chilililambomwe, Chirundu, and Lusaka, successful assessments have already been concluded.

This undertaking carries paramount significance, for it is poised to revolutionize the dissemination of information regarding disease trends, thereby establishing an expedient flow of data across all tiers of reporting. The M-Health DHIS2 App stands as a transformative instrument, uniquely positioned to bridge the existing gap between healthcare providers and the communities they serve. Extensive evidence attests to the pivotal role of technology in the healthcare sector, effectively bolstering the security of public health while facilitating the targeted deployment of interventions.

As the pilot study progresses, the prospect of a more interconnected healthcare landscape emerges. The M-Health DHIS2 App serves as a conduit, enabling seamless communication between frontline healthcare workers and the populace.

The real-time data collection and transmission capabilities of this application offer an avenue to anticipate and respond to shifts in disease patterns with unprecedented agility.

The integration of technology in healthcare not only elevates the efficiency of data dissemination but also establishes a fortified line of defense against potential health crises. This becomes particularly pertinent in the era of evolving health challenges and global interconnectedness. The strategic implementation of technology-driven solutions like the M-Health DHIS2 App resonates as a proactive measure, empowering healthcare stakeholders to stay ahead of the curve by promptly identifying trends and swiftly implementing tailored interventions.

In essence, the ongoing assessment of the M-Health DHIS2 App by the SDI department represents a significant stride towards enhancing disease surveillance and intelligence. By embracing technology and leveraging its potential, public health stands to benefit from heightened security and a more targeted, responsive approach to safeguarding community well-being. This endeavor exemplifies the fusion of innovation and public health imperatives, reaffirming the role of technology as a pivotal asset in shaping a healthier future.

Perspective

Frontline Field Epidemiology Success Story in Southern Province

M Situmbeko[1], M Mutila[1], J Zulu[2]

[1]Zambia National Public Health Institute, Lusaka, Zambia
[2]Ministry of Health, Lusaka, Zambia

Correspondence: Dr. James Zulu (jamesexnobert@yahoo.com)

Citation style for this article:

Situmbeko M, Mutila M, Zulu J. Frontline field epidemiology success story in Southern Province. Health Press Bull. 2023;07(1):6-8.

Introduction

The Zambia Field Epidemiology Training Program (Zambia FETP) is a competency-based training and in-service program in applied epidemiology and public health that increases the workforce's competence in public health to improve Zambia's surveillance, epidemic preparedness, and response system. Its goal is to train a cadre of epidemiologists using a one health strategy to establish, implement, and strengthen an efficient public health surveillance and response system in Zambia.

Southern Province witnessed the successful graduation of Cohort 10 of the Zambia Frontline Field Epidemiology Training Programme (FETP) in the second quarter of 2022. A total number of 20 people made up this cohort, 19 of them graduated and demonstrated their improved public health response abilities in their respective Southern Province districts. Effective problem analysis using the fishbone diagram methodology, as well as competent case and outbreak investigations, were notable accomplishments.

Achievements by FETP Residents

Rabies Case Investigation in Mazabuka District

The rabies virus appears in the saliva two weeks before any clinical signs appear [1,2]. The main means of transmission include contact with infected saliva, tears, or nerve tissue. An organ transplant, a bite, or a scratch could have caused this [3]. The main means of transmission include contact with infected saliva, tears, or nerve tissue. An organ transplant, a bite, or a scratch could have caused this [3]. A Frontline Field Epidemiology resident found a documented case exhibiting symptoms consistent with rabies in humans while conducting an active case search at Mazabuka Hospital. Following investigations, it was discovered that two more people had unfortunately passed away from the disease and were epidemiologically connected to the same dog through dog bites.

Due to this, the team decided to stratify data on dog attacks in the district by healthcare facility and analyze the results. This revealed a sizable number of reported events. As a result, a thorough "One Health" strategy was

created, involving the department of animal health, to address the outbreak in the district.

Food Poisoning Investigation in Pemba District

Consuming food or water that has been contaminated with bacteria, chemicals, viruses, or parasites results in food poisoning, a condition that can be fatal. The inappropriate handling, processing, or storage of food is the main source of food contamination [4]. As crucial components in the prevention of food poisoning, food safety and cleanliness must be adopted, and customers must be informed about the options available for eating facilities [5, 6].

During his second field interval assignment, a Frontline Field Epidemiology resident investigated possible cases of food poisoning in Pemba District. Beans, nshima, and Chibwantu were the potential foodborne illness sources. The investigator expertly applied case/outbreak research procedures to isolate the implicated food sources—beans and nshima—from the eight affected people in a particular community.

Problem Analysis on Inconsistent Data at Macha Hospital, Choma District

A Frontline Field Epidemiology resident working at Macha Hospital assembled a team after conducting an extensive data quality audit to analyze the problem of inconsistent data. The team discovered numerous significant elements using the fishbone diagram.

To address the problems under the institution's control, the findings were presented to the hospital management, which increased awareness and encouraged the implementation of suggested remedies.

Conclusion

These success stories demonstrate the Frontline Field Epidemiology Training Programme's major contribution to providing public health professionals with the knowledge and abilities they need to confront and mitigate a range of public health concerns. The program emphasizes information sharing through conference presentations, partnerships with pertinent departments and organizations, and the facilitation of real-world field experiences.

References

1. Helmick CG, Tauxe RV, Vermon AA. Is there a risk to contacts of patient with rabies? Rev Infect Dis. 1987;9(3):511–8.

2. CDC. Investigation of rabies infections in organ donor and transplant recipients - Alabama, Arkansas, Oklahoma, and Texas, 2004. MMWR Morb Mortal Wkly Rep. 2004;53(26):586–9.

3. Manning SE, Rupprecht CE, Fishbein D, Hanlon CA, Lumlertdacha B, Guerra M, Meltzer MI, Dhankhar P, Vaidya SA, Jenkins SR, Sun B, Hull HF; Advisory Committee on Immunization Practices Centers for Disease Control and Prevention (CDC). Human rabies prevention--United States, 2008: recommendations of the Advisory Committee on Immunization Practices. MMWR Recomm Rep. 2008;57(RR-3):1-28.

4. Protus BM. Electronic resources review. J Med Lib Assoc 2014;102(3):224-5.

5. Chun B-C. Strategies for prevention of food poisoning. J Korean Med Assoc. 2007;50(7):606-12.

6. Afifah MN, Asma A, Malina O. Knowledge, attitude and practice regarding food poisoning and its prevention in Malaysia: A systematic literature review. J. Food Sci. 2020;4(6):1832-49.

7. Yuan G, Li R, Zhao Q, Kong X, Wang Y, Wang X, Guo R. Simultaneous determination of paraquat and diquat in human plasma by HPLC-DAD: Its application in acute poisoning patients induced by these two herbicides. J Clin Lab Anal. 2021;35(3):e23669.

8. Yu J, Zhang L, Li X, Lv K, Sun S, Wu W, Ping L, Guo G, Tan W, Guo S, Wang K, Zhao A, Yang N. Comparison of biochemical parameters between mouse model and human after paraquat poisoning. Biomed Res Int. Volume 2022, Article ID 1254824.

Research Articles

Depression among Pre-clinical Students during the COVID-19 Pandemic in the Copperbelt Province of Zambia

S Siziya[1], ML Mazaba[2], J Banga[3], E Nkhama[4], MT Nseluke[5], H Nyambe-Silavwe[6], G Kangwa-Siame[6], A Mbewe[7], K Gondwe[8], M Zulu[8], W Kadochi[8], G Chongwe[9]

[1]Michael Chilufya Sata School of Medicine, Copperbelt University, Ndola, Zambia
[2]Communication Information and Research Directorate, Zambia National Public Health Institute, Lusaka, Zambia
[3]Ndola Teaching Hospital, Ministry of Health, Ndola, Zambia
[4]Environmental and Occupational Health Unit, School of Public Health and Environmental Sciences, Levy Mwanawasa Medical University, Lusaka, Zambia
[5]Directorate of Clinical Care and Diagnostic Services, Ministry of Health Headquarters, Lusaka, Zambia
[6]Public Health Unit, Michael Chilufya Sata School of Medicine, Ndola, Zambia
[7]Department of Environmental Health, School of Public Health, University of Zambia, Lusaka, Zambia
[8]Department of Clinical Sciences, Michael Chilufya Sata School of Medicine, Copperbelt University, Ndola, Zambia
[9]Tropical Diseases Research Centre, Ndola, Zambia

Correspondence: Prof Seter Siziya (ssiziya@gmail.com)

Citation style for this article

Siziya S, Mazaba ML, Banga J, Nkhama E, Nseluke MT, Nyambe-Silavwe H, et al. Depression among pre-clinical students during the COVID-19 pandemic in the Copperbelt province of Zambia**.** Health Press Bull. 2023;07(1):9-18.

Abstract

Depression is one of the common mental health problems affecting medical students and this is partly caused by information overload and effect of the COVID-19 pandemic on changes in the mode of lecturing from physical to virtual. We are not aware of any study conducted among preclinical students in Zambia to determine the prevalence of depression, hence, this study. A cross sectional study was conducted with a sample size of 380 having been obtained using a 1 in 2 systematic sampling.

Depression was determined using the Patient Health Questionnaire–9 at a cut-off point of 10. Prevalence rates of mild, moderate, moderately severe, and severe depression were 92 (24.5%), 57 (15.2%), 34 (9.0%) and 19 (5.1%), respectively. Overall, 110 (29.3%) out of 376 students had depression. Gender and self-rated health were independently associated with depression. Gender and self-rated health were independently associated with depression. Male students were 32% less likely (AOR=0.68, 95% CI [0.53, 0.87])

to have depression compared to female students. Students who rated their health as Good-Excellent were 58% less likely (AOR=0.42, 95% CI [0.32, 0.56]) to have depression compared to students who rated their health as Fair-poor. Depression is common among preclinical students. Self-rated health may be used to screen preclinical students for depression, paying particular attention to female students.

Keywords: Depression, self-rated health, preclinical, students, Copperbelt province, Zambia

Key Takeaways

1. Prevalence of depression among preclinical students is high.
2. Male preclinical students were less likely to have depression than females.
3. Self-Rated Health could be used to screen preclinical students for depression.

Introduction

The novel coronavirus disease 2019 (COVID-19) epidemic started in December 2019 in Wuhan city of China [1]. The number of cases increased exponentially within three months affecting 203 countries/territories/areas and one international conveyance from which 750890 cases and 36405 deaths were reported resulting in a 4.8% case fatality ratio, with both number of cases and fatality ratio, with both number of cases and deaths fatality ratio, with both number of cases and deaths doubling in the preceding week [2]. In order to curtail further spread of the coronavirus, countries introduced measures such as avoiding large gatherings [3] and subsequently in Zambia schools (primary, secondary and tertiary) were closed in March 2020.

Depression is a global problem to be the leading cause of disease burden globally by the year 2030 [4]. Depression is one of the common mental health problems affecting medical students. In a systematic review, covering 167 cross-sectional studies and 16 longitudinal studies from 43 countries, Rotenstein et al [5] estimated an overall pooled crude depression prevalence of 27.2%. Depression prevalence rates are generally higher among medical students than those reported in general populations [6]. Lower rates of depression have been reported among students when they enter medical school and highest at the end of Year 2 of their four years-medical training [7]. With the innovation in medical education owing to the COVID-19 pandemic, rates of depression could be high. Depression has been associated with poor academic performance [8] and may lead to substance abuse and suicide [9].

Medical education can be challenging such as in terms of excessive workload [10] and lack of

leisure time [11]. Furthermore, while the COVID-19 pandemic may have affected some pharmacy students mentally [12], no similar work has been conducted among preclinical students in Zambia. Hence, the objective of the study was to determine the prevalence of depression among preclinical students at a medical school in the Copperbelt province during the era of the COVID-19 pandemic**.**

Materials and Methods

Study area

The Michael Chilufya Sata School of Medicine (MCSSOM) is one of the 10 schools of the Copperbelt University. It was opened in 2011 with two undergraduate programs: Bachelor of Surgery (MBChB) and Bachelor of Dental Surgery (BDS). The MCSSOM now has 6 undergraduate programs (MBChB, BDS, Bachelor of Science in Clinical Medicine (BSc CM), Bachelor of Science in Biomedical Sciences (BSc Biomed), Bachelor of Science in Public Health (BSc PH) and Bachelor of Science in Environmental Health (BSc EH) and the following postgraduate programs: Master of Science by dissertation, Master of Science in Anatomy, Master of Public Health, Master of Medicine (Urology, General Surgery, Obstetrics and Gynaecology, Paediatrics and Internal Medicine) and Doctor of Science.

Preclinical students in Years 2 and 3 take the following programs: MBChB, BDS and BSc CM. Preclinical students at MCSSOM take 10 courses of which 4 are full courses and 6 are half courses. These half courses run throughout the year and all courses are examined at the end of the academic year. Students spend most of the day attending lectures, tutorials, laboratory practicals and working on their assignments with little time left for hobbies, friends, and family. However, these extracurricular activities have been curtailed because of COVID-19 restrictions. Furthermore, students are not accommodated by the Copperbelt University but live in boarding houses that are not conducive for learning and some students opt to go to MCSSOM to study in the evening.

Study design

A cross sectional study was conducted.

Sample size and sampling method

A total of 449 second year students and 346 third year students were available to participate in the survey. Since no prevalence rate of depression was available to be used in the sample size determination, a prevalence of 50%, estimation within 5% and 95% response rate were considered. Altogether, 272 students were to be enrolled into the study. Students were requested

to participate in the survey after their examinations. Whilst in their examination rooms, students were selected using a 1 in 2 systematic sampling technique and increased the sample size to 380 (Sampling interval (K) was 2.9 and considered using 2).

Ethical Consideration

The Tropical Diseases Research Centre approved the protocol (Ref: TRC/C4/05/20) on 26th May 2020. The authority to conduct the research was granted by the National Health Research Authority on 2nd June 2020. The questionnaire, along with the information sheet and consent form, was distributed to students. Consent form were distributed to students. Students were informed that their participation in the study was voluntary and confidential and in no way that, their none participation or withdraw from the study at any time would have any repercussions. Thereafter, a written informed consent was obtained from the students.

Data collection and analysis

A self-administered questionnaire was used to collect data. It comprised among other sections: background characteristics (socio-demographic factors), COVID-19 testing and its risk factors, self-rated health and depression. The Patient Health Questionnaire – 9 (PHQ9P) was used to determine the depression level among students [13]. The depression severity was classified as follows: Score of 0-4 was No depression, 5-9 Mild, 10-14 Moderate, 15-19 Moderately severe and 20-27 Severe. Using the Kroenke et al [14] cut off point of 10, students were classified as depressed if they obtained a score of 10 or more.

Data analyses were conducted using IBM SPSS® Statistics 20. Bivariate analyses, using Yates' corrected Chi-square test and Pearson's Chi-square test where applicable, were performed to evaluate associations between socio-demographic, respondent's perceived health status and COVID-19 factors, and depression. Results yielding p values of less than 5% were considered statistically significant. To determine factors that were independently associated with depression, a multivariate logistic regression analysis was conducted using a Backward Stepwise (Likelihood Ratio) variable selection method and considering Deviation as the contrast for independent factors, 95% confidence interval, probabilities for stepwise entry of factors of 5.0% and that for removal of 5.1%. We report adjusted odds ratios (AOR) together with their 95% confidence intervals (CI) as measures of associations.

Results

Although a sample of 272 was predetermined for the survey, we opted to use a 1 in 2 systematic sampling method for which we should have obtained a sample size of 397.

Overall, 380 students participated giving a response rate of 95.7%. Totals of 189 students were in Year 2 and 133 were in Year 3 with 67.3% of the students being male. No information was available on year of study for 58 students. Table 1 shows the distributions of age, year of study, self-rated health, and depression score by gender. Female students tended to be younger (p=0.031). Overall, 59.0% of students were in Year 2 and

Table 1: Distributions of age, years of study, self-rated health, and depression score by gender

Factor	Total	Male	Female	p value
	n (%)	n (%)	n (%)	
Age (years)				
≤20	61 (17.0)	34 (14.0)	27 (23.3)	0.031
21	93 (26.0)	58 (24.0)	35 (30.2)	
22	89 (24.9)	63 (26.0)	26 (22.4)	
23+	115 (32.1)	87 (36.0)	28 (24.1)	
Year of study				
2	187 (59.0)	130 (60.2)	57 (56.4)	0.610
3	130 (41.0)	86 (39.8)	44 (43.6)	
Self-rated health				
Good-Excellent	296 (81.1)	205 (83.7)	91 (75.8)	0.098
Poor-Fair	69 (18.9)	40 (16.3)	29 (24.2)	
Depression score				
0-4	169 (45.7)	121 (48.6)	48 (39.7)	0.003
5-9	92 (24.9)	69 (27.7)	23 (19.0)	
10-14	56 (15.1)	35 (14.1)	21 (17.4)	
15-19	34 (9.2)	15 (6.0)	19 (15.7)	
20-27	19 (5.1)	9 (3.6)	10 (8.3)	

81.1% of the students rated their health as Good-Excellent. Male students tended to have lower depression scores than female students (p=0.003).

Overall, 110 (29.3%) out of 376 students had depression. Prevalence rates of mild, moderate, moderately severe, and severe depression were 92 (24.5%), 57 (15.2%), 34 (9.0%) and 19 (5.1%), respectively.

Table 2 shows factors associated with depression in bivariate analyses. Only sex and self-rated health were significantly associated with depression. Male students were less likely to have depression. Students who rated their health as Good-Excellent were less likely to have depression.

After adjusting for self-rated health, male students were 32% less likely (AOR=0.68, 95% CI [0.53, 0.87]) to have depression compared to female students. Meanwhile, after adjusting for sex, students who rated their health as Good-Excellent were 58% less likely (AOR=0.42, 95% CI [0.32, 0.56]) to have depression compared to students who rated their health as Fair-poor.

Discussion

This is the first study, to our knowledge, on the prevalence and correlates of depression among preclinical students to be conducted in Zambia.

About a third (29.3%) of the students had depression. We found sex and self-rated health to be significantly associated with depression. Male students were 32% less likely to have depression compared to female students. Students who rated their health as Good-Excellent were 58% less likely to have depression compared with students who rated their health as Fair-Poor.

The observed prevalence in the current study of 29.3% compares with the 30.6% obtained by Ngasa et al [15] among four public medical schools in Cameroon. Furthermore, the prevalence of depression in the present study compares very well with the rate of 33% that was observed in Karachi [16] and in Nepal [17]. However, the rate observed in the current study is higher than the 24.7% reported by Olum et al [18] among preclinical students at the Makerere University in Uganda.

In contrast to the findings that were found in the current study on the severity of depression, higher rates of mild and moderate depression were reported in Cameroon (34.6% vs 24.5%; 26.4% vs 15.2%, respectively) than in the current study, while rates for moderately severe and severe were lower in Cameroon (3.4% and 0.8%, respectively) than in the present study of 9.0% and 5.1%, respectively [15].

Table 2: Factors associated with depression in bivariate analyses.

Factor	Depression		p value
	Yes	No	
	n (%)	n (%)	
Sex			
Male	59 (54.1)	190 (72.8)	0.001
Female	50 (45.9)	71 (27.2)	
Age (years)			
<21	23 (21.3)	38 (15.0)	0.300
21	31 (28.7)	63 (24.8)	
22	24 (22.2)	66 (26.0)	
23+	30 (27.8)	87 (34.3)	
Marital status			
Married or cohabiting	3 (2.7)	21 (7.9)	0.102
Single*	107 (97.3)	245 (92.1)	
Self-rated health			
Good-Excellent	66 (60.6)	236 (90.1)	<0.001
Poor or Fair	43 (39.4)	26 (9.9)	
Year of study			
2	63 (63.6)	126 (56.5)	0.281
3	36 (36.4)	97 (43.5)	
Been in physical contact with COVID-19 positive person			
Yes	11 (10.0)	23 (8.7)	0.586
No	42 (38.2)	116 (43.9)	
Not sure	57 (51.8)	125 (47.3)	
Been tested for COVID-19			
Yes	16 (14.8)	60 (22.8)	0.111
No	92 (85.2)	203 (77.2)	

* Never married, widowed, divorced, separated

The high depression rate observed in the current study may partly have been due to the survey being conducted during the period of examinations. Further, students sat for the examinations following two of the three academic terms having been conducted virtually, for the first time in the delivery of the curriculum. Students and lecturers were not prepared for the change in the mode of delivery of lectures. Anxiety could have affected students that might have led to the high rate of depression observed in the current study.

Differences in rates of depression among study populations may partly be due to differences in their socio-demographic characteristics. Because of the narrow distribution of age in the current study population of preclinical students, it may not have been possible to find a significant association of age and depression if it really existed. Patten et al [19] reported interactions among age, sex, and marital status in rates of depression.

Cyranowski et al [20] proposed a theoretical model on the differences in depression between males and females. They suggested that during the prepubescent period, boys are more likely to be depressed than girls and thereafter, females become more likely to be depressed than males up to the age of 50-55 years. Patten et al [19] also presented evidence that depression is more than twice as prevalent in young women than men in the 14–25 years age group but this ratio decreases with age. Further evidence suggests that starting at puberty, young women are at the greatest risk for major depression globally [21] and it would be interesting to find out why this is the case. However, depression rates are similar between males and females in the age group 65 years or older [19,22].

We found in the current study that male students were less likely to have depression than female students. Similar findings have been reported elsewhere. Higher prevalence of depression was reported among female (35.1%) than male (23.4%) students in Nepal [16]. Similarly, Ngasa et al [15] found that female gender was more likely to be depressed than male gender. These differences may partly be due to hormonal differences in oestrogens between males and females [23].

Peters et al [24] observed a relationship between deterioration in Self-Rated Health (SRH) and worsening of mental health. Ishida et al [25] also found that depressive symptoms were associated with SRH among university students. Similarly, Kim et al [26] also observed that low SRH may be a risk factor for depression among males.

As with all cross-sectional studies, being one-time measurement of factors, we are unable to ascribe causality to observed relationships. Both non-response and selection biases are minimal in this study given the high response rate of 95.7% and having used a 1 in 2 systematic sampling method with no obvious periodicity. Data was collected from the students immediately after the examinations and could have introduced biases in data. Recall bias might have been introduced in the data, but a two-week recall may not have introduced significant bias in the data. However, this may have resulted in a higher rate for depression. It remains to be observed in subsequent surveys to monitor changes in depression levels.

This study has revealed that the prevalence of depression is high among preclinical students. Self- rated health may be used to screen preclinical students for depression, paying particular attention to female students.

Funding: The research was not funded.

References

1. Chahrour M, Assi S, Bejjani M, Nasrallah AA,Salhab H, Fares MY, et al. A bibliometric analysis of COVID-19 research activity: a call for increased output. Cureus 2020;12:e7357.

2. WHO-AFRO. COVID-19 Situation update for the WHO African Region, ! April 2020. External Situation Report 5. Available at: https://apps.who.int/iris/bitstream/handle/10665/331655/SITREP_COVID-19_WHOAFRO_20200401-eng.pdf. Accessed on 29 May 2021.

3. Bedford J, Enria D, Giesecke J, Heymann DL, Ihekweazu C, Kobinger G, et al. COVID-19: towards controlling of a pandemic. Lancet 2020;395(10229):1015-8.

4. World Health Organization. Global burden of mental disorders and the need for a comprehensive, coordinated response from health and social sectors at the country level. Report by the Secretariat. Geneva: World Health Organization, 2011.

5. Rotenstein LS, Ramos MA, Torre M, Segal JB, Peluso MJ, Guille C, et al. Prevalence of Depression, Depressive Symptoms, and Suicidal Ideation Among Medical Students: A Systematic Review and Meta-Analysis. JAMA 2016;316(21):2214-36.

6. Mosley TH, Perrin SG, Neral SM, Dubbert PM, Grothues CA, Pinto BM. Stress, coping and well-being among third-year medical students. Acad Med1994;69:765–7.

7. Clark D, Zeldow P. Vicissitudes of depressed mood during four years of medical school. JAMA 1988;260:2521-8.

8. Kebede MA, Anbessie B, Ayano G. Prevalence and predictors of depression and anxiety among medical students in Addis Ababa, Ethiopia. Int J Ment Health Syst 2019;13(1):30.

9. Dyrbye LN, Thomas MR, Shanafelt TD. Medical student distress: causes, consequences, and proposed solutions. Mayo Clinic Proceedings 2005;80(12):1613-22.

10. Levey R. Sources of stress for residents and recommendations for programs to assist them. Acad Med 2001;76(2):142–50.

11. Dyrbye LN, Thomas MR, Shanafelt TD. Systematic reviewof depression, anxiety, and other indicators ofpsychological distress among US and Canadian medicalstudents. Acad Med 2006;81(4):354-73.

12. Campos JADB, Campos LA, Bueno JL, Martins BG. Emotions and mood swings of pharmacy students in the context of the coronavirus disease of 2019 pandemic. Curr Pharm Teach Learn 2021;13(6):635-42.

13. Pfizer Inc. Patient Heatlh Questionnaire (PHQ-9). A2663B, 10-04-2005 Trademark: PIME-MD. https://www.rpndocs.com/rehr/documents/PPManual/DepressionScreeningForm.pdf

14. Kroenke K, Spitzer RL, Williams JBW. The PHQ-9: Validity of a brief depression severity measure. J Gen Intern Med 2001;16(9):606-13.

15. Ngasa SN, Sama CB, Dzekem BS, Nforchu KN, Tindong M, Aroke D, et al. Prevalence and factors associated with depression among medical students in Cameroon: a cross-sectional study. BMC Psychiatry 2017;17(1):216.

16. Shaikh S, Munawar L, Shakoor S, Siddiqui R. Gender distribution of depression among undergraduate medical students by using PHQ-9 scale. J. BahriaUniv Med Dent Coll 2019; 9(2):102-4.

17. Adhikari A, Dutta A, Sapkota S, Chapagain A, Aryal A, Pradhan A. Prevalence of poor mental health among medical students in Nepal: a cross-sectional study. BMC Med Educ 2017;17(1):232.

18. Olum R, Nakwagala FN, Odokonyero R. Prevalence and factors associated with depression among medical students at Makerere University, Uganda. Adv Med EducPract2020;11:853–60.

19. Patten SB, Wang JL, Williams JV, Currie S, Beck CA, Maxwell CJ, et al. Descriptive epidemiology of major depression in Canada. Can J Psychiatry 2006;51(2):84–90.

20. Cyranowski JM, Frank E, Young E, Shear MK. Adolescent onset of the gender difference in lifetime rates of major depression: a theoretical model. Arch Gen Psychiatry 2000;57(1):21-7.

21. Whiteford HA, Degenhardt L, Rehm J, Baxter AJ, Ferrari AJ, Erskine HE, et al. Global burden of disease attributable to mental and substance use disorders: findings from the Global Burden of Disease Study 2010. Lancet 2013;382(9904):1575-86.

22. Bebbington P, Dunn G, Jenkins R, Lewis G, Brugha T, Farrell M, Meltzer H: The influence of age and sex on the prevalence of depressive conditions: report from the National Survey of Psychiatric Morbidity. Int Rev Psychiatry 2003;15(1-2):74–83.

23. Gillies GE, McArthur S. Estrogen actions in the brain and the basis for differential action in men and women: a case for sex-specific medicines. Pharmacol Rev 2010;62(2):155-98.

24. Peters A, Rospleszcz S, Greiser KH, Dallavalle M, Berger K; Complete list of authors available under: Collaborators. The impact of the COVID-19 pandemic on self-reported health. DtschArzteblInt 2020;117(50):861-7.

25. Ishida M, Montagni I, Matsuzaki K, Shimamoto T, Cariou T, Kawamura T, et al. The association between depressive symptoms and self-rated health among university students: a cross-sectional study in France and Japan. BMC Psychiatry 2020;20(1):549.

Summary of outbreaks

Cholera Outbreak

Cholera outbreaks have been reported in several districts across Zambia. The affected districts include Vubwi, Chipata, Chipangali, and Lusangazi in the Eastern province, as well as Mwansabombwe and Nchelenge in the Luapula province, and Nsama in the Northern Province. The cumulative total of reported cholera cases is 309, with the distribution as follows: Vubwi (81), Mwansabombwe (55), Chipata (39), Chipangali (25), Nchelenge (52), Lusangazi (1), and Nsama (55). Unfortunately, the outbreaks have resulted in a total of 8 deaths, with fatalities reported in Vubwi (2), Nsama (3), Chipangali (1), Chipata (1), and Nchelenge (1) districts.

Measles Outbreak

During the first quarter of the year, Zambia experienced a measles outbreak. A total of 140 suspected cases were identified, out of which 559 individuals were tested. Among the tested cases, 127 were confirmed to be positive for measles.

COVID-19 Update

After over three years since the declaration of COVID-19 as a pandemic, the World Health Organization (WHO) officially declared an end to the global Public Health Emergency (PHE) for COVID-19 on May 5
Since the initial outbreak on March 18, 2020, Zambia has recorded a cumulative total of 343,668 confirmed COVID-19 cases. The country conducted 3,990,383 tests to detect the virus. Fortunately, 339,444 individuals have successfully recovered from the virus. However, the pandemic has resulted in 4,058 COVID-19 and COVID-19 related deaths.

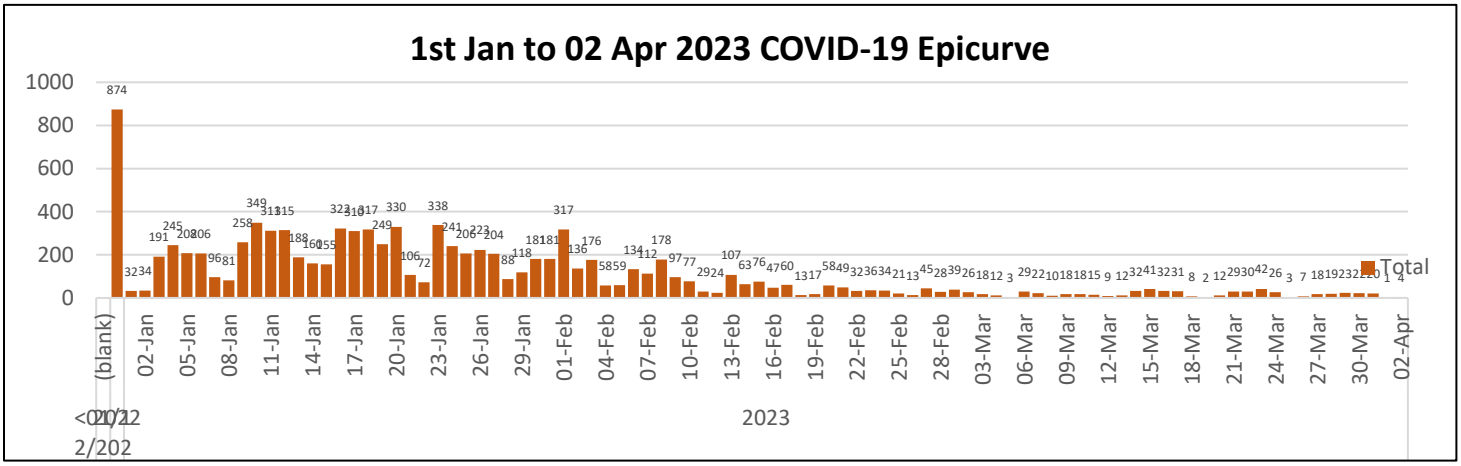
In terms of vaccination efforts, Zambia has made significant progress, with vaccine coverage reaching 80% among an eligible population of 10,926,800.

This surveillance report provides a comprehensive overview of the ongoing outbreaks and public health updates in Zambia. The authorities continue to work diligently to control and manage these health challenges and safeguard the well-being of the population.

Summary Report Priority Diseases, Conditions and Events (Week 1-13)			
Disease/Event/Condition	Week 1 - 13		
	Suspected	Tested	Confirmed
COVID-19	203,913	203,913	9,039
HIV	369,341	349,723	13,492
Malaria	3,009,000	2,968,347	1,632,087
Non bloody diarrhea	132,747	4,526	2,122
Maternal deaths	N/A	N/A	159
Influenza	623	623	13
Dysentery	6,786	599	55
AFP	82	82	0
Cholera	309		
Meningitis (Neisseria)	41	11	6
Measles	1,148	559	127
Scabies	39,369	1,438	1,273
Mumps	22,063	0	0

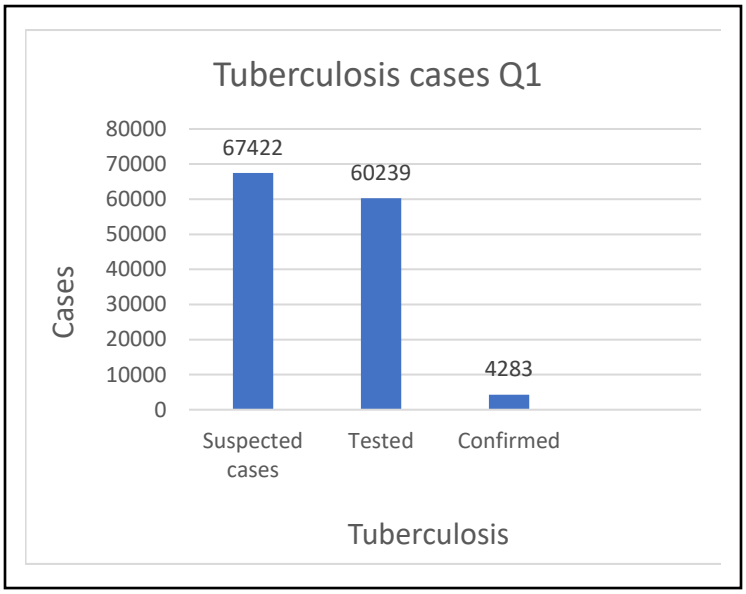
Specific diseases and summarized conditions

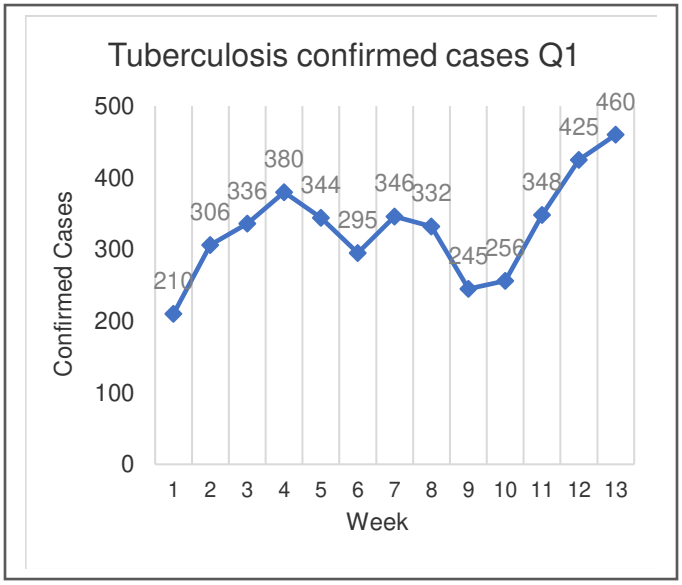
Covid-19



COVID-19 (Coronavirus): Since March 18, 2020, Zambia has recorded a total of 343,668 confirmed cases, 3,990,383 samples tested, 339,444 recoveries, and 4,058 COVID-19 and COVID-19 related deaths cumulatively. The country's vaccine coverage now stands at 80% from an eligible population of 10,926,800.

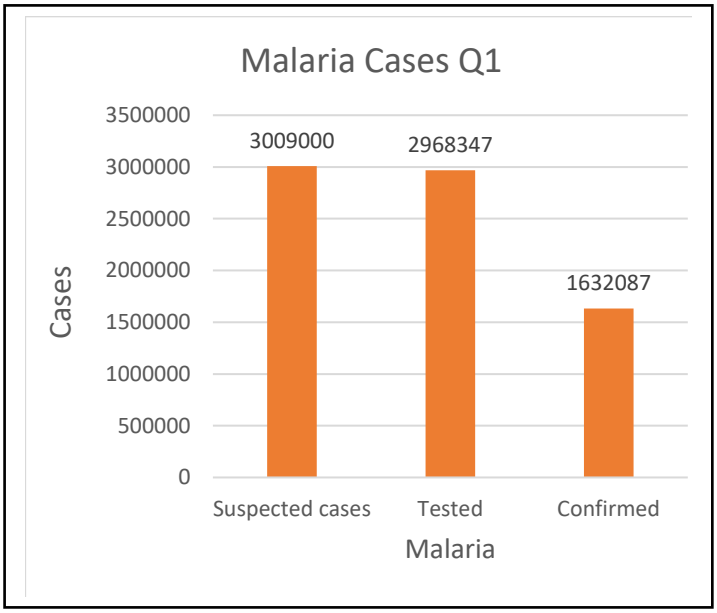
Tuberculosis

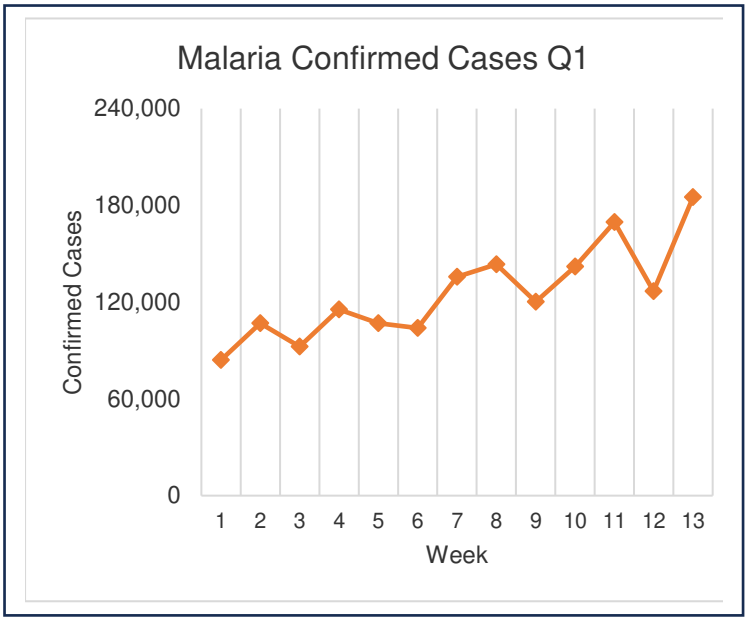




Tuberculosis (TB) stands as a formidable contributor to morbidity and mortality in Zambia, casting a shadow over the nation's health landscape. As of the initial quarter of 2023, Zambia's ongoing battle continues, 67,422 suspected cases of tuberculosis 67,422 were recorded and a remarkable 60,239 cases were tested among the tested 4,283 cases were confirmed as TB infections.

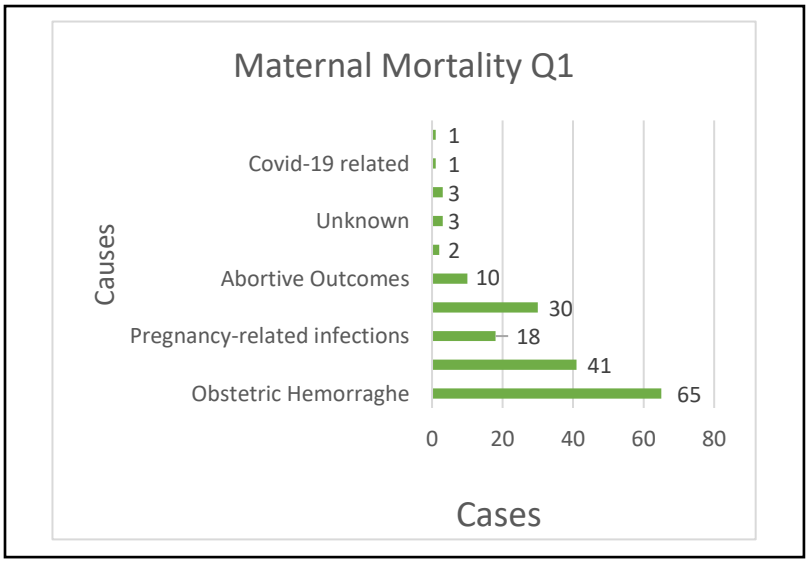
Malaria

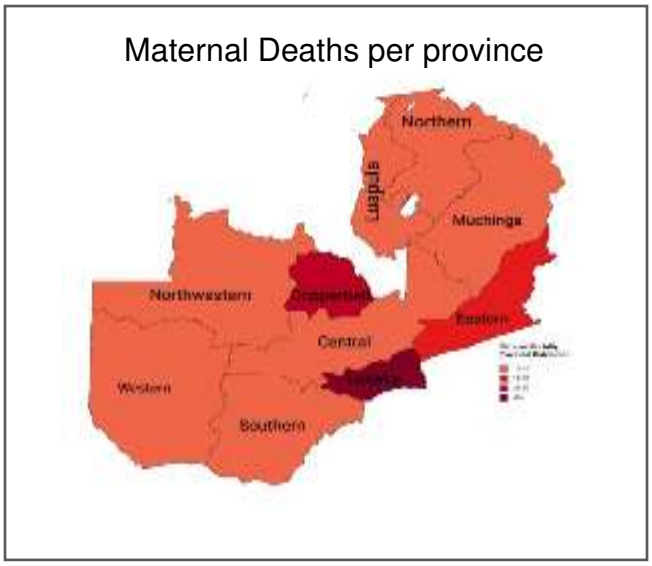




Malaria an enduring public health issue continues to be a major concern in Zambia as it contributes largely to the country's morbidity and mortality. The initial quarter of 2023 recorded a staggering 3,009,000 suspected cases out of these 1,632,087 were confirmed cases which continues to emphasize the significant burden this disease places on the population. Malaria continues to extend far beyond its immediate health consequences it reaches into the economic productivity and overall community well-being.

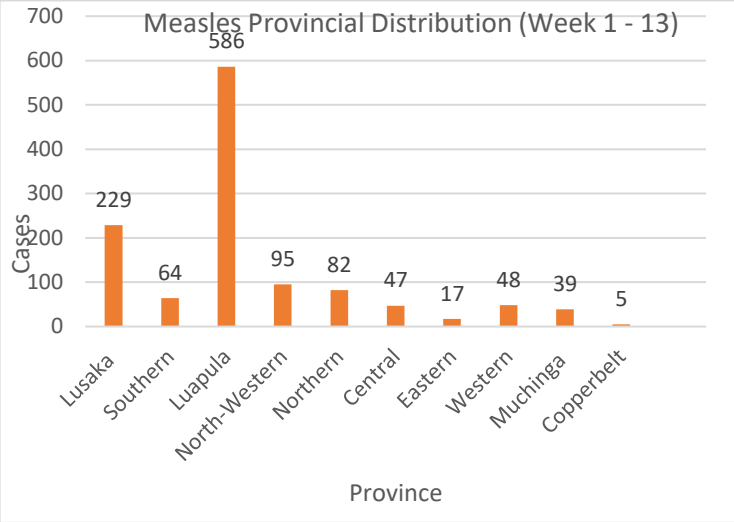
Maternal Deaths





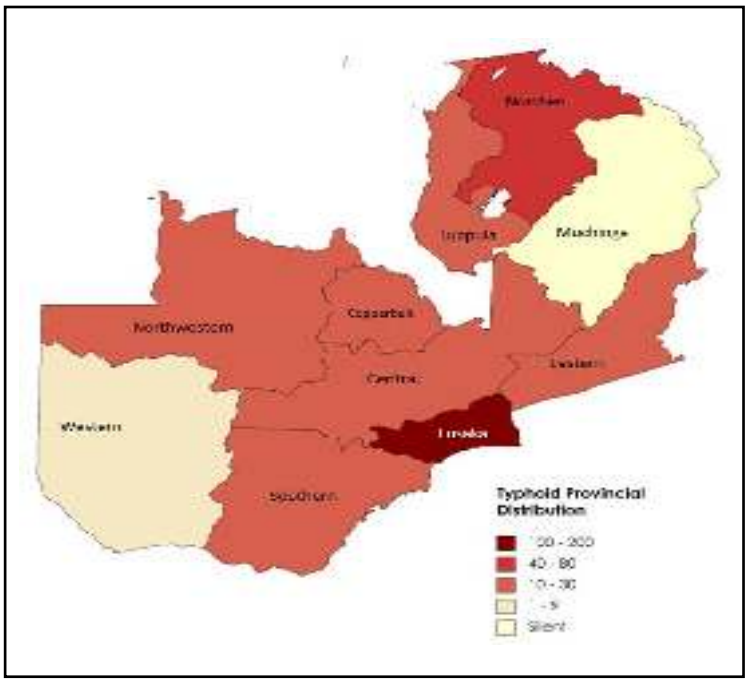
Maternal Mortality which is the demise of a woman during pregnancy or within one year of pregnancy or one year postpartum remains a crucial concern globally. Zambia has taken several strides in combating maternal mortality and in the first quarter of 2023, there were a total of 174 cases across all 10 provinces. Of note Lusaka province had the highest number of cases recording 44 cases while Copperbelt was second with 24 cases.
Obstetric Hemorrhage continues to be the leading cause of maternal mortality in Zambia, despite the ongoing advancements and interventions.

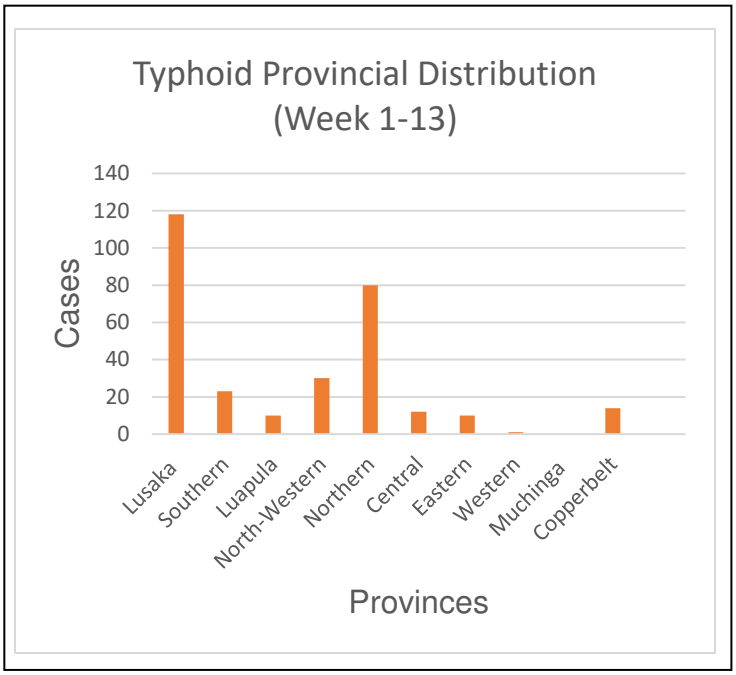
Measles



Measles is a vaccine preventable disease with severe complications including fatalities it continues to be a significant public health concern in Zambia. In the initial quarter a total of 1,404 cases were suspected amongst these 559 underwent testing and 127 were confirmed cases.
Zooming in on the provincial distribution Luapula emerged as a hot spot with 586 suspected cases representing a significant 51% of the total suspected cases.

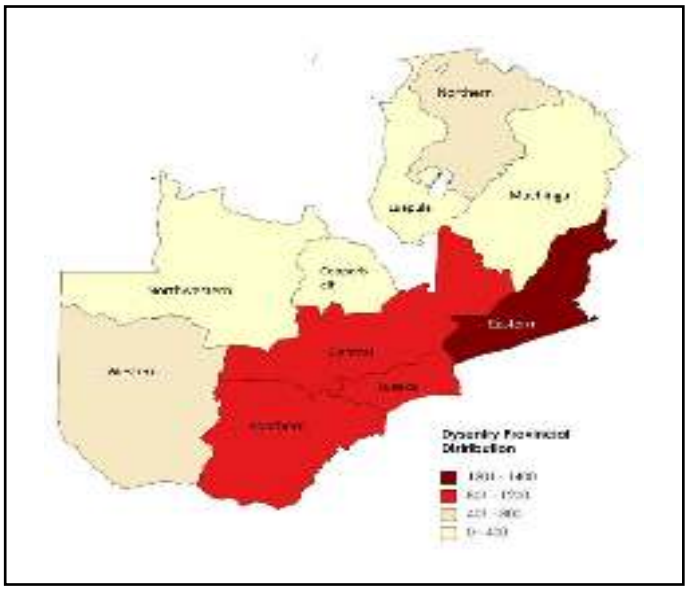
Typhoid

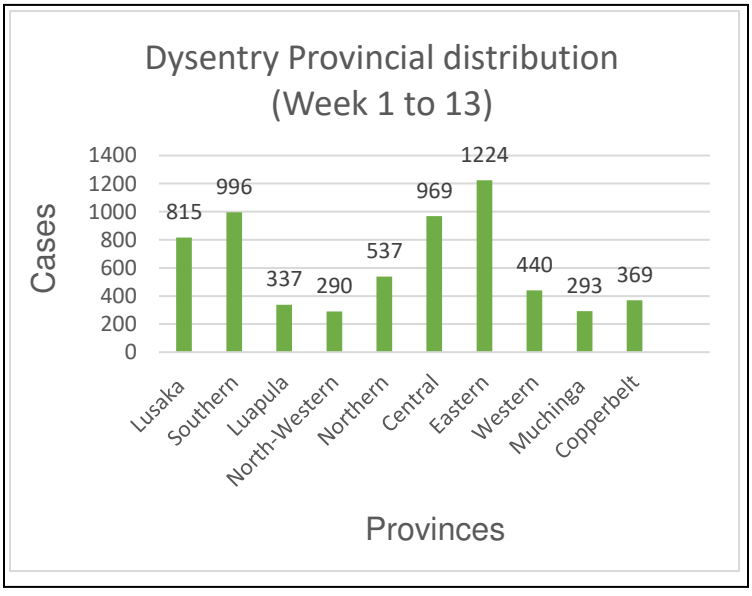




Dysentery

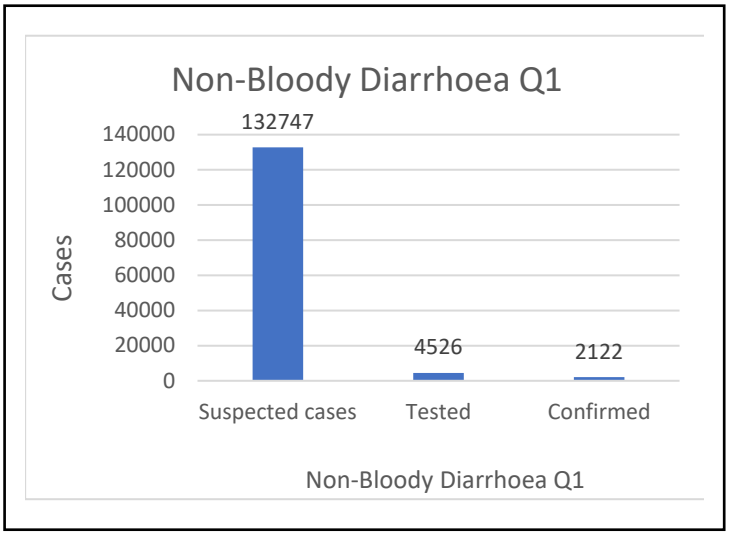
In the first Quarter of 2023, Zambia encountered significant reports of suspected typhoid cases totaling 298 instances. Notably Lusaka and Northern Province stood out with 118 cases in Lusaka and 80 cases in Northern province. It is important to highlight that Muchinga Province did not report any cases during this period, There is need for heightened awareness and effective strategies in the prevention of typhoid.

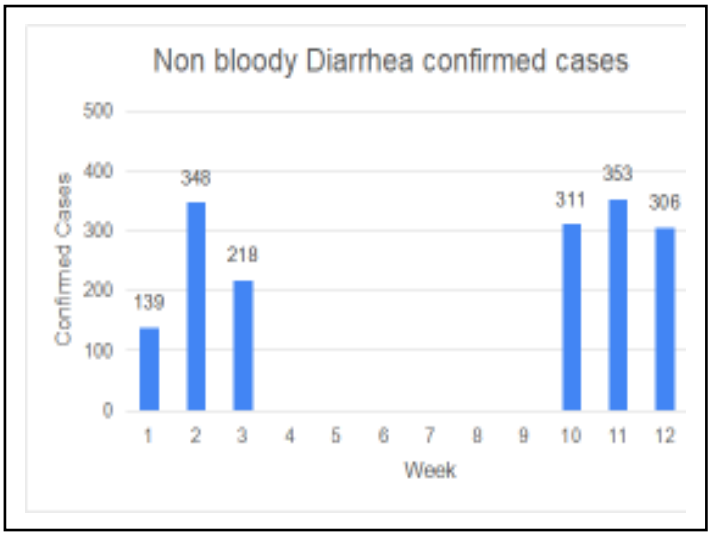




In the initial quarter of 2023, there were 6,786 suspected cases of dysentery recorded, out of which 599 cases underwent testing, confirming 55 cases. The Eastern province stood out with the highest number of suspected cases, reaching 1,224 instances. This data demonstrates the importance of significant effective healthcare responses to address and control the spread of dysentery, particularly in the Eastern province where the outbreak appears to be most pronounced.

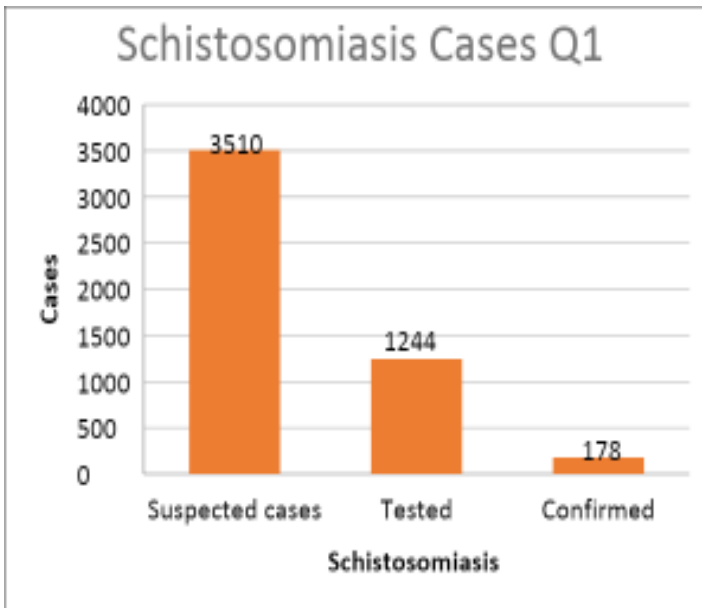
Non -bloody diarrhea

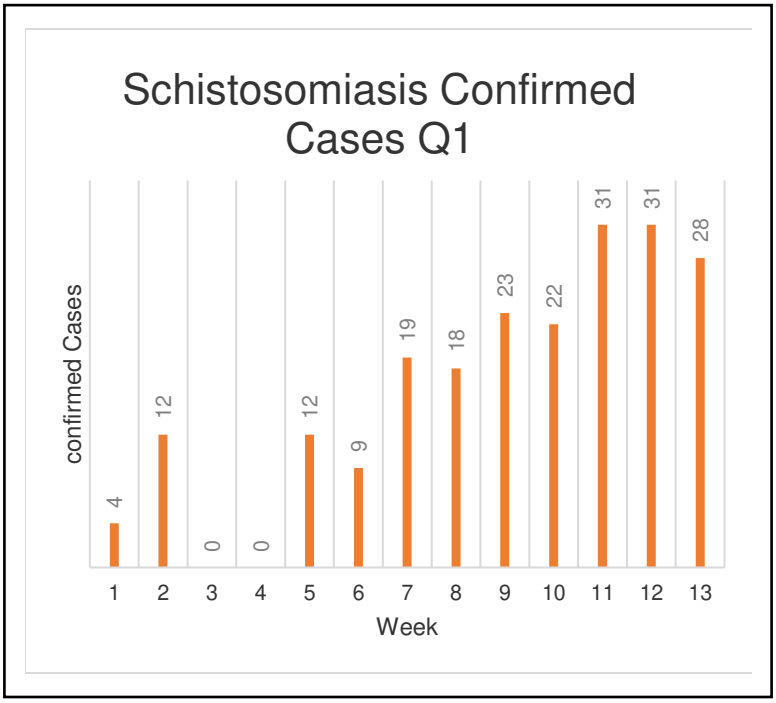




Schistosomiasis

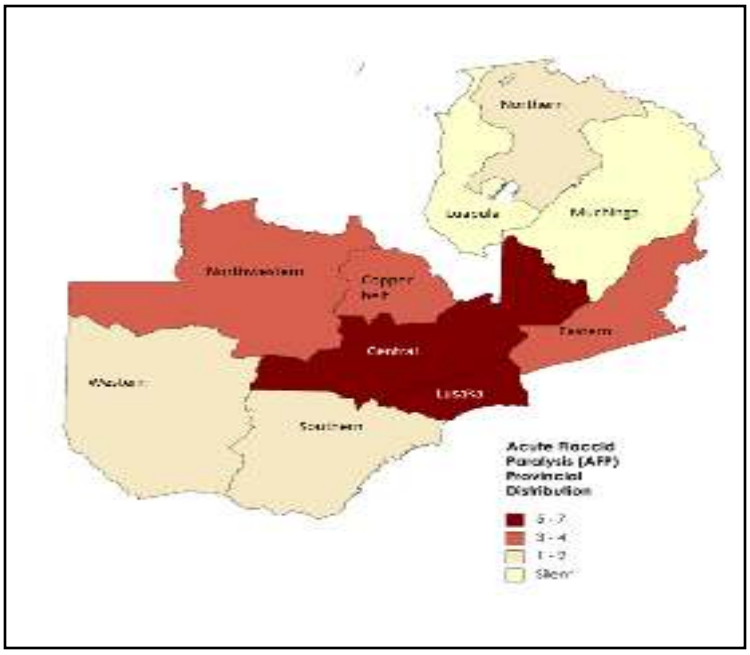
During the initial first quarter of 2023 some light was shed on the prevalence of non-bloody diarrhea. A total of 132,747 cases of non-bloody diarrhea were recorded and 4,526 underwent testing and 2,122 being confirmed. Delving deeper into some of the specific conditions that encompass non bloody diarrhea. Typhoid manifested in 298 suspected cases of which 14 were confirmed cases, while dysentery another ailment within the category exhibited 6,786 suspected cases out of which 55 were confirmed.

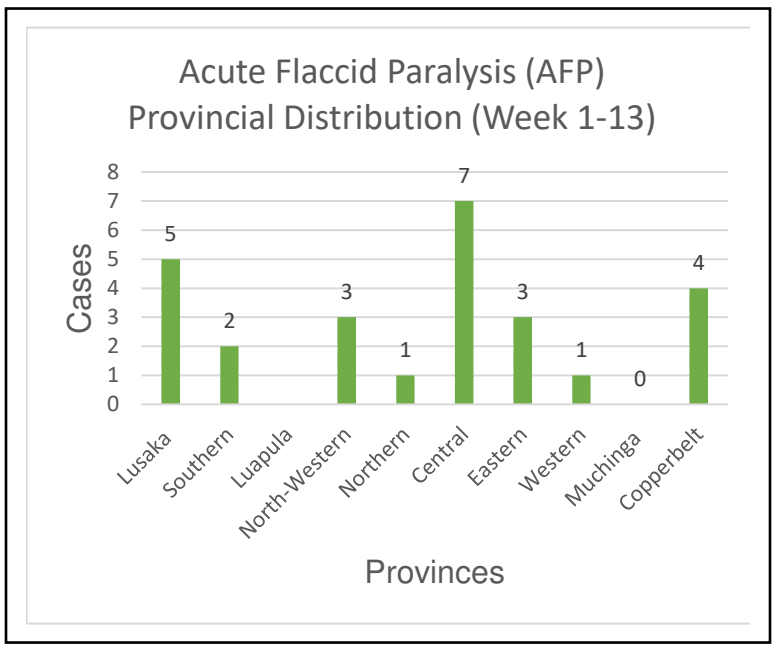




Schistosomiasis a neglected tropical disease thriving in the subtropics is highly prevalent in rural districts with proximity to water bodies in Zambia. As the first quarter unfolds a total of 3510 suspected cases recorded and reported within these numbers 178 cases were confirmed.

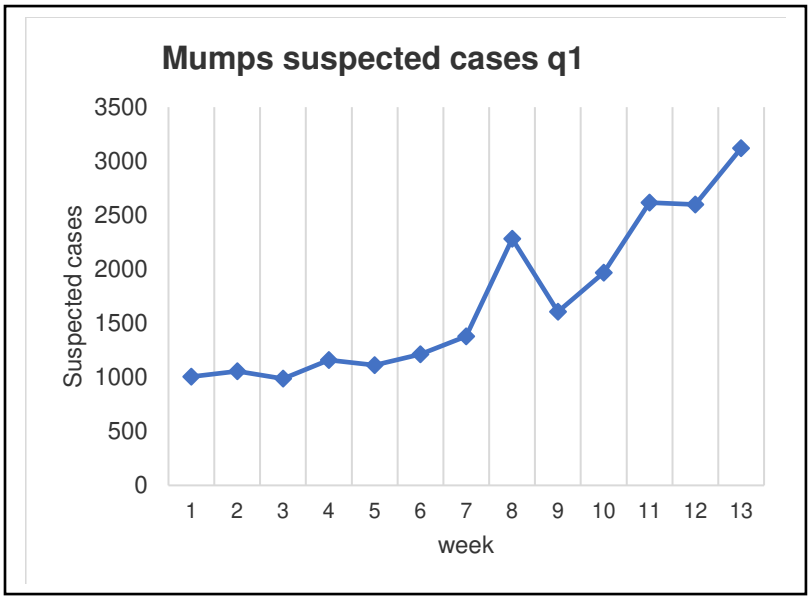
Acute Flaccid Paralysis (AFP)

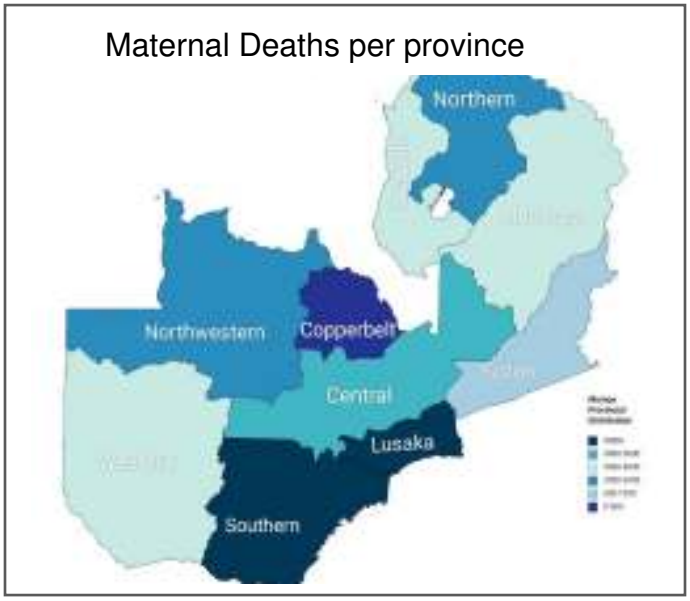




The persistence of acute flaccid paralysis in children, remains a significant public health challenge in the pursuit of polio eradication. In the first quarter, there were 82 suspected cases of polio recorded, all of which underwent testing, yet none were confirmed as positive. Notably, the Central province reported the highest number of suspected cases, reaching a total of 7 cases. This data reflects ongoing efforts to monitor and combat the spread of polio, emphasizing the importance of

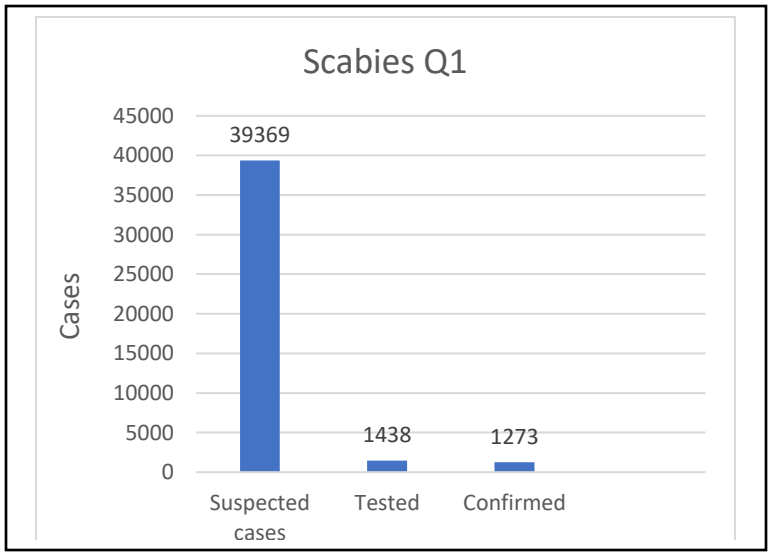
Mumps





In the initial quarter of the year 2023, Zambia's Integrated Disease Surveillance and Response system recorded and reported a total of 22,377 suspected cases of mumps, notably the 5023 provinces of Lusaka and southern province recorded the highest number of suspected cases at and 5065 respectively.
The initial quarter has shown an increase in the number of suspected cases reported when compared to the initial quarter of 2022 and 2021.Mumps which is a vaccine preventable disease with serious complications in its more severe form. This underscores the need for ongoing sensitization and education aimed at raising the awareness about the importance of the mumps, measles, and rubella (MMR) vaccine in an effort to encourage uptake and reduce its incidence.

Scabies



In subtropical regions of Southern Africa, scabies remains to be an ongoing concern as a neglected Topical disease, poor hygiene and impaired host immunity continue to stand out as major risk factors.
Though not fatal, it can cause severe morbidity and a poor quality of life. In the initial quarter Zambia recorded 39,369 suspected cases of scabies reported out of which 1,273 cases were confirmed diagnosis, notably western province recorded the highest number of cases at 11,011 (23.3%) cases and Lusaka reporting the lowest cases with 1,294 (2.7%) cases.

References

1. CDC. Reproductive health. Maternal mortality. https://www.cdc.gov/reproductivehealth/maternal-mortality/index.html. Accessed 9 September 2023.

2. Kateule E, Kumar R, Mulenga M, Daka V, Banda K, Anderson R, McNall R, McGrew M, Baggett HC, Kasongo W. Mumps outbreak in an unimmunized population – Luanshya District, Copperbelt Province, Zambia, 2015. Pan African Medical Journal 2018;31(3):1-7.

3. Motswaledi HM. Clinical diagnosis and treatment of scabies, a neglected tropical disease. S Afr Fam Pract (2004). 2021;63(1):e1-e6. doi: 10.4102/safp.v63i1.5224. 4

4. Kalungwana N, Mwakazanga D, Mwansa J, Mutengo MM, Siziya S. Prevalence and factors associated with Schistosomiasis in Ng'ombe Township of Lusaka urban district. JABS 2012;1(1):7-11.

5. Chipoya MN, Shimaponda-Mataa NM. Prevalence, characteristics and risk factors of imported and local malaria cases in North-Western Province, Zambia: a cross-sectional study. Malar J 2020;19:430.