NOTIFIABLE MEDICAL CONDITIONS SURVEILLANCE SYSTEM

Issued by the National Institute for Communicable Diseases

Introduction

This report summarises data from the National Notifiable Medical Conditions Surveillance System (NMCSS) on cases notified during **December 2023**. Additionally, this report includes information on the distribution of case notifications by sources, such as clinical or laboratory notifications, merged cases (**see Appendix no. 3**), and the number of reported deaths. It monitors the use of the electronic NMC Reporting Application (App) for notification, data quality, specifically the completeness and timeliness of clinical diagnosis and notifications over time, and back-captured cases notified in December 2023 (**see Appendix nos. 1 and 3**). Category 4 NMCs, COVID-19, and multi-system inflammatory syndrome (MIS-C) have been excluded from this report. For more notes on data interpretation please see NMCSS interpretation.

Highlights
- A total of 8012 cases were notified in December 2023; most were category 2 conditions.
- There were 290 average active users of the NMC App in December 2023
- Category 1 cases were reported in a median (IQR) of zero (0, 2) days.

NMC Reporting Application
- NMC Reporting App is available on both web and mobile platforms
- Register if you have no NMC account and you can reset the password if you have not used the application over 12 months. is
- Use recommended browsers to access the NMC reporting App for notifications, and searching of cases and reports.

Category 1 Conditions at a glance

Table 1: The number of notifications that are suspected and confirmed for category 1 conditions.

Condition	Suspected, N = 671[1]	Confirmed, N = 414[1]
Acute Flaccid Paralysis	21	0
Cholera	32	1
Congenital rubella syndrome	0	19
Diphtheria	6	0
Enteric Fever (Typhoid or Paratyphoid Fever)	4	10
Foodborne Illness Outbreak	107	0
Listeriosis	5	10
Malaria	49	157
Measles	242	24
Meningococcal Disease	20	0
Pertussis	65	58
Rabies	0	2
Rubella	117	133
Waterborne Illness Outbreak - UNDEFINED	3	0

[1]Suspected and confirmed cases are independent and are not totalled - suspected and confirmed cases are distinct.

NMC Data Summary, December 2023

A total of 8739 cases were notified to the NMCSS in December 2023 **(See Appendix No. 3 for definitions)**. There were 8012 current notifications; the majority (6 773, 85%) were category 2 conditions. The provinces with the highest number of notifications were GP (1 887, 24%), WC (1 813, 23%), and KZN (1 794, 22%). The provinces with the least number of notifications were NC (237, 3.0%), and NW (299, 3.7%). (**Figure 1**) There were 727 back-captured clinical notifications diagnosed between March 2022 and December 2023 and only notified in December 2023. The majority (473, 65%) of those notifications were Pulmonary TB. (**See Appendix no.1**).

The majority of the notified cases were males 4 648 (58%). Individuals in the 35-39 age group represented the majority (882, 11%) of notified cases. At the time of notification, approximately 1,844 (23%) of the notified cases were hospitalised, while 48 (0.6%) were transferred to another healthcare facility. There were 65 deaths notified during the reporting period with a case fatality rate of 0.8%.

Table 2: Description of NMC notifications by case source

NMC Category	**Overall**, N = 8 012	**Clinical** notifications, n = 5733	**Laboratory** notifications, n = 1965	**Merged** Cases, n = 314
Category 1	1 085 (14%)	686 (12%)	265 (13%)	134 (43%)
Category 2	6 773 (85%)	5 047 (88%)	1 564 (80%)	162 (52%)
Category 3	154 (1.9%)	0 (0%)	136 (6.9%)	18 (5.7%)

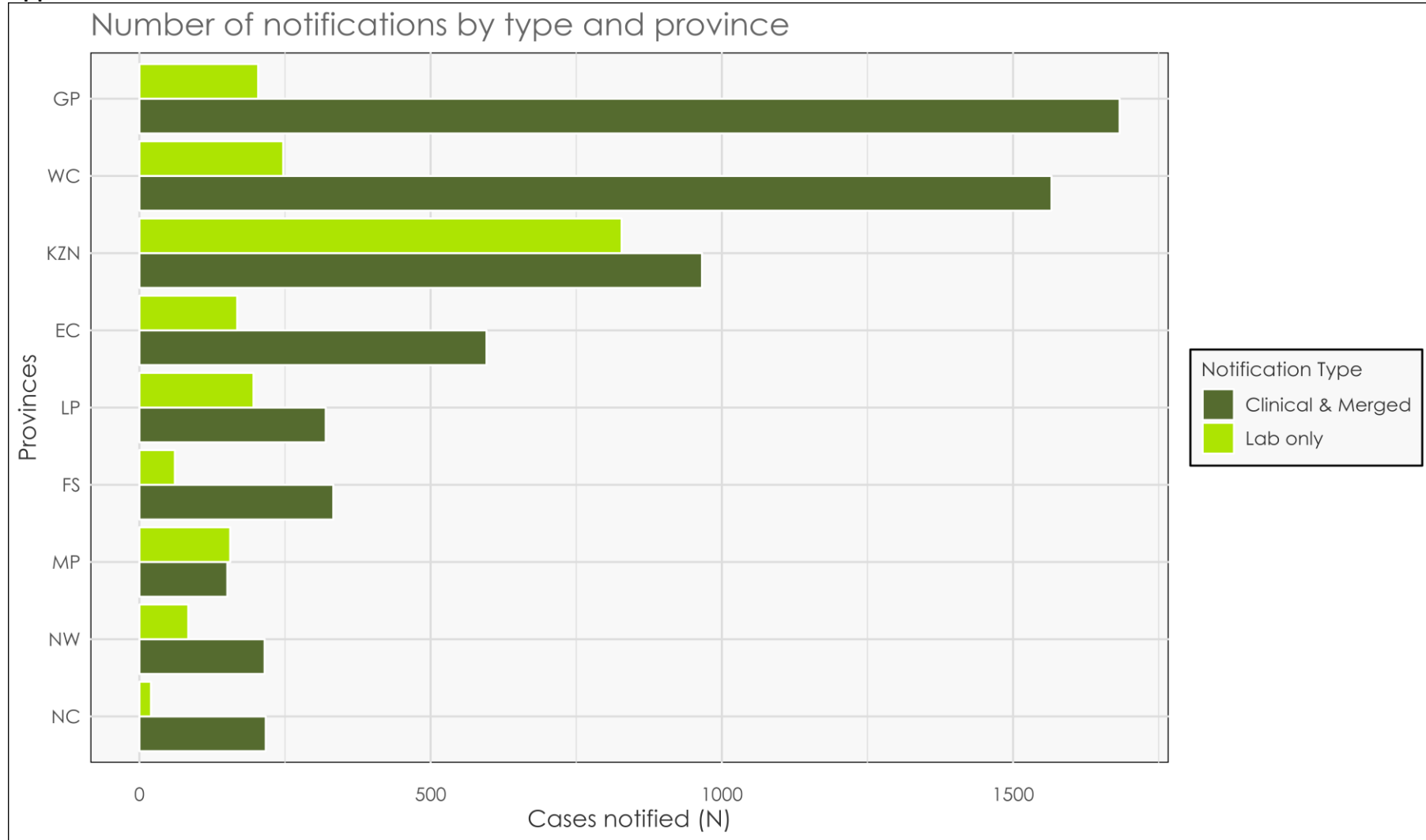## Number of notifications by type and province

Figure 1: Distribution of notifications by province and notification type

There were 593 (9.8%) clinical notifications from the private sector (i.e. private hospitals, private practice and the mining industry) compared to 5 451 (90%) in the public sector. Clinical notifications using the NMC Reporting Application made up 5755 (99%) (see Table 3).

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Table 3: Clinical notifications notified by provinces, reporting platform, and sector

Province	Overall, N = 5 824	App - Private, n = 586	App - Public, n = 5169	Paper-based - Private, n = 6	Paper-based - Public, n = 63
GP	1 627 (100%)	190 (12%)	1 432 (88%)	3 (0.2%)	2 (0.1%)
WC	1 514 (100%)	93 (6.1%)	1 393 (92%)	2 (0.1%)	26 (1.7%)
KZN	900 (100%)	102 (11%)	792 (88%)	0 (0%)	6 (0.7%)
EC	584 (100%)	63 (11%)	491 (84%)	1 (0.2%)	29 (5.0%)
FS	330 (100%)	50 (15%)	280 (85%)	0 (0%)	0 (0%)
LP	300 (100%)	15 (5.0%)	285 (95%)	0 (0%)	0 (0%)
NC	214 (100%)	18 (8.4%)	196 (92%)	0 (0%)	0 (0%)
NW	214 (100%)	27 (13%)	187 (87%)	0 (0%)	0 (0%)
MP	141 (100%)	28 (20%)	113 (80%)	0 (0%)	0 (0%)

Hospital Form Completeness

Table 4: Completion of hospitalisation form for notifications reported as inpatients with category 1 conditions. Complete refers to >80% of variables completed.

Hospital Form Completed	Complete, n = 25 (9.7%)	Incomplete, n = 48 (19%)	Only Symptoms completed, n = 121 (47%)	Not Attempted, n = 65 (25%)
Acute Flaccid Paralysis	0 (0%)	2 (4.2%)	13 (11%)	3 (4.6%)
Cholera	1 (4.0%)	1 (2.1%)	3 (2.5%)	1 (1.5%)
Diphtheria	1 (4.0%)	3 (6.3%)	1 (0.8%)	0 (0%)
Enteric Fever (Typhoid or Paratyphoid Fever)	0 (0%)	1 (2.1%)	4 (3.3%)	2 (3.1%)
Foodborne Illness Outbreak	0 (0%)	0 (0%)	18 (15%)	14 (22%)
Listeriosis	2 (8.0%)	0 (0%)	3 (2.5%)	2 (3.1%)
Malaria	5 (20%)	18 (38%)	32 (26%)	20 (31%)
Measles	3 (12%)	4 (8.3%)	9 (7.4%)	2 (3.1%)
Meningococcal Disease	1 (4.0%)	2 (4.2%)	10 (8.3%)	3 (4.6%)
Pertussis	9 (36%)	16 (33%)	27 (22%)	15 (23%)
Rabies	1 (4.0%)	0 (0%)	0 (0%)	1 (1.5%)
Rubella	0 (0%)	1 (2.1%)	1 (0.8%)	1 (1.5%)
Waterborne Illness Outbreak - UNDEFINED	2 (8.0%)	0 (0%)	0 (0%)	1 (1.5%)

Distribution of Category 1 NMCs by Province and Case Definition

The majority of category 1 notifications were for Measles 266 (25%). The majority of Measles cases were notified in WC 238(89.5%).

Table 5: The number of notifications by province and number of notifications that are suspected and confirmed by vital status.

Condition	Provinces									Case		Deaths	
---	EC[1]	FS[1]	GP[1]	KZN[1]	LP[1]	MP[1]	NC[1]	NW[1]	WC[1]	Suspected[1]	Confirmed[1]	Suspected[1]	Confirmed[1]
Acute Flaccid Paralysis	1	0	11	6	0	0	0	1	2	21	0		
Cholera §	29	0	3	0	0	0	0	0	1	32	1		
Congenital rubella syndrome	0	0	0	2	0	0	1	1	15	0	19		
Diphtheria *	0	0	1	1	0	0	0	0	4	6	0		
Enteric Fever (Typhoid or Paratyphoid fever)	0	0	4	4	0	1	0	0	5	4	10		
Foodborne Illness Outbreak	27	2	24	53	0	0	1	0	0	107	0	1	0
Listeriosis	2	0	3	4	1	0	0	0	5	5	10	1	1
Malaria	3	6	60	24	51	33	2	10	17	49	157	0	1
Measles	2	1	30	8	1	0	5	2	217	242	24	1	0
Meningococcal Disease	4	0	5	1	0	1	0	2	7	20	0	2	0
Pertussis	9	10	41	23	5	12	2	3	18	65	58	2	1
Rabies	1	0	0	1	0	0	0	0	0	0	2	0	1
Rubella	0	4	3	2	1	0	2	0	238	117	133		
Waterborne Illness Outbreak - UNDEFINED	0	0	0	2	1	0	0	0	0	3	0		

[1]n(%);
* Toxin-producing results not available on NMC;
§ Serotype information not available on NMC;
** Merged case represents a clinical and laboratory notification of the same person and was successfully linked and made into a single notification
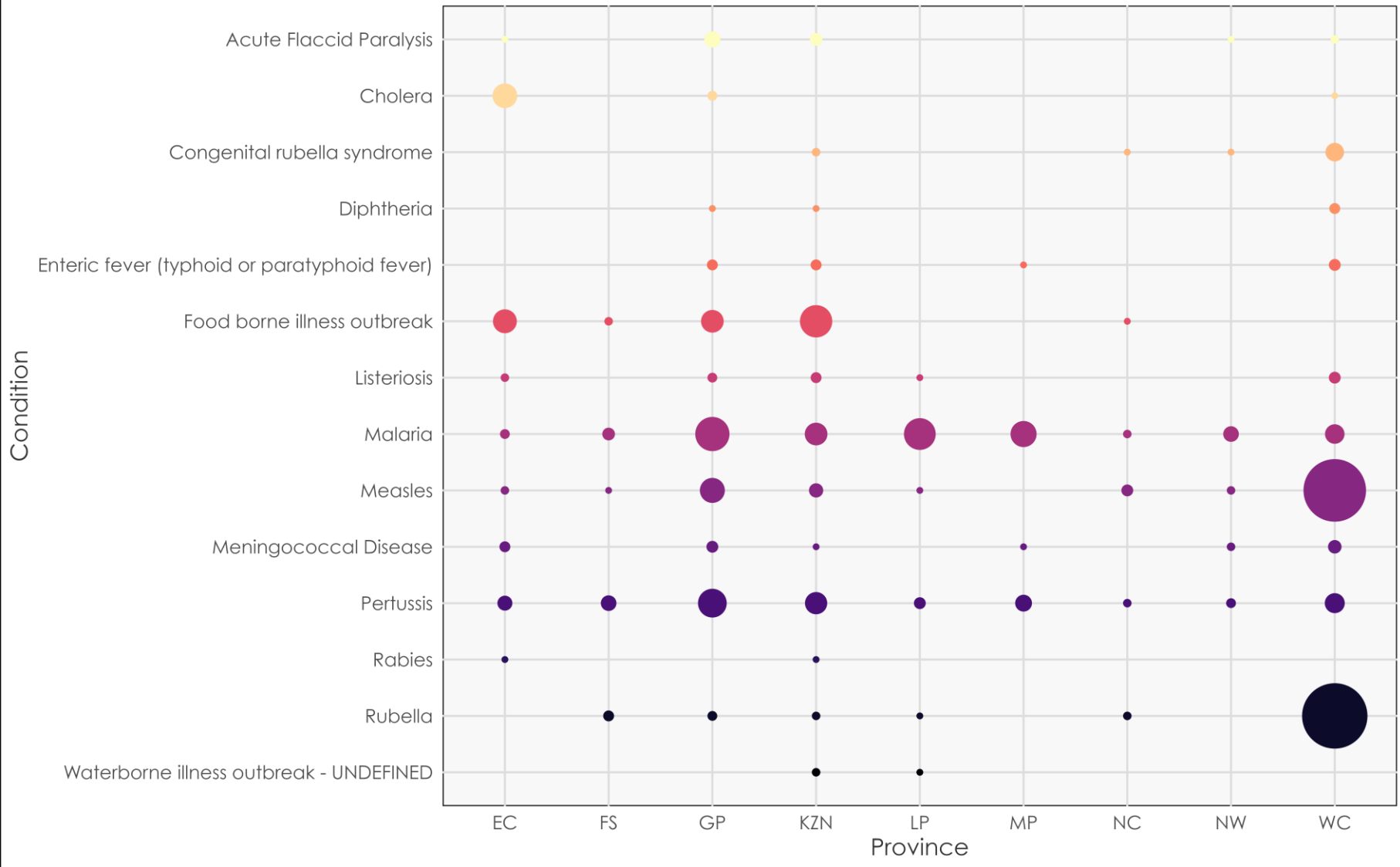
Figure 2: Distribution of Category 1 NMCs by province

Distribution of Category 2 NMCs by Province and Case Definition

The majority of category 2 notifications were for Tuberculosis: pulmonary 4 168 (56%). The majority of Tuberculosis:pulmonarycases were notified in GP 1119(26.8%).

Table 6: The number of notifications by notification type and the number of notifications that are confirmed by the appropriate centre.

Condition	Provinces									Case		Deaths	
	EC[1]	FS[1]	GP[1]	KZN[1]	LP[1]	MP[1]	NC[1]	NW[1]	WC[1]	Suspected[1]	Confirmed[1]	Suspected[1]	Confirmed[1]
Agricultural or stock remedy poisoning	2	12	47	3	2	3	1	3	3	76	0	3	0
Bilharzia (schistosomiasis)	45	1	29	275	126	90	1	1	20	28	561		
Brucellosis	0	0	0	0	0	0	0	0	1	1	0		
Congenital syphilis	5	1	2	15	1	1	2	1	7	11	24	1	1
Haemophilus influenzae type B	0	0	0	1	0	1	0	0	0	1	1		
Hepatitis A	27	21	136	102	58	38	7	17	82	64	424	0	1
Hepatitis B	75	40	70	501	6	10	11	60	14	74	713	3	0
Hepatitis C	0	1	9	1	0	2	0	0	1	11	3		
Hepatitis E	0	0	0	0	0	1	0	0	0	1	0		
Lead poisoning	0	0	2	0	0	2	0	0	0	4	0		
Legionellosis	0	1	1	2	0	0	0	0	0	3	1		
Maternal death (pregnancy, childbirth and puerperium)	0	0	4	0	1	0	0	0	0	5	0	5	0
Soil-transmitted helminths	0	1	2	0	0	0	0	0	0	3	0		
Tetanus	0	0	0	0	0	1	0	0	1	2	0		
Tuberculosis: extensively drug-resistant (XDR -TB)	1	0	1	2	2	0	0	0	0	6	0		
Tuberculosis: multidrug- resistant (MDR -TB)	12	4	35	30	0	2	5	0	31	119	0	2	0
Tuberculosis:extra-pulmonary	85	60	396	129	44	25	23	25	155	942	0	10	0

Condition	Provinces									Case		Deaths	
	EC[1]	FS[1]	GP[1]	KZN[1]	LP[1]	MP[1]	NC[1]	NW[1]	WC[1]	Suspected[1]	Confirmed[1]	Suspected[1]	Confirmed[1]
Tuberculosis: pulmonary	402	223	948	588	213	84	174	173	890	3 695	0	27	0

[1]n(%);
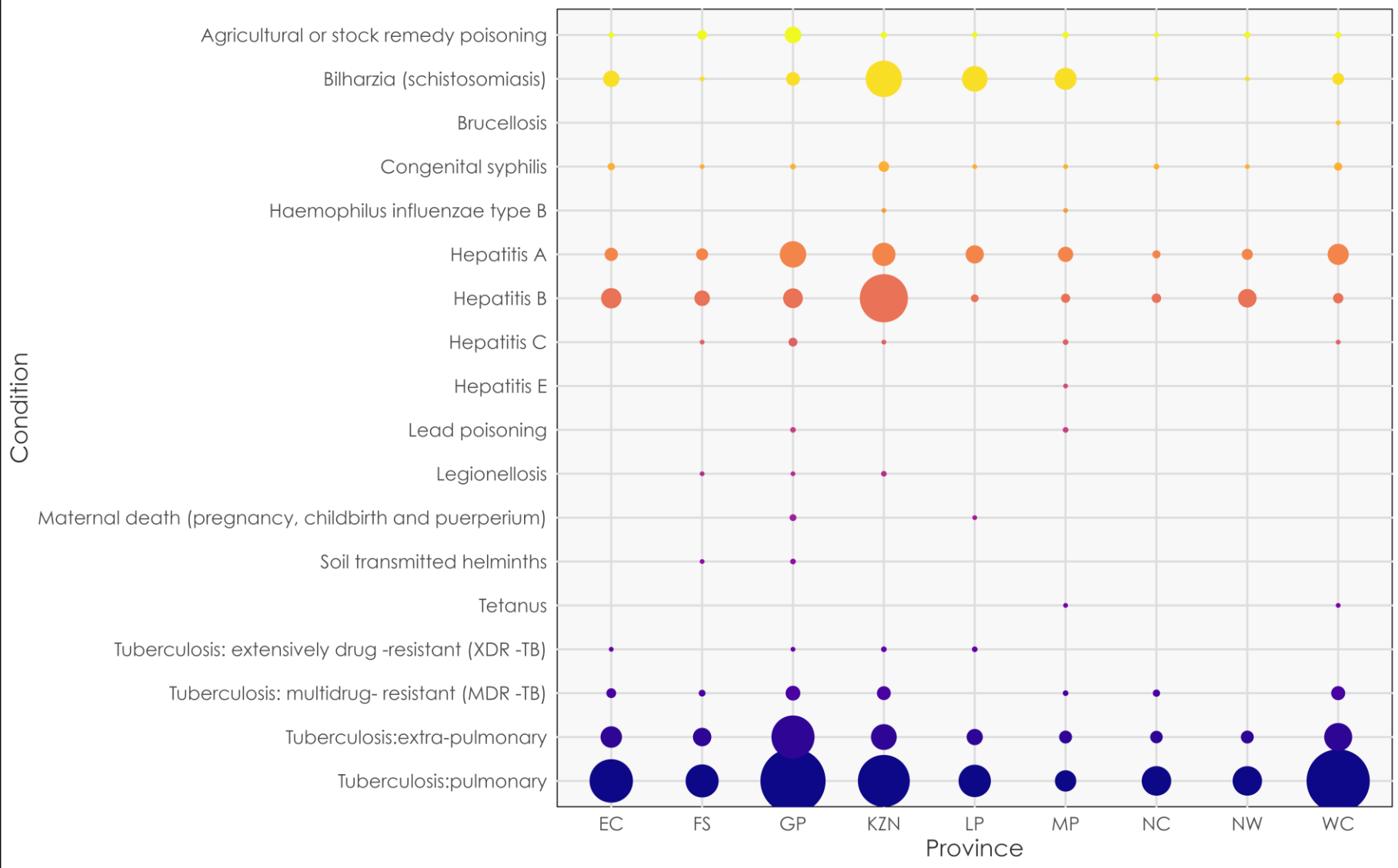
Figure 3: Distribution of Category 2 NMCs by province

Authorised users and average active users of the NMC Reporting App by month of notification, December 2020-December 2024

Users (No.)

Month of notification

2021   2022   2023

■ Average active users   ─── Authorised users
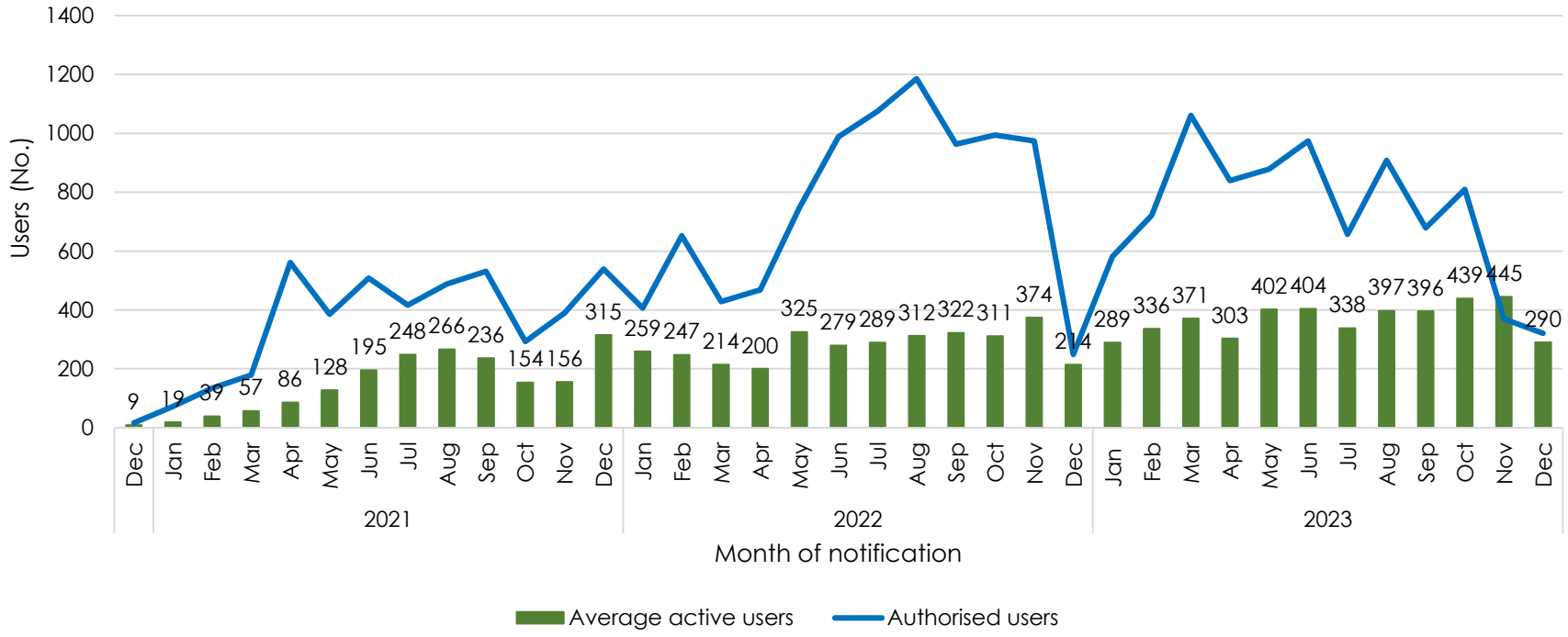
Data Quality

Completeness refers to the proportion of complete data entries per variable in the dataset among clinical and merged notifications.

Timeliness is measured by the number of days from the time of diagnosis of the NMC to the time of notification. Overall, it took a median (IQR) of 0 (0, 2) days to report category 1 NMCs.

Table 7: NMC data completeness of clinical notifications on both reporting platforms

	App, N = 5 757	**Paper-based**, N = 70
Folder Number	4 764 (83%)	52 (74%)
First Name	5 757 (100%)	70 (100%)
Surname	5 757 (100%)	70 (100%)
Symptom Onset Date	5 747 (100%)	69 (99%)
Date of Diagnosis	5 757 (100%)	70 (100%)
Outcome	5 757 (100%)	70 (100%)

ID Number Completeness

Table 8: Length of ID numbers inputted on NMC system

Length of ID number	**Android**, N = 1 819[1]	**Microstrategy/SDW**, N = 2 185[1]	**Paper-based**, N = 70[1]	**Web**, N = 3 474[1]	**iOS**, N = 464[1]
0	748 (41%)	2 122 (97%)	52 (74%)	1 141 (33%)	205 (44%)
6	1 (<0.1%)	2 (<0.1%)	0 (0%)	251 (7.2%)	45 (9.7%)
7	0 (0%)	0 (0%)	0 (0%)	8 (0.2%)	0 (0%)
8	0 (0%)	1 (<0.1%)	0 (0%)	56 (1.6%)	0 (0%)
9	1 (<0.1%)	0 (0%)	0 (0%)	10 (0.3%)	1 (0.2%)
10	0 (0%)	6 (0.3%)	0 (0%)	73 (2.1%)	0 (0%)
11	0 (0%)	0 (0%)	0 (0%)	2 (<0.1%)	1 (0.2%)
12	0 (0%)	0 (0%)	0 (0%)	26 (0.7%)	1 (0.2%)
13	1 069 (59%)	54 (2.5%)	18 (26%)	1 907 (55%)	211 (45%)

[1]n (%)

Symptomatology

Table 9: Symptoms of patients clinically notified and merged with lab notifications to the NMC

Characteristic	Overall, N = 8 012[1]	Category 1, N = 1 085[1]	Category 2, N = 6 773[1]	Category 3, N = 154[1]
Cough	2 797 (35%)	138 (13%)	2 659 (39%)	0 (0%)
Loss of weight	1 793 (22%)	0 (0%)	1 793 (26%)	0 (0%)
Loss of appetite	1 308 (16%)	7 (0.6%)	1 301 (19%)	0 (0%)
Night Sweats	1 087 (14%)	0 (0%)	1 087 (16%)	0 (0%)
Fever	1 083 (14%)	196 (18%)	887 (13%)	0 (0%)
Chest pains	873 (11%)	0 (0%)	873 (13%)	0 (0%)
Shortness of breath	480 (6.0%)	0 (0%)	480 (7.1%)	0 (0%)
Weakness	431 (5.4%)	0 (0%)	431 (6.4%)	0 (0%)
Other	416 (5.2%)	34 (3.1%)	378 (5.6%)	4 (2.6%)
Flu-like symptoms	411 (5.1%)	12 (1.1%)	399 (5.9%)	0 (0%)
Muscle weakness	398 (5.0%)	17 (1.6%)	381 (5.6%)	0 (0%)
Maculopapular rash	222 (2.8%)	222 (20%)	0 (0%)	0 (0%)
Conjuctivitis	111 (1.4%)	111 (10%)	0 (0%)	0 (0%)
Vomiting	59 (0.7%)	59 (5.4%)	0 (0%)	0 (0%)
Abdominal pain	51 (0.6%)	51 (4.7%)	0 (0%)	0 (0%)
Paroxysmal coughing	43 (0.5%)	43 (4.0%)	0 (0%)	0 (0%)
Headache	27 (0.3%)	27 (2.5%)	0 (0%)	0 (0%)
Profuse watery diarrhoea	22 (0.3%)	22 (2.0%)	0 (0%)	0 (0%)
Inspirational whoop	21 (0.3%)	21 (1.9%)	0 (0%)	0 (0%)
Chills / Shivering	15 (0.2%)	15 (1.4%)	0 (0%)	0 (0%)
Nausea	14 (0.2%)	14 (1.3%)	0 (0%)	0 (0%)

Characteristic	Overall, N = 8 012[1]	Category 1, N = 1 085[1]	Category 2, N = 6 773[1]	Category 3, N = 154[1]
Tiredness / Body malaise	12 (0.1%)	12 (1.1%)	0 (0%)	0 (0%)
Acute febrile illness	12 (0.1%)	12 (1.1%)	0 (0%)	0 (0%)
Meningitis	11 (0.1%)	11 (1.0%)	0 (0%)	0 (0%)
Vomiting after cough	10 (0.1%)	10 (0.9%)	0 (0%)	0 (0%)
Loss of muscle tone	9 (0.1%)	9 (0.8%)	0 (0%)	0 (0%)
Rice-water stools	7 (<0.1%)	7 (0.6%)	0 (0%)	0 (0%)
Dizziness	6 (<0.1%)	6 (0.6%)	0 (0%)	0 (0%)
Pseudomembrane	5 (<0.1%)	5 (0.5%)	0 (0%)	0 (0%)
Petechial rash	5 (<0.1%)	5 (0.5%)	0 (0%)	0 (0%)
Severe dehydration	4 (<0.1%)	4 (0.4%)	0 (0%)	0 (0%)
Sore throat	4 (<0.1%)	4 (0.4%)	0 (0%)	0 (0%)
Culture-positive listeria monocytogens	4 (<0.1%)	4 (0.4%)	0 (0%)	0 (0%)
Difficulty breathing	3 (<0.1%)	3 (0.3%)	0 (0%)	0 (0%)
Low-grade fever	3 (<0.1%)	3 (0.3%)	0 (0%)	0 (0%)
Gastrointestinal illness	3 (<0.1%)	3 (0.3%)	0 (0%)	0 (0%)
Slurred speech	2 (<0.1%)	2 (0.2%)	0 (0%)	0 (0%)
Haematological abnormalities	2 (<0.1%)	2 (0.2%)	0 (0%)	0 (0%)
Aggressive behaviour	1 (<0.1%)	1 (<0.1%)	0 (0%)	0 (0%)
Muscle weakness or paralysis	1 (<0.1%)	1 (<0.1%)	0 (0%)	0 (0%)

[1]n (%)

Conclusion

The majority of notifications were clinical notifications. The increase in average active users and newly registered users over time is an indication of an increase in the acceptance of the NMC App in the provinces. The completeness of patient clinical details and patient demographic details have improved, due to the application of mandatory fields on the NMC App. There was a delay in reporting tuberculosis cases. The data harmonisation processes between the current and improved NMC systems are underway to improve reporting.

Recommendations
- We recommend the expedition of NMC App "whitelisting" on the provincial departmental intranet to make the electronic notification platform more accessible to health facilities.
- We recommend that clinicians should complete all patient clinical and demographic details to improve completeness.
- NMC Trainers to emphasise the importance of timeous reporting of Category 1 and 2 NMCs, to ensure real-time availability of data for public health action.

Appendix No. 1: Back-captured Clinical Notifications

Table 10: Back captured notifications by reporting province

Condition	Overall	Province									Case Source				
	Overall, (727)	EC, (54)	FS, (50)	GP, (282)	KZN, (130)	LP, (23)	MP, (38)	NC, (48)	NW, (15)	WC, (87)	Android, (158)[1]	Paper-based, (1)[1]	SDW, (4)[1]	Web, (527)[1]	iOS, (37)[1]
Agricultural or stock remedy poisoning	2 (0.3%)	0	1	1	0	0	0	0	0	0	1	0	0	1	0
Bilharzia (schistosomiasis)	3 (0.4%)	0	0	1	1	1	0	0	0	0	1	0	1	1	0
Cholera	1 (0.1%)	1	0	0	0	0	0	0	0	0	0	1	0	0	0
Congenital syphilis	6 (0.8%)	2	0	0	1	0	0	0	0	3	1	0	1	4	0
Hepatitis A	4 (0.6%)	0	0	1	0	1	0	0	0	2	0	0	1	3	0
Hepatitis B	25 (3.4%)	7	0	10	0	0	7	0	0	1	1	0	0	24	0
Hepatitis C	9 (1.2%)	0	0	5	0	0	4	0	0	0	0	0	0	9	0
Malaria	6 (0.8%)	0	0	1	0	4	1	0	0	0	5	0	1	0	0
Maternal death (pregnancy, childbirth and puerperium)	3 (0.4%)	0	0	0	0	3	0	0	0	0	0	0	0	3	0
Pertussis	2 (0.3%)	0	1	0	1	0	0	0	0	0	0	0	0	1	1
Rubella	1 (0.1%)	0	0	0	0	0	0	0	1	0	0	0	0	1	0
Soil-transmitted helminths	1 (0.1%)	0	0	1	0	0	0	0	0	0	1	0	0	0	0
Tuberculosis: extensively drug-resistant (XDR-TB)	2 (0.3%)	0	0	1	1	0	0	0	0	0	1	0	0	1	0
Tuberculosis: multidrug- resistant (MDR-TB)	42 (5.8%)	1	2	5	28	2	1	0	0	3	12	0	0	26	4
Tuberculosis:extra-pulmonary	147 (20%)	6	9	85	27	3	2	4	3	8	34	0	0	103	10

Condition	Overall	Province									Case Source				
	Overall, (727)	EC, (54)	FS, (50)	GP, (282)	KZN, (130)	LP, (23)	MP, (38)	NC, (48)	NW, (15)	WC, (87)	Android, (158)[1]	Paper-based, (1)[1]	SDW, (4)[1]	Web, (527)[1]	iOS, (37)[1]
Tuberculosis: pulmonary	473 (65%)	37	37	171	71	9	23	44	12	69	101	0	0	350	22

[1]SDW – Surveillance Data Warehouse/ Microstrategy

Appendix No.2: Summary of NMCSS Data Flow
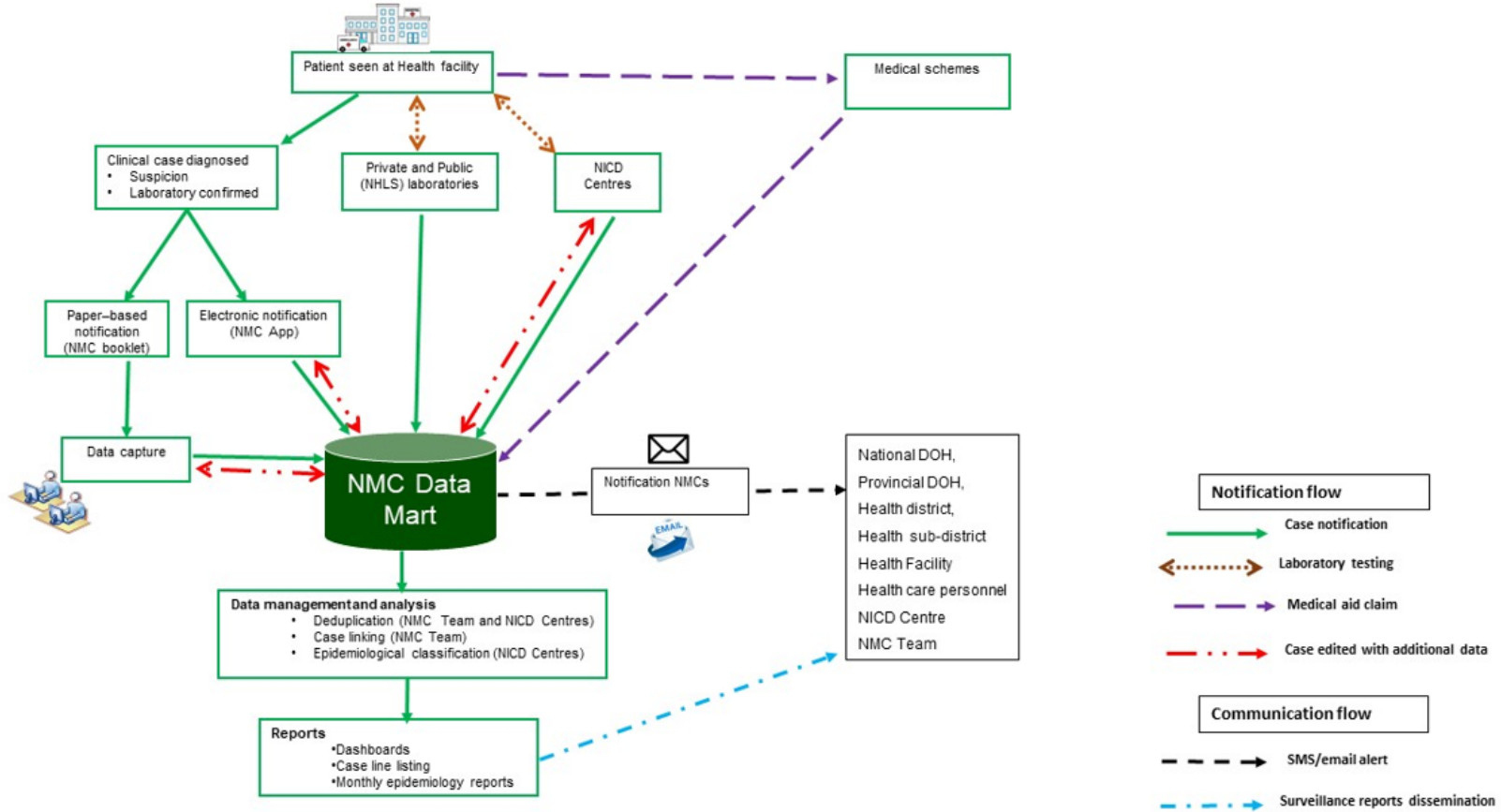
Appendix No.3: NMC Categories, and Case Classification Definitions

NMC categories

Category 1: NMCs are notified by the most rapid means available upon diagnosis, followed by a written or electronic notification to the Department of Health within 24 hours of diagnosis by healthcare providers, private health laboratories or public health laboratories. These conditions must be notified based on clinical suspicion regardless of laboratory confirmation.

Category 2: NMCs notified through a written or electronic notification to the Department of Health of clinical or laboratory diagnosis within 7 days by healthcare providers, private health laboratories or public health laboratories.

Category 3: NMCs are notified through a written or electronic notification to the Department of Health within 7 days of diagnosis by public and private health laboratories.

Category 4: NMCs are notified through a written or electronic notification to the Department of Health within 1 month of diagnosis by public and private health laboratories.

Case Classification definitions

Clinical cases: are cases reported to the NMC by health care providers at facilities, either through the completion of a paper form that is faxed, emailed to the National Institute of Communicable Diseases (NICD), or by direct data entry into the NMC application on a PC, laptop or mobile device. The diagnosis is made by the clinician based on case definitions published on the NICD website.

Laboratory cases: are cases that are downloaded into the NMC database directly from the National Health Laboratory Services (NHLS) laboratory information system. The NMC application applies the case definitions that are published on the NICD website. Private sector data is being sourced.

Merged cases: are cases where a case was notified by a health care provider at the facility (a 'clinical case') AND the laboratory issued a report with a positive result for the same case (a 'laboratory case). The NMC App is set up to automatically detect and link clinical and laboratory case notifications. The NICD specialist Centres and NMC data team review all cases and manually link any remaining clinical and laboratory cases

Notification capture times definitions

Current notification: All cases diagnosed and notified in the current month

Delayed notification: All cases diagnosed in the last 14 days from the previous month

Back capture notification: All cases diagnosed in previous months and before the last 14 days of the previous month.

Appendix No.4: IDSR reporting template for IDSR conditions existing on NMC by under-5 and 5-and-over years and vital status.

Table 11: The number of IDSR conditions the laboratory notified to the NMC using the IDSR reporting template of under and 5-and-above years by vital status.

Condition	Notified/Suspected				Confirmed
	Under 5 A, N = 216[1]	5 & over A, N = 441[1]	5 & over D, N = 4[1]	Under 5 D, N = 2[1]	N = 414[1]
Acute Flaccid Paralysis	9	12	0	0	0
Cholera	5	27	0	0	1
Congenital Rubella syndrome	0	0	0	0	19
Diphtheria	0	6	0	0	0
Enteric Fever (Typhoid or Paratyphoid Fever)	1	3	0	0	10
Foodborne Illness Outbreak	9	97	1	0	0
Listeriosis	0	4	1	0	10
Malaria	1	48	0	0	157
Measles	100	140	1	0	24
Meningococcal Disease	5	13	0	2	0
Pertussis	29	30	1	0	58
Rabies	0	0	0	0	2
Rubella	57	58	0	0	133
Waterborne Illness Outbreak - UNDEFINED	0	3	0	0	0

[1]A = Cases who are alive.
D = Cases who are deceased.

END