NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Division of the National Health Laboratory Service

NOTIFIABLE MEDICAL CONDITIONS SURVEILLANCE SYSTEM

Issued by the National Institute for Communicable Diseases based

Introduction

This report summarizes data on cases diagnosed and notified in **March 2023** using the National Notifiable Medical Conditions Surveillance System (NMCSS). This report also provides the distribution of case notifications by source i.e., clinical or laboratory notification, as well as merged cases (**see Appendix no.3)** and the number of reported deaths. It tracks the use of the electronic Application (App) for notification, data quality, specifically completeness and timeliness of clinical notifications over time, and back-captured cases notified in February (**see Appendix no.1 &3**). This report has excluded category 4 NMCs, and multi-system inflammatory syndrome (MIS-C). The Covid-19 data reported in this report represents routine surveillance notification data.

Highlights

- A total of 8 157 cases were notified in March 2023 and the majority were category 2 conditions.
- At least 97% (n=4 292/5 443) of the clinical notifications were notified using the NMC Reporting App; range:72-100% **(Figure1)**
- Overall, it took a median of less than a day (IQR: 0-2 days) to report category 1 NMCs in March 2023.
- At least 34 % (n=145/423) of cases, either admitted, discharged or transferred out had the hospitalisation form completed.
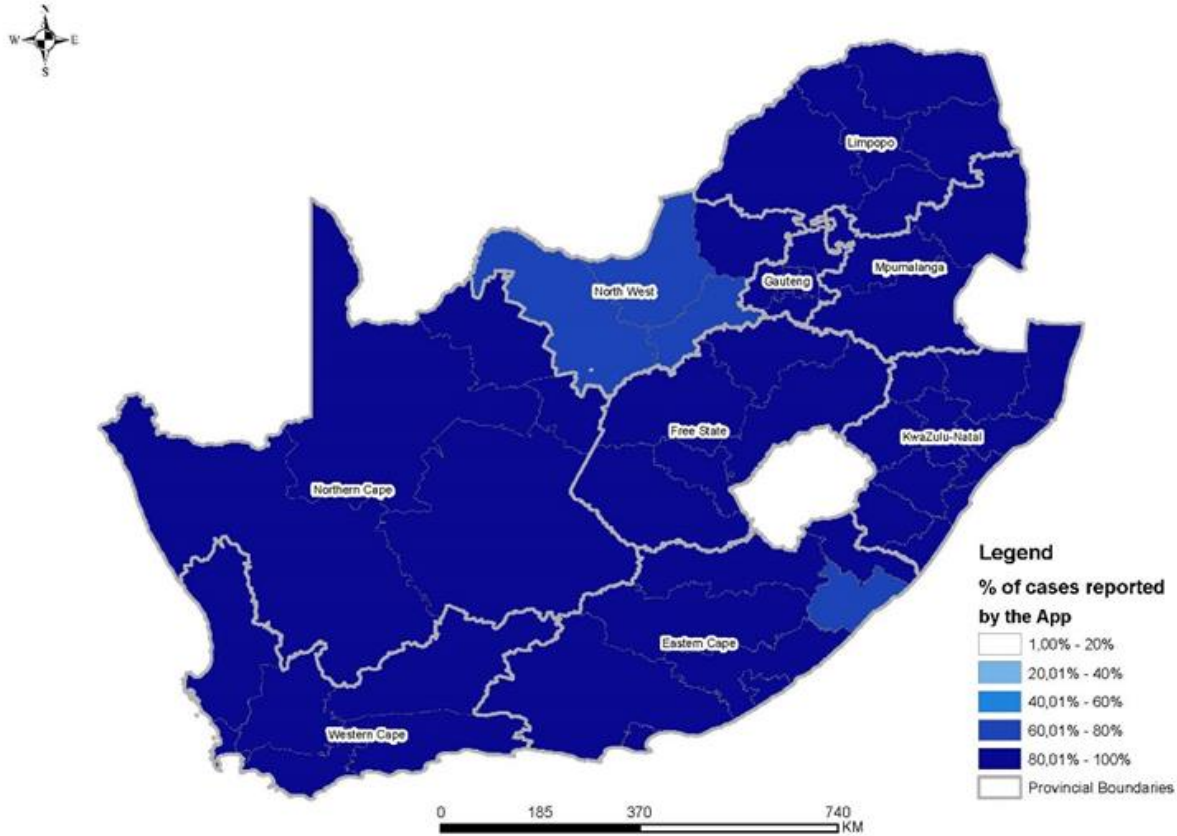
**Figure 1:** App utilisation rate by reporting province, March 2023

NMC data summary, March 2023

We report on 8 157 cases notified in March 2023, of these 7 460 cases were diagnosed and notified (current notifications) to the NMCSS in March 2023. In addition, there were 697 notifications diagnosed in the last two weeks of February 2023 and notified in March 2023 (referred to as delayed notifications) (see **Appendix no.3** for definitions). Overall, the majority were category 2 conditions (83.0%, n=6 770); of which 66.1% (n= 4 476/6 770) were clinical notifications (**Table 1**). The provinces with the highest number of notifications were KwaZulu-Natal (n=2 166, 26.6%), Gauteng (n=1 777, 21.8%), and Western Cape (n=1 312, 16.1%). Among the cases captured by clinicians, the majority were from Gauteng (27.9%, n= 1 517) and Western Cape (20%, n=1 097). (**Figure 2**). Of these, the majority (97.2%, n=5291/5441) were captured using the NMC Reporting App. The majority of the laboratory notifications are from KwaZulu-Natal (44.1%, n=1197/2916). There were 1 354 back-captured clinical notifications diagnosed from 26 February 2019 to 14 February 2023 and only notified in March 2023. (**See Appendix No. 1**).

Table 1: Description of NMC notifications by case source, March 2023.

		Case Source		
	Total notifications **n (%)**	**Clinical notification only** **n (%)**	**Laboratory notification only** **n (%)**	**Merged cases** **(Clinical with laboratory results)** **n (%)**
Category 1	1 232 (15.1)	599 (11.8)	476 (17.5)	157 (42.7)
Category 2	6 770 (83.0)	4 476 (88.2)	2 088 (76.9)	206 (56.0)
Category 3	155 (1.9)	0 (0.0)	150 (5.5)	5 (1.4)
Grand Total	**8 157 (100.00)**	**5 075 (62.2)**	**2 714 (33.3)**	**368 (4.5)**

Data are continuously updated and are best available at the time of release.
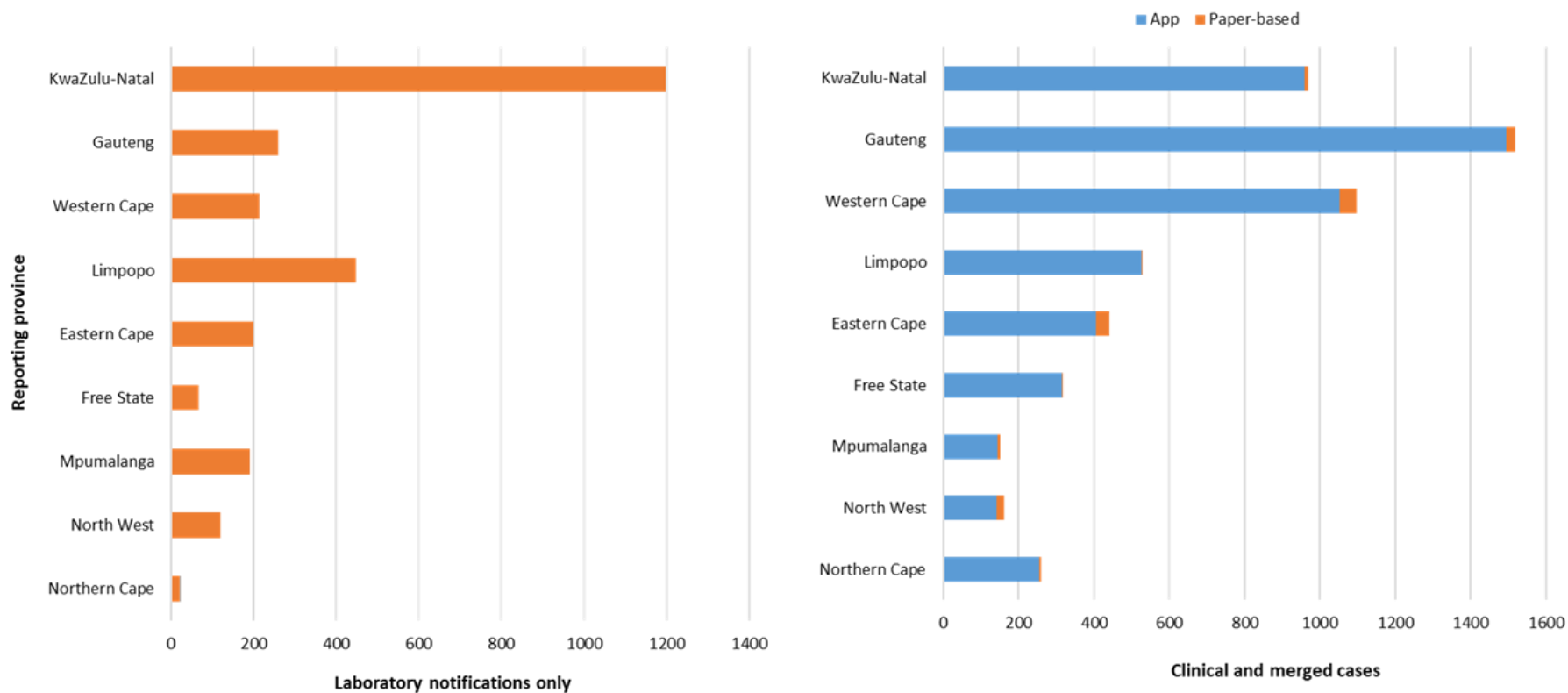
Figure 2: Distribution of notifications by province, March 2023

Of the clinical and merged notifications, 13.5% (n=734/5 443) were from the private sector (i.e., private hospitals, private practice, and the mining industry). We report an overall NMC Reporting App utilisation rate (proportion of clinical notifications reported using the App) of 97.2% (n=4 292/5 443). In all provinces, the majority of the clinical notifications were captured using the NMC Reporting App (Figure 3) with utilisation ranging from 87.1% in North West to 99.8% in Limpopo.
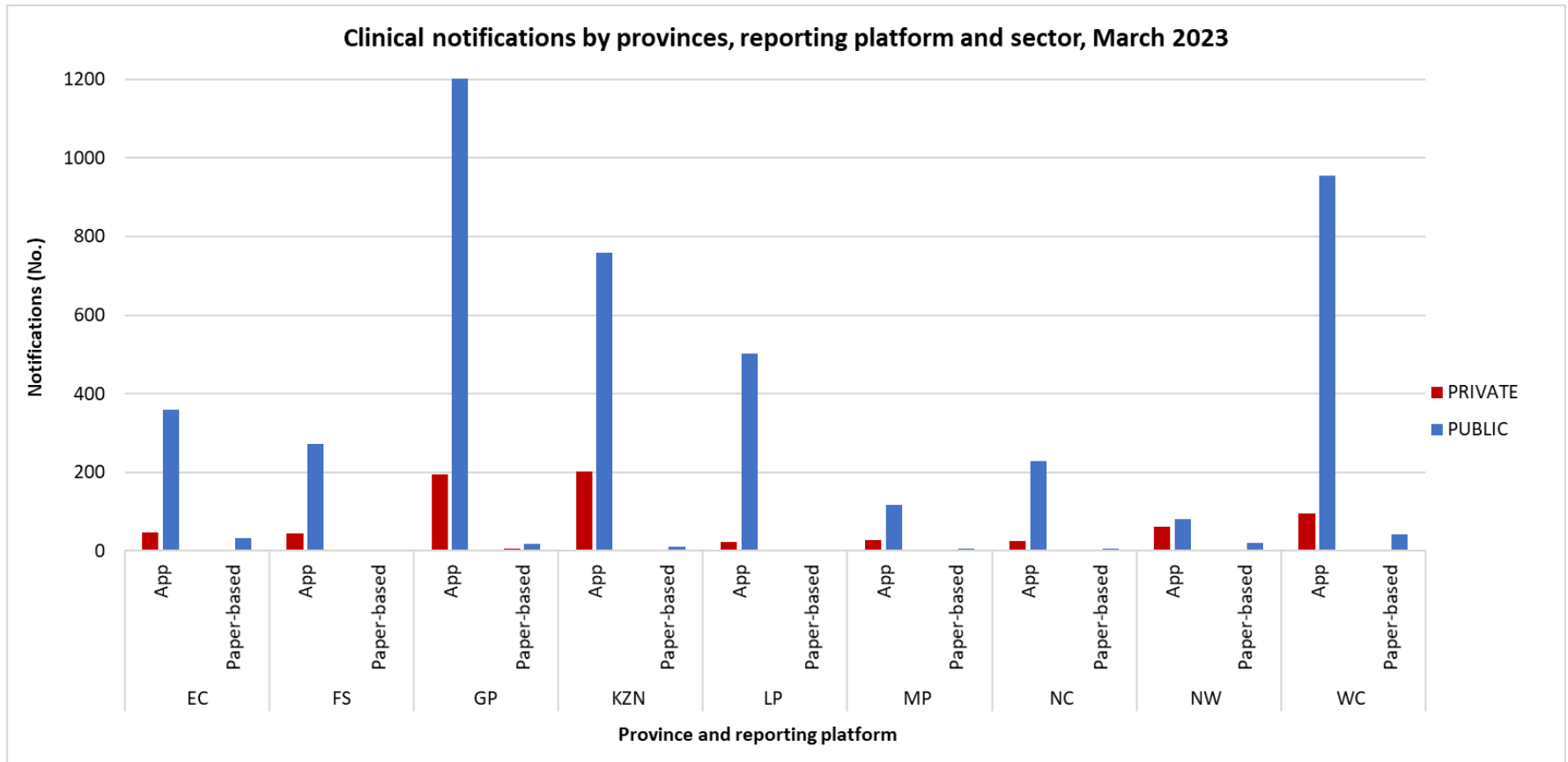
Figure 3: Clinical notifications notified by provinces, reporting platform, and sector, March 2023

The majority of the notified cases were male (59.4%, n=4 844). Individuals in the 0-4 (11.0%, n=899) and 35-39 (10.3%, n=837) age categories represented the majority of notified cases (**Table 2)**. Approximately 23.3% (n=1 903) of the notified cases were hospitalized, while 0.7% (n=58) were referred to another healthcare facility. There were 64 deaths notified during the reporting period.

Table 2: Age distribution by gender, admission status, and patient outcome, March 2023

Age groups	Gender			Admission status					Patient Outcome			
	Female	Male	Unknown	Discharged	Inpatient	Outpatient	Transferred	Unknown	Alive	Deceased	Unknown	Total (%)
0-4	418	478	3	84	356	255	8	196	696	4	199	899 (11.0)
5-9	199	311	0	17	93	103	3	294	216	2	292	510 (6.3)
10-14	147	459	0	14	50	102	2	438	173	2	431	606 (7.4)
15-19	211	321	0	20	69	126	2	315	217	1	314	532 (6.5)
20-24	261	259	0	26	93	199	2	200	317	2	201	520 (6.4)
25-29	300	325	0	28	108	279	4	206	417	4	204	625 (7.7)
30-34	353	468	0	31	184	344	6	256	557	9	255	821(10.1)
35-39	342	495	0	41	177	363	4	252	586	5	246	837(10.3)
40-44	274	426	0	36	176	317	9	162	530	6	164	700 (8.6)
45-49	221	325	0	29	152	247	5	113	418	8	120	546 (6.7)
50-54	161	282	0	27	127	218	5	66	370	3	70	443 (5.4)
55-59	103	219	0	19	107	140	4	52	264	4	54	322 (3.9)
60-64	79	140	0	12	66	102	3	36	184	4	31	219 (2.7).
65+	154	202	0	30	117	160	1	48	302	8	46	356 (4.4)
Unknown	87	134	0	6	28	8	0	179	40	2	179	221 (2.7)
Total (%)	3310 (40.6)	4 844 (59.4)	3 (0.04)	420 (5.1)	1 903 (23.3)	2 963 (36.3)	58 (0.7)	2 813 (34.5)	5 287 (64.8)	64 (0.8)	2 806 (34.4)	8157

The Category 1 NMC notifications require completion of the hospitalisation form if the patient was admitted, transferred or discharged at the time of notification. In March 2023, 423 patients diagnosed with category 1 conditions were either admitted, discharged or transferred out. Of these, 34.3% (n=145/423) notifications had the hospitalisation form completed (**Figure 4).**
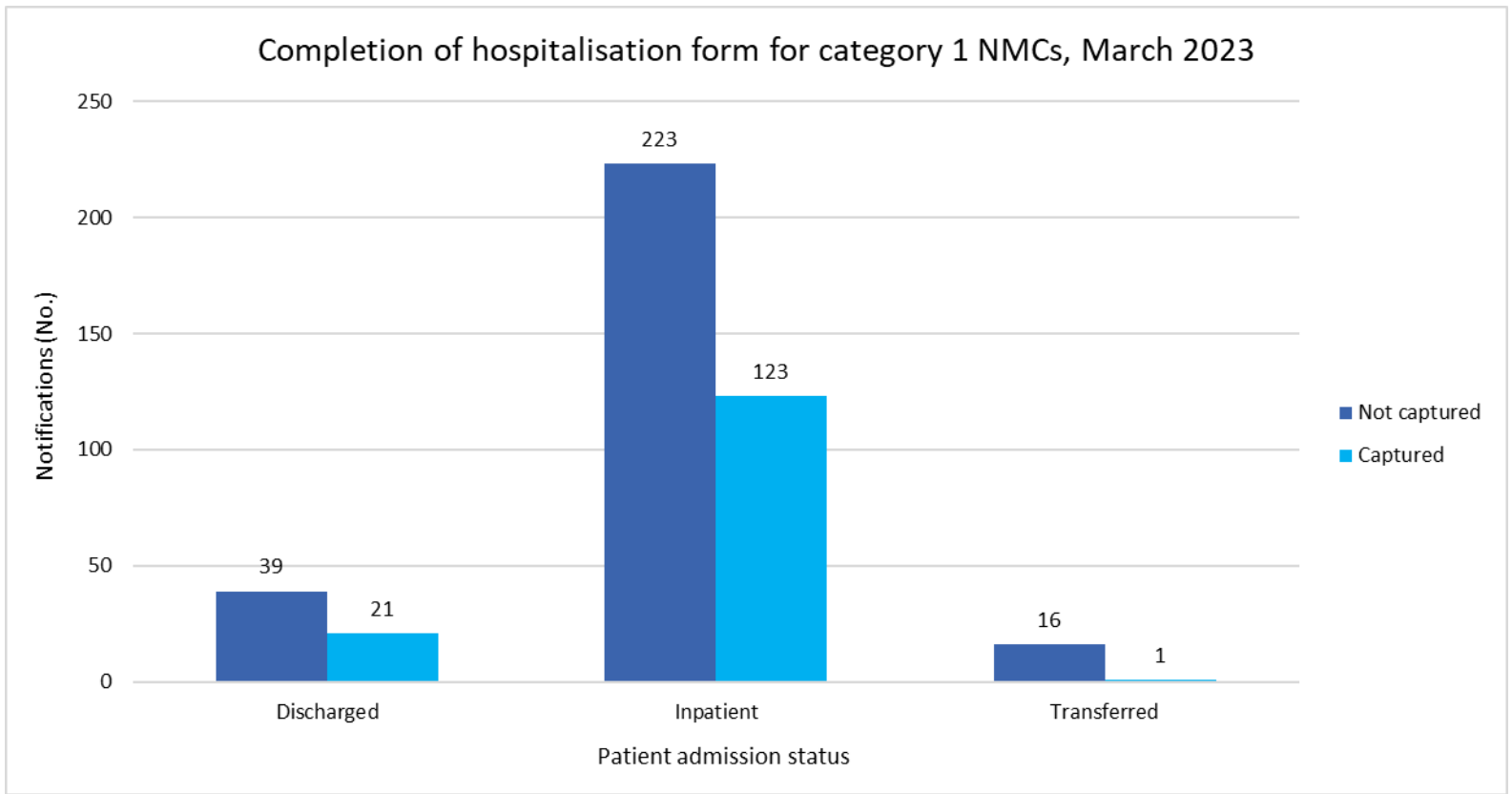
Figure 4: Completion of hospitalisation form for patients diagnosed with category 1 conditions who were either admitted, discharged or transferred out in March 2023

Distribution of category 1 NMCs by province and number of deaths, March 2023

The majority of category 1 notifications were for Malaria (40.9%, n=504), followed by measles (33.2%, n=409) and pertussis (17.1%, n=211) (**Table 3**). In South Africa, malaria season starts in September to May, hence the higher counts of cases in endemic provinces. The increased number of measles cases is a result of the ongoing measles outbreak affecting eight provinces. An increased number of pertussis cases was observed as of May 2022. Additional 5 confirmed cholera cases were reported in March 2023 in Gauteng Province. See the cholera cases update available on the National Institute for Communicable Diseases website. An additional foodborne illness outbreak was reported to NICD from KZN, making a sum of 9 outbreaks in the month of March 2023.

Table 3: Distribution of Category 1 NMC, March 2023

Category 1 NMC	Province									March 2023		¥February 2023	
	EC	FS	GP	KZN	LP	MP	NC	NW	WC	Total	²Total deaths n (⁴CFR)	Total	²Total deaths n (⁴CFR)
Acute Flaccid Paralysis/Poliomyelitis	0	0	3	8	3	1	0	0	3	18	**0(0,0)**	9	0(0,0)
Acute rheumatic fever	0	1	0	0	0	0	0	0	0	1	**0(0,0)**	1	0(0,0)
Anthrax	0	0	0	0	0	0	0	0	0	**0**	**0(0,0)**	0	0(0,0)
Botulism	0	0	0	0	0	0	0	0	0	**0**	**0(0,0)**	0	0(0,0)
Cholera	0	0	5	0	0	0	0	0	0	5	**0 (0.0)**	6	1 (16,7)
Congenital Rubella Syndrome	1	1	0	5	0	0	0	0	0	7	**2(28.6)**	0	0(0,0)
Diphtheria	0	0	0	1	0	0	0	0	0	1	**0(0,0)**	1	0(0,0)
Enteric fever (typhoid or paratyphoid fever)	1	1	9	2	0	2	0	1	8	24	**2(8.3)**	22	2(9,1)
Foodborne illness outbreak	1	0	2	4	0	0	0	0	1	8	**0(0,0)**	12	0(0,0)
Haemolytic uraemic syndrome (HUS)	0	0	0	0	0	0	0	0	0	**0**	**0(0,0)**	1	0(0,0)
Listeriosis	0	1	4	3	0	0	0	0	0	8	**1(12.5)**	10	2(20,0)
$Malaria	6	0	112	116	174	60	1	18	17	504	**6 (1.2)**	471	2 (0,4)
Measles	5	7	90	42	162	15	18	28	42	409	**1(0.2)**	454	0(0,0)
Meningococcal Disease	0	1	0	3	0	0	0	2	5	11	**1(9.1)**	6	0(0,0)
Monkeypox	0	0	0	0	0	0	0	0	0	**0**	**0(0,0)**	0	0(0,0)
Pertussis	15	14	51	35	11	11	3	7	64	211	**0 (0.0)**	215	3 (1,4)
Plague	0	0	0	0	0	0	0	0	0	**0**	**0(0,0)**	0	0(0,0)
Rabies (human)	1	0	0	2	1	0	0	0	0	4	**0 (0.0)**	4	1 (25,0)
Respiratory disease caused by a novel respiratory pathogen	0	0	0	0	0	0	0	0	0	**0**	**0(0,0)**	0	0(0,0)
Rift Valley Fever (human)	0	0	0	0	0	0	0	0	0	**0**	**0(0,0)**	0	0(0,0)
Rubella	0	8	3	4	2	1	0	2	0	20	**0(0,0)**	9	0(0,0)
Smallpox	0	0	0	0	0	0	0	0	0	**0**	**0(0,0)**	0	0(0,0)
**Viral haemorrhagic fever diseases	0	0	0	0	0	0	0	0	0	**0**	**0(0,0)**	1	0(0,0)
Waterborne illness outbreak - UNDEFINED	0	0	0	0	1	0	0	0	0	1	**0(0,0)**	1	0(0,0)
Yellow fever	0	0	0	0	0	0	0	0	0	**0**	**0(0,0)**	1	0(0,0)
Total	**30 (2.4)**	**34 (2.8)**	**279 (22.6)**	**225 (18.3)**	**354 (28.7)**	**90 (7.3)**	**22 (1.8)**	**58 (4.7)**	**140 (11.4)**	**1 232**	**13 (1.1)**	**1 224**	**12 (1.0)**

EC (Eastern Cape). FS (Free State). GP (Gauteng). KZN (KwaZulu-Natal). LP (Limpopo). MP (Mpumalanga). NW (North West). NC (Northern Cape). WC (Western Cape). **Viral Haemorrhagic fever diseases: Ebola or Marburg viruses, Lassa virus, Lujo virus, novel or new world arenaviruses. Crimean-Congo haemorrhagic fever. ¥* February 2023 data for comparison purposes (notification date. $These data do not include malaria cases reported to DHIS2. Efforts are underway to harmonize reporting of malaria cases through the different systems. *Data are updated continually and are best available at the time of release.*

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² Patient's vital status at the time of reporting. This is not always the final clinical outcome. The system depends on clinicians to update the vital status of patients. ,⁴ CFR- Case Fatality Rate (%) = (No. of deaths/ No. of cases) x 100

Distribution of category 2 NMCs by province and number of deaths, March 2023

A total of 6 770 NMC category 2 notifications were reported in March 2023. The majority of category 2 NMC notifications were pulmonary tuberculosis infection (48.2%) followed by Hepatitis B (15.4%) and Bilharzia (13.9%). Thirty-one deaths were reported due to tuberculosis infection.

**Table 4:** Distribution of Category 2 NMC, March 2023

Category 2 NMC	Provinces									March 2023		¥*February 2023	
	EC	FS	GP	KZN	LP	MP	NC	NW	WC	Total	[2]Total deaths n(4CRF)	Total	[2]Total deaths n(4CRF)
Agricultural or stock remedy poisoning	3	7	44	0	3	0	0	0	9	66	**4 (6,1)**	63	**4 (6,3**
Bilharzia (schistosomiasis)	55	2	31	457	238	141	0	2	18	944	**0 (0,0)**	872	**1 (0,1)**
Brucellosis	0	0	0	0	0	0	0	0	0	**0**	**0(0,0)**	**0**	**0(0,0)**
Congenital syphilis	8	2	6	51	0	1	3	3	16	90	**0 (0.0)**	82	**1 (1,2)**
Haemophilus influenzae type B	0	0	1	1	0	0	0	0	2	4	**0(0,0)**	**2**	**0(0,0)**
[3]Hepatitis A	22	17	72	72	20	15	14	27	151	410	**0(0,0)**	**440**	**0(0,0)**
Hepatitis B	90	38	66	740	8	9	12	58	24	1045	**1(0,1)**	**982**	**0(0,0)**
[3]Hepatitis C	0	0	3	0	0	0	0	0	0	3	**0(0,0)**	**8**	**0(0,0)**
Hepatitis E	1	2	0	0	0	0	0	0	5	8	**0(0,0)**	**10**	**0(0,0)**
Lead poisoning	0	0	0	0	0	0	0	0	0	**0**	**0(0,0)**	**0**	**0(0,0)**
Legionellosis	0	0	0	0	0	0	0	0	3	3	**0(0,0)**	**7**	**0(0,0)**
Leprosy	0	0	0	0	0	0	0	0	0	**0**	**0(0,0)**	**0**	**0(0,0)**
[5]Maternal death (pregnancy. childbirth and puerperium)[3]	0	0	1	2	0	0	0	0	0	3	**3(n/a)**	**4**	**4(n/a)**
Mercury poisoning	0	0	0	0	0	0	0	0	0	**0**	**0(0,0)**	**0**	**0(0,0)**
Soil-transmitted helminths	0	0	1	0	0	0	0	0	0	1	**0(0,0)**	**0**	**0(0,0)**
Tetanus	0	0	0	0	1	0	0	0	0	1	**0 (0.0)**	**3**	**1 (1,9)**
[5]Tuberculosis: extensively drug-resistant (XDR -TB)	1	0	1	3	0	0	0	0	3	8	**0(0,0)**	**6**	**0(0,0)**
[5]Tuberculosis: multidrug- resistant (MDR -TB)	6	1	24	14	3	0	1	4	27	80	**1 (1,3)**	**108**	**2 (1,9)**
[5]Tuberculosis: extra-pulmonary	42	39	381	98	59	17	32	23	147	838	**11 (1,3)**	**785**	**12 (1,5)**
[5]Tuberculosis: pulmonary	350	237	842	494	286	66	193	105	693	3266	**31 (0,9)**	**3015**	**27 (0,9)**
Total **(%)**	**578** **(8.5)**	**345** **(5.1)**	**1473** **(21.8)**	**1 932** **(28.5)**	**618** **(9.1)**	**249** **(3.7)**	**255** **(3.8)**	**222** **(3.3)**	**1 098** **(16.2)**	**6 770**	**51** **(0.8)**	**5 420** **(100)**	**52** **(0.8)**

EC (Eastern Cape). FS (Free State). GP (Gauteng). KZN (KwaZulu-Natal). LP (Limpopo). MP (Mpumalanga). NW (North West). NC (Northern Cape). WC (Western Cape). ¥*February 2023 data for comparison purposes. **Data are updated continually and are best available at the time of release.**

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[5] Parallel systems exist for reporting under the administration of the National Department of Health., [2]Patient's vital status at the time of reporting. This is not always the final clinical outcome. The system is dependent on clinicians to update the vital status of patients, should it change over time,[4] CRF- Case Fatality Rate (%) = No. of deaths/ No. of cases x 100

The average active users on the NMC App, December 2020 to February 2023

In March 2023, there were 371 average active users (sum of total access per day/number of days where users were active) (Figure 5). A total of 1 061 newly authorised users were recorded in March.
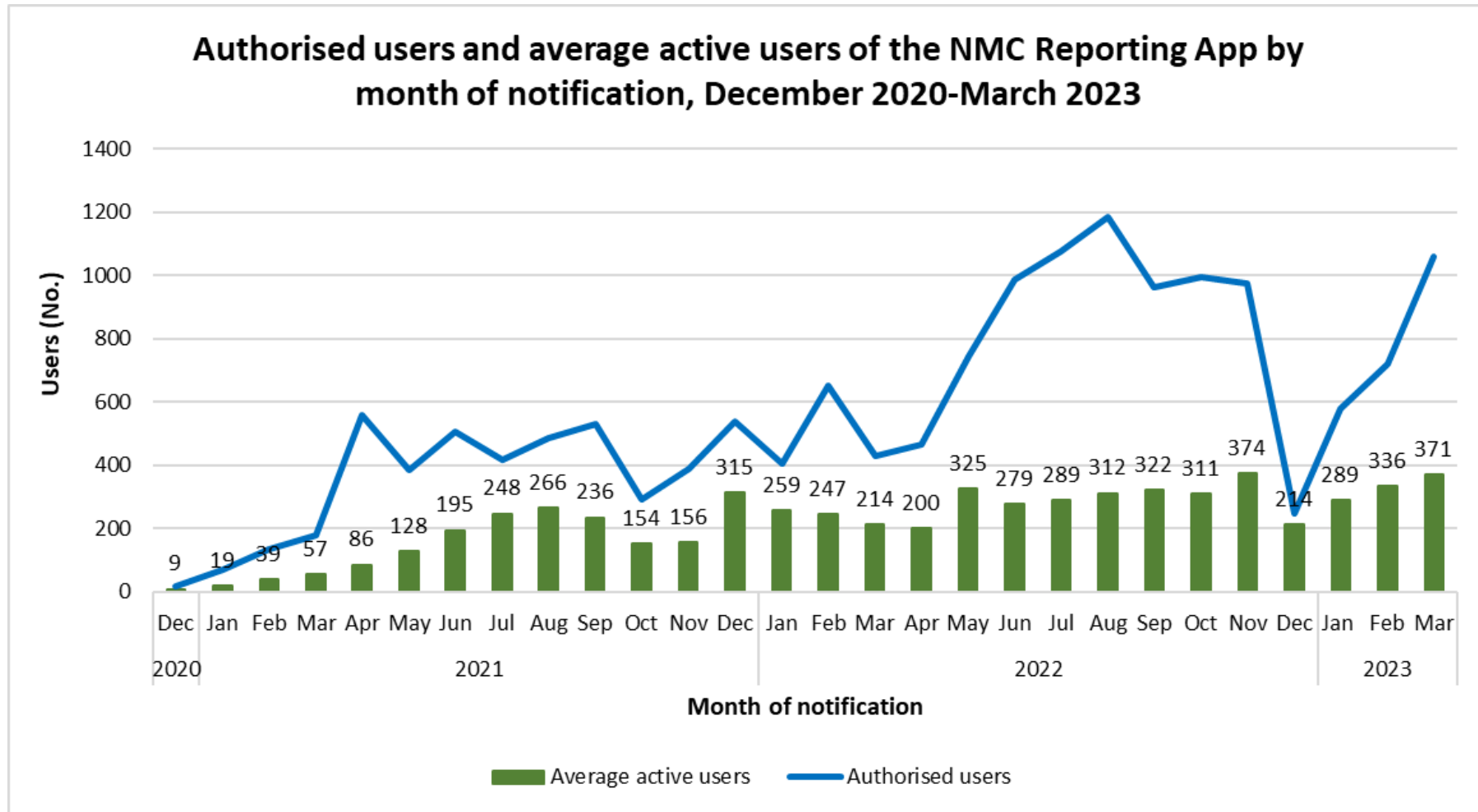
Figure 5: The average active user of the improved NMC reporting Application, December 2020-March 2023.

Completeness of clinical notifications in the NMCSS, March 2023

Completeness refers to the proportion of complete data entries per variable in the dataset among clinical and merged notifications. In March 2023, patient name, and surname were 100% complete on both App and paper platforms (**Table 5**). The patient folder/file number is poorly completed on both platforms.

Table 5: NMCSS data completeness on both reporting platforms, March 2023

Variables	NMC App (n=6 631)	Paper-based (n= 166)
	Complete n (%)	Complete n (%)
Patient folder no.	5543 (83.6)	116 (69.9)
Patient first name	6 631 (100.0)	166 (100.0)
Patient surname	6 631 (100.0)	166 (100.0)
Date of birth	6 573 (99.1)	165 (99.4)
Symptom Onset Date	6 599 (99.5)	159 (95.8)
Diagnosis Date	6 631 (100.0)	166 (100.0)
Patient outcome status	6 483 (97.8)	158 (95.2)

Timeliness of clinical notifications by NMC categories and province, March 2023

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 of less than a day (IQR :0-2) to report category 1 NMCs in March 2023 (**Table 7**).

Table 7: Time to notification of Category 1 and 2 NMC, March 2023

	Months	All cases notified in 2023		All cases notified in 2022	
		N¥	Median (IQR*)	N¥	Median (IQR*)
Category 1	**December**			511	**1 (0-2)**
	November			576	0(0-1)
	October			606	0(0-2)
	September			464	1(0-2)
	August			276	1(0-6)
	July			220	1(0-2)
	June			201	1(0-3)
	May			23	1(0-4)
	April			24	2 (0-6)
	March	772	0 (0-2)	24	1(0-4)
	February	754	0 (0-2)	80	1(0-3)
	January	746	1 (0-2)	41	1(0-5)
Category 2	**December**			¥2 566	**2 (0-7)**
	November			¥5 283	2(0-7)
	October			¥5 111	2(0-6)
	September			¥4 493	2(0-6)
	August			¥4 249	2(0-7)
	July			¥3 286	2(0-7)
	June			¥2 658	2 (0-6)
	May			127	10(3-34)
	April			112	9 (3-21)
	March	6 020	4 (0-22)	168	8(2-30)
	February	5 233	4 (0-15)	262	8(2-26)
	January	3 669	2 (0-7)	271	11(3-52)

IQR: Interquartile range is based on 25 and 75 quartiles, ¥The increase is due to Tuberculosis notifications and NMC App uptake by the TB programme to notify TB

Notifications of COVID-19 in the NMCSS, March 2023

The majority of the COVID-19 notifications were reported by healthcare facilities through the routine NMC Surveillance system. At least 70% of all the notifications (n=2 686/3 827) of the COVID-19 cases were laboratory confirmed. The majority of the routine notifications were reported by Gauteng (58.0%) followed by Western Cape (18.6%) in March 2023. On hospitalisation, there were 134 COVID-19 patients admitted in private facilities and 54 were reported by the Western Cape from 05 March 2023 to 15 April 2023.

Table 8: Notifications of COVID-19 notifications by source, March 2023

Case source	Diagnosis method	EC	FS	GP	KZN	LP	MP	NC	NW	WC	Total
Clinical	Laboratory confirmed	116	19	914	127	6	10	7	19	217	1 435
	Rapid test	46	15	679	41	3	13	8	118	218	1 141
Lab	Laboratory confirmed	71	37	560	121	2	39	12	19	253	1 114
Merged	Laboratory confirmed	7	2	66	35	0	3	0	0	24	137
Total (%)	**All**	**240 (6.3)**	**73 (1.9)**	**2 219 (58.0)**	**324 (8.5)**	**11 (0.3)**	**65 (1.7)**	**27 (0.7)**	**156 (4.1)**	**712 (18.6)**	**3 827**

Conclusion

A higher number of clinical notifications were reported by use of the NMC Reporting App from Gauteng and Western Cape provinces. This aligns with the increased uptake of the App in provinces. The increase in average active users over time is an indication of an increase in the acceptance of the NMC Reporting App in the provinces. Overall, the NMC Reporting App collected data of better quality than the paper-based form. The majority of back-captured tuberculosis cases resulted from a delay in reporting cases.

Recommendations

- We recommend the expedition of the NMC Reporting App "whitelisting" on the provincial departmental intranet to make the electronic notification platform more accessible to health facilities.

- To minimize the burden of capturing on the App, we recommend the submission of *already existing databases* for ingestion into the NMCSS.

- We recommend the completion of hospital forms for hospitalised patients for all category 1 NMCs including, COVID-19.

Appendix 1: Back-captured clinical notifications

Table 8: NMC conditions diagnosed (February 2019 to 14 February 2023) and notified in March 2023

| NMC Condition	EC	FS	GP	KZN	LP	MP	NC	NW	WC	Total n (%)
Acute Flaccid Paralysis	1	0	0	0	0	0	0	0	0	1 (0.1)
Agricultural or stock remedy poisoning	0	0	1	0	0	0	0	0	0	1(0.1)
Bilharzia (schistosomiasis)	0	0	1	4	1	0	0	0	5	11(0.8
Congenital syphilis	1	0	1	0	0	0	0	0	5	7 (0.5)
Haemophilus influenzae type B	0	0	1	0	0	0	0	0	0	1(0.1)
Hepatitis A	0	0	0	1	0	0	0	1	1	3 (0.2)
Hepatitis B	1	0	22	2	0	10	0	0	0	35 (2.6)
Hepatitis C	0	0	9	1	0	2	0	0	0	12 (0.9)
Malaria	0	0	5	0	5	0	0	0	0	10 (0.7)
Measles	0	0	0	0	0	0	2	0	0	2 (0.1)
Pertussis	0	0	0	1	0	0	0	0	1	2 (0.1)
Tuberculosis: extensively drug-resistant (XDR -TB)	0	0	0	0	0	0	1	0	2	3 (0.2)
Tuberculosis: multidrug- resistant (MDR -TB)	2	3	5	12	0	0	0	0	2	24 (1.8)
Tuberculosis: extra-pulmonary	6	6	347	20	11	2	0	4	17	413 (30.5)
Tuberculosis: pulmonary	34	41	457	56	122	7	33	12	66	828 (61.2)
Waterborne illness outbreak - UNDEFINED	0	0	1	0	0	0	0	0	0	1 (0.1)
Total (%)	**45 (3.3)**	**50 (3.7)**	**850 (62.8)**	**97 (7.2)**	**139 (10.3)**	**21 (1.6)**	**36 (2.7)**	**17 (1.3)**	**99 (7.3)**	**1354**

Table 9: Back capture: Time to notification of category 1 and 2 NMC, February 2023

	Months	Back notified cases in February 2023		
		N¥	Median (IQR*)	Min- Max
Category 1	March	16	61(40-150)	18-396
	February	13	36(24-53)	18-86
	January	10	205(30-370)	19-370
Category 2	March	1 338	156(56-331)	15-1467
	February	847	77(42-145)	19-1699
	January	616	62(40-126)	18-771

*IQR: Interquartile range is based on 25 and 75 quartiles; ᵗExcluding Leprosy cases

Appendix 2: Summary of NMCSS Data Flow
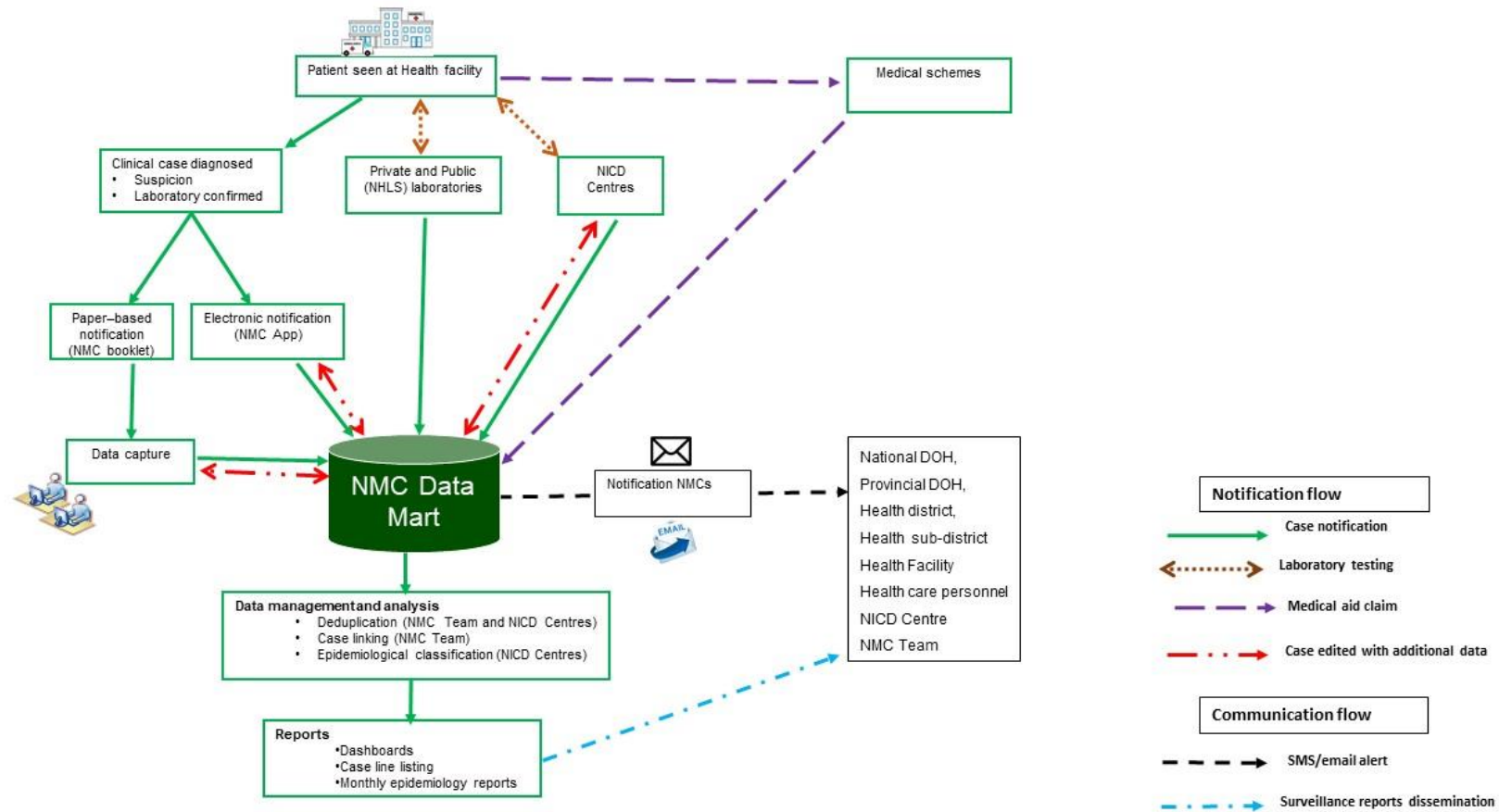
Figure 7: Summary of data flow within the NMC surveillance system

Appendix 3: NMC Categories, and Case Classification definitions

<u>NMC categories</u>

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 irrespective 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.

<u>Case Classification definitions</u>

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 on the basis of 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