NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Division of the National Health Laboratory Service

NMC SURVEILLANCE REPORT JULY 2023

NOTIFIABLE MEDICAL CONDITIONS SURVEILLANCE SYSTEM

Issued by the National Institute for Communicable Diseases

Introduction

This report summarizes data from the National Notifiable Medical Conditions Surveillance System (NMCSS) on cases diagnosed and reported in **July 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 July 2023 (**see Appendix nos. 1 and 3**). Category 4 NMCs and multi-system inflammatory syndrome (MIS-C) have been excluded from this report.

Highlights

- A total of 7 290 cases were notified in July 2023 and the majority were category 2 conditions.
- There were 338 average active users of the NMC App in July 2023
- There is an observed increase of pertussis cases from 237 in June to 282 in July 2023.

NMC Reporting application

• NMC Reporting App is available on both web and mobile platforms

- Use recommended browsers to access NMC reporting App for notifications, searching of cases and reports.
- Register if you have no NMC account. You can reset your password if you have not used the application over 12 months.

NOTES: For any additional information contact the NMC national technical team: <u>NMCAppSupport@nicd.ac.za</u> or NMC hotline <u>072 621 3805</u>. Please refer to Appendices for NMC data flow, definitions and interpretation of epidemiology data in this report.

DATA IS CONTINUOUSLY CLEANED, DE-DUPLICATED, AND UPDATED, HENCE IS SUBJECT TO CHANGE. ALL NUMBERS REPORTED ARE PRELIMINARY UNLESS OTHERWISE STATED. DATE OF DIAGNOSIS IS USED FOR REPORTING.

NMC data summary, July 2023

A total of 7466 cases were diagnosed and notified to the NMCSS in July 2023. There were 7 290 current notifications and 176 back captured notifications (see Appendix no.3 for definitions). The majority were category 2 conditions (n=6 508, 89%) (Table 1). Gauteng recorded the highest number of notifications with (n=1967, 26.3%), followed by KwaZulu-Natal (n=1847, 24.7%), and Western Cape (n=1 476,19.8%). Northern Cape and North West recorded the least notifications with 320 (4.3%) and 291 (3.9%) cases, respectively (Figure 1). There were 27 (53%) TB cases that were back captured. (See Appendix no.1).

NMC Category	Overall , N = 7 290	Clinical notifications , n = 5 178	Laboratory notifications, n = 1 915	Merged Cases, n = 197
Category 1	688 (9,4%)	348 (6,7%)	253 (13%)	87 (44%)
Category 2	6 508 (89%)	4 830 (93%)	1 579 (82%)	99 (50%)
Category 3	94 (1,3%)	0 (0%)	83 (4,3%)	11 (5,6%)

Table 1: Description of NMC notifications by case source

NMC Reporting App utilisation, July 2023



Figure 1: Distribution of notifications by province and notification type

There were 600 (11%) Clinical notifications from the private sector (i.e. private hospitals, private practice and mining industry) compared to 4 775 (89%) in the public sector. The majority (98.7%) of the clinical notifications were captured using the NMC Reporting Application (see **Table 2**).

Province	Overall , N = 5 178	App - Private , n = 593	App - Public , n = 4 520	Paper-based - Private , n = 7	Paper-based - Public, n = 58
GP	1 651 (100%)	207 (13%)	1 434 (87%)	5 (0,3%)	5 (0,3%)
WC	1 243 (100%)	77 (6,2%)	1 150 (93%)	2 (0,2%)	14 (1,1%)
KZN	758 (100%)	88 (12%)	664 (88%)	0 (0%)	6 (0,8%)
EC	326 (100%)	37 (11%)	281 (86%)	0 (0%)	8 (2,5%)
FS	314 (100%)	53 (17%)	260 (83%)	0 (0%)	1 (0,3%)
NC	282 (100%)	19 (6,7%)	257 (91%)	0 (0%)	6 (2,1%)
LP	224 (100%)	19 (8,5%)	205 (92%)	0 (0%)	0 (0%)
NW	210 (100%)	49 (23%)	146 (70%)	0 (0%)	15 (7,1%)
MP	170 (100%)	44 (26%)	123 (72%)	0 (0%)	3 (1,8%)

 Table 2: Clinical notifications notified by provinces, reporting platform, and sector

		Gende	er		Ac	dmission Sta	lus			Vital Statu	JS	
Age Category	Female	Male	Unknown	Discharged	Inpatient	Outpatient	Transferred	Unknown	Alive	Deceased	Unknown	Overall
0-4	302	342	5	46	282	189	3	129	502	17	130	649
5-9	125	221	1	16	81	57	2	191	154	2	191	347
10-14	117	308	0	24	58	72	3	268	158	0	267	425
15-19	171	241	0	33	56	123	1	199	209	3	200	412
20-24	253	231	0	34	93	219	4	134	349	2	133	484
25-29	280	298	0	36	114	282	6	140	439	7	132	578
30-34	369	432	0	41	187	372	7	194	603	7	191	801
35-39	325	495	0	48	204	378	11	179	642	1	177	820
40-44	251	458	0	47	182	332	13	135	569	7	133	709
45-49	174	333	0	32	139	250	1	85	421	3	83	507
50-54	157	278	0	35	127	202	5	66	362	7	66	435
55-59	110	221	0	19	114	165	6	27	300	6	25	331
60-64	91	126	0	11	73	102	4	27	184	4	29	217
65+	140	184	0	27	131	121	3	42	276	5	43	324
Unknown	106	145	0	16	27	21	2	185	66	1	184	251
Total	2 971	4 313	6	465	1 868	2 885	71	2 001	5 234	72	1 984	7 290

Table 3: Age distribution by gender, admission status, and patient outcome

The majority of the notified cases were males (n=4 313, 59%). Individuals in the 35-39 year age group represented the majority (n=820, 11%)) of notified cases (**Table 3**). At the time of notification, approximately 1 868 (26%) of the notified cases were hospitalized, while 71 (1,0%) were transferred to another healthcare facility. There were 72 deaths notified during the reporting period.

Hospital Form Complete

Table 4: Completion of hospitalisation form for patients diagnosed with category 1 conditions who were either admitted, discharged, or transferred out

	Disch	arged	Inpatient	Trans	ferred
Hospital Form Completed	No , N = 22 (47%)	Yes , N = 25 (53%)	Yes , N = 321 (100%)	No , N = 6 (86%)	Yes , N = 1 (14%)
Cholera	0 (0%)	1 (4,0%)	15 (4,7%)	2 (33%)	0 (0%)
Congenital rubella syndrome	1 (4,5%)	0 (0%)	4 (1,2%)		
Enteric fever (typhoid or paratyphoid fever)	0 (0%)	1 (4,0%)	4 (1,2%)		
Food borne illness outbreak	0 (0%)	1 (4,0%)	3 (0,9%)		
Malaria	4 (18%)	3 (12%)	87 (27%)	2 (33%)	1 (100%)
Measles	1 (4,5%)	3 (12%)	11 (3,4%)		
Pertussis	16 (73%)	15 (60%)	154 (48%)	1 (17%)	0 (0%)
Rubella	0 (0%)	1 (4,0%)	2 (0,6%)		
Acute Flaccid Paralysis			18 (5,6%)		
Listeriosis			10 (3,1%)		
Meningococcal Disease			11 (3,4%)		
Rabies			2 (0,6%)	1 (17%)	0 (0%)

All in-patients with a category 1 condition had a hospital form completed (see **Table 4**). There is a low hospital form completion rate for discharged patients (25, 53%) and transferred patients (n=1, 14%).

Distribution of category 1 NMCs by province and number of deaths

				P	rovino	ces				Vital Sto	atus
Condition	EC	FS	GP	KZN	LP	MP	NC	NW	WC	Not Deceased, n(%)	Deceased , n(%)
Acute Flaccid Paralysis	0	0	3	3	1	2	2	0	7	18 (100%)	0 (0%)
Cholera	0	0	7	3	2	8	0	0	0	19 (95%)	1 (5,0%)
Congenital rubella syndrome	0	1	6	8	0	0	0	0	1	14 (88%)	2 (13%)
Enteric fever (typhoid or paratyphoid fever)	0	1	5	1	0	0	0	0	0	7 (100%)	0 (0%)
Food borne illness outbreak	0	0	4	0	0	0	0	1	4	9 (100%)	0 (0%)
Listeriosis	0	2	1	5	0	0	0	1	5	12 (86%)	2 (14%)
Malaria	2	3	92	21	63	41	1	14	17	253 (100%)	1 (0,4%)
Measles	0	0	2	13	7	3	4	2	10	41 (100%)	0 (0%)
Meningococcal Disease	1	0	2	1	1	0	1	0	8	14 (100%)	0 (0%)
Pertussis	21	41	98	33	18	24	2	9	36	274 (97%)	8 (2,8%)
Rabies	1	0	0	2	0	0	0	0	1	3 (75%)	1 (25%)
Rubella	2	2	2	2	1	0	0	1	1	11 (100%)	0 (0%)

Table 5: Distribution of Category 1 NMC by Province

The majority of category 1 notifications were for Pertussis (n=282, 41%) (**Table 5**), increasing from 237 in June 2023. The majority of the Pertussis cases were notified in GP n=98, 34.8%).

Distribution of category 2 NMCs by province and number of deaths

Table 6: Distribution of Category 2 NMC by Province

				Pro	vince	s				Vital Sto	atus
Condition	EC	FS	GP	KZN	LP	MP	NC	NW	WC	Not Deceased n(%)	Deceased n(%
Agricultural or stock remedy poisoning	0	42	30	0	2	1	0	2	5	76 (93%)	6 (7,3%)
Bilharzia (schistosomiasis)	17	0	44	414	101	101	1	2	10	690 (100%)	0 (0%)
Brucellosis	1	0	1	0	0	0	0	0	1	3 (100%)	0 (0%)
Congenital syphilis	3	0	3	12	0	1	0	2	15	35 (97%)	1 (2,8%)
Haemophilus influenzae type B	1	0	0	2	1	0	0	0	9	11 (85%)	2 (15%)
Hepatitis A	17	15	67	68	26	22	9	13	151	387 (100%)	1 (0,3%)
Hepatitis B	28	39	78	583	2	18	1	53	19	820 (100%)	1 (0,1%)
Hepatitis C	0	0	6	1	1	1	0	0	0	9 (100%)	0 (0%)
Legionellosis	0	0	2	0	0	0	0	0	1	3 (100%)	0 (0%)
Maternal death (pregnancy, childbirth and puerperium)	0	0	0	1	0	0	0	0	0		1
Soil transmitted helminths	0	0	0	1	0	0	0	0	0	1 (100%)	0 (0%)
Tuberculosis: extensively drug -resistant (XDR -TB)	0	0	1	1	0	1	1	1	1	6 (100%)	0 (0%)
Tuberculosis: multidrug- resistant (MDR -TB)	8	3	31	41	2	3	3	5	23	119 (100%)	0 (0%)
Tuberculosis: extra-pulmonary	35	54	467	94	33	19	37	50	222	996 (99%)	15 (1,5%)
Tuberculosis: pulmonary	264	188	1 004	535	144	105	256	134	869	3 463 (99%)	36 (1,0%)

The majority of category 2 notifications were for Tuberculosis: pulmonary (n=3 499, 52%). The majority of Tuberculosis: pulmonary cases were notified in GP (n=1004, 28.7%). Hepatitis B is the second most (n=821, 13%)) notified category 2 condition. (Table 6).

The average active users on the NMC App

In July 2023, there were 338 average active users (sum of total access per day/number of days where users were active) (**Figure 2**). Although, there are more active users for July 2023 compared to July 2022 and 2021, there was a decline in new registrations.



Figure 2: The average active users of the NMC reporting Application, December 2020 to July 2023w

Conclusion

Most notifications were clinical notifications. The completeness of patient clinical details and patient demographic details have improved, due to the application of mandatory fields on the NMC App yet symptom onset date could be improved.

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.
- NMC Trainers to emphasize the importance of timeous reporting of Category 1 and 2 NMCs, to ensure real-time availability of data for public health action.
- We encourage both paper-based and app notifiers to fill out the symptom onset.
- We recommend completion of the hospitalization form for patients who were admitted in hospital.
- We recommend that clinicians edit existing laboratory notifications to improve completeness of notifications

Appendices

Appendix no.1: Back captured clinical notifications

	Overall					Province	•			
Condition	Overall , n = 176	EC , n = 3	FS , n = 10	GP , n = 86	KZN , n = 16	LP , n = 1	MP , n = 11	NC , n = 26	NW , n = 2	WC , n = 21
Agricultural or stock remedy poisoning	4 (2,3%)	0	4	0	0	0	0	0	0	0
Hepatitis B	3 (1,7%)	0	0	2	1	0	0	0	0	0
Measles	1 (0,6%)	0	0	0	0	0	0	1	0	0
Pertussis	1 (0,6%)	0	0	1	0	0	0	0	0	0
Tuberculosis: multidrug- resistant (MDR -TB)	6 (3,4%)	1	0	1	2	0	0	0	0	2
Tuberculosis: extra-pulmonary	30 (17%)	0	1	21	0	0	3	1	1	3
Tuberculosis: pulmonary	131 (74%)	2	5	61	13	1	8	24	1	16

Appendix no.2: Summary of NMCSS Data Flow

Figure 3: Summary of data flow within the NMC surveillance system



Appendix no.3: NMC Categories, and Case Classification definitions

NMC categories

Category 1: NMCs 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 an 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 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 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 case: are cases reported to the NMC by health care providers at facilities, either through completion of a paper form that is faxed, emailed to 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 case: 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 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: Incidence analysis based on notification data

Cases and incidence by province

Category 1 (Pertussis of interest)



Figure 1: Cases of Category 1 Notifiable Medical Conditions

Pertussis (in brown) has been notified in all provinces with Gauteng (GP) reporting the most.

		pop = 95 993		oop = /4 960		pop = 31 190	WC 7 3	pop = 29 448		pop = 76 951		oop = 30 765		pop = 2 147		pop = 71 242		pop = 25 377
Condition	c1	i ¹	c	i	c	i ¹	c	i ¹	c	i 1		i	c1	i	c	i ¹	c	i
Rabies		-		-		0,02		0,01		-		-		-		0,01		-
Enteric fever (typhoid or paratyphoid fever)		0,03		-		0,01		-		-		0,03		-		-		-
Food borne illness outbreak		0,02		-		-		0,05		-		-		0,02		-		-
Congenital rubella syndrome		0,04		-		0,07		0,01		-		0,03		-		-		-
Rubella		0,01		0,02		0,02		0,01		-		0,07		0,02		0,03		-
Listeriosis		0,01		-		0,04		0,07		-		0,07		0,02		-		-
Meningococcal Disease		0,01		0,02		0,01		0,11		-		-		-		0,01		0,08
Cholera		0,04		0,03		0,03		-		0,17		-		-		-		-
Acute Flaccid Paralysis		0,02		0,02		0,03		0,10		0,04		-		-		-		0,15
Measles		0,01		0,12	13	0,11	10	0,14		0,06		-		0,05		-		0,23
Malaria	92	0,56	63	1,1	21	0,18	17	0,23	41	0,86		0,10	14	0,33		0,03		0,08
Pertussis	97	0,59	18	0,30	33	0,28	36	0,49	24	0,50	41	1,4		0,21	21	0,31		0,15

Table 1: Table of cases and incidence of Category 1 Notifiable medical conditions by province

¹c = cases, i = incidence

Although GP notified the most cases of pertussis (n = 97), cases of pertussis per 100 000 population are highest in Free State at 1.4 cases per 100 000 population.

Category 2 (Hepatitis B of interest)



Figure 2: Cases of Category 2 Notifiable Medical Conditions by province

KZN notified the most hepatitis B and bilharzia cases in the province. We would also draw attention to the cases of agricultural or stock remedy poisoning (orange) notified in GP and FS.



Figure 3: Cases per 100 000 population of Category 2 Notifiable Medical Conditions by age

Hepatitis B and bilharzia modes of transmission differ, bilharzia is acquired from parasitic worms found in infested water sources whereas hepatitis B is transmitted via bodily fluids, similar to HIV.

		pop = 31 190		pop = 395 993		pop = 29 448		pop = 76 951		oop = 4 960		oop = 80 765		pop = l2 147		pop = 71 242		pop = 25 377
ondition	C	i ¹		i ¹		i ¹	C	i	c	i ¹	c	i ¹	c	i 1	c	i ¹	c	i i
Maternal death (pregnancy, childbirth and puerperium)		0,01		-		-		-		-		-		-		-		-
Soil transmitted helminths		0,01		-		-		-		-		-		-		-		-
Legionellosis		-		0,01		0,01		-		-		-		-		-		-
Brucellosis		-		0,01		0,01		-		-		-		-		0,01		-
Hepatitis C		0,01		0,04		-		0,02		0,02		-		-		-		
Haemophilus influenzae type B		0,02		-		0,12		-		0,02		-		-		0,01		
Congenital syphilis	12	0,10		0,02	15	0,20		0,02		-		-		0,05		0,04		
Agricultural or stock remedy poisoning		-	30	0,18		0,07		0,02		0,03	38	1,3		0,05		-		
Hepatitis A	68	0,58	67	0,41	151	2,1	22	0,46	26	0,44	15	0,51	13	0,31	17	0,25		0,0
Bilharzia (schistosomiasis)	414	3,6	44	0,27	10	0,14	101	2,1	101	1,7		-		0,05	17	0,25		0,0
Hepatitis B	582	5,0	76	0,46	19	0,26	18	0,38		0,03	39	1,3	53	1,2	28	0,42		0,0

Table 2: Table of cases and incidence of Category 2 Notifiable medical conditions by province

¹c = cases, i = incidence

Cases per 100 population of bilharzia and hepatitis B follow the patterns of reported cases however, the cases per 100 000 of agricultural or stock remedy poisoning are far higher in FS (1.3 in FS vs 0.18 in GP cases per 100 000).

		0-4	5	-9	10)-14	15	5-19	20	0-24	2	5-29	30	-34	35	-39	40	-44	4	5-49	5	0-54	55	5-59	60	D-64	ć	65+
Condition	c	i ¹	C1	i 1	C	i ¹	c	i 1	c	i ¹	\mathbf{c}^1	i ¹	c	i ¹	C1	i ¹	c	i ¹	c	i 1	\mathbf{c}^1	i ¹	c	i 1	\mathbf{c}^1	i ¹	\mathbf{c}^1	i 1
Maternal death (pregnancy, childbirth and puerperium)		-		-		-		-		-		-		-		-		0,02		-		-		-		-		-
Soil transmitted helminths		-		-		-		-		-		0,02		-		-		-		-		-		-		-		-
Brucellosis		-		-		-		-		-		0,02		-		-		-		-		0,04		0,04		-		-
Legionellosis		-		-		-		-		-		-		-		-		-		-		-		-		0,05		0,05
Hepatitis C		-		-		-		-		0,02		0,02		0,05		0,06		-		-		-		-		-		0,03
Haemophilus influenzae type B		0,10		-		0,02		-		-		-		0,02		-		0,05		0,03		-		0,04		-		0,03
Congenital syphilis	31	0,54		-		-		-		-		-		-		-		-		-		-		-		-		0,03
Agricultural or stock remedy poisoning		0,14		0,11		0,13	16	0,31	16	0,32		0,11		0,11		0,10		0,02		0,03		0,04		0,09		-		0,03
Hepatitis A	38	0,66	113	2,0	51	0,93	27	0,52	27	0,54	30	0,56	19	0,35	15	0,30		0,19	11	0,33		0,18		0,13		0,16		0,10
Bilharzia (schistosomiasis)	12	0,21	102	1,8	245	4,5	157	3,1	72	1,4	27	0,51	15	0,27		0,18		0,14		0,18		0,07		0,13		0,05		0,16
Hepatitis B		0,03		-		0,05	27	0,52	40	0,80	75	1,4	163	3,0	156	3,1	125	3,0	77	2,3	56	2,0	25	1,1	18	0,95	26	0,68

Table 3: Table of cases and incidence of Category 2 Notifiable medical conditions by age

¹c = cases, i = incidence

Appendix 5: Hepatitis incidence in July

Cases and incidence by Province



Figure 4: Cases of Viral Hepatitis by province

KZN has reported the highest number of Hepatitis B active infections in the country. WC has reported the second highest number of viral hepatitis cases however the majority of viral hepatitis in WC is Hepatitis A.

		pop = 31 190		pop = 29 448		pop = 395 993		/ pop = 42 147		pop = 30 765		pop = 71 242		pop = 76 951		pop = 74 960		pop = 25 377
Condition ¹	c	i ¹	c	i	C	i	C	i ¹	C	i ¹	c	i ¹		i	c	i	c	i 1
Hepatitis C		0,01		-		0,04		-		-		-		0,02		0,02		-
Hepatitis A	68	0,58	151	2,1	67	0,41	13	0,31	15	0,51	17	0,25	22	0,46	26	0,44		0,68
Hepatitis B	582	5,0	19	0,26	76	0,46	53	1,2	39	1,3	28	0,42	18	0,38		0,03		0,08

Table 4: Table of cases and incidence of Hepatitis notifications by province

¹c = cases, i = incidence

Cases and incidence by Age category



Figure 5: Cases of viral hepatitis notifications by age

We can see that Hepatitis A and B affect two distinct populations as their modes of transmission differ. Hepatitis A is an enteric infection and infection from blood products is rare, whereas Hepatitis B is transmitted via bodily fluids, similar to HIV.

	(0-4	5-	.9	10	D-14	14	5-19	20	0-24	2	5-29	30)-34	35	-39	40	-44	4	5-49	50)-54	55	5-59	60)-64	6	5+
Condition	CI	i ¹	c	i ¹	c ¹	i ¹	C	i ¹	CI	i ¹	CI	i ¹	C	i ¹	C	i ¹	C	i ¹	CI	i ¹	\mathbf{c}^1	i ¹	CI	i ¹	CI	i ¹	CI	i ¹
Hepatitis C		-		-		-		-		0,02		0,02		0,05		0,06		-		-		-		-		-		0,03
Hepatitis A	38	0,66	113	2,0	51	0,93	27	0,52	27	0,54	30	0,56	19	0,35	15	0,30		0,19	11	0,33		0,18		0,13		0,16		0,10
Hepatitis B		0,03		-		0,05	27	0,52	40	0,80	75	1,4	163	3,0	156	3,1	125	3,0	77	2,3	56	2,0	25	1,1	18	0,95	26	0,68

Table 17: Table of cases and incidence of Hepatitis notifications by age

¹c = cases, i = incidence