



NEMS OPERATIONAL ACTIVITIES

MONTHLY REPORT: JUNE 2021

Date	June 2021.
Districts	NEMS NATIONAL OPERATION.





INDEX	Page No
Brief description of the NEMS Operational Service	3-4
Chapter 1: Calls	
1. Overview of the Calls, Missions and Referrals	5
1.1 Number of Calls, Missions and Referrals supported	5 - 6
1.2 Cumulative and Percentage Trend of Calls, Mission and Referrals	6
1.3 NEMS Daily activities (Calls, Missions and Referrals) Averages	7
1.4 Call Analysis	7
1.4.1 Classification of calls	7
1.4.2 Breakdown of Calls by District	8
1.4.3 Breakdown of Call complaints by District	8
1.4.4 Number of Calls per hour	9
1.4.5 Number of Calls per day	9
2. Chapter 2: Missions	
2.1 Categories of NEMS missions	10
2.2 Time of Day of the Missions	11
2.3.1 Comparative Analysis of NEMS Missions for previous to current month	12
2.3.2 Typology of Complaints that lead to Missions	13
2.3.3 Trend of Complaints missions by day	13
2.3.4 Mission Complaints by Districts	13
2.4 Outcome of the Missions	14
2.4.1 Mission outcomes and reasons for aborting missions	15
3. Chapter 3: National Hospital Bed Capacity	
3.1 Category of Beds: Adult, Maternity and Paediatric	16
3.2 Bed Capacity and Average Bed occupancy by facility	16
3.3 Highlight of Overcrowded Facilities	16
3.4 National Percentage Bed Occupancy by Department	17
4. Chapter 4: NEMS National Referrals	
4.1 Number of Incoming and Outgoing Referred patients	17
4.2 Types of referrals: Incoming and Outgoing	17
4.3 The outcome of the number of Incoming Referred Patients by District	18
4.4 Number of Referrals Support by FHC	18 - 19
4.4 Referrals by Health Facilities (Hospitals)	19
4.5 Destination Hospital for Inter-hospitals Referrals	20
4.6 Number of Referred patients by arrival methods	21
4.7 Average Kilometres per Mission	22
Chapter 5: NEMS National COVID-19 Response	
5.1 Number of COVID-19 Missions	24
5.2 Outcome of COVID-19 Missions	24
5.3 COVID-19 Missions and Samples Transported	25
5.4 Trend of COVID-19 Missions undertaken : Confirmed & Suspected	25
5.5 COVID-19 Confirmed Cases	26
5.6 District of Origin of COVID-19 Patients	
5.6.1 Frequency of District of Origin of COVID-19 Patients	
5.7 COVID-19 Missions Confirmed Cases by Treatment Centre	



5.8 COVID-19 Treatment Centres destination	26
5.8.1 Missions for Confirmed COVID-19 cases by Treatment Centre	27
5.9 .1 Transportation of Specimen by District: Missions and Samples	27
6.0 Percentage of Samples transported by Destination Laboratory	27



Brief description of the NEMS Operational Service

NEMS is an outfit set out to achieve operational or professional excellence providing a sustainable and well maintained Referral system of Ambulances /Hearse; Trained Para Medics and Drivers; Equipped depot and workshop; Management expertise and Administrative personnel; Triage and operation centre operatives; Information & communication Systems infrastructure, Monitoring, Evaluation and Data analysis geared towards evidence-based reporting.

This will be accomplished through NEMS core values:

Inspiration: Having a deep-rooted passion and internal drive for success to attain operational excellence

Integrity: Assumes complete accountability for actions, having strong moral principles and is honest in all dealings.

Innovation: Showing creativity by pursuing options that may be risky or novel thinking creatively for solutions while learning from setbacks and mistakes

Inclusiveness: Treating everyone fairly irrespective of race, religion, gender, nationality, ethnicity, age etc. Taking decisions to keep NEMS vision alive.

Innovation: Showing creativity by pursuing options that may be risky or novel thinking creatively for solutions while learning from setbacks and mistakes

Inclusiveness: Treating everyone fairly irrespective of race, religion, gender, nationality, ethnicity, age etc. Taking decisions to keep NEMS vision alive.

The data collected from the NEMS database and the Referral Coordinators' database from 15th of October 2018 up to the 30th June 2021, indicates that NEMS has accomplished over two(2) years of operations delivering the following:

Table 1: Cumulative Number of Supported Indicators

Indicators	Summed
CALLS	73643
MISSIONS	70591
INCOMING REFERRALS	59924

- **Distributions of the Ambulances**

NEMS currently has ninety- seven (97) ambulances in operation all over Sierra Leone and the distribution is as follows: WA Rural 8, WA Urban 7, Bombali 5, Pujehun 7, Kenema 6, Bo 7, Tonkolili 7, Bonthe 5, Kono 7, Kailahun 7 Moyamba 5, Koinadugu 5, Kambia 5, Falaba 5, and Karene 5.

For the COVID-19 response, NEMS continues to dedicate a vehicle in each district, with the exception of two vehicles for Western Area Urban, for the management of COVID-19 cases. All the ambulances are temporarily to the district headquarter town except for Western Area, Port Loko and Kenema districts. In June 2021, the District Ambulance Supervisors DASs were used for the transporting of COVID-19 ambulance related issues, while all other ambulances have been set for the transportation of any kind of complaints received.

- **Km Travelled**

Since the start of the activities in October 2018, the ninety-seven (97) ambulances dispatched across the country have travelled a total number of **5,399,906 km**. In June 2021, Western Area Rural appeared as the district with the highest KM travelled.

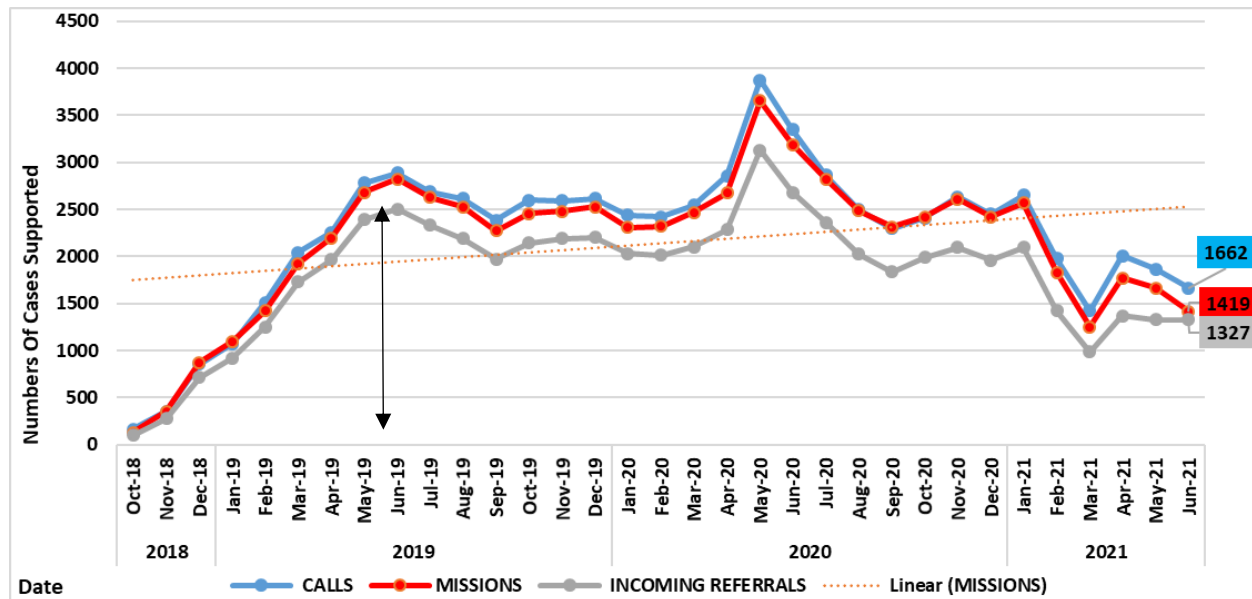


- **COVID-19 Response**

The total number of **COVID-19** confirmed cases **referred by NEMS** in May 2021 is 197, while there was no reported suspected case. The cumulative figures since the COVID-19 outbreak in the country are 1,604 **confirmed**, 169 **suspected**. In May 2021 NEMS ambulances transported 16 samples for testing at the listed laboratories in figure 25.

1. Overview of the Calls, Missions and Referrals

Figure 1 Trend of Calls, Missions and Referrals (Oct 2018 – June 2021)



The graph **Figure 1**, displays the trend at which **Calls, Missions and Incoming Referrals** are supported by NEMS since the inception of operations in **October 2018**. The indication of the vertical line of the month of **June 2019** indicates the start of **NEMS service at every district nationwide**. The data showed that, the number of **Calls** constantly surpassed the numbers of **Missions** and **Incoming Referrals**.

The line chart above showed that NEMS recorded its climax in the May 2020, at a time the nation's instituted number of restriction to curb COVID19 cases. In June 2021, we recorded a total of **1662, 1419 and 1327** for **calls, missions and incoming referrals services** respectively.

Figure 1 further outlines a positive flow in the service delivery from the commencement of operations in October 2018 to June 2019; afterwards the graph indicated a sharp drop in September 2019, with the lowest recorded number of services for more than six months and by June 2019, NEMS had initiated operations in every district in Sierra Leone.

From the time NEMS recorded its apex in May 2020, the numbers have been gradually dropping from that period and had not yet reach that peak that was achieved in June 2020.



Table 2: Calls, Missions, Referrals

YEARS	MONTH	CALLS	Trend	MISSIONS	Trend	INCOMING REFERRALS	Trend
2018	Oct-18	162	-	129	-	101	-
	Nov-18	351	37%	353	46%	277	47%
	Dec-18	858	42%	875	43%	716	44%
2019	Jan-19	1072	11%	1095	11%	919	12%
	Feb-19	1510	17%	1420	13%	1253	15%
	Mar-19	2043	15%	1923	15%	1730	16%
	Apr-19	2257	5%	2197	7%	1965	6%
	May-19	2782	10%	2683	10%	2392	10%
	Jun-19	2888	2%	2823	3%	2503	2%
	Jul-19	2685	-4%	2630	-4%	2332	-4%
	Aug-19	2614	-1%	2527	-2%	2189	-3%
	Sep-19	2383	-5%	2276	-5%	1973	-5%
	Oct-19	2597	4%	2454	4%	2146	4%
	Nov-19	2594	0%	2480	1%	2190	1%
	Dec-19	2615	0%	2528	1%	2200	0%
2020	Jan-20	2436	-4%	2308	-5%	2033	-4%
	Feb-20	2421	0%	2321	0%	2015	0%
	Mar-20	2546	3%	2471	3%	2102	2%
	Apr-20	2859	6%	2672	4%	2285	4%
	May-20	3873	15%	3654	16%	3129	16%
	Jun-20	3349	-7%	3189	-7%	2679	-8%
	Jul-20	2864	-8%	2822	-6%	2359	-6%
	Aug-20	2497	-7%	2484	-6%	2025	-8%
	Sep-20	2299	-4%	2317	-3%	1835	-5%
	Oct-20	2411	2%	2422	2%	1989	4%
	Nov-20	2635	4%	2609	4%	2098	3%
	Dec-20	2453	-4%	2423	-4%	1961	-3%
2021	Jan-21	2651	4%	2571	3%	2094	3%
	Feb-21	1979	-15%	1828	-17%	1420	-19%
	Mar-21	1425	-16%	1251	-19%	986	-18%
	Apr-21	2006	17%	1774	17%	1370	16%
	May-21	1866	-4%	1664	-3%	1331	-1%
	Jun-21	1662	-12%	1418	-17%	1327	0%
Total NEMS Project		73643		70591		59924	

The figure **Table 2** above, provides a cumulative and percentage trend for the three (3) major indicators (**i.e. Calls, Missions and Incoming Referrals**) by NEMS from inception to date. It is obvious that there is an upward trend on the number of services offered from October 2018 to June 2019, as initially stated in **Figure 1**. The table further shows a negative trend from the third quarter of 2019. For Calls and Missions recorded in (November and December) 2019, there was no significant changes that occurred, while there was slight difference on the referrals reported on the said period.

Table 3: NEMS Daily Activities

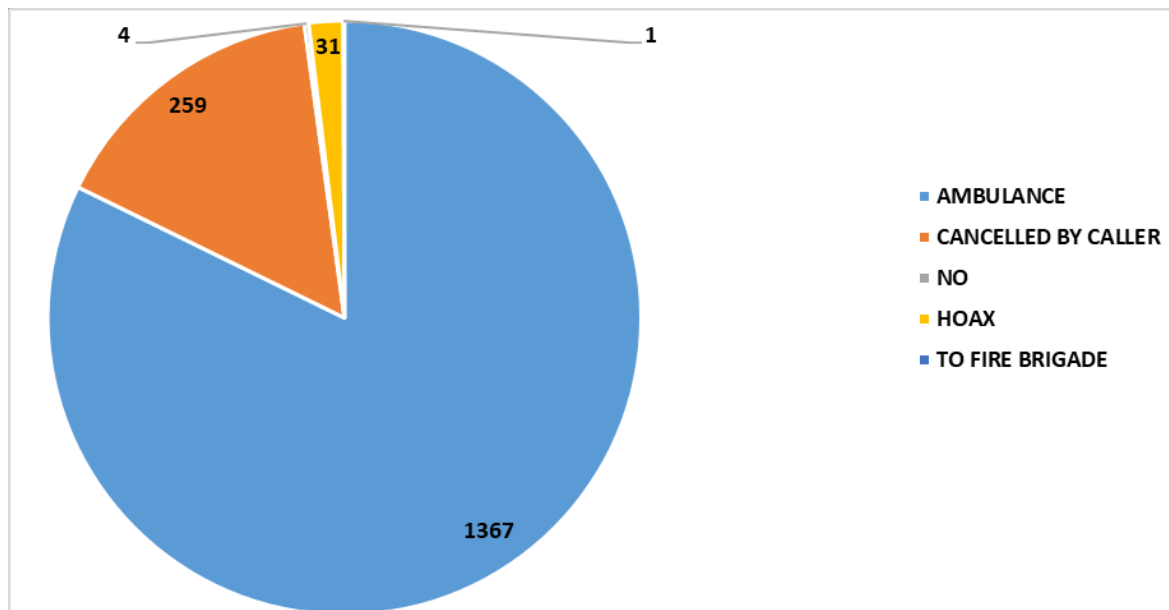
DAILY ACTIVITIES	CALLS	MISSIONS ¹	INCOMING REFERRALS
May-21	55	47	44

¹ This excludes the number of missions supported by MSF in Kenema district and Bombali DHMT ambulance located at Fintonia and managed in collaboration with NEMS. Incoming Referrals includes NEMS referrals and walked-In (Taxi, private car and other transportations).

The Figure **Table 3** shows the average daily calls, missions and incoming referrals supported in June 2021.

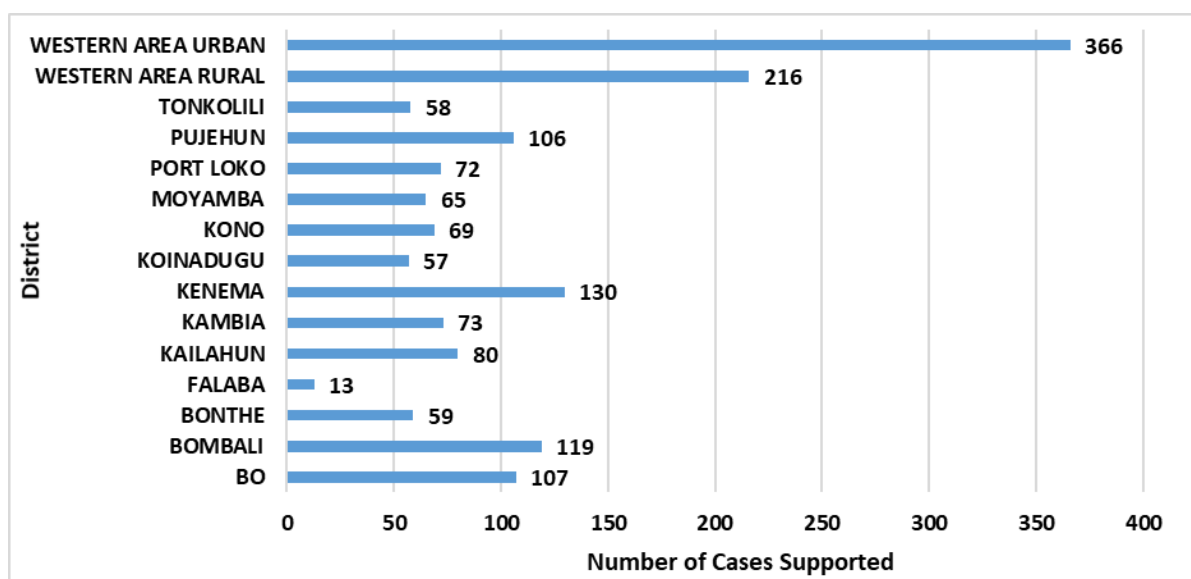
2. Calls Analysis

Figure 2: Classifications of Calls



The diagram figure 2 outlines the classification of Calls as they are received at the NEMS call center. Over 1300 Calls received required NEMS to dispatch an ambulance, while 295 of the total number of calls were considered as either cancelled by the caller, as hoax calls or not completed.

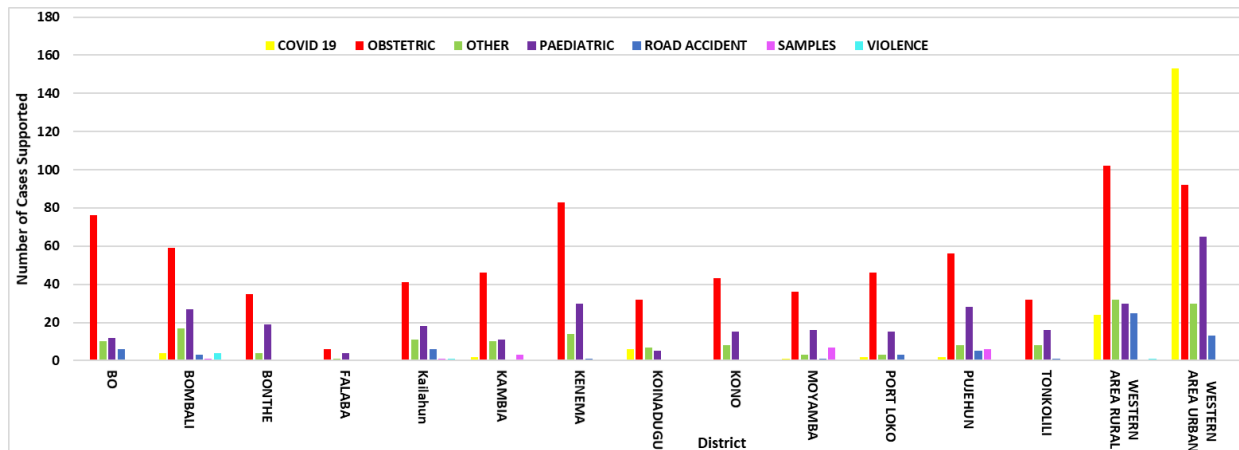
Figure 3: Breakdown of Calls by District



The figure 3 provides a breakdown of Calls by district in the month under review. Western Are Urban reported the highest number of Calls, seconded by Western Area Rural. Falaba recorded the least number of Calls, while Kenema with the majority of Calls coming from the province. All the regional headquarter

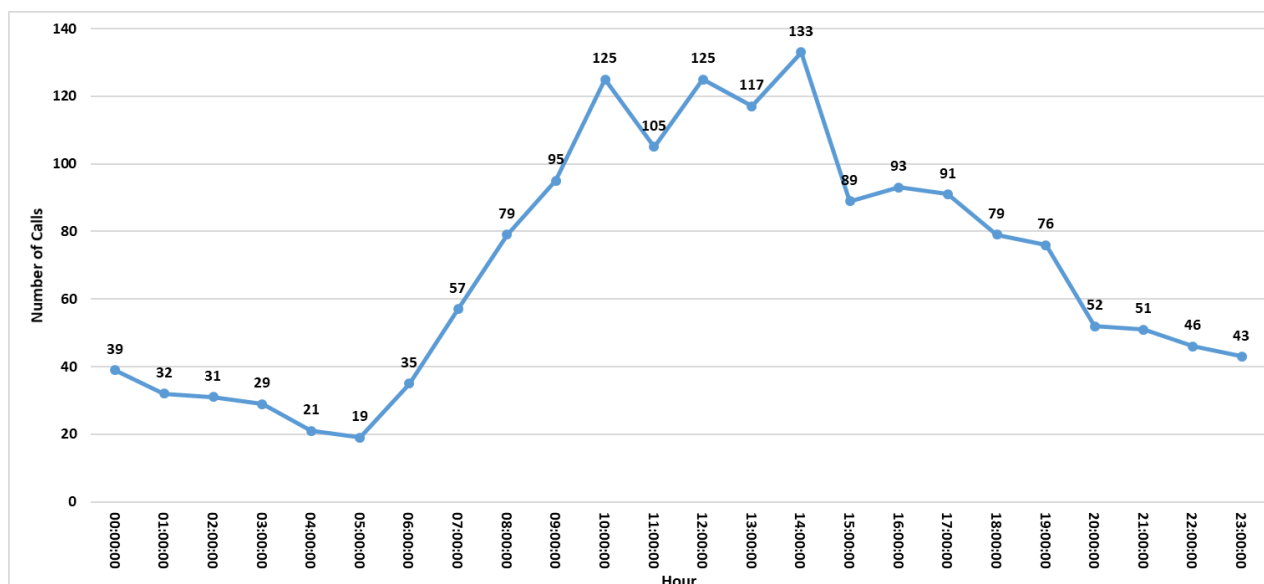
districts registered over 100 Calls, while the others had less than 100, with the exception of Pujehun with 106 Calls.

Figure 4: Breakdown of Calls Complaint by District



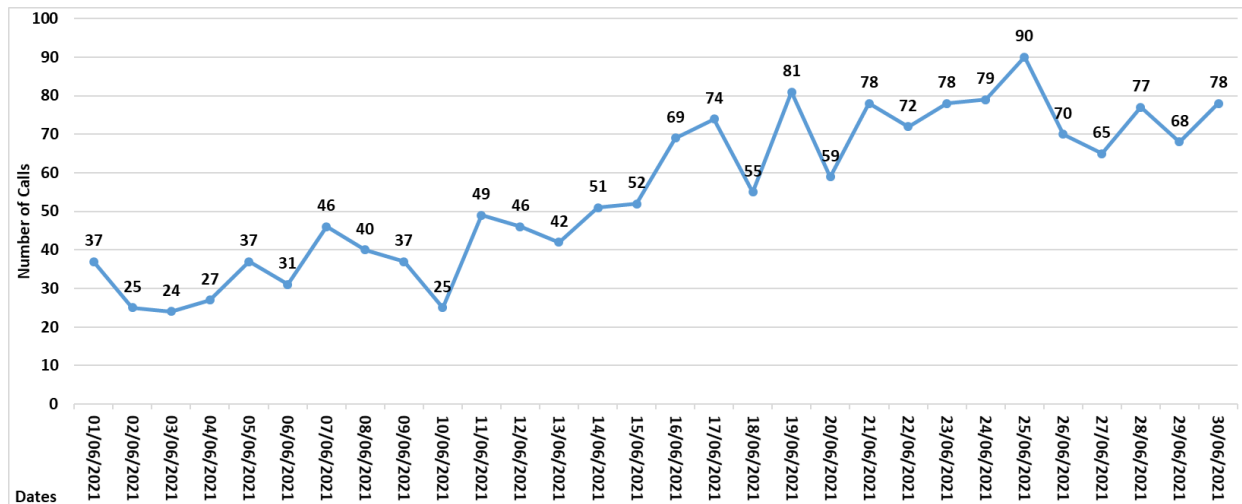
The chart figure 4 provides an in-depth understanding of the various complaints received by call center. It is obvious from the chart that every district recorded numbers of calls for obstetric and Paediatric complaints, while not every district that reported COVID19, road accident and violence. Bombali, Kailahun and Western Area Rural reported violence cases, while Bo, Bombali, Kailahun, Port Loko, Pujehun Western Area Urban and Rural recorded road accident cases.

Figure 5: Number of Calls per Hour



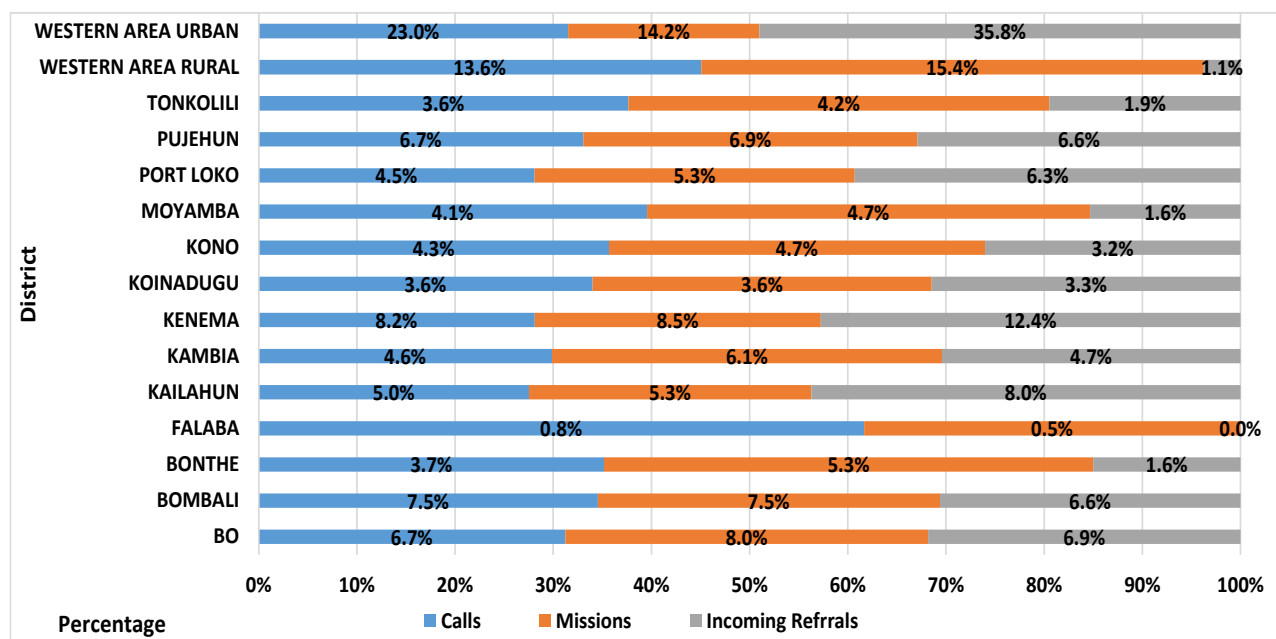
The figure 5 is a line graph that describe the number of calls received at operation center on an hourly based. The chart above showed that, there is a surge on the number of calls received during the day than those at mid-night.

Figure 6: Number of Calls per Day



The line chart above demonstrates the trend of incoming calls to the NEMS call center, per day in the month of June 2021. The oscillating line graph showed that there has been an increment on the number of incoming Calls received. The least number of calls recorded on the 3rd, while on the 25th, the call system recorded its pinnacle on calls, with 90 calls received.

Figure 7: Calls, Missions, Referrals by District



The bar chart above, is demonstrating the percentage of calls, missions and incoming referrals supported by NEMS per district in the month of June 2021. From the diagram above, Western Area Urban accounted for 23% the highest percentage of all the incoming Calls, and incoming referrals respectively. For Missions, Western Area Rural, reported a significant portion of the cases transported to hospitals, while the data showed that, with the lowest percentage of incoming referrals.

3. Missions

Figure 8: Categorising Missions

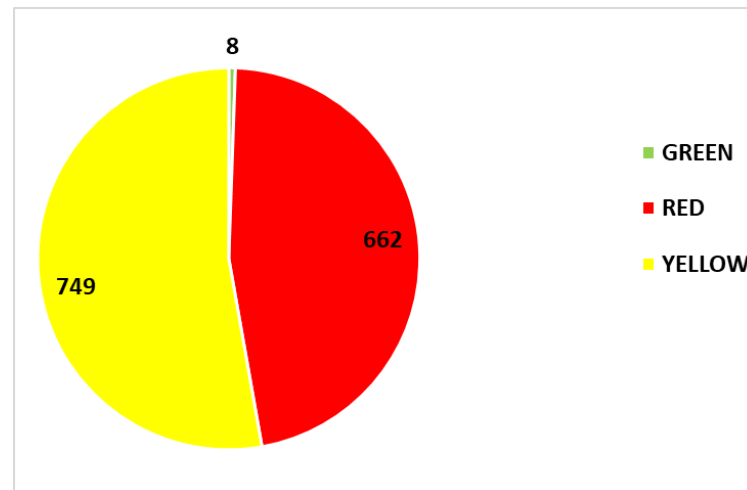
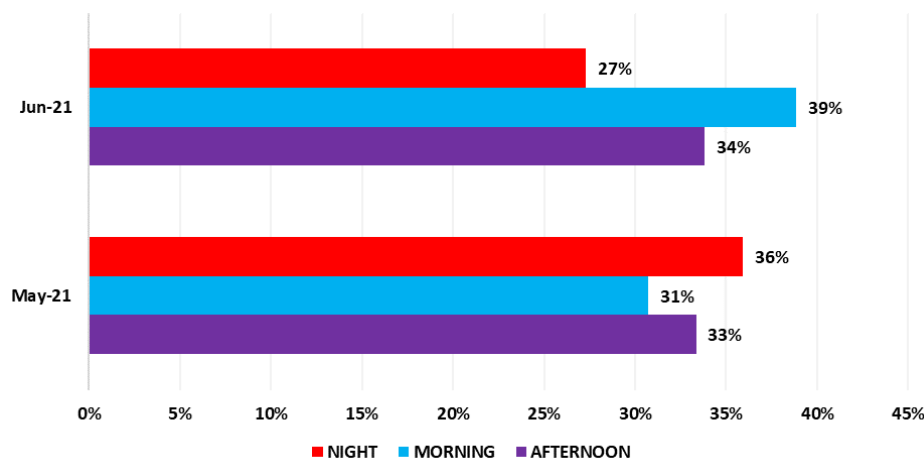


Figure 9: Time of the day of the Missions



The chart figure 8 gives an insight on how calls are categorized for a mission. The severity of the patient's condition has three major categories (Red, Yellow and Green). A patient assessment (Triage) is to determine the severity of the condition; separate the stable patient from the unstable ones and then prioritize available resources. NEMS utilizes the triage process to determine whether the patient's condition matches the threshold of an emergency and dispatch an ambulance. A NEMS mission can be activated and an ambulance dispatched if the condition of the patient matches the severity criteria for Yellow or Red. The colour code Green is ascribed when the patient's condition does not match the threshold to activate a mission and dispatch ambulance.

Out of the 1419 Missions undertaken in June, only 8 did not meet the requirement for emergency.

The 'time of the day' is a measure of the time of the call that consequently activates the NEMS mission. The diagram labelled **Figure 9** shows the percentage of missions undertaken in the morning (i.e. from 8 am to 2 pm); afternoon (from 2 pm to 8 pm) and night (from 8 pm to 8 am) comparing the data for May with June 2021 as displays below:

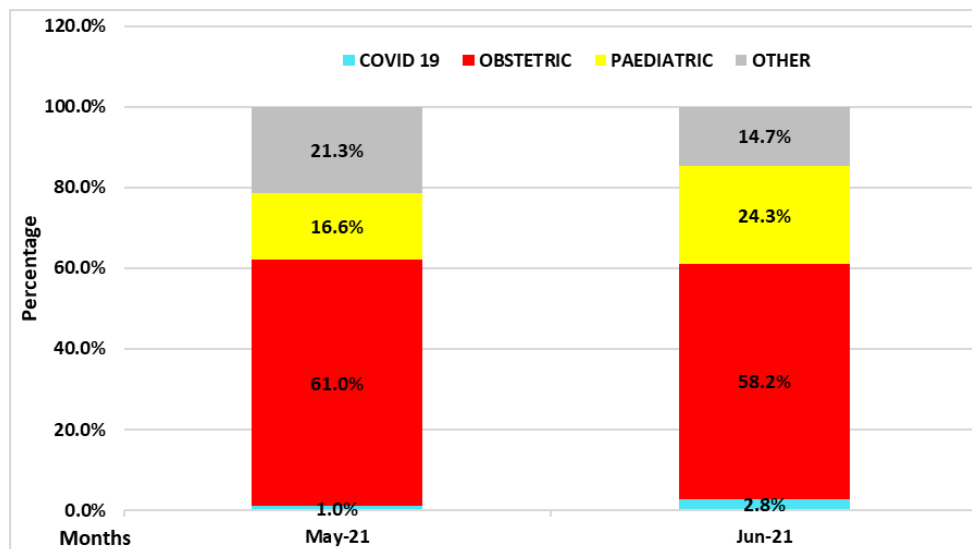
It is obvious that a significant number of the missions were undertaken in the morning hours, for the month of June, while that was not the case for May. While there is a huge drop on the percentage of missions made at night and a slight rise on those in the afternoon, there has been a tremendous increment on the percentage of missions made at morning hours.

In contrasting the percentage of missions made in May and June, it is vividly clear that, there is an 8 and 1% surge on the morning and afternoon correspondingly, while there is 9% plummet on night missions.

3. Missions Complaints

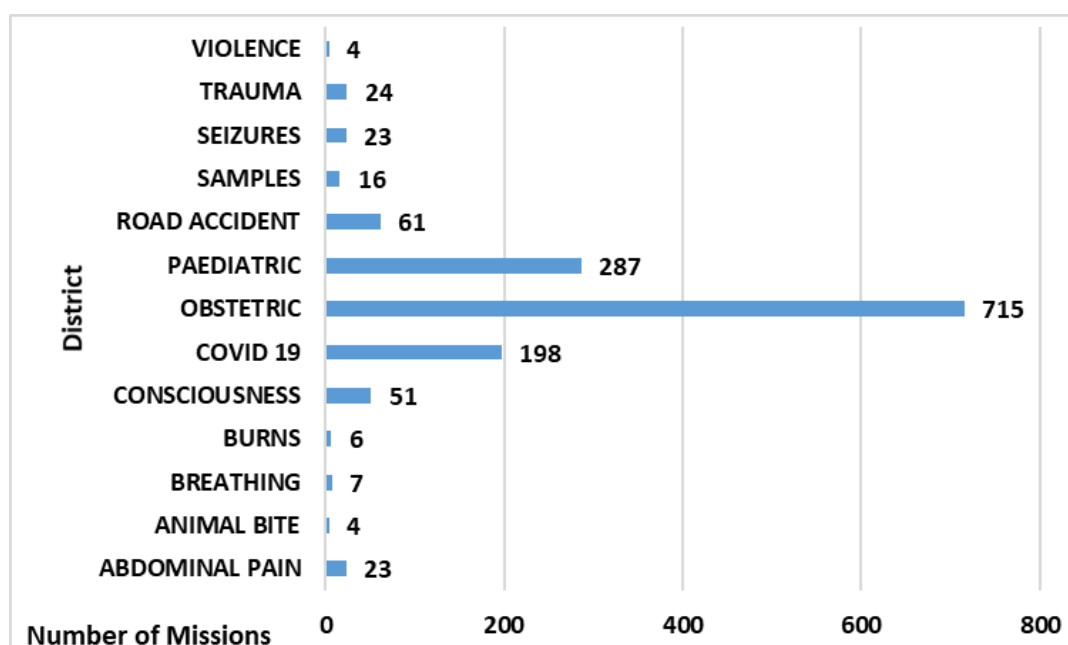
The graph (Figure 10) represents the category of complaints of the NEMS missions comparing May 2021 to June 2021 data. The data of COVID-19 missions include only confirmed.

Figure 10: Comparing Mission's complaints by the Previous and Current Month



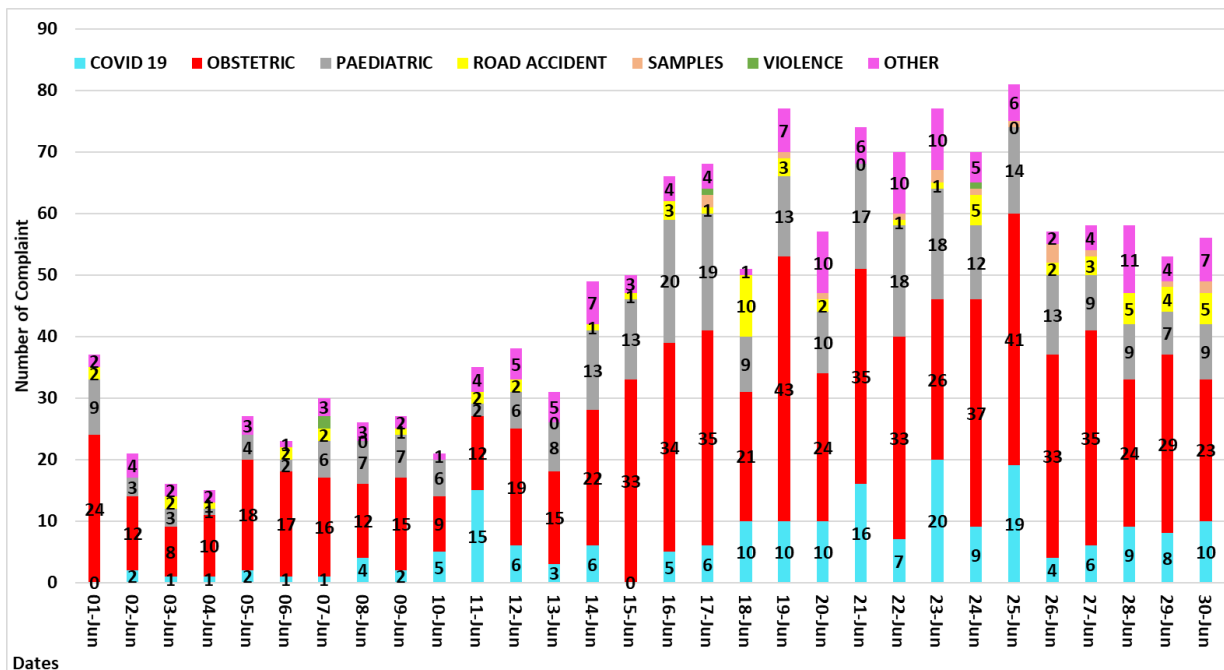
The June 2021 data presented in this diagram shows that approximately 58% of NEMS missions are associated with **obstetric** complaints compared to May 2021 with 61%, indicating 2.8% decrease in obstetric complaints in June 2021. When we compared the represented data, **paediatric complaints** accounted for about **24% in June 2021 compared to May with nearly 17%**. The percentage of missions for complaints associated with COVID-19 illustrated a growth of 1.8% to that of the previous month. It is seen that, roughly 15% of the complaints are grouped and classified as 'others'.

Figure 11: Typology of Mission complaints



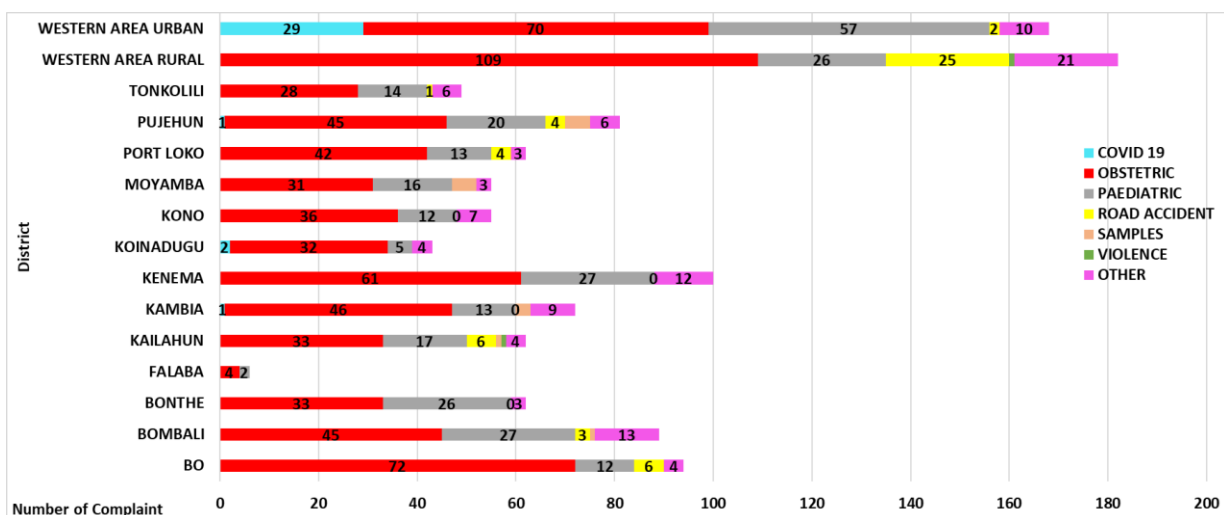
The chart **figure 11** above provides a detailed breakdown of the number of complaints received and considered as missions. It is evidently clear that obstetric complaint was the most occurring indicator, seconded by Paediatric, while violence and animal bite remain to be the least complaints received for the month under review.

Figure 12: Showing Trend of Missions complaints by day



The data displayed in the stacked column chart labelled **figure 12** above gives a further breakdown on the number of complaints per day and the trend at which mission's complaints are reported for the month of June 2021. The chart showed a positive increase on the number of complaint for each day. As displayed on the diagram above, COVID 19, Obstetric and Paediatric cases were the most registered complaints in the month of June 2021. The number of COVID 19 complaint in June is alarming, cases were recorded on most occasion with the exception of two days; 1st 15th, while the highest number of cases were reported on the 23rd. Road Accident almost occurred throughout the month June, 10 cases were reported on the 18th, as that represents the climax on a daily for the month. A number of violence complaints were received for the month.

Figure 13: Missions Complaints by District



To have a supplementary analysis on complaints, the Figure 13 describe the various categories of complaints **by district for the month of June 2021**. This figure does not only justified figure 3, but also that of figure 10. As western Area Rural reported the highest number of missions, so it records a massive number of obstetric complaint, which alone crossed over most of the other district indicators.

Figure 14: Number of Calls, Missions and Referrals Supported per Day

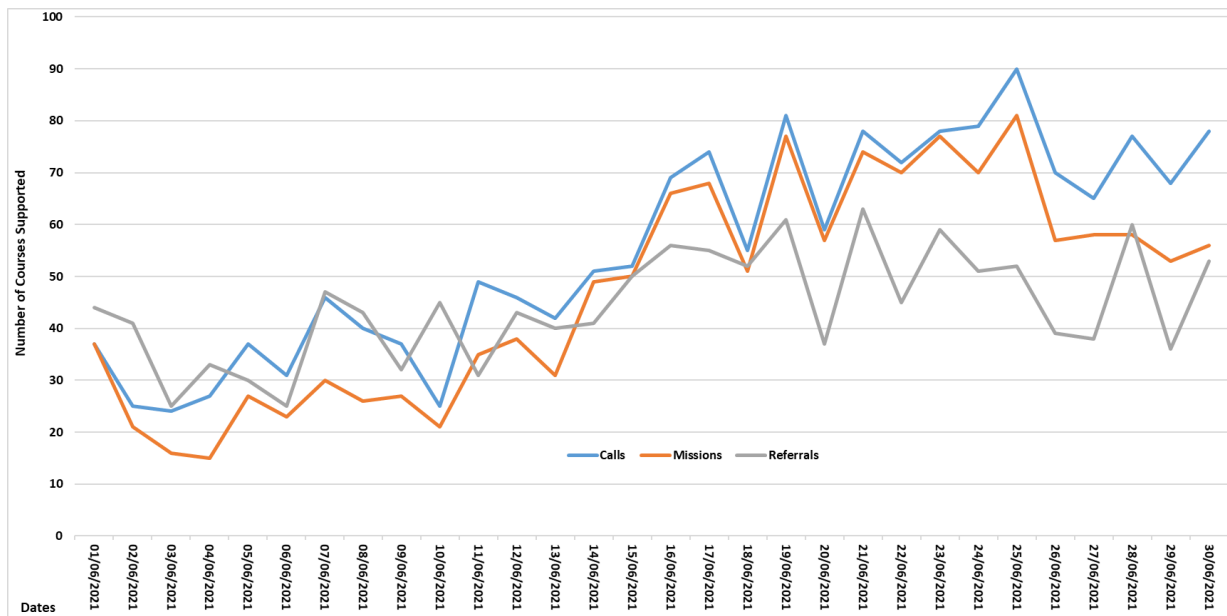


Figure 14: shows the number of Calls received, missions carried out, and referrals managed per day by NEMS for June 2021. Throughout June 2021, the indicators fluctuated. The average call was 55, Missions is 47 and referrals 44 for the month under review.

Figure 15: Outcome of the Missions

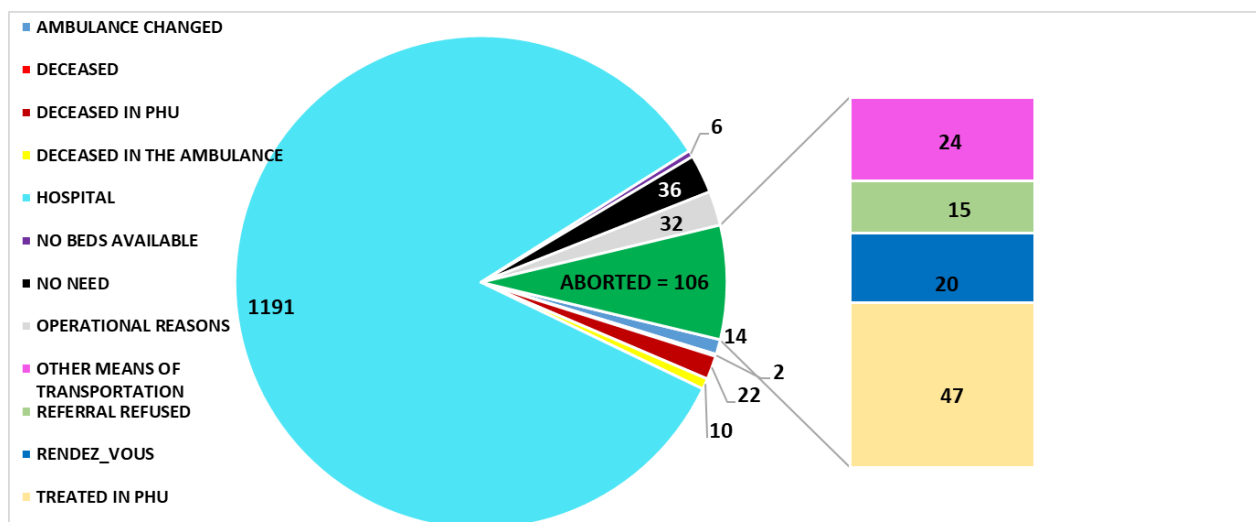


Figure 15 shows the outcome of missions carried out by NEMS in June 2021.

'Hospital' refers to missions leading to referral to a pre-identified health facility (Hospital). Referencing the June 2021 data displayed in the pie chart above shows that (1191) 84% of the missions led to referral to a pre-identified specialist health facility compared to the May 2021 figure that showed that 83% of the missions referred to a pre-identified specialist health facility.

This indicates an increase in the referrals figure for June 2021 compared to May 2021. This is further simplified by table labelled **Table 4**.

Table 4: Displays Missions Outcome and the Reasons to Abort

INDICATORS	ABORTED	DECEASED	HOSPITAL	NO NEED	RENDEZ_VOUS	TOTAL/REASON
AMBULANCE CHANGED	13		1			14
DECEASED		2				2
DECEASED IN PHU		22				22
DECEASED IN THE AMBULANCE		10				10
HOSPITAL			1191			1191
NO BEDS AVAILABLE	6					6
NO NEED	12			24		36
OPERATIONAL REASONS	32					32
OTHER MEANS OF TRANSPORTATION	24					24
REFERRAL REFUSED	15					15
RENDEZ_VOUS					20	20
TREATED IN PHU	47					47
TOTAL	149	34	1192	24	20	1419

Table 4 above serves as a supplementary analysis to the pie chart above showing the outcomes of missions for the month under review.

'Aborted', The June 2021 data showed that out of the 1419 missions undertaken, 149 (11%) of those missions were cancelled before or after the arrival of the NEMS ambulance team at the Peripheral Health Unit. For a mission to be cancelled, there a diverse reasons and these could be any of the following;

- 'Ambulance Changed' - the data for June 2021 revealed that out of 149 missions aborted, 13 (9%) of the aborted missions in June 2021 were due to 'ambulance changed',
- 'Deceased' – this mission outcome refers to death before the arrival of the NEMS ambulance team. June 2021 data showed that (34) of the mission were cancelled because the patient died. Out of the 34 missions cancelled, 22 of those aborted mission occurred because the patients passed away in the PHU and 10 of the missions were aborted because the patients passed away in the ambulances and 2 died while the ambulance was heading to the PHU.
- 'Operational reasons' - this type of mission outcome has a strongly correlation with the ambulance technical problems. The table above shows that 32 (21%) of the aborted missions occurred because of technical problems with the ambulances in the month of June 2021 compared with April with 14% of aborted missions relating to 'operational reasons'
- 'Other Means of transportation' – refers to a situation where the patients or families decided to employ other medium of transportation after requesting for an ambulance. The May 2021 data showed that 24 (16%) of the aborted missions occurred because the patients used other means of transportation
- 'Treated at the PHUs' refers to a situation where either the PHU personnel or the ambulance team managed the emergency at the PHU level, with 47 (32%).
- 'Referral refused' the table above shows that out of 208 missions aborted, 15 (10%) was due to the patients or family members refusal to use the ambulance dispatched by NEMS,
- 'Other reasons' includes 'no-need' of the ambulance (24), 'no beds available at the referral hospitals' (6).



- 'Rendezvous' has been used to describe situations that may require more than one ambulance to complete a mission. The NEMS data for June 2021 shows that 'Rendezvous' was use to accomplish 20 (1.4%) mission out of 1419 mission outcomes compared to May 2021 that was (2%).

5. National Hospital Beds

Table 5: Bed Capacity and Average Percentage Bed Occupancy by Facility

Facility	Adult Bed Capacity	% Average Bed Occupancy per Month	Maternity Bed Capacity	% Average Bed Occupancy per Month	Paediatric Bed Capacity	% Average Bed Occupancy per Month
Bo Government Hospital	139	57	54	73	95	70
Makeni Government Hospital	94	73	27	70	62	45
Mattru UBC Hospital	36	32	12	104	17	77
Connaught Government Hospital	167	86	0		24	79
Kailahun Government Hospital	38	59	37	67	42	65
Kambia Government Hospital	44	20	21	60	31	68
Kenema Government Hospital	118	56	41	77	96	61
Kabala Government Hospital	49	44	37	54	55	49
Koidu Government Hospital	75	80	40	71	56	190
Lungi Government Hospital	40	38	20	58	20	50
Moyamba Government Hospital	48	38	24	91	39	58
Ola Daring Children Hospital	0		0		174	84
Princess Christian Maternity Hospital	0		115	0	18	
Port Loko Government Hospital	65	29	35	51	20	87
Pujehun Government Hospital	41	44	34	80	36	77
Tonkolili Government Hospital	97	11	28	68	89	59
34M Military Hospital	82	49	22	58	40	64
King Harman Road Government Hospital	4	92	17	58	30	64
Rokupa Government Hospital	6	49	21	49	39	64
Lumley Government Hospital	12	71	10	92	4	133
Macauley Government Hospital	13	0	10	0	4	0
Emergency Memorial Hospital	47	93	0	0	20	91
Total National Bed Capacity	1215		605		1011	

The tabular representation labelled **table 5** above provides further breakdown on the bed capacity and the percentage average for the different facilities.

From the tabular presentation, Connaught Hospital does not directly provide care to pregnant women with maternity related complaints and there is no specific department to handle maternity related complaints. Ola Daring Hospital (ODH), is a specialized children hospital provide care to only under-5 cases, while Princess Christian Maternity Hospital(PCMH), located adjacent ODCH with the purpose to support and address maternity related issues . The SCBU beds available at PCMH are not counted in determining the bed capacity of the facility, as they serve a different purpose from the others.

Macauley street hospital is currently under rehabilitation, because of that, patients are not admitted now. However, there is a provision for consultation available only for emergency cases that can be further referred if that is required.

Emergency Memorial Hospital provides specialist care to patients requiring surgical care and cannot do so for maternity related illness.

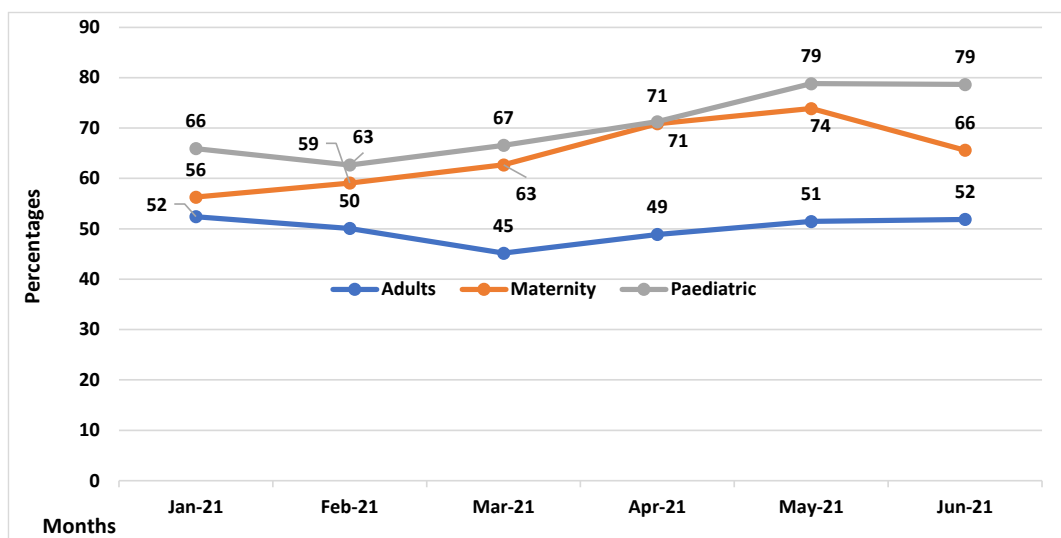
All other facility listed on the table above provide care and has space for the various department listed on the table.

Adult Occupancy: for the adult bed capacity, no facility reported overcrowding, while King Harman Road Government Hospital and Emergency Memorial Hospital recorded over 90% average occupancy for the month of June.

Maternity Occupancy: Mattru UBC Hospital reported 104% as average bed occupancy for the month of June, which means that the facility admitted patients more than its capacity. Moyamba and Lumley recorded over 90% average bed occupancy, as that shows a potential overcrowding.

Paediatric Occupancy: Koidu and Lumley Government Hospitals reported overcrowding for the month of June, as the averages for the month are 190% and 133% respectively. Emergency Memorial Hospital showed a potential overcrowding, with 91%. While all other facility has a relatively stable capacity.

Figure 15: National Percentage Bed Occupancy by Department



The figure 15 above provides an average percentage bed occupancy by month. Health facilities have various subsectors that are merged to form the major listed departments on the line chart. Since the commencements 2021, the average bed occupancy has been below 80% for the different departments and months as well.

5. Referrals by Hospital

Table 7: Number of Referred patients by Incoming and Outgoing

Facility	Total Referrals	Incoming	Outgoing	Incoming-repeat	Outgoing-repeat	NEMS
National	1476	1327	149	0	0	883
34M	70	46	24	0	0	18
Bo	100	91	9	0	0	93
Bombali	96	88	8	0	0	67
Bonthe	23	21	2	0	0	21
Connaught	74	72	2	0	0	60
Emergency	59	15	44	0	0	28
Kailahun	110	106	4	0	0	26
Kambia	62	62	0	0	0	59
Kenema	167	165	2	0	0	73
King Harman Road	32	20	12	0	0	15
Koinadugu	53	44	9	0	0	43
Kono	43	42	1	0	0	42
Lumley	34	21	13	0	0	2
Lungi	16	15	1	0	0	8
Macauley Street	4	0	4	0	0	0
Moyamba	21	21	0	0	0	21
ODCH	159	153	6	0	0	55
PCMH	139	138	1	0	0	103
Port Loko	69	69	0	0	0	32
Pujehun	88	88	0	0	0	67
Rokupa	25	25	0	0	0	25
Tonkolili	32	25	7	0	0	25
Total	1476	1327	149	0	0	883

From the table 7 above, a total 1,476 referrals were supported by NEMS. In that number 1,327 were classified as incoming referrals, while 149 represented the total outgoing referred patients supported. In June 2021, Kenema Government Hospital recorded the highest number of incoming referred patients, while Macauley street reported the least.



Table 8: The Outcome of the Number of Incoming Referred Patients' by Districts

Facility	Admission ongoing	Death	Death on arrival	Discharge against medical advice	Discharge	Onward referral	Patient did not arrive	Rejected referral	Unable to admit	Death in Ambulance	Total
National	351	80	5	26	841	10	4	0	7	3	1327
34M	46	0	0	0	0	0	0	0	0	0	46
Bo	14	2	0	1	74	0	0	0	0	0	91
Bombali	6	9	2	1	63	3	3	0	0	1	88
Bonthe	4	0	0	0	17	0	0	0	0	0	21
Connaught	9	11	0	0	52	0	0	0	0	0	72
Emergency	12	0	0	0	1	0	0	0	2	0	15
Kailahun	17	7	0	1	77	2	0	0	1	1	106
Kambia	0	3	0	1	58	0	0	0	0	0	62
Kenema	3	13	0	5	141	0	0	0	3	0	165
King Harman Road	1	1	0	0	17	0	0	0	1	0	20
Koinadugu	15	2	0	0	26	0	0	0	0	1	44
Kono	13	0	1	0	28	0	0	0	0	0	42
Lumley	6	0	0	2	12	1	0	0	0	0	21
Lungi	5	0	2	3	5	0	0	0	0	0	15
Macauley Street	0	0	0	0	0	0	0	0	0	0	0
Moyamba	19	1	0	0	0	0	1	0	0	0	21
ODCH	80	20	0	7	46	0	0	0	0	0	153
PCMH	51	2	0	0	83	2	0	0	0	0	138
Port Loko	9	5	0	4	51	0	0	0	0	0	69
Pujehun	29	4	0	1	54	0	0	0	0	0	88
Rokupa	5	0	0	0	20	0	0	0	0	0	25
Tonkolili	7	0	0	0	16	2	0	0	0	0	25
Grand Total	351	80	5	26	841	10	4	0	7	3	1327

The outcome of incoming referrals to the various health facilities nationwide presented in the tabular diagram for the month under review. A significant portion of the referred patients were discharged, while out of the 1,327 patients, 80 of those were reported dead. 351 of the total patients were reported to still be in the various facilities receiving care.

Table 9: Number of Referrals supported by FHC

Facility	Total Referrals	Lactating	Non-FHCI	Pregnant	Under 5	EVD Survivor	Yes - other
National	1327	42	191	608	439	0	47
34M	46	0	0	0	0	0	46
Bo	91	0	12	64	15	0	0
Bombali	88	0	17	30	40	0	1
Bonthe	21	0	0	14	7	0	0
Connaught	72	0	61	0	11	0	0
Emergency	15	0	11	0	4	0	0
Kailahun	106	7	9	39	51	0	0
Kambia	62	1	6	45	10	0	0
Kenema	165	7	22	84	52	0	0
King Harman Road	20	0	0	3	17	0	0
Koinadugu	44	3	4	28	9	0	0
Kono	42	3	6	25	8	0	0
Lumley	21	1	4	15	1	0	0
Lungi	15	0	2	8	5	0	0
Macauley Street	0	0	0	0	0	0	0
Moyamba	21	0	4	14	3	0	0
ODCH	153	0	15	0	138	0	0
PCMH	138	11	0	127	0	0	0
Port Loko	69	6	6	36	21	0	0
Pujehun	88	2	7	41	38	0	0
Rokupa	25	0	0	25	0	0	0
Tonkolili	25	1	5	10	9	0	0
Total	1327	42	191	608	439	0	47

Table 9 above explains the categories of incoming referred patients at the various health facilities nationwide for the month of June 2021. From the table above, 34 Military Hospital received patients outside of the free health care group, which includes pregnant women, lactating mothers, under 5 and EVD



survivors. Every facility reported cases related to maternity or paediatric cases, with the exception of 34 Military. In the month of June 2021, there were no records of EVD survivor.

Table 10: - Referral by Hospitals

REFERRAL HOSPITAL	May-21	Jun-21
Tertiary Facility Total	42.7%	18.6%
Connaught Hospital	9.8%	5.5%
Ola During Children's Hospital	8.8%	1.6%
Princess Christian Maternity Hospital	24.0%	11.6%
Regional and District Hospital Total	57.6%	54.8%
Bo Government Hospital	6.6%	7.0%
Bonthe Government Hospital	0.7%	0.8%
Kabala Government Hospital	3.1%	3.2%
Kailahun Government Hospital	3.1%	2.7%
Kambia Government Hospital	4.3%	4.4%
Kenema Government Hospital	7.2%	9.4%
Koidu Government Hospital	2.9%	4.4%
Lungi Government Hospital	0.4%	0.6%
Magburaka Government Hospital	1.7%	2.8%
Makeni Government Hospital	4.5%	5.0%
Moyamba Government Hospital	2.6%	2.6%
Port Loko Government Hospital	3.5%	3.2%
Pujehun Government Hospital	7.2%	7.6%
Segbwema Government Hospital	9.9%	1.2%
Other Government Facility	0.1%	1.2%
Kingharman Road Government Hospital	0.1%	0.1%
Other Government facilities (i.e.Macauley, Lumley)	-	-
Rokupa Government Hospital	-	1.1%
Private/NGO facility Total	7.2%	12.7%
Emergency	0.1%	1.0%
Kamakwie	1.3%	1.5%
Masanga	0.1%	1.2%
Mattru UBC Hospital	4.3%	2.2%
MSF Hospital – Kenema	1.4%	-
Another Private facility (i.e. Lion Heart)	-	-
St. John Of God Catholic Hospital Lunsar	-	1.1%
ABERDEEN WOMEN'S CENTER	-	2.1%
SERABU	-	0.3%
ABERDEEN WOMEN'S CENTER	-	0.6%
MARCY SHIP	-	2.1%
YELE	-	0.6%
COVID-19 CTC/CCC/ISOLATION	1.0%	13.4%

Table 10 shows the percentages of NEMS general monthly referrals to the main hospitals for the month of June 2021. The tabular diagram compares the data between June and May 2021.

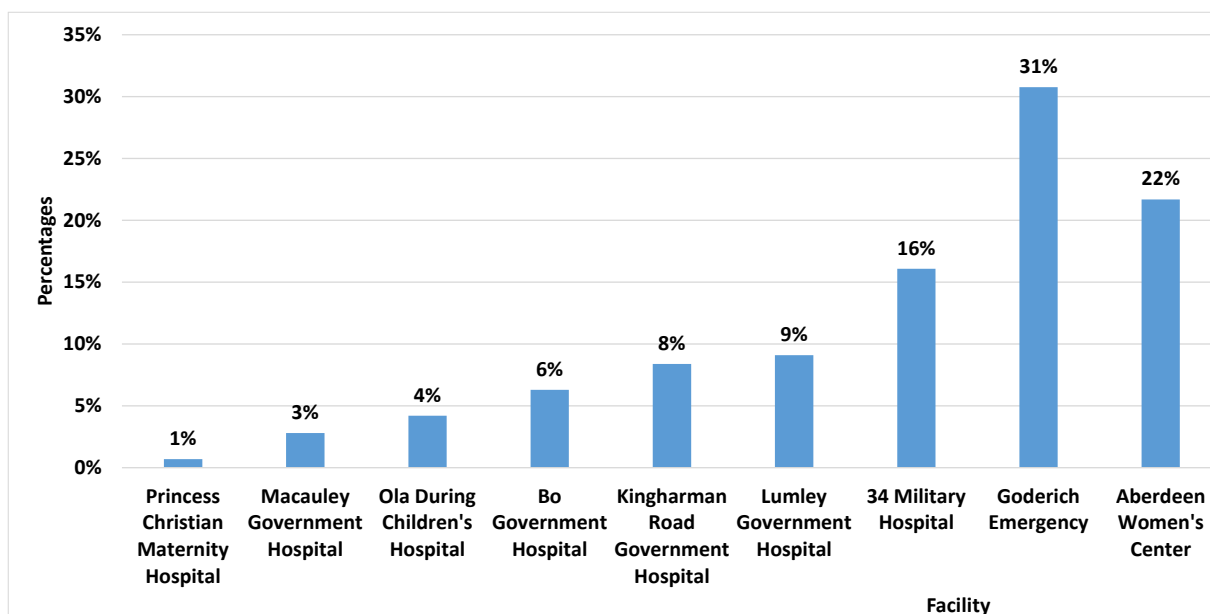
You can see that for the month under review, The tertiary facilities account for as the least recipient of referrals (18.6%) as follows: **Connaught (5.5%), Princess Christian Maternity hospital (PCMH) (11.6%), and Ola During Children's Hospital (ODCH) (1.6%)** compared to May 2021 with a total receipt of 42.7% for tertiary institutions. This indicated 24.1% less referrals than June 2021.

For the month under review, the **Regional and District Hospitals** received 54.8% of all referrals compared to May 2021 with 57.6% of the referrals. This indicates a significant drop by 2.8% in the percentage of patients referred to the **Regional and District Hospitals**.

Furthermore, the table above displays the percentage of patients referred to **COVID-19 Treatment Centres and Isolation Units**, with a surge on the percentage of confirmed cases in June 2021 that changed the constant 1% in the last few months to 13.4% in June.

6. Inter-hospitals Referrals

Figure 16: Showing Destination Hospitals for Inter-Hospital Referrals



It is visible that, Goderich Emergency reported the highest percentage of inter-hospital referrals with 31%, while 22% of the total inter-hospital referrals were from Aberdeen Women's Clinic.

You will observe from the representation in Figure 16 that, Goderich Emergency, are the facilities receiving the highest percentages of inter-hospital referrals, with a percentage score of 31%. The facility with the least reported cases of inter-hospital referrals is from Princess Christian Maternity Hospital (PCMH), with 1%.

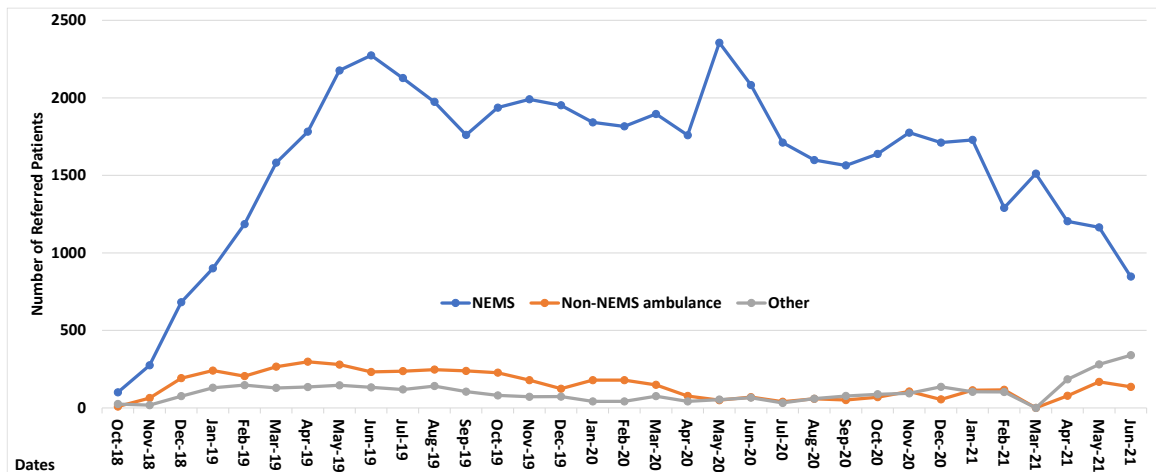
Table 11: Number of Inter – Hospital and District Missions and Referrals

INTERHOSPITAL REFERRALS	MISSIONS	REFERRALS
Princess Christian Maternity Hospital	1	1
Macauley Government Hospital	2	4
Ola During Children's Hospital	2	6
Bo Government Hospital	5	9
Kingharman Road Government Hospital	11	12
Lumley Government Hospital	10	13
34 Military Hospital	26	23
Goderich Emergency	54	44
Aberdeen Women's Center	31	31
INTER-DISTRICT REFERRALS	142	143
Goderich Emergency	-	1
Kabala Government Hospital	2	7
Kailahun Government Hospital	1	4
Kenema Government Hospital	1	2
Koidu Government Hospital	-	1
Koinadugu Government Hospital	4	2
Lungi Government Hospital	3	1
Magburaka Government Hospital	3	7
Makeni Government Hospital	3	8
Matru UBC Hospital	3	2
WITHIN THE SAME DISTRICT	20	35
TOT.	162	178

The 11th table above illustrates the number of inter-hospital missions and referrals covered by NEMS in the month of June 2021. A total of 142 mission to that 143 referrals reported for inter-hospital, while 20 and 35 for missions and referrals for inter-district movements supported by NEMS.

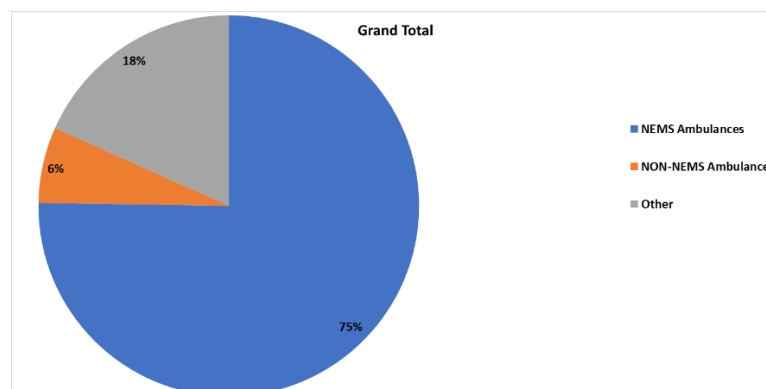
7. Arrival Methods

Figure 17: Number of Referred Patients by Arrival Methods



The graph labelled **figure 17** provides a detailed analysis on patients' arrival at the various hospital where referral coordinators are attached. The data for June 2021 demonstrates that major or most common means of arrival at hospital is through the utilization of NEMS' ambulances since the inception of this programme in Sierra Leone's health sector.

Figure 18: Arrival Methods at the Hospital of the Referrals



The pie chart labelled **figure 18** above, exemplifies the methods of arrival at the various health facilities nationwide for the month of June 2021. 75% of the total number of referred cases received by the respective hospitals was transported by NEMS ambulance, while a combined total of 24% of the total number of referred cases used other means of transportation as displayed on the pie chart above.

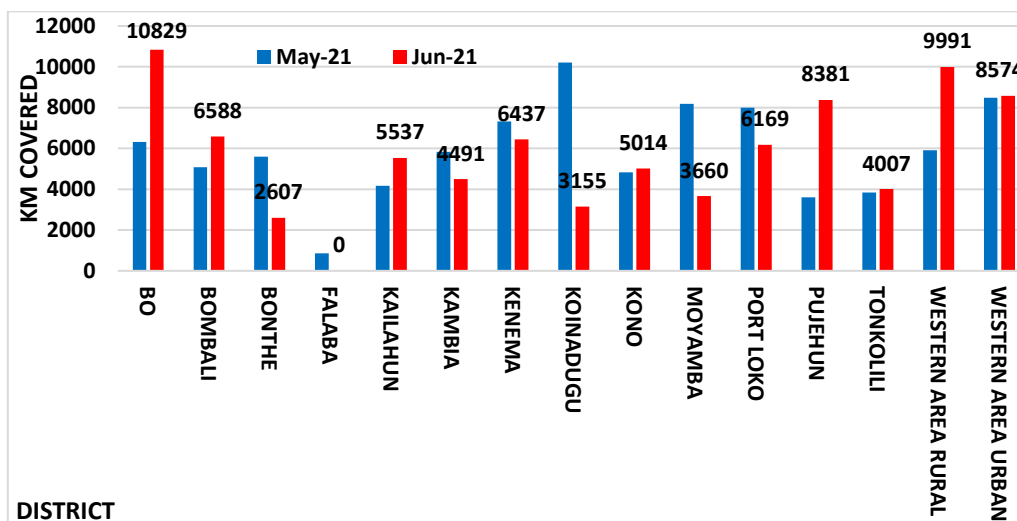
Table 12: Arrival Methods of the Referrals by Hospital

REFERRAL FACILITIES	NEMS Ambulances	NON-NEMS Ambulances	Other
Tertiary Facility	60%	15%	25%
34 Military Hospital	37%	48%	15%
Connaught Hospital	85%	15%	0%
Kingharman Road Govt. Hospital	79%	21%	0%
Lumley Govt. Hospital	10%	5%	86%
Ola During Children's Hospital	36%	12%	52%
Princess Christian Maternity Hospital	75%	1%	24%
Rokupa Govt. Hospital	100%	0%	0%
Private/NGO facility Total	90%	0%	10%
Matru UBC Hospital	90%	0%	10%
Regional/District Hospital	75%	5%	20%
Kabala Govt. Hospital	89%	0%	11%
Bo Govt. Hospital	98%	2%	0%
Kailahun Govt. Hospital	25%	18%	58%
Kambia Govt. Hospital	95%	3%	2%
Kenema Govt. Hospital	44%	22%	33%
Koidu Govt. Hospital	100%	0%	0%
Lungi Govt. Hospital	53%	0%	47%
Magburaka Govt. Hospital	100%	0%	0%
Makeni Govt. Hospital	75%	8%	17%
Moyamba Govt. Hospital	100%	0%	0%
Port Loko Govt. Hospital	46%	3%	51%
Pujehun Govt. Hospital	76%	0%	24%
Grand Total	75%	6%	18%

The tabular representation labelled **table 12** provides a further breakdown on patients' arrival at secondary and tertiary hospital nationwide for the month of June 2021. For tertiary hospital, there has been a drop on the percentage of NEMS arrival method, with Rokupa Government Hospital appears to be the only tertiary hospital in Western Area to register 100% NEMS arrival method, while most others recorded less than 80% with the exception of Connaught Hospital, which has 85%. Kailahun, Kenema, Lungi and Port Loko are the secondary hospitals that showed less than 70% NEMS, while Koidu and Magburaka reported 100% as NEMS arrival method. Overall, the major means of transporting emergency cases from peripheral health units nationwide is through NEMS.

8. Missions by Ambulances

Figure 19: Km Travelled by District

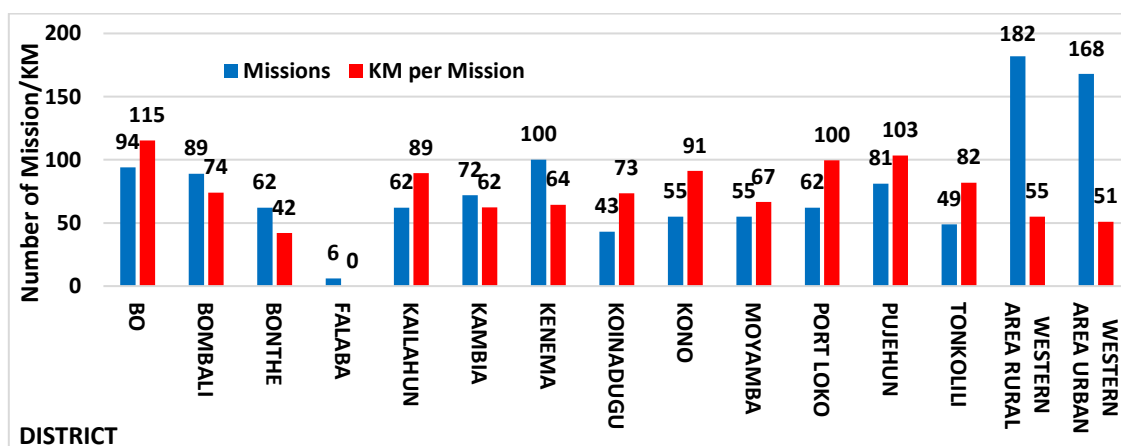


The District Ambulance Supervisors (DAS) Monthly Kilometre Reports showed that, In June 2021 data, a cumulative **85,440 km** was travelled Compared to May 2021, with **88,233 Km** indicating a significant drop by **2,793 km** in the kilometres travelled by NEMS ambulances for the month under review. This reduction is consistent with the general drop in the number of missions undertaken by NEMS in June 2021.

The two graphs (**Figure 19 and Figure 20**) displays the number of km travelled by NEMS ambulances per district and the average km/mission covered per district and calculated for all the missions undertaken by NEMS as recorded in the NEMS database. A Comparison was the inter-district figures for June 2021 with May 2021. Calculated the average km/mission is for all the missions handled by NEMS as per our database (and not only the one ending with a referral to the hospital).

Assessment of the district data showed that, there was a general drop in the June 2021 figure compared to the May 2021 figure. However, Bo, Pujehun, Bombali and Western Area Rural recorded a significant increase in the figure for the KM covered, while there is a slight rise for that of Western Area Urban. Another critical revelation of the June 2021 data evaluation is that only one district Bo covered above ten thousand kilometres compared to May 2021 with just over six thousand KM. Falaba district ambulances carried out no mission in the month of June, due to mechanical issues.

Figure 20: Average Km/Mission



The Bar chart labelled **figure 20** compares the **average km covered for a mission by district** for June 2021. For the month under review, the district with the highest average km per mission is Bo with 94 missions, the ambulances covered a significant 115 Kilometers per mission (km/mission). The other districts that experienced significant increases include Western Area Rural by (55) km/mission, Pujehun by 103 km/mission



and Bombali by 74 km/mission. It critical to highlight that only three (3) districts (Bo,Port Loko and Pujehun) an average km/mission of above 100 for the month under review.

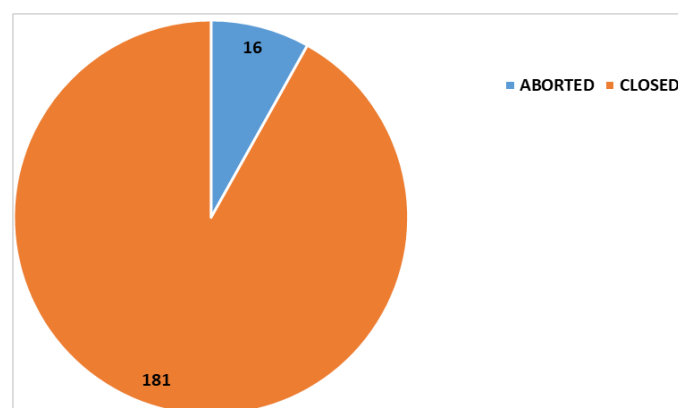
It is essential to understand that, other district NEMS ambulances transported the missions recorded by Falaba.

10. NEMS COVID-19 Response

a. COVID-19 Missions

From NEMS data sources related to June 2021, we observed that the strategy to repurposing the ambulances in May 2021 laid the foundation for the seamless accomplishment an exponential increase in both the movement of samples and the number of COVID-19 missions. As can be seen from the data presented, 213 missions that are strongly linked to COVID-19 related cases that required NEMS ambulance for transportation. The data further showed that 197 cases were categorized as confirmed cases including sixteen (16) samples from the provinces.

Figure 21: **Outcome of COVID-19 Missions**



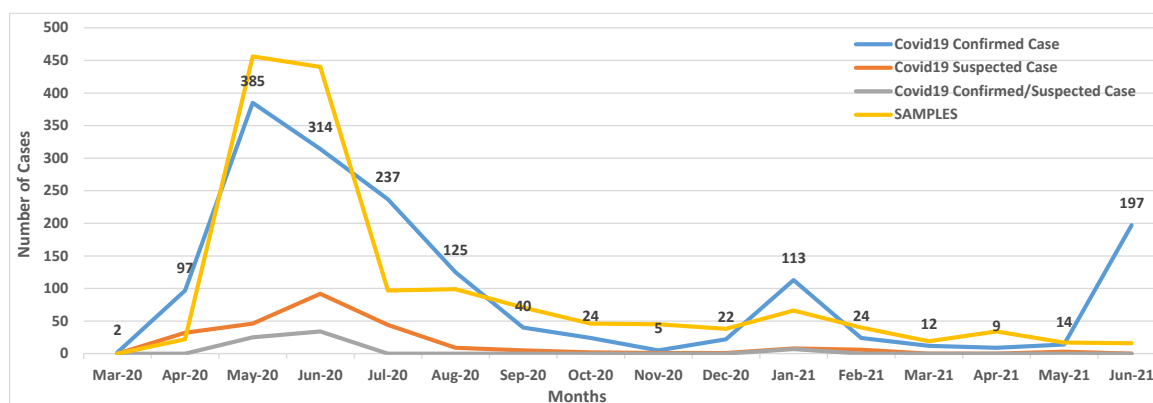
The pie chart **figure 20** describes the transportation outcome of COVID-19 activated missions. Overall, the data showed that out of 197 cases that NEMS dispatched ambulances for, 181 (92%) of the cases were transported to their various care centers. However, 16 (8%) was aborted.

b. COVID-19 Missions and Samples transported

Typology of Complain	Jun-21	May-21	Apr-21	Mar-21	Feb-21	Jan-21	TOTAL ⁸ Dec 2020-June 2020
Covid19 Confirmed Case	197	14	9	12	24	113	1251
Covid19 Suspected Case	-	3	-	-	6	8	232
Covid19 Confirmed/Suspected Case	-	-	-	-	-	7	59
SAMPLES	16	17	34	19	40	66	1314
TOTAL		34	43	31	70	194	2856

Table 13 for this report reinforces you with adequate information on the general COVID -19 operations for the month of June 2021. The new wave of COVID-19 infection led to the surge in the number of confirmed cases in June 2021, which is much higher than the previous month 14.

Figure 22: Trend of COVID-19 missions (confirmed and suspected cases*)*



* April 2020: including the 2 suspected cases in March

** January 2021: in the total cases are included the 7 missions COVID without a classification in term of COVID typology case.

Figure 22 is a line graph that illustrates the trend at which COVID-19 cases are reported to NEMS and transported by NEMS. A critical analysis from the chart above demonstrated that there has been constant drop in the number of confirmed cases since the nation recorded its highest number of confirmed COVID19 cases in January 2021 and commenced a steady drop until May 2021 when the . While in May 2021, the figure 21 registered a skyrocketing number of new cases that sent the total number for the month of June to 197. The number of samples transported plunged, when put in contrast to April 2021. In Western Area, samples are hardly transported, while this is common for the provincial districts.

c. COVID-19 Confirmed Cases

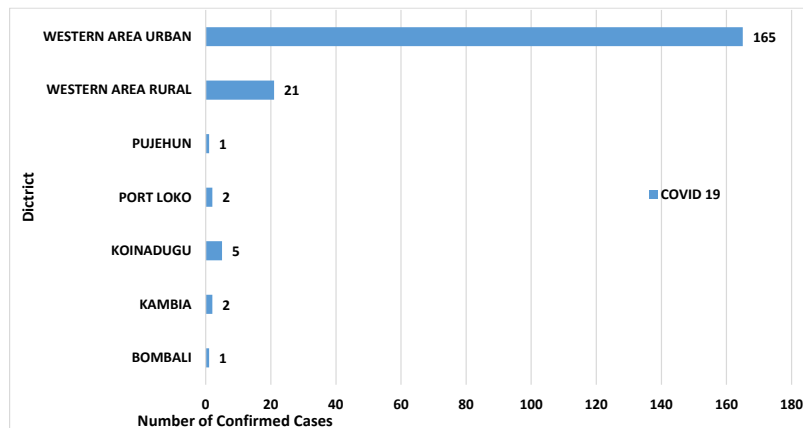
A detail analysis of the number of coronavirus (COVID-19) cases is done here. 197 cases were recorded in the month of June 2021 and these were all transported by NEMS to the respective treatment centres and holding homes.

The cumulative number of confirmed COVID19 cases are surging since the first cases of the third wave was registered in mid-June. The current total number of confirmed COVID19 cases is at 1620 since March 2020.

District of Origin of the Patients

The bar chart **figure 22** depicts a bar chart, which showed the origin of all transported COVID-19 cases. It is evidently clear that Western Area Urban and Rural continues to record the majority of the cases transported, which is a total of 165 and 21 respectively. The other confirmed cases were from Pujehun, Port Loko, Koinadugu, Kambia and Bombali and each of them reported one cases each, with the exception of Port Loko, Koinadugu and Kambia that registered 2, 5 and 2 considerably.

Figure 23: Origin district of the COVID-19 patient (frequencies)



Ambulance Station

The 14th Table is set to describe COVID19 confirmed cases by their respective stations. W R 04 reported the highest percentage of transported cases, while the District Ambulance Supervisors' vehicles were allocated to transport COVID19 cases at most part of the nation, with fewer exceptions.

In the event of an emergency, the ambulance that is operational and at the nearest location to the patients is mostly called upon to transport the patients to the appropriate health facility for care. In the month of June, a number of ambulances set to travelled non-COVID19 cases were asked to move suspected cases with proper infection prevention and control protocol.

Table 14: COVID-19 Missions by Ambulance Station (confirmed cases)

DISTRICT	STATION	CODE	% OF MISSIONS
BOMBALI	DAS Bombali Makeni - COVID-19	B M 99	1%
BOMBALI	COVID19/BINKOLO	B M 02	1%
KAMBIA	DAS Kambia - COVID-20	K A 99	1%
KOINADUGU	DAS Koinadugu - COVID-21	K I 99	3%
PORT LOKO	Port Loko-COVID19	P L 03	1%
PORT LOKO	DAS Port Loko-COVID19	P L 99	1%
PUJEHUN	DAS Pujehun - COVID-22	P U 99	1%
WESTERN AREA RURAL	Hasting - COVID-19	W R 06	12%
WESTERN AREA RURAL	Regent	W R 02	1%
WESTERN AREA RURAL	St. Joseph - COVID19	W U 04	53%
WESTERN AREA RURAL	St. Joseph - COVID19	W U 08	27%

COVID-19 Treatment Centres Destination

The Table 15 on this report delineate the COVID19 confirmed cases transported to their respective treatment centres in Sierra Leone. 34 Military Hospital has two spot for COVID19 patients (CTC 1&2) as displayed on the graph below. It has being the hub for COVID19 treatment and continues to do so, with the surge in cases. PMTC CCC seconded the table below, with 30% of the total number of confirmed cases transported to PMTC CCC. All the other treatment centres recorded 1% of the total confirmed cases, with the exception of ADRA CCC & CTC, Indian CCC and Makeni CTC, as represented as 23%, 2% and 5% respectively.

Table 15: COVID-19 Missions by Treatment Centre (confirmed cases)



District	Treatment Centre	%
WA. Urban	34 Military Hospital CTC 1&2	36%
WA. Urban	ADRA CCC & CTC	23%
WA. Rural	BENGUEMA CCC	1%
WA. Urban	CONNAUGHT ISOLATION UNIT	1%
WA. Urban	COOL FARM CTC	1%
WA. Rural	HASTINGS	1%
WA. Urban	INDIAN CCC	2%
Port Loko	LUNGI CTC	1%
Bombali	MAKENI CTC	5%
WA. Urban	PCMH ISOLATION UNIT	1%
WA. Urban	PMTCC CCC	30%
Pujehun	PUJEHUN CTC	1%

11. Samples' Referrals

In June 2021, the National Emergency Medical Service provided support in transporting both confirmed cases and samples from the various district listed below. While there were a total 197 confirmed COVID-19 cases and 16 samples, with the majority of the confirmed missions were from Western Area Urban. Pujehun and Moyamba shared the same percentage (31%) for samples transported.

Figure 24: *Transportation of Specimen by District: Missions and Samples*

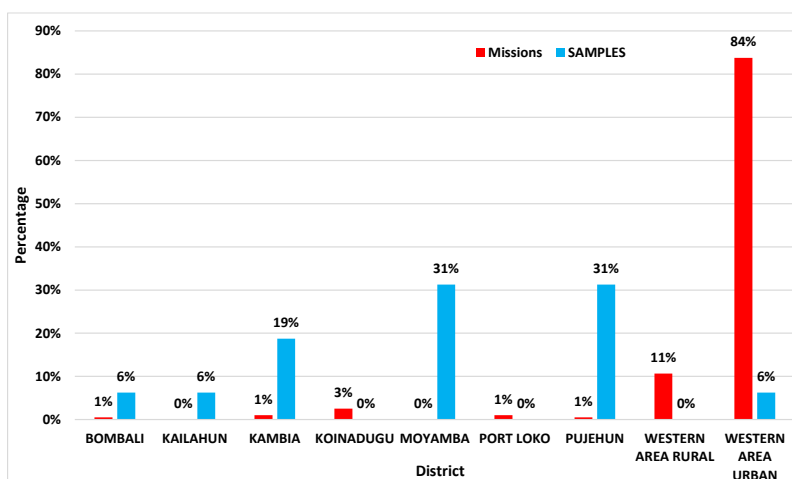
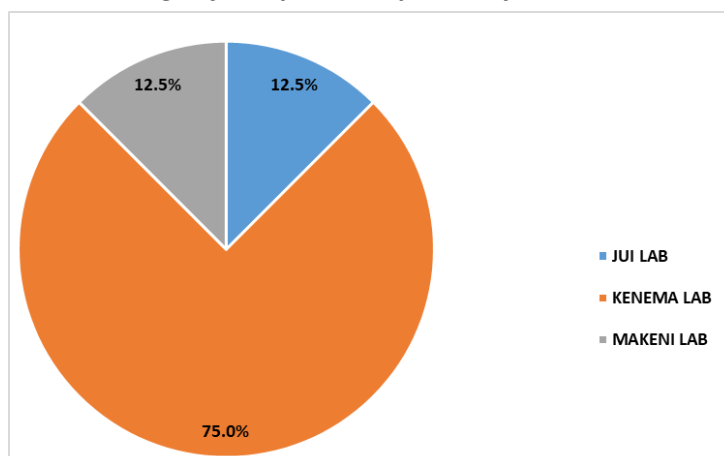


Figure 25: *Percentage of Samples transported by destination laboratories*



The pie chart above describes the percentages of COVID-19 laboratory results for June 2021. Kenema Lab recorded the highest of specimen assessed in the month of June 2021, with 75%. While Jui and Makeni laboratories reported an equal receipt of 12.5% of the COVID-19 samples in their respective labs. Hence, the combination of both Jui and Makeni labs received and processed 25% of the total labs.