**MINISTRY OF HEALTH
AND SANITATION**

*49 J Spur rd, Freetown,
Sierra Leone*

NEMS
National Emergency
Medical Service

NEMS OPERATIONAL ACTIVITIES

MONTHLY REPORT: NOVEMBER 2021

Date	November 2021.
Districts	NEMS NATIONAL OPERATION.

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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 /Hearses; Trained Para Medics and Drivers; Equipped depot and workshop; Management expertise and Administrative personnel; 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.

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

Table 1: **Cumulative Number of Supported Indicators**

Indicators	Summed
CALLS	80850
MISSIONS	76725
INCOMING REFERRALS	65340

- ***Distributions of the Ambulances***

NEMS currently has one hundred (100) ambulances in operation all over Sierra Leone, while each district among the 16 has one ambulance allocated to the District Ambulance Supervisor (DAS) to serve as replacement to inoperative ones, which summed this to the total reported here:

Ambulance Distributions	
District	**Numbers**
BO	7
BOMBALI	6
BONTHE	5
FALABA	5
KAILAHUN	7
KAMBIA	5
KARENE	5
KENEMA	6
KOINADUGU	5
KONO	7
MOYAMBA	6
PORT LOKO	6
PUJEHUN	7
TONKOLILI	8
WESTERN AREA RURAL	7
WESTERN AREA URBAN	8
Grand Total	100

For the COVID-19 response, NEMS continues to dedicate a vehicle in each district, with the exception of Western Area Urban where two vehicles are deployed for the management of COVID-19 cases. All the

ambulances are temporarily located at the district headquarter town except for Western Area, Port Loko and Kenema districts. In **June** and **July** 2021, the District Ambulance Supervisors DASs were repurposed for the transporting of COVID-19 related issues, while all other ambulances have been positioned for the transportation of other emergency related complaints reach.

- *Km Travelled*

Since the start of NEMS activities in October 2018, when ninety seven ambulances were initially dispatched across the country, later increased to hundred (100) ambulances that have travelled a total number of **5,867,763 km**. In **November** 2021, Port Loko emerged as the district with the highest KM travelled **13,739** KM covered.

- *COVID-19 Response*

The total number of **COVID-19** confirmed cases **referred by NEMS** in **November** 2021 is 1, while there were 3 suspected case reported. The cumulative figures since the COVID-19 outbreak in the country are **3,667 confirmed**, 258 **suspected**.

1. Overview of the Calls, Missions and Referrals

1. *Figure 1 Trend of Calls, Missions and Referrals (Oct 2018 – June 2021)*
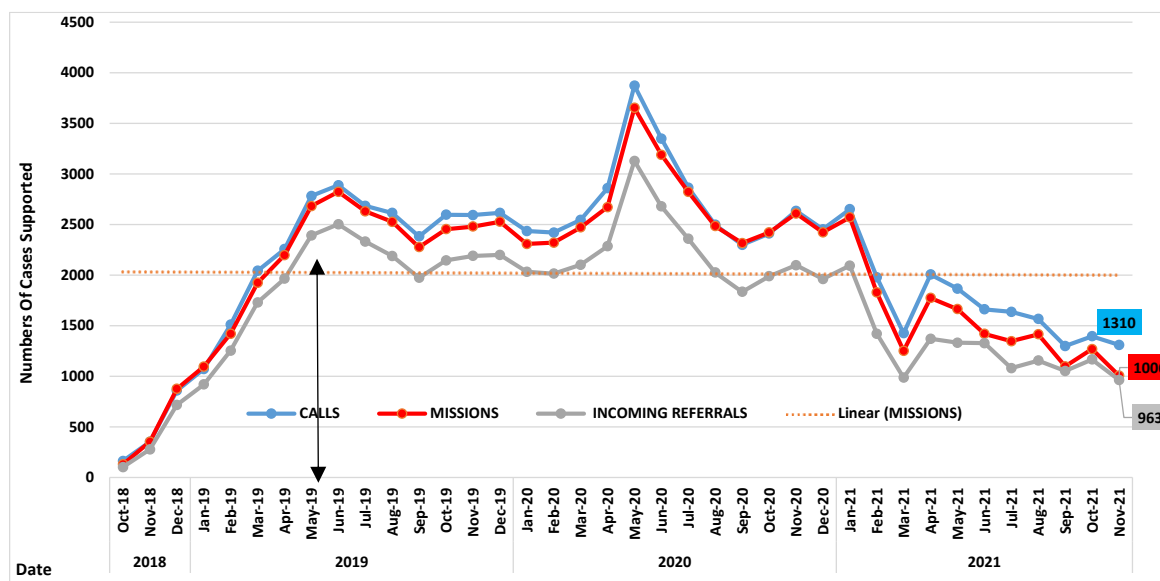
The graph **Figure 1** displays the trend at which **Calls, Missions and Incoming Referrals** are supported by NEMS since the inception of operations in **October 2018**. The indication of the vertical line in the month of **June 2019** indicates the start of **NEMS service at every district nationwide**. The data showed that, the number of **Calls** consistently surpassed the numbers of **Missions** and **Incoming Referrals.**

The graph further demonstrates that NEMS recorded the highest numbers of **calls, missions, and incoming referrals services** in May 2020. This means that, since inception there has not been any month that these numbers have been surpassed. However, it is also critical to mention that, this was the period of time the nation's instituted several restrictions to curb COVID19 cases.

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.

Irrespective of the fact there is a drop on the number of Operations in the month of **November**.

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1.1 Number of Calls, Missions, and Incoming Referrals

In **November 2021**, we recorded a total of 1**,310, 1,006 and 963** for **calls, missions, and incoming referrals services** respectively.

1.Table 2: Cumulative and Percentage Trend of 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	-6%	1418	-8%	1327	0%
	Jul-21	1637	-1%	1347	-3%	1080	-10%
	Aug-21	1566	-2%	1415	2%	1155	3%
	Sep-21	1299	-9%	1098	-13%	1052	-5%
	Oct-21	1395	4%	1268	7%	1166	5%
	Nov-21	1310	-3%	1006	-12%	963	-10%
Total NEMS		80850		76725		64377	

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 **November** 2021. 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 change that occurred, while there was slight difference on the referrals reported on the said period. It is essential to note that, there is a negative percentage trend on both Calls, Missions and Incoming Referrals for the month of **November** respectively.

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1.3 Table 3: NEMS Daily Activities Averages

Daily Operations	Calls	Missions	Incoming Referrals
Nov-21	44	34	32

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

1.4 Calls Analysis

1.4.1 Figure 2: **Classifications of Calls**
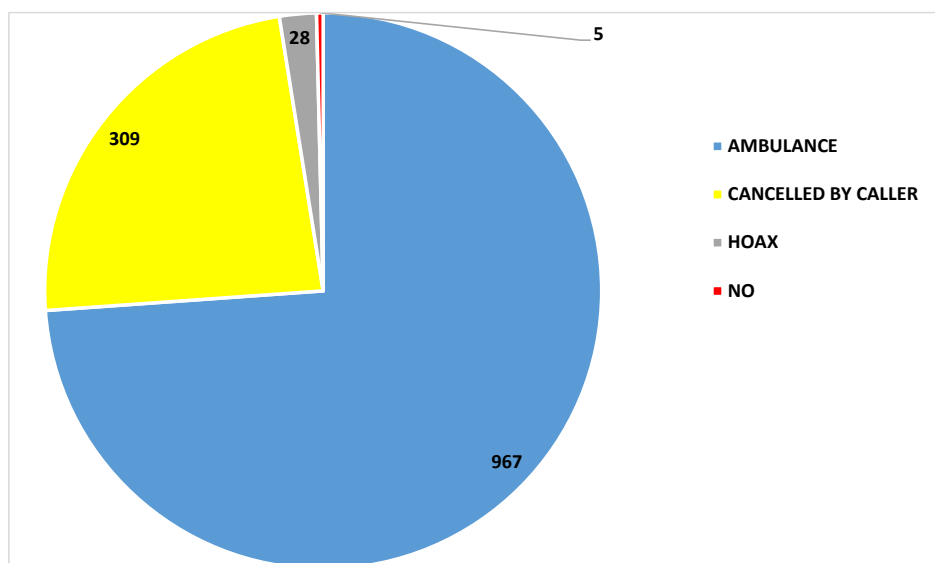
The diagram **figure 2** outlines the classification of Calls as they are received at the NEMS call center (Operation Center). NEMS Call center operatives received a cumulative total of 1,310 Calls. With a sum of 967 of the total number of calls were classified as ambulance, which means an ambulance is required and dispatched by NEMS' OC. 342 of the total number of calls were considered as either cancelled by the caller (309), as hoax (28) calls or not completed (5).

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1.4.2 *Figure 3:* Breakdown of Calls by District
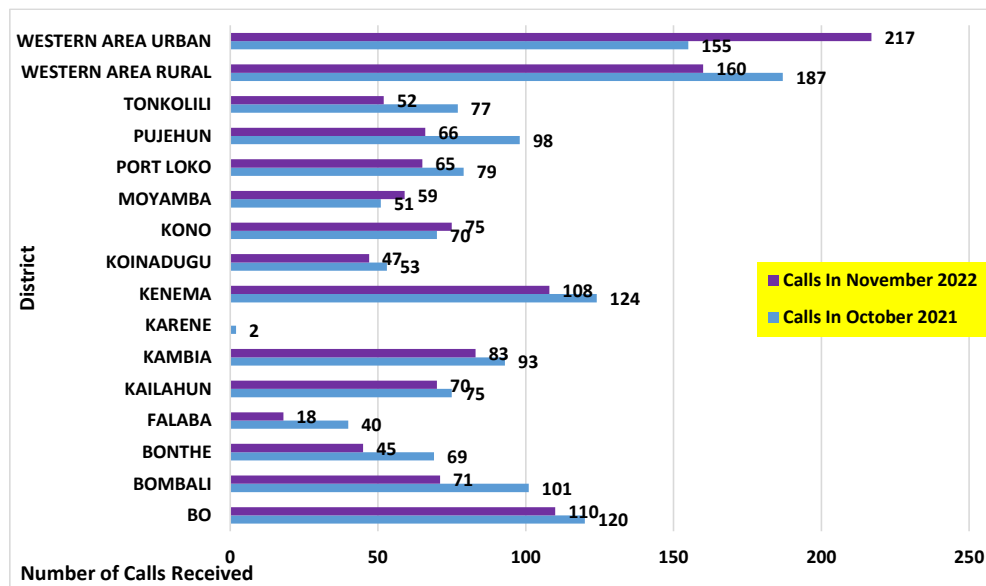
The graph **figure 3** provides a breakdown of Calls by district in the month under review. In November 2021, Western Area Urban and Rural continue to report the highest number of calls received – 217 and 160 respectively. Kenema recorded the highest number of Calls (108) from province, while Bo (120) wi th the most Calls coming from the provinces. All the regional headquarter towns (Kenema – 108, Port Loko – 65, Bombali – 71, and Bo - 110) registered over 70 Calls, with the exception of Port Loko that joined the other districts to report less than 70.

1.4.3 *Figure 4:* Breakdown of Calls Complaint by District
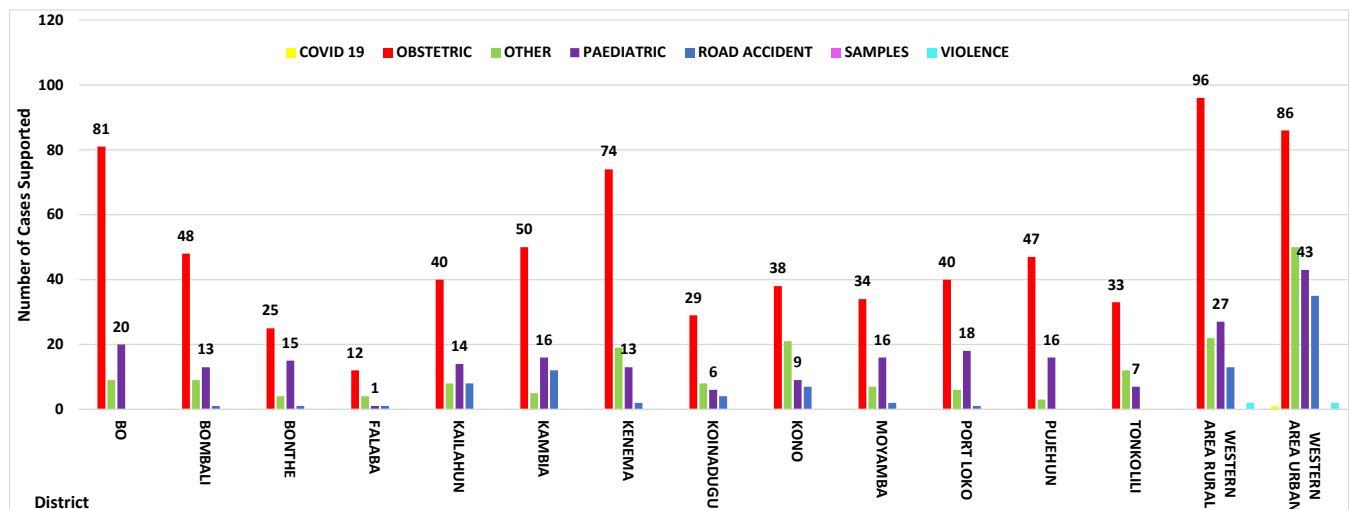
The chart **figure 4** provides an in-depth understanding of the various complaints received by call center. It is obvious from the chart that every district recorded numbers of calls for obstetric and Paediatric complaints.

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1.4.4 Figure 5: **Number of Calls per Hour**
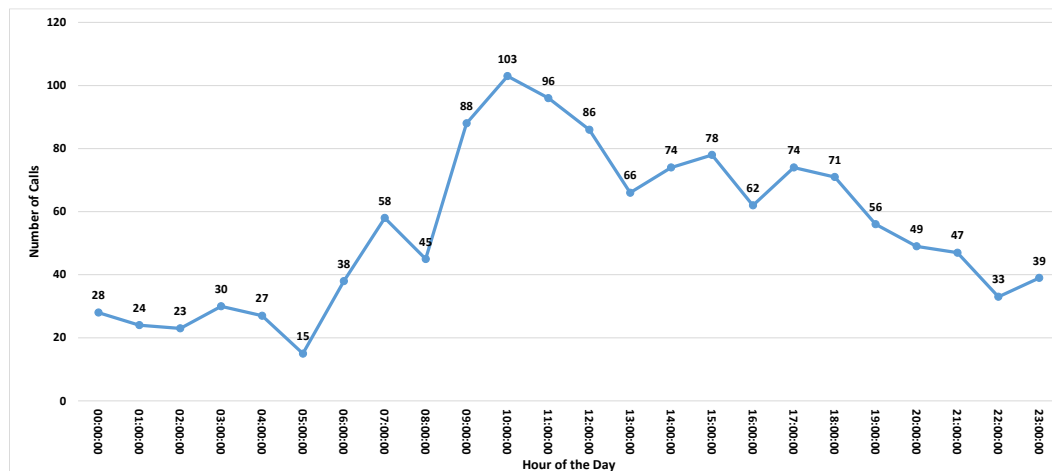
The diagram **figure 5** is a line graph that describes the number of calls received at NEMS operation center on an hourly based. The chart above showed that, there was a surge on the number of calls received during the day than those at mid-night.

1.4.5 Figure 6: **Number of Calls per Day**
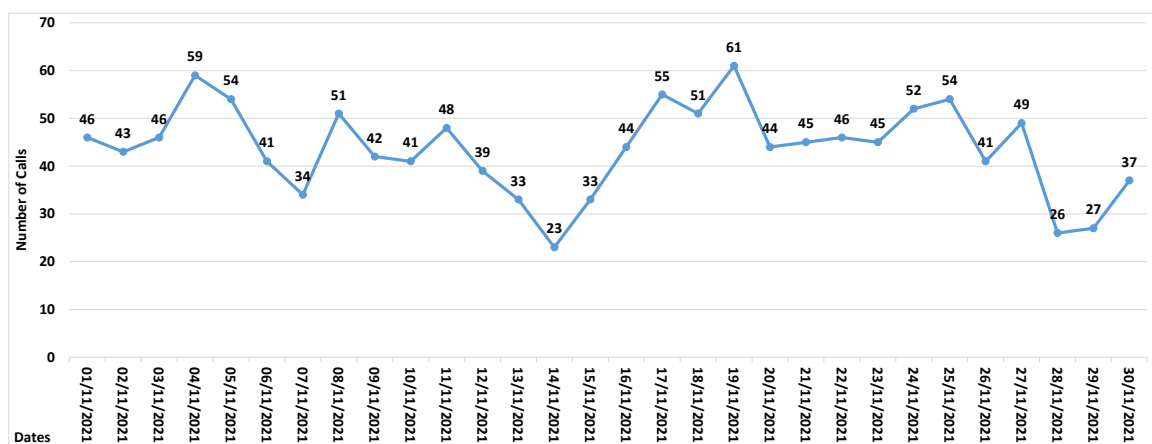
The oscillating line chart above demonstrates the trend of incoming calls to the NEMS call centre, per day in the month of **November** 2021. The line graph showed that there has been a decrement on the number of incoming Calls received. The least number of calls recorded on the 14th, while on the 19th, the call system recorded its apex on calls, with 61 calls received.

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1.4.6 Figure 7: Calls, Missions, Referrals by District
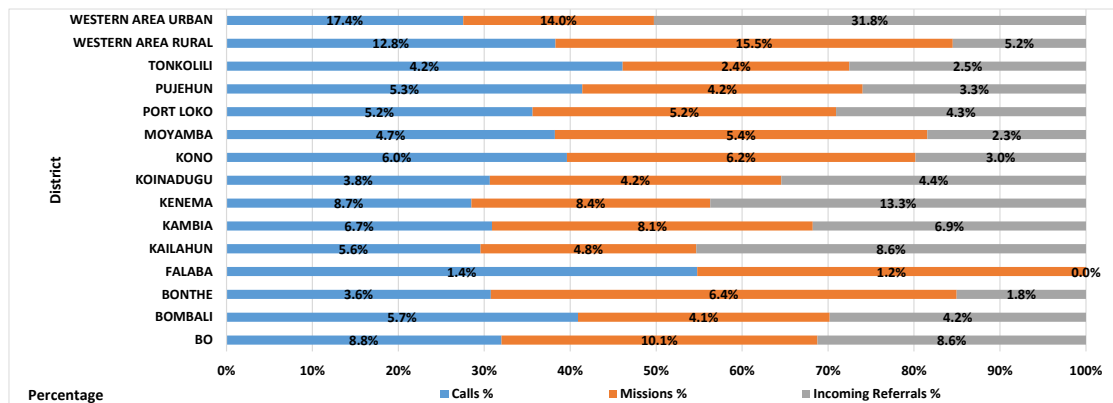
The bar chart above is demonstrating the percentage of Calls, Missions and Incoming Referrals supported by NEMS per district in the month of November 2021. From it, Western Area Urban accounted for 17.4% and 31.8%, which reported the highest percentage of all the incoming Calls and incoming referrals respectively, while Western Area Rural recorded the majority of Missions (15.5%). Falaba reported 1.4% calls and 1.2% missions.

2. Missions

2.1 Figure 8: Categories of NEMS Missions
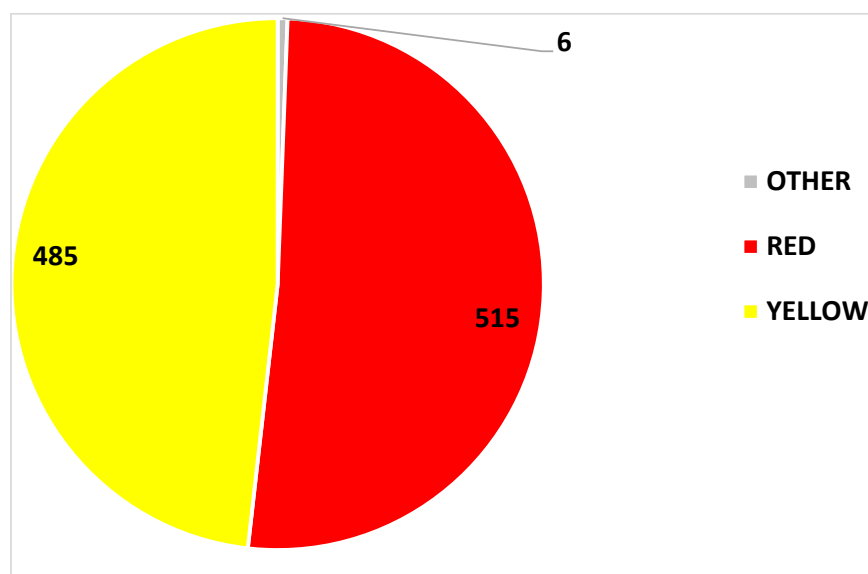
The chart **figure 8** provides an insight on how calls are categorized calls to determine a mission. The severity of the patient's condition has three major categories, with an additional color 'Other' (Red, Yellow and Green). A patient assessment (Triage) is to determine the severity of the condition; 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 color code Green and other are ascribed when the patient's condition does not match the threshold and incomplete information is shared with call center, for the operator to activate a mission and dispatch ambulance.

Out of the 1,006 Missions undertaken in November, only 6 did not meet the requirement for emergency.

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*2.2 **Figure 9**: Time of the day of the Missions*
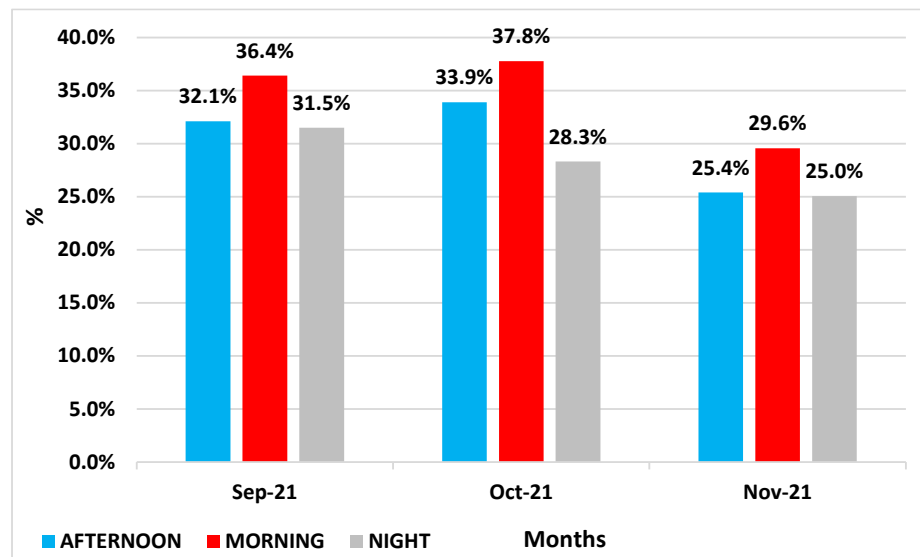
The '**time of the day**' is a measure of the time of the call that consequently activates the NEMS mission. The diagram labelled **Figure 9** demonstrates the percentage of missions undertaken in the morning (i.e., from 8 am to 2 pm), afternoon (from 2 pm to 8 pm) and night (from 8 pm to 8 am) comparing the data for September, October and November 2021 as displays below:

In November 2021, the bar chart above displays an overall drop on all indicators as compared to the previous month. It is obvious that a significant number (29.6%) of the missions were undertaken in the morning hours, for the month of November, which is less than the previous two previous months by 8.2% and 6.8% for both October and September respectively.

For the Afternoon indicator, the percentages of missions supported during the following months September, October and November are 32.1%, 33.9% and 25.4% correspondingly. Between September and October, there were an increment of 1.8%, while November and October, we saw a decrement of 8.5%.

For the night or evening hour's indicator, there is a gradual drop between the various months. 31.5%, 28.3% and 25.0% is for the September, October and November separately.

2.3 Complaints that lead to Missions

2.3.1 Figure 10: Comparative Analysis of NEMS Mission's complaints for the Previous month (May) to Current Month
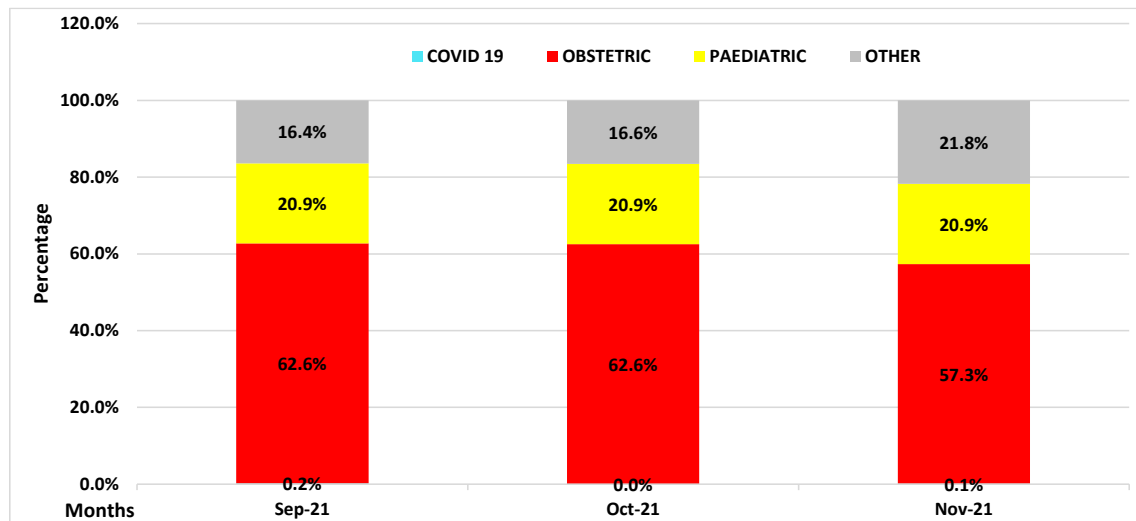
The graph (Figure 10) represents the major category of complaints of the NEMS missions comparing **September, October and November** 2021 data. The data of COVID-19 missions include only confirmed. It is visible that Obstetric cases were the majority of the missions supported to health facilities by NEMS.

The indicator 'Other' is a combination of other complaints, these include Abdominal Pain, Animal Bite, Breathing, Burns, Chest Pain, Consciousness, Road Accident, Seizures, Trauma and general Other. And these showed a percentage of 16.4%, 16.6% and 21.8% for the three months (**September, October and November**) under review. This has increase significantly compared to the previous months.

In November, the nation reported one Covid-19 case, which is 0.1% of the total missions supported, and that was transported by NEMS, while in the October NEMS recorded zero case of Covid-19. In October, the number of Covid-19 cases were 2, which is represented on the bar chart above as 0.2%.

The paediatric indicator for the graph above continuously reporting the same percentage missions covered in the three month analysed.

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2.3.2 Figure 11: Typology of complaints that lead to Missions
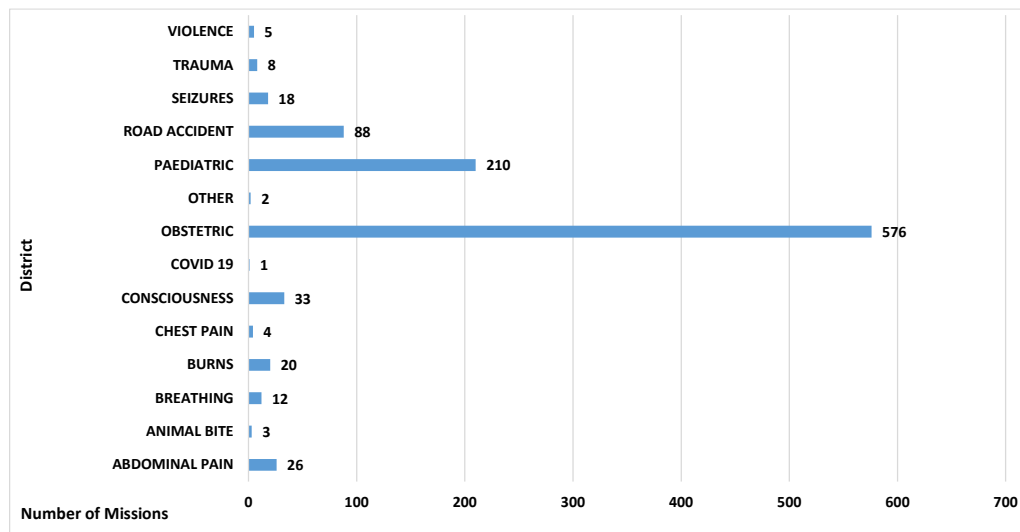
The chart **figure 11** above provides a detailed breakdown of the number of complaints received and then considered as missions. It is evidently clear that obstetric complaints were the most occurring indicator, seconded by Paediatric, while road accident and other traumatic cases remain to be the least complaints received for the month under review.

2.3.2 Figure 12: Showing Trend of Missions complaints by day
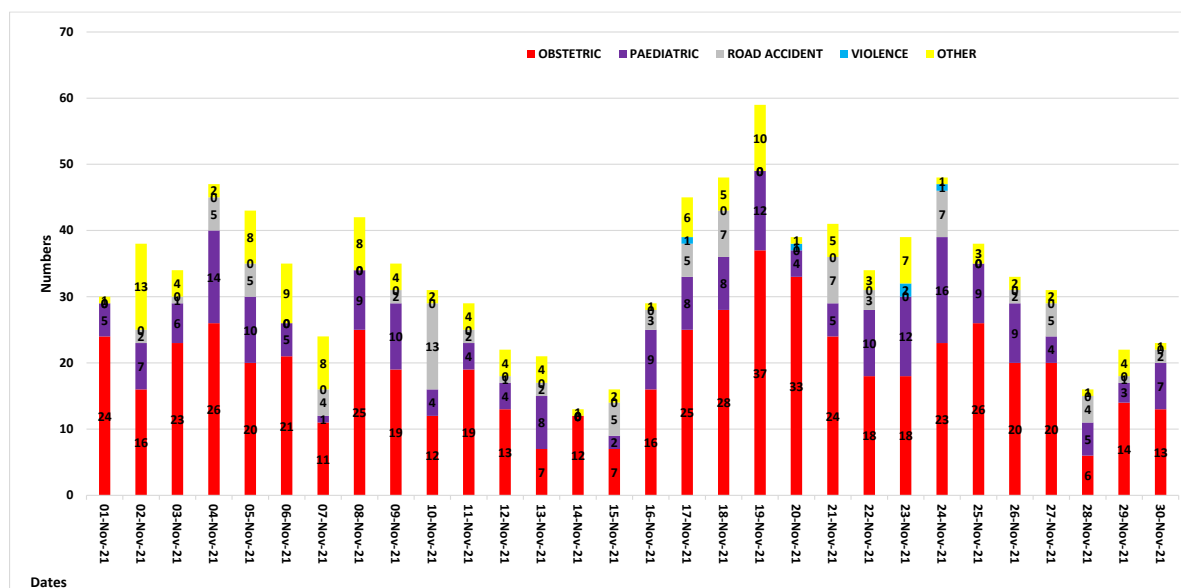
The data displayed in the stacked column chart labelled **figure 12** above gives a further breakdown on the number of complaints per day and the trend at which complaints that lead to missions are reported for the month of **November** 2021.

The chart showed a positive increase on the number of complaints for each day, with a sharp dropped on the 14th. As displayed on the diagram above, Obstetric, Paediatric and Road Accident cases appear to be the most registered complaints in the month of **November** 2021.

The number of COVID 19 complaint in **November** is under control in the month under review, irrespective of recording 1 case in the month of November. Road Accident occurred on most of the days in the month **November**, with fewer days that shown no report on accident cases. A few numbers of violence complaints were received for fewer days.

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2.3.3 Figure 13: Missions Complaints by District
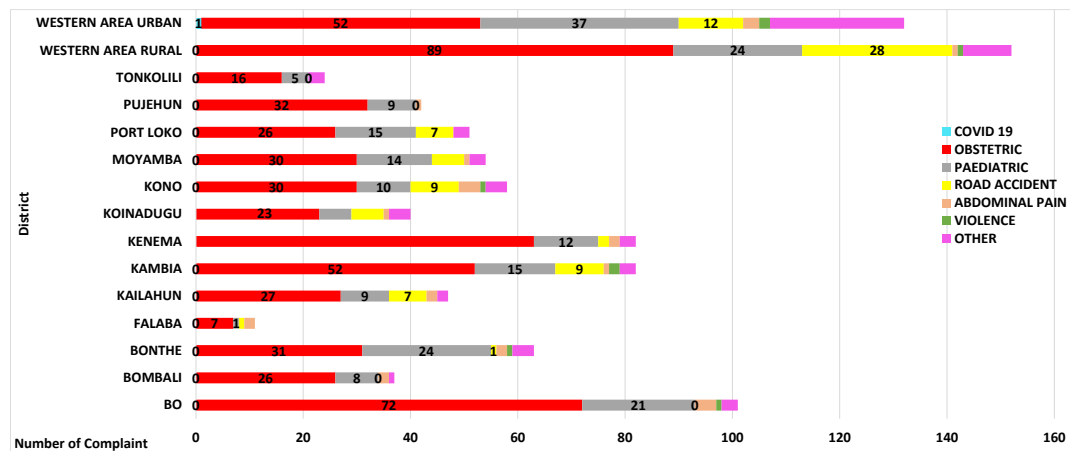
The chart above is a supplementary analysis on complaints with an in-depth description for the various categories of complaints by district for the month of **November 2021**. This figure does not only justified figure 3, but also that of figure 10. As western Area Rural reported the highest number of missions, so it records a massive number of obstetric complaints, which alone crossed over most of the other district indicators.

Figure 14: **Number of Calls, Missions and Referrals Supported per Day**
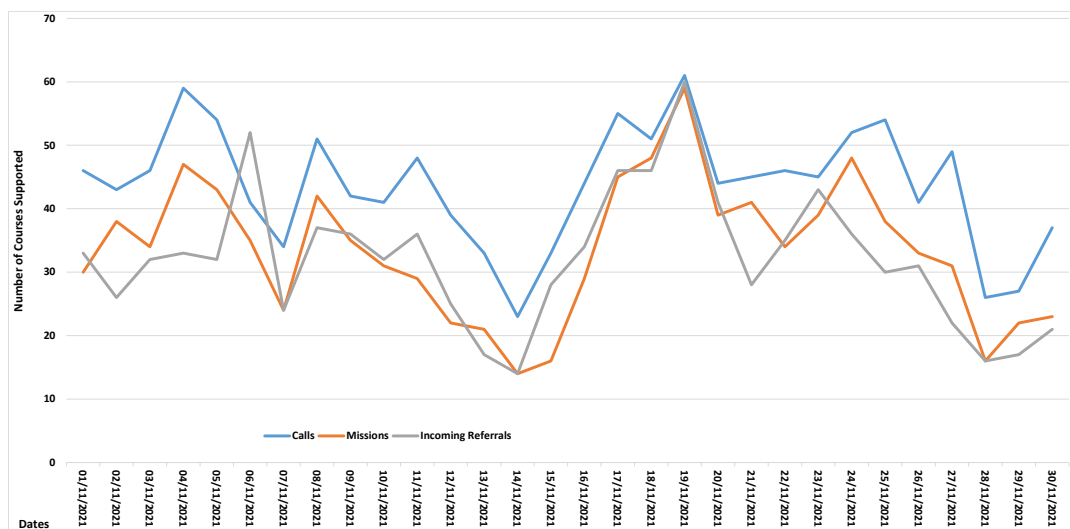
Figure 14 is a line chart that shows the number of Calls received, missions carried out, and referrals managed per day by NEMS in **November** 2021. Throughout **November** 2021, the indicators fluctuated. The average call was 44, Missions is 34 and referrals 32 for the month under review.

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2.4 Figure 15: Outcome of the Missions
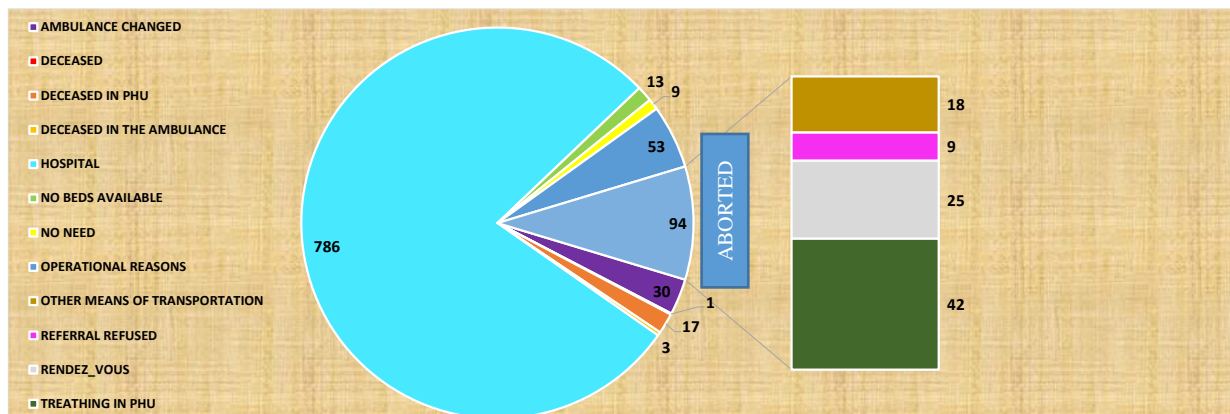
Figure 15 shows the outcome of missions carried out by NEMS in **November** 2021.

'**Hospital**' refers to missions leading to referral to a pre-identified health facility (Hospital). Referencing the **November** 2021 data displayed in the pie chart above shows that (786) 78.1% of the missions led to referral to a pre-identified specialist health facility compared to the October 2021 figure that showed that 81.7% of the missions referred to a pre-identified specialist health facility. This indicates a decrease in the referrals figure for **November** 2021 compared to October 2021. This is further simplified by table labelled **Table 4**.

2.4.1 Table 4: Displays Missions Outcome and the Reasons why missions are aborted

INDICATORS	DECEASED	HOSPITAL	NO NEED	RENDEZ-VOUS	Grand Total
AMBULANCE CHANGED	0	0	30	0	30
DECEASED	1	0	0	0	1
DECEASED IN PHU	0	2	15	0	17
DECEASED IN THE AMBULANCE	0	2	1	0	3
HOSPITAL	0	739	27	20	786
NO BEDS AVAILABLE	0	0	13	0	13
NO NEED	0	0	9	0	9
OPERATIONAL REASONS	0	1	52	0	53
OTHER MEANS OF TRANSPORTATION	0	0	18	0	18
REFERRAL REFUSED	0	0	9	0	9
RENDEZ_VOUS	0	24	1	0	25
TREATHING IN PHU	0	5	37	0	42
Grand Total	1	773	212	20	1006

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 **November** 2021 data showed that out of the 1,006 missions undertaken, 212 (21.1%) 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 are diverse reasons, and these could be any of the following:

- '**Ambulance Changed**' - the data for **November** 2021 revealed that out of 212 missions aborted, 30 (14.2%) of the aborted missions in **November** 2021 were due to 'ambulance changed',
- '**Deceased**' – this mission outcome refers to death before the arrival of the NEMS ambulance team. **November** 2021 data showed that (33) of the mission were cancelled because of the patient died. Out of the 33 missions cancelled, 15 of those aborted mission occurred because the patients passed away in the PHU and 1 of the missions were aborted because the patients passed away in the ambulances and 1 died while the ambulance was heading to the PHU.

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- **'Operational reasons'** - this type of mission outcome has a strongly correlation with the ambulance technical problems. The table above shows that 52 (24.5%) of the aborted missions occurred because of technical problems with the ambulances in the month of **November** 2021 compared with October with 15.4% 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 **November** 2021 data showed that 18 (8.5%) 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 37 (17.5%).
- **'Referral refused'** the table above shows that out of 212 missions aborted, 9 (4.2%) was due to the patients or family members refusal to use the ambulance dispatched by NEMS,
- **'Other reasons'** includes 'no-need' of the ambulance (9), 'no beds available at the referral hospitals' (13).
- **'Rendezvous'** has been used to describe situations that may require more than one ambulance to complete a mission. The NEMS data for **November** shows that '**Rendezvous**' was use to accomplish 20 (2%) mission out of 1,006 mission outcomes compared to October 2021 that was (3.2%).

3. National Hospital Bed capacity

3.1 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	Peadiatric Bed Capacity	% Average Bed Occupancy per Month
Bo Government Hospital	139	51	54	83	72	75
Makeni Government Hospital	95	84	27	74	41	35
Mattru UBC Hospital	36	52	12	100	19	51
Connaught Government Hospital	182	82	0		24	83
Kailahun Government Hospital	38	44	37	59	42	69
Kambia Government Hospital	40	35	23	49	35	62
Kenema Government Hospital	118	50	41	62	63	57
Kabala Government Hospital	49	49	37	49	55	46
Koidu Government Hospital	74	82	36	83	57	124
Lungi Government Hospital	40	46	20	41	20	53
Moyamba Government Hospital	48	36	24	75	39	53
Ola During Children Hospital	0		0		131	105
Princess Christian Maternity Hospital	0		115	90	18	
Port Loko Government Hospital	65	31	35	45	20	101
Pujehun Government Hospital	41	56	34	85	24	82
Tonkolili Government Hospital	49	16	40	58	72	84
34M Military Hospital	82	42	22	38	10	83
King Harman Road Government Hospital	4	76	17	38	15	87
Rokupa Government Hospital	19	42	21	42	26	83
Lumley Government Hospital	12	0	10	0	4	0
Macauley Government Hospital	13	47	10	58	4	55
Emergency Memorial Hospital	25	80	0	0	37	83
Total National Bed Capacity	1169		615		828	

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 maternal related complaints and there is no specific department to handle pregnancy related complaints. Ola During Children's Hospital (ODCH), is a specialized children hospital providing care to sick children, while Princess Christian Maternity Hospital (PCMH), located adjacent ODCH with the purpose to support and address maternity related issues.

The Special Care Baby Unit SCBU beds available at PCMH and ODCH are not counted in determining the bed capacity of the facility, which is the same for the other district or tertiary hospitals nationwide. These beds serve a different purpose from the others. Nationwide, all district and tertiary hospitals have a total of **2,612** beds, which has dropped from its usual **2,796 useable beds.**

There are currently no referrals for admission to Macaulay Street and Lumley government hospitals because they are currently undergoing rehabilitation. However, there is a provision for consultation available only for emergency cases that can be further referred if that is required.

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

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

Adult Occupancy: for the adult bed capacity, no facilities that reported overcrowding in the month of **November 2021, while Makeni Government Hospital, Emergency Memorial Hospital and Connaught Hospital recorded 80% or over average occupancy.**

Maternity Occupancy: Mattru UBC Hospital reported 100% average bed occupancy for the month of **November**, which means that the facility admitted patients more than its capacity and that appears to be the usual case at the maternity department for the hospital. Princess Christian Maternity Hospital and Koidu Government Hospital recorded 90% and 83% average bed occupancy respectively, as that shows a potential overcrowding.

Paediatric Occupancy: Koidu Government Hospitals, ODCH and Pujehun Government Hospital reported overcrowding for the month of **November**, as the averages for the months are 124%, 105% and 101%respectively.

Figure 15: **National Percentage Bed Occupancy by Department**
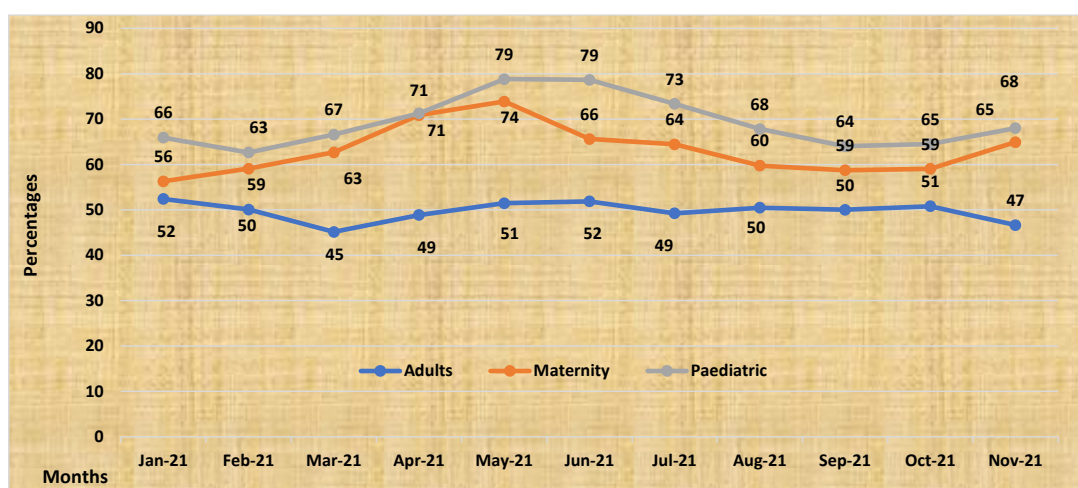
The diagram **figure 15** above provides an average percentage bed occupancy by month. Health facilities have various subsectors that are merged to form the major listed departments on the line chart. Since the commencements of 2021, the average bed occupancy has been below 80% for the different departments and all the various health facilities Referral Coordinators are attached with a slight increase to 68% for the month of **November**.

4.NEMS National Referrals

4.1 Table 7: Number of Incoming and Outgoing Referred patients

No:	Facility	Total Referrals	Incoming Referrals	Outgoing Referrals	NEMS Referrals
	National Referrals by District, October 2021				
	National Total	1073	963	110	668
	Nationwide %	100	90	10	62
1	34M	79	46	33	2
2	Bo	85	83	2	84
3	Bombali	47	40	7	34
4	Bonthe	21	17	4	21
5	Connaught	51	51	0	49
6	Emergency	46	28	18	25
7	Kailahun	85	83	2	25
8	Kambia	67	66	1	67
9	Kenema	129	128	1	68
10	King Harman Road	0	0	0	0
11	Koinadugu	51	42	9	40
12	Kono	30	29	1	30
13	Lumley	7	0	7	2
14	Lungi	6	5	1	6
15	Macauley Street	12	1	11	0
16	Moyamba	24	22	2	24
17	ODCH	97	92	5	28
18	PCMH	105	103	2	67
19	Port Loko	36	36	0	26
20	Pujehun	32	32	0	27
21	Rokupa	35	35	0	35
22	Tonkolili	28	24	4	8

From the diagram labelled **table 7** above, a total of 1,073 referrals were supported by NEMS. In that number 963 were classified as incoming referrals, while 110 represented the total outgoing referred patients supported. In **November** 2021, Kenema Government Hospital recorded the highest number of incoming referred patients, while Lumley and Lungi reported the least. It is essential to note that this report does not include King Harman Road Government Hospital for the total number of referrals supported in **November,** which due to computer issues.

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

Admission ongoing	Death	Death on arrival	Discharge against medical advice	Discharged	Onward referral	Patient did not arrive	Rejected referral	Unable to admit	Death in Ambulance	Total
			Number of Incoming Referrals by patients' outcome, October 2021							
360	57	2	27	507	5	2	0	1	0	961
37	6	0	3	53	1	0	0	0	0	100
46	0	0	0	0	0	0	0	0	0	46
28	2	0	2	51	0	0	0	0	0	83
5	1	1	2	30	0	1	0	0	0	40
0	2	0	0	14	0	0	0	0	0	16
4	14	0	0	32	0	0	0	0	0	50
25	0	0	0	3	0	0	0	0	0	28
17	6	0	2	57	0	1	0	0	0	83
7	5	0	5	47	2	0	0	0	0	66
12	9	0	7	99	0	0	0	1	0	128
0	0	0	0	0	0	0	0	0	0	0
6	0	0	3	32	1	0	0	0	0	42
28	1	0	0	0	0	0	0	0	0	29
0	0	0	0	0	0	0	0	0	0	0
0	0	0	1	4	0	0	0	0	0	5
0	0	0	0	1	0	0	0	0	0	1
15	0	0	0	7	0	0	0	0	0	22
29	9	0	2	51	1	0	0	0	0	92
91	0	0	0	12	0	0	0	0	0	103
5	4	0	2	24	1	0	0	0	0	36
14	4	0	0	14	0	0	0	0	0	32
15	0	1	1	18	0	0	0	0	0	35
13	0	0	0	11	0	0	0	0	0	24

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The outcomes of incoming referrals to the various health facilities nationwide are presented in the tabular diagram labelled **Table 8** for the month under review. A significant portion of the referred patients were discharged (507), while out of the 061 patients, 57 of those were reported dead. 360 of the total patients were reported to still be in the various facilities receiving care.

Table 9: **Number of Incoming Hospital Referrals supported by Category**

Facility	Lactating	Non-FHCI	Pregnant	Under 5	EVD Survivor	Yes - other	Total
34M	0	30	0	0	0	16	46
Bo	0	6	54	23	0	0	83
Bombali	0	4	24	10	0	2	40
Bonthe	0	2	7	8	0	0	17
Connaught	0	51	0	0	0	0	51
Emergency	0	17	0	11	0	0	28
Kailahun	4	10	43	26	0	0	83
Kambia	2	12	41	11	0	0	66
Kenema	9	22	79	18	0	0	128
King Harman Road	0	0	0	0	0	0	0
Koinadugu	2	10	22	8	0	0	42
Kono	1	6	17	4	0	1	29
Lumley	0	0	0	0	0	0	0
Lungi	0	0	3	2	0	0	5
Macauley Street	0	0	0	1	0	0	1
Moyamba	0	4	16	2	0	0	22
ODCH	0	9	0	83	0	0	92
PCMH	5	0	98	0	0	0	103
Port Loko	2	3	19	12	0	0	36
Pujehun	4	0	17	11	0	0	32
Rokupa	0	0	29	6	0	0	35
Tonkolili	0	0	4	20	0	0	24
Total	29	186	473	256	0	19	963

Table 9 above explains the categories of incoming referred patients at the various health facilities nationwide for the month of **November** 2021. Continuously, EVD survivors have dropped significantly and are hardly captured in our datasets. The various facilities supported a total 963 incoming referred patients.

Every actively hospital do have records for either pregnant women, with the exception of ODCH, Connaught Hospital and emergency, which does not provide hospitalized care for these categories.

Table 10: Outcome of Referred Patients by Free Health Care Category

FHC	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
Lactating	5	3	0	0	20	1	0	0	0	0	29
Non-FHCI	68	25	0	14	74	3	0	0	1	0	185
Pregnant	189	3	1	4	274	0	2	0	0	0	473
Under 5	81	26	1	9	137	1	0	0	0	0	255
EVD Survivor	0	0	0	0	0	0	0	0	0	0	0
Yes - other	17	0	0	0	2	0	0	0	0	0	19
Total	360	57	2	27	507	5	2	0	1	0	961

The **November** data showed that, a significant portion of both pregnant, under 5 and Non-FHCI cases were discharged, while another proportion are still at the various health facility by the time this report is produced.

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Table 10: Referral by Health Facilities (Hospitals)

REFERRAL HOSPITAL	Sep-21	Oct-21	Nov-21
Tertiary Facility Total	**20.3%**	**19.2%**	**21.3%**
Connaught Hospital	5.3%	5.6%	7.9%
Ola During Children's Hospital	3.6%	3.8%	3.9%
Princess Christian Maternity Hospital	11.3%	9.8%	9.5%
Regional and District Hospital Total	**59.2%**	**63.7%**	**58.8%**
Bo Government Hospital	10.4%	8.4%	10.6%
Bonthe Government Hospital	0.4%	0.6%	0.5%
Kabala Government Hospital	5.3%	5.6%	4.9%
Kailahun Government Hospital	3.2%	3.9%	3.1%
Kambia Government Hospital	7.9%	7.1%	8.1%
Kenema Government Hospital	7.7%	8.8%	8.6%
Koidu Government Hospital	3.3%	4.9%	5.7%
Lungi Government Hospital	0.7%	0.7%	0.6%
Magburaka Government Hospital	3.7%	3.6%	1.0%
Makeni Government Hospital	6.4%	6.5%	3.6%
Moyamba Government Hospital	1.6%	2.6%	3.4%
Port Loko Government Hospital	3.2%	4.4%	3.3%
Pujehun Government Hospital	4.8%	6.1%	4.9%
Segbwema Government Hospital	0.7%	0.5%	0.5%
Other Government Facility	**7.0%**	**2.3%**	**7.0%**
Kingharman Road Government Hospital	0.4%	0.7%	0.4%
Other Government facilities (i.e.Macauley & Lungi)	0.8%	1.3%	0.5%
Rokupa Government Hospital	5.6%	-	5.5%
34 MILITARY HOSPITAL	0.2%	0.4%	0.6%
Private/NGO facility Total	**7.5%**	**7.2%**	**17.1%**
Emergency	1.0%	0.7%	2.5%
Kamakwie	1.2%	0.7%	0.4%
Masanga	0.3%		0.1%
Mattru UBC Hospital	2.9%	3.5%	3.1%
MSF Hospital – Kenema	0.4%	0.9%	0.9%
SERABU	0.1%	0.1%	-
LIFE CARE HOSPITAL	-	0.1%	8.6%
YELE	-	0.9%	0.9%
CHOITHRAM MEMORIAL HOSPITAL	0.1%	0.2%	0.6%
KORTUMAHUN RIVER	0.0%	-	-
LUNGI AIR PORT	0.7%	-	0.1%
TEKO BARRACKS	0.2%	-	-
UMC SAROLLA	0.1%	-	-
RAINBOW CENTER M/REG.	0.1%	-	-
KISSY MENTAL HOSPITAL	0.1%	-	-
GBONDAPI PHU	0.1%	-	-
HASTINGS CHC	0.1%	-	-
TONGOI	-	0.1%	-
WATERLOO CHC	-	0.1%	-
ROKUPA	-	3.8%	-
NEW HOPE MEDICAL CENTER	-	0.1%	-
KPAGUMA HOSPITAL	-	0.1%	-
GBANGBATOKIE	-	0.1%	-
EMPIRE 1 HOSPITAL WATERLOO	-	0.1%	-
COVID-19 CTC/CCC/ISOLATION	**0.3%**	**0.0%**	**0.1%**
RENDEZ_VOUS	**6.2%**	**3.8%**	**3.1%**

Table 10 shows the percentages of NEMS general monthly referrals to the main hospitals for the month of November 2021. The tabular diagram compares the data between September, October and November 2021. You can see that for the month under review, The tertiary facilities account for as the least recipient of referrals (21.3%) as follows: **Connaught Hospital (7.9%), Princess Christian Maternity hospital (PCMH) (9.5%), and Ola During Children's Hospital (ODCH) (3.9%)** compared to October 2021 with a total receipt of 19.2% for tertiary institutions. This indicated 1.8% increment in the November referrals data than October data.

For the month under review, the **Regional and District Hospitals** received 58.8% of all referrals compared to October 2021 with 63.7% of the referrals. This indicates a drop by 4.9% in the percentage of patients referred to the **Regional and District Hospitals**.

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Furthermore, the table above displays the percentage of patients referred to **COVID-19 Treatment Centers and Isolation Units,** with a fall on the percentage of confirmed cases in November 2021 that changed 0.0% in October to 0.1% in November. It is intriguing to see that Rendezvous is 3.8% in October to 3.1% in November 2021.

56. Inter-hospitals Referrals

Figure 16: Showing Destination Hospitals for Inter-Hospital Referrals
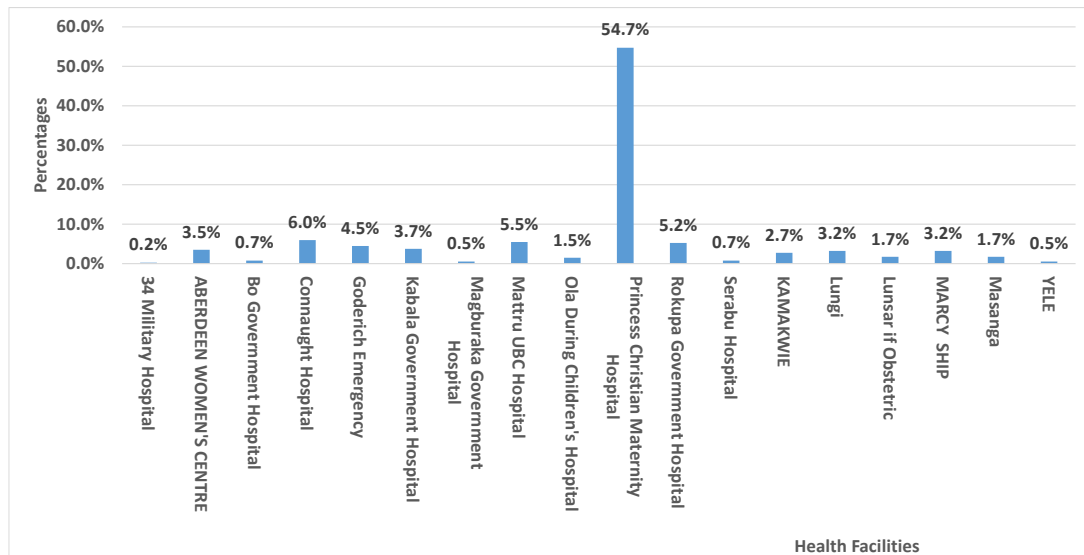
It is visible that, Princess Christian Maternity Hospital reported the highest number of inter-hospital referrals with 54.7%.

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

INTERHOSPITAL REFERRALS	MISSIONS	REFERRALS
34 Military Hospital	1	1
ABERDEEN WOMEN'S CENTRE	14	6
Bo Government Hospital	3	2
Connaught Hospital	24	23
Goderich Emergency	18	27
Kabala Government Hospital	15	1
Magburaka Government Hospital	2	1
Mattru UBC Hospital	22	1
Ola During Children's Hospital	6	1
Princess Christian Maternity Hospital	220	5
Rokupa Government Hospital	21	4
Serabu Hospital	3	4
KAMAKWIE	11	1
Lungi	13	1
Lunsar if Obstetric	7	1
MARCY SHIP	13	1
Masanga	7	1
YELE	2	1
INTER-DISTRICT REFERRALS (TOTAL)	**402**	**82**
Port Loko Government Hospital	7	2
Moyamba Government Hospital	2	2
KENEMA	9	1
EMERGENCY	1	1
Magburaka Government Hospital	9	1
Mattru UBC Hospital	5	1
Makeni	1	1
MARCY SHIP	1	1
Bo Government Hospital	31	29
Princess Christian Maternity Hospital	1	1
Pujehun Government Hospital	12	10
Serabu Hospital	4	3
WITHIN THE SAME DISTRICT (TOTAL)	**83**	**53**
Grand Total	485	135

The tabular diagram labeled **table 11** above, illustrates the number of inter-hospital missions and referrals covered by NEMS in the month of **November** 2021. A total of 402 mission to that 82 referrals reported for inter-hospital, while 83 and 53 for missions and referrals respectively for inter-district movements supported by NEMS.

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7. Arrival Methods

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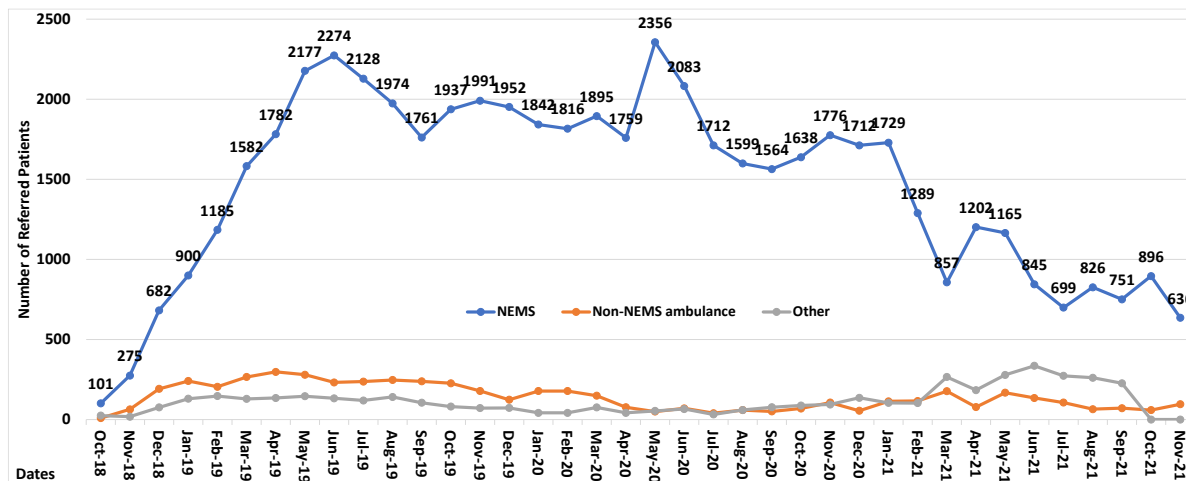
The graph labelled **figure 17** provides a detailed analysis on patients' arrival at the various hospital where referral coordinators are attached. The data for **November** 2021 demonstrates that major or most common means of arrival at hospital is through the utilization of NEMS' ambulances since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

Figure 18: Arrival Methods at the Hospital of the Referrals
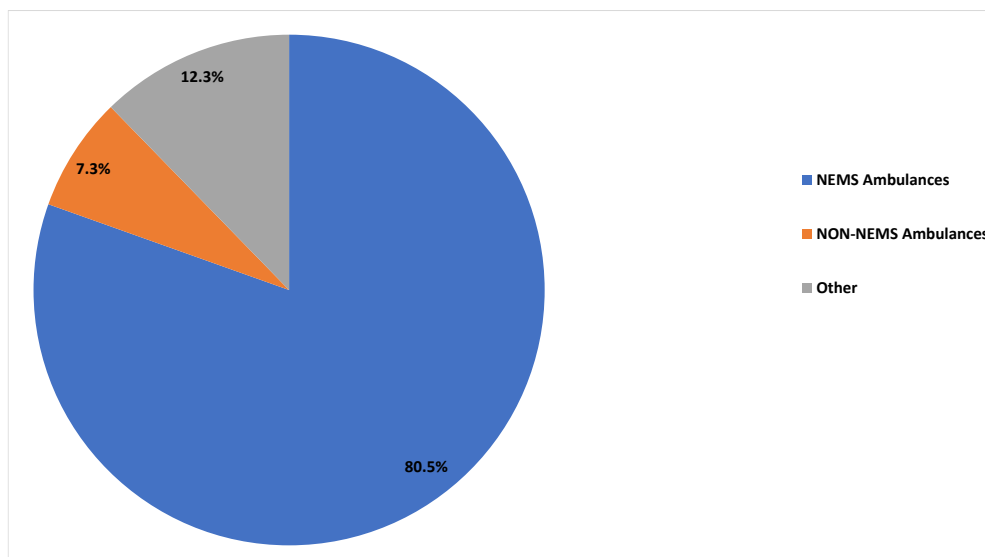
The pie chart labelled **figure 18** above, exemplifies the methods of arrival at the various health facilities nationwide for the month of **November** 2021. 80.5% of the total number of referred cases received by the respective hospitals was transported by NEMS ambulance, while a combined total of 19% of the total number of referred cases used other means of transportation as displayed on the pie chart above.

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*Table 12: **Arrival Methods of the Referrals by Hospital***

REFERRAL FACILITIES	NEMS Ambulances	NON-NEMS Ambulances	Other
Tertiary Facility	**64.4%**	**14.2%**	**21.4%**
34 Military Hospital	4.3%	69.6%	26.1%
Connaught Hospital	96.1%	3.9%	0.0%
Kingharman Road Govt. Hospital	-	-	-
Lumley Govt. Hospital	90.5%	0.0%	9.5%
Ola During Children's Hospital	29.3%	7.6%	63.0%
Princess Christian Maternity Hospital	66.3%	4.0%	29.7%
Rokupa Govt. Hospital	100.0%	0.0%	0.0%
Private/NGO facility Total	**100.0%**	**0.0%**	**0.0%**
Matru UBC Hospital	100.0%	0.0%	0.0%
Regional/District Hospital	**76.9%**	**7.6%**	**15.5%**
Kabala Govt. Hospital	90.5%	0.0%	9.5%
Bo Govt. Hospital	100.0%	0.0%	0.0%
Kailahun Govt. Hospital	30.1%	4.8%	65.1%
Kambia Govt. Hospital	100.0%	0.0%	0.0%
Kenema Govt. Hospital	53.1%	9.4%	37.5%
Koidu Govt. Hospital	100.0%	0.0%	0.0%
Lungi Govt. Hospital	-	-	-
Magburaka Govt. Hospital	33.3%	66.7%	0.0%
Makeni Govt. Hospital	82.5%	0.0%	17.5%
Moyamba Govt. Hospital	100.0%	0.0%	0.0%
Port Loko Govt. Hospital	72.2%	2.8%	25.0%
Pujehun Govt. Hospital	84.4%	0.0%	15.6%
Grand Total	**80.5%**	**7.3%**	**12.3%**

The tabular representation labelled **table 12** provides a further breakdown on patients' arrival at secondary and tertiary hospital nationwide for the month of **November** 2021. For tertiary hospital, there has been an increment 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 Lumley and Connaught Hospital, which has 90.5 and 96.1%.

Bo, Kambia, Koidu, and Moyamba are the secondary hospitals that showed 100% NEMS, while Kabala, Makeni, and Pujehun reported 90.5%, 82.5% and 84.4% respectively as NEMS arrival method. Overall, the major means of transporting emergency cases from peripheral health units nationwide is through NEMS. Mattru UBC Hospital has 100% NEMS arrival.

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8. Time Analysis

Table 13: Time Taken to Triage

Time Taken to Triage	BO	BOMBALI	BONTHE	FALABA	KAILAHUN	KAMBIA	KENEMA	KOINADUGU	KONO	MOYAMBA	PORT LOKO	PUJEHUN	TONKOLILI	WESTERN AREA RURAL	WESTERN AREA URBAN	Grand Total Nov 2021	Percentage Nov 2021	Grand Total Oct 2021	Percentage Oct 2021	Grand Total Sept 2021	Percentage Sept 2021
00:00:00 to 00:05:00	43	35	13	1	31	26	41	13	27	16	33	26	33	55	54	447	35.9%	289	27.6%	446	34.9%
00:05:01 to 00:10:00	39	19	11	10	27	42	49	20	30	28	20	24	7	44	77	447	35.9%	403	38.5%	472	37.0%
00:10:01 to 00:15:00	13	10	6	2	8	7	5	4	9	6	5	5	6	12	28	126	10.1%	140	13.4%	152	11.9%
00:15:01 to 00:20:00	6	2	2	2	1	1	4	2	2	2	2	3	2	14	16	61	4.9%	62	5.9%	54	4.2%
00:20:00 to 00:30:59	3	1	6	1	0	3	2	3	2	1	1	2	1	12	19	57	4.6%	55	5.3%	55	4.3%
00:31:00 to 01:59:59	5	4	6	1	3	4	4	5	3	5	3	6	2	17	22	90	7.2%	73	7.0%	81	6.3%
02:00:00 to 02:59:59	1	0	1	0	0	0	0	0	1	0	0	0	1	2	0	6	0.5%	13	1.2%	6	0.5%
03:00:00 to 03:59:59	0	0	0	1	0	0	1	0	0	0	1	0	0	1	1	5	0.4%	7	0.7%	5	0.4%
04:00:00 to 04:59:59	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2	0.2%	2	0.2%	2	0.2%
05:00:00 to 05:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.1%	1	0.1%	1	0.1%
06:00:00 to 06:59:59	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0.2%	1	0.1%	0	0.0%
07:00:00 to 07:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%	1	0.1%
08:00:00 to 08:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	1	0.1%	0	0.0%
09:00:00 to 09:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%	0	0.0%
10:00:00 to 10:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%	0	0.0%
11:00:00 to 11:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%	0	0.0%
12:00:00 to 12:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%	0	0.0%
13:00:00 to 13:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%	0	0.0%
14:00:00 to 14:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%	0	0.0%
15:00:00 to 15:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%	0	0.0%
16:00:00 to 16:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%	0	0.0%
17:00:00 to 17:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%	0	0.0%
18:00:00 to 18:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%	2	0.2%
19:00:00 to 19:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%	0	0.0%
20:00:00 to 20:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%	0	0.0%
21:00:00 to 21:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%	0	0.0%
22:00:00 to 22:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%	0	0.0%
23:00:00 to 23:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%	0	0.0%
Grand Total/District	110	71	45	18	70	83	106	47	75	59	65	66	52	160	217	1244	100.0%	1047	100.0%	1277	100.0%

The table above delineates the time taken by Call Centre to triage a patient when a call is received. In November 2021, call centre took less than 15 minutes to triage an 81.9% of the total Calls received, while in October, it took less than 15 minutes to triage 79.5% of the total calls supported.

The calls data shows that 18.1% of the total calls received that took more than 15-minute, which could be due to inevitable challenges in the allocation of an ambulance to undertake a specific mission. In comparison with October, which showed a total of 20.5% of the Calls supported took more than 15 minutes to triage a patient and make a decision to send an ambulance.

Table 13: Time Taken to Reach the Target

Time Taken to Reach the Target	BO	BOMBALI	BONTHE	FALABA	KAILAHUN	KAMBIA	KENEMA	KOINADUGU	KONO	MOYAMBA	PORT LOKO	PUJEHUN	TONKOLILI	WESTERN AREA RURAL	WESTERN AREA URBAN	Grand Total Nov 2021	Percentage Nov 2021	Grand Total Oct 2021	Percentage Oct 2021
00:00:00 to 00:30:59	49	20	33	4	23	45	50	11	35	30	24	17	11	98	119	569	64%	401	48%
00:31:00 to 01:59:59	32	16	18	2	14	30	16	13	17	18	21	16	4	38	11	266	30%	371	44%
02:00:00 to 02:59:59	3	2	3	3	2	2	2	4	1	2	1	3	2	0	0	30	3%	36	4%
03:00:00 to 03:59:59	1	1	2	0	0	0	1	3	2	0	0	0	0	0	0	10	1%	19	2%
04:00:00 to 04:59:59	0	0	2	2	0	0	0	1	0	0	0	0	0	0	0	5	1%	8	1%
05:00:00 to 05:59:59	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0%	4	0%
06:00:00 to 06:59:59	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0%	2	0%
07:00:00 to 07:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	0	0%
08:00:00 to 08:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	1	0%
09:00:00 to 09:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	1	0%
10:00:00 to 10:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	0	0%
11:00:00 to 11:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	0	0%
12:00:00 to 12:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	1	0%
13:00:00 to 13:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	0	0%
14:00:00 to 14:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	0	0%
15:00:00 to 15:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	0	0%
16:00:00 to 16:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	0	0%
17:00:00 to 17:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	0	0%
18:00:00 to 18:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0%	0	0%
19:00:00 to 19:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	0	0%
20:00:00 to 20:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	0	0%
21:00:00 to 21:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	0	0%
22:00:00 to 22:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	0	0%
23:00:00 to 23:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	0	0%
Grand Total/District	85	39	58	11	39	77	69	35	55	50	46	36	17	137	130	884	100%	844	100%

When a decision is made to allocate an ambulance for a specific mission, the time taken by the ambulance team to reach the targeted Peripheral Health Unit (PHU) or a health facility is shown in the table above. In November, 94% of the missions transported took less than 2-hour to reach the targeted PHU, while in October 92% of the total missions supported by NEMS took less than 2-hour to get to the particular health facility that requested for an ambulance, with an increment of 2%. Those missions that took more than 2-hour to locate the respective PHUs, were 6%. In contrast with October.

Table 14: Time Taken to Reach the Hospital

Time Taken to Reach the Hospital	BO	BOMBALI	BONTHE	KAILAHUN	KAMBIA	KARENE	KENEMA	KOINADUGU	KONO	MOYAMBA	PORT LOKO	PUJEHUN	TONKOLILI	WESTERN AREA RURAL	WESTERN AREA URBAN	Grand Total Nov 2021	Percentage Nov 2021	Grand Total Oct 2021	Percentage Oct 2021
00:00:00 to 00:30:59	44	19	25	15	32	0	44	14	24	11	16	25	15	69	70	423	44.8%	487	42.1%
00:31:00 to 01:59:59	44	18	29	24	36	0	28	18	22	35	27	15	5	76	55	432	45.7%	528	45.7%
02:00:00 to 02:59:59	7	4	4	6	4	0	7	5	4	4	4	0	0	3	3	55	5.8%	75	6.5%
03:00:00 to 03:59:59	3	0	3	1	1	0	0	2	2	2	1	0	0	0	1	16	1.7%	27	2.3%
04:00:00 to 04:59:59	0	0	1	0	0	0	1	1	2	0	0	0	0	0	4	9	1.0%	13	1.1%
05:00:00 to 05:59:59	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	4	0.4%	4	0.3%
06:00:00 to 06:59:59	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0.1%	8	0.7%
07:00:00 to 07:59:59	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2	0.2%	0	0.0%
08:00:00 to 08:59:59	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2	0.2%	0	0.0%
09:00:00 to 09:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	4	0.3%
10:00:00 to 10:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	1	0.1%
11:00:00 to 11:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	2	0.2%
12:00:00 to 12:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	4	0.3%
13:00:00 to 13:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	1	0.1%
14:00:00 to 14:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%
15:00:00 to 15:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%
16:00:00 to 16:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	1	0.1%
17:00:00 to 17:59:59	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0.1%	1	0.1%
18:00:00 to 18:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%
19:00:00 to 19:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%
20:00:00 to 20:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%
21:00:00 to 21:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%
22:00:00 to 22:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%
23:00:00 to 23:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%
	98	41	62	46	73	0	80	41	57	52	48	41	22	150	134	945	100.0%	1156	100.0%

After locating the health unit that requested for an ambulance, the ambulance team then travelled with the patients to a specific health facility that has the required health services needed by the patients. The table above this narrative provides an in-depth analysis on the time taken to reach secondary or tertiary health facility. It is visible that in November over 90.5% of the missions supported took less than 2 hours to reach the required health facility, while in October, we saw a total of 87.8% of the number of missions supported by NEMS within 2-hour to reach their various health facilities, which increased by 2.7% for the previous month irrespective of the dropped on the first 30 minutes.

8. Missions by Ambulances

Figure 19: Km Travelled by District
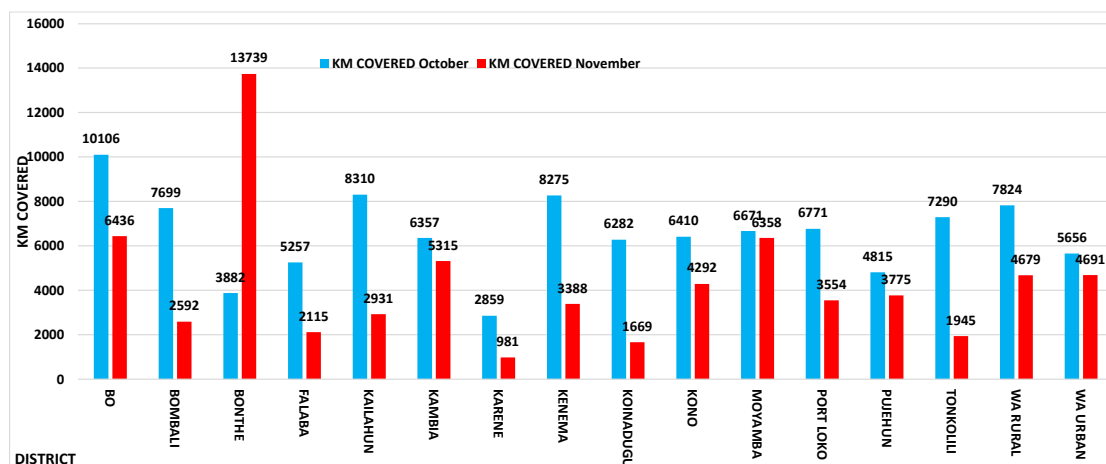
The District Ambulance Supervisors (DAS) Monthly Kilometre Reports showed that, In November 2021 data, a cumulative **68,460 km** was travelled, when put in contrast with the October 2021, with **104,464 Km** indicating a significant drop by **36,004** km in the kilometres travelled by NEMS ambulances for the month under review. This reduction is consistent with the general drop in the number of missions undertaken by NEMS in November 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, with the calculation of all the missions undertaken by NEMS as recorded in the NEMS database. A comparison was the inter-district figures for November 2021 with October 2021. Calculated the average km/mission is for all the missions handled by NEMS as per our

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database (and not only the one ending with a referral to the hospital, but those which required the ambulance to move from its location).

Assessment of the district data showed that, there was a general drop in the November 2021 figure compared to the October 2021 figure for most districts, with the exception of Bonthe.

Another critical revelation of the November 2021 data evaluation is that only one district Bonthe covered above thirteen thousand kilometres compared to October 2021 with four thousand KM.

Figure 20: Average Km/Mission
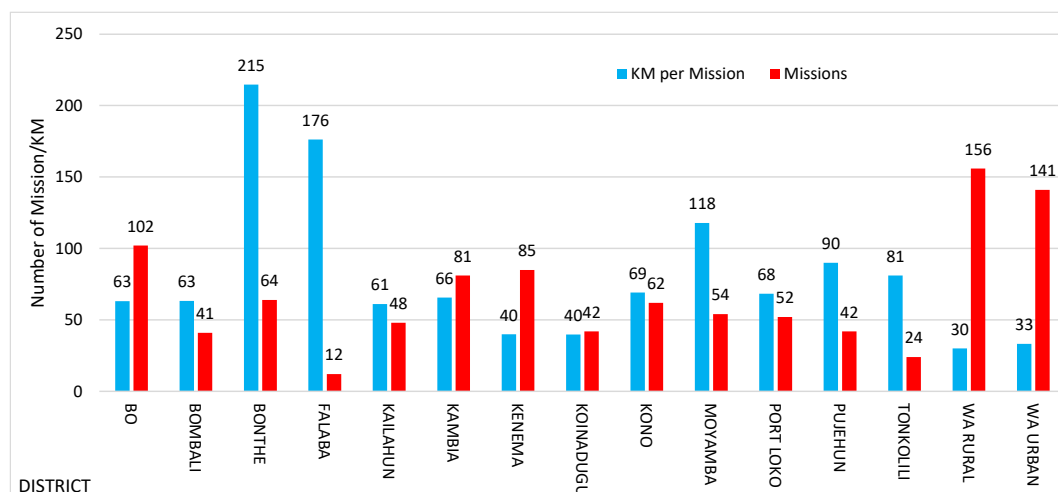
The Bar chart labelled **figure 20** compares the **average KM covered for a mission by district** for November 2021. For the month under review, the district with the highest average KM per mission is Bonthe with 64 missions, the ambulances covered a significant 215 Kilometers per mission (km/mission). The other districts that experienced significant increases include Falaba by (176) km/mission, Moyamba by 118 km/mission and Pujehun by 90 km/mission.
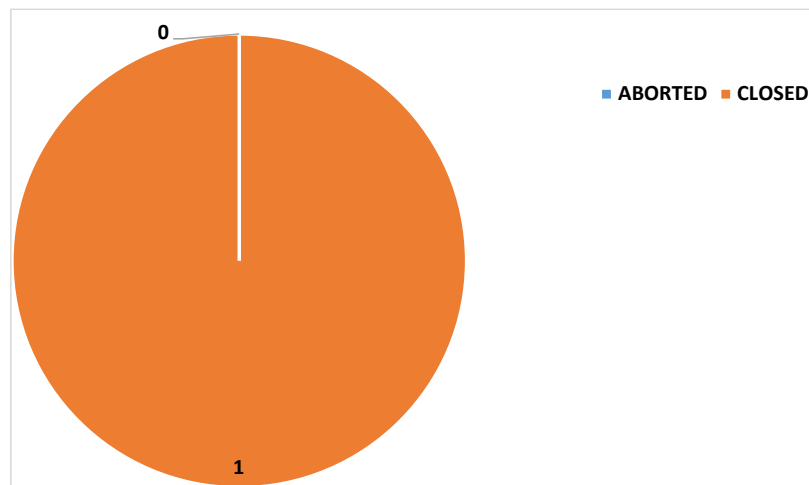
It is essential to understand that, other district NEMS ambulances transported the missions recorded by Falaba and Karene.

5. NEMS National COVID-19 Response

5.1 COVID-19 Missions

From NEMS data sources related to November 2021, we observed that the strategy to repurposing the ambulances in November 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, 1 mission that is strongly linked to COVID-19 related case that required NEMS ambulance for transportation. 3 samples recorded.

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5.2 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 1 case that NEMS dispatched ambulances for, 1 (100%) of the case were transported to the Police Hospital care centers.

5.3 COVID-19 Missions and Samples transported

Typology of Complain	Nov-21	Oct-21	Sep-21	Aug-21	Jul-21	Jun-21	May-21	Apr-21	Mar-21	Feb-21	Jan-21	TOTAL Dec 2020
Covid19 Confirmed Case	1	-	2	16	138	197	14	9	12	24	113	1251
Covid19 Suspected Case	-	-	-	3	3	-	3	-	-	6	8	232
Covid19 Confirmed/Suspected Case	-	-	-	-	-	-	-	-	-	-	7	59
SAMPLES	3	-	26	6	28	16	17	34	19	40	66	1314
TOTAL	4	0	28	25	169	213	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 November 2021. The rigorous measures implemented by the authorities responsible to management of covid-19 in Sierra Leone has contributed to the fall of covid-19 cases in the month of November.

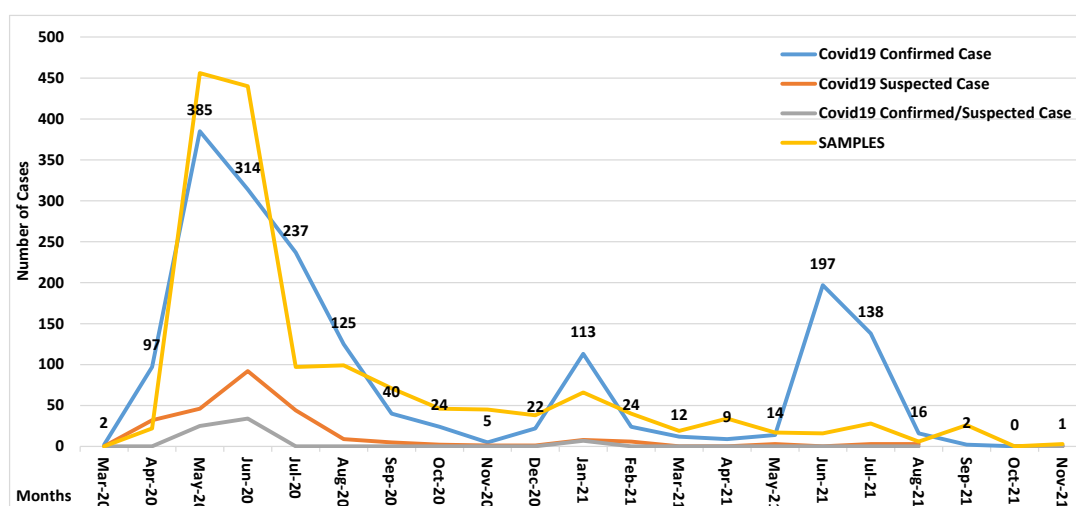## 5.4 Figure 22: Trend of COVID-19 missions (confirmed and suspected cases)

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 constantly

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dropping 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 we saw a sharp rise in June 2021.

The management of the covid-19 cases has seen a significant drop on the numbers recorded for the month of November. The number of samples transported plunged, when put in contrast to October 2021. In Western Area, samples are hardly transported, while this is common for the provincial districts.
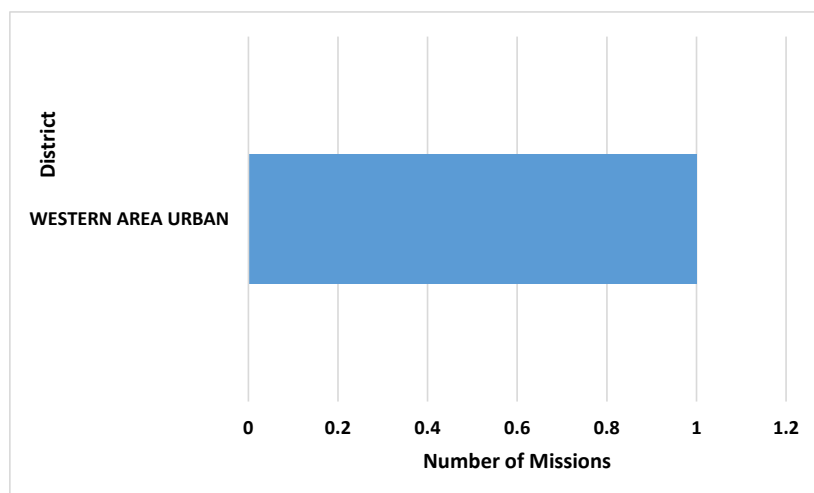
5.5 COVID-19 Confirmed Cases

A detail analysis of the number of coronavirus (COVID-19) cases is done here. 1 case recorded in the month of November 2021 and these were all transported by NEMS to the respective treatment centres and holding homes.

The cumulative number of confirmed COVID19 cases are dropping since the first cases of the third wave was registered in mid-June. The current total number of confirmed COVID19 cases is at 3,638 since March 2020 to the month under review.

5.6 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 continues to record the majority of the cases transported, which is a total of 2 respectively.

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

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

District	Station	Code	% of Missions
WESTERN AREA URBAN	K O 02	Sewafeh	100%

5.7.1 Ambulance Station

Table 14 describes COVID19 confirmed cases by their respective stations. KO 02 which is the Sewafeh ambulance allocated to transport COVID19 cases reported and transported in the November 2021.

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.

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5.8 COVID-19 Treatment Centres Destination

The Table 15 on this report delineates the COVID19 confirmed cases transported to their respective treatment centres in Sierra Leone. Police Hospital has one treatment centre for COVID19 patients as displayed on the graph below. Police reported the one number of confirmed cases 100%.

5.8.1 Table 15: Missions for Confirmed COVID-19 Cases by Treatment Centre

Facility	Treatment Center	%
WESTERN AREA URBAN	POLICE HOSPITAL	100%