



NEMS OPERATIONAL ACTIVITIES

MONTHLY REPORT: DECEMBER 2021

Date	December 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

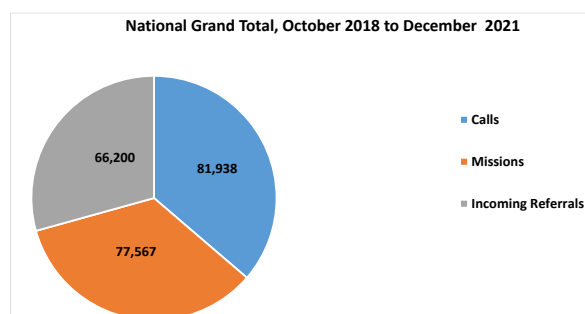
Integrity: Assumes complete accountability for actions, having strong moral principles and is honest in all dealings.

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

Table 1: Cumulative Number of Supported Indicators



- **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 temporary backup to any ambulance that may become inoperative, which summed the total ambulance in operation to one hundred (100):



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

NEMS was very strategic during the COVID-19 response because confirmed, suspected cases and samples needed to be transported to treatment centres and designated labs. NEMS dedicated a vehicle in every district, with the exception of Western Area Urban where two vehicles are deployed for the efficient management of COVID-19 cases and samples. 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, to further enhance the COVID-19 response, the District Ambulance Supervisors (DASs) ambulances were repurposed for the transporting of COVID-19 related issues, while all other ambulances have been re-positioned for the transportation of other emergency related complaints received.

- ***Km Travelled***

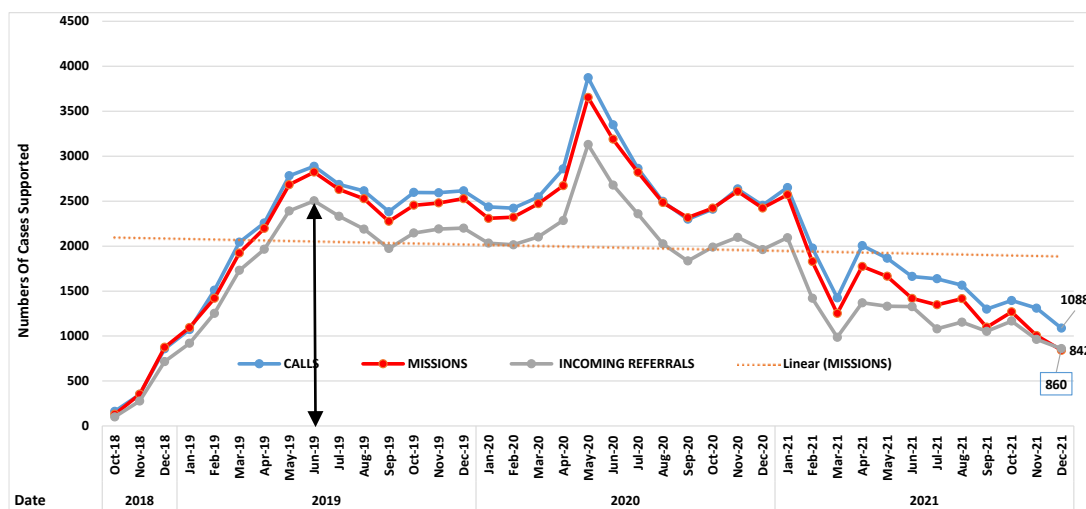
Since the start of NEMS activities in October 2018, ninety-seven (97) ambulances were initially dispatched across the country and was later increased to hundred (100) ambulances that have travelled a total number of **5,951,846 km**. **December** 2021 figures show that Port Loko merged as the district that recorded the highest KM travelled **13,739 KM** by the ambulances.

- ***COVID-19 Response***

The total number of **COVID-19** confirmed cases **referred by NEMS** in **December** 2021 was five (5), with only one (1) suspected case reported. The national cumulative figures since the COVID-19 outbreak in Sierra Leone are **3,673 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** have been supported by NEMS since the inception of the operations of NEMS in **October 2018**. The presentation of the vertical line in the month of **June 2019** highlights 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** consecutively. **The observed reason for this occurrence is that there are calls that may not lead to missions and hoax calls**

The graph further demonstrates that NEMS recorded the highest numbers of **calls, missions, and incoming referrals services** in May 2020 and such numbers have not been recorded for any of the three indicators since that period. However, it is also critical to mention that, the period coincided with the time that Sierra Leone instituted several restrictions to curb COVID19 cases.

From the time NEMS recorded its peak in May 2020, the numbers have been gradually dropping from that period and had not yet reach that peak figure that was achieved in May 2020. In 2021, NEMS reported its lowest number of Calls, Missions and Incoming referrals, while the line chart has oscillated and verscilate to attain its highest point in 2021.

In December 2021, the number of Calls are 1,088, while the number of Calls that translated to Missions were 842 and the cumulative Incoming referrals for the period under review are 860.



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%
	Dec-21	1088	-9%	842	-9%	860	-6%
Total NEMS		80850		77567		65340	

The figure label **Table 2** above gives a collective and percentage trend for the three (3) major indicators (**i.e., Calls, Missions, and Incoming Referrals**) by NEMS from inception to **December 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, and 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 **December** respectively.



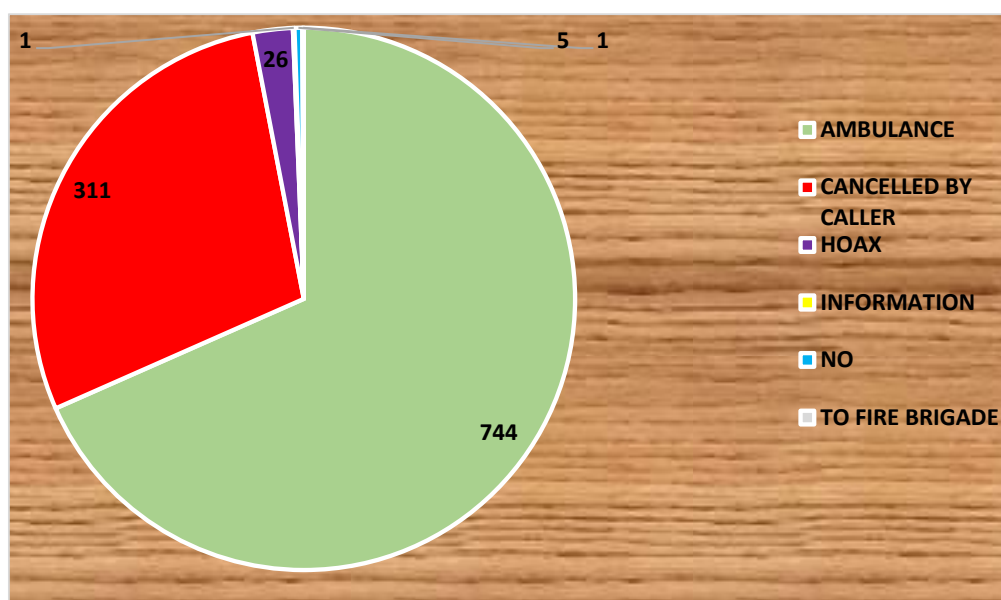
1.3 Table 3: NEMS Daily Activities Averages

Daily Operations	Calls	Missions	Incoming Referrals
Dec-21	34	26	27

The Figure **Table 3** shows the average daily Calls, Missions and Incoming Referrals supported in **December** 2021.

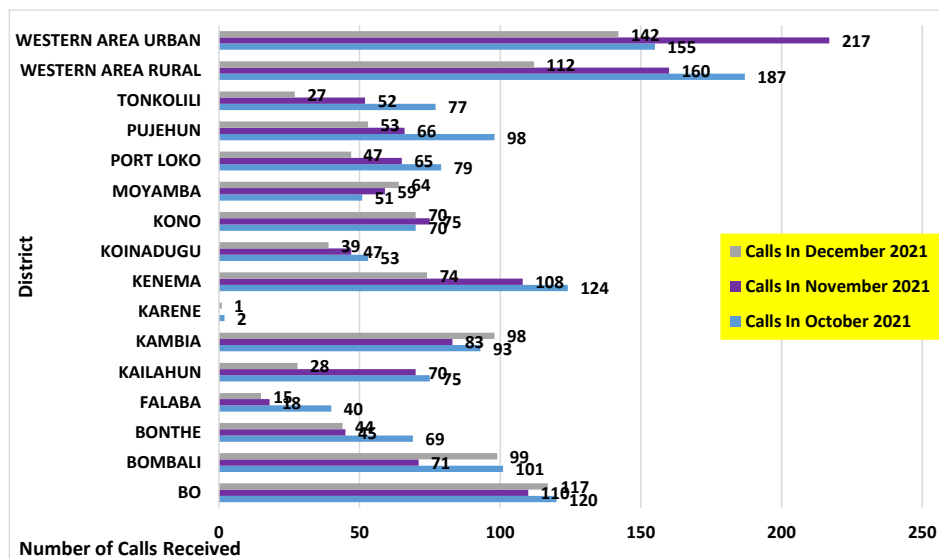
1.4 Calls Analysis

1.4.1 Figure 2: Classifications of Calls



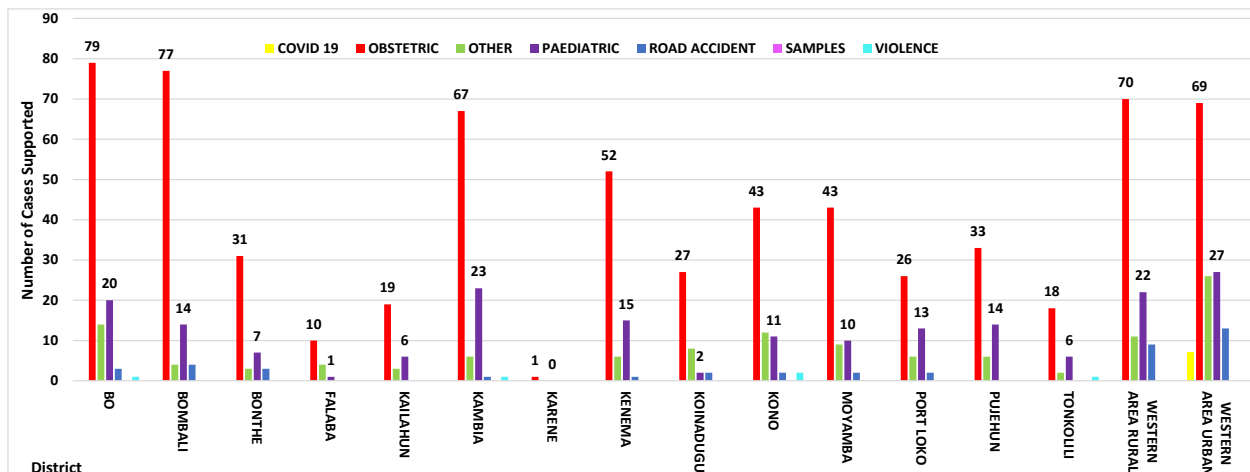
The diagram **figure 2** outlines the classification of Calls as they were received at the NEMS Call Center (Operation Center). NEMS Call Center operators received a cumulative total of one thousand and eighty-eight (1, 088) Calls. Seven hundred and forty-four (744) of the total number of calls received actually led to the activation of missions- the dispatch of NEMS ambulance to pick up a patient and transport him/her to the specialized hospital capable to manage his/her case. This means that three hundred and forty-four (344) of the total calls were classified as either cancelled by the caller (311), or as hoax calls (26) and seven (7) of those call fall under the category of incomplete information.

1.4.2 Figure 3: Breakdown of Calls by District



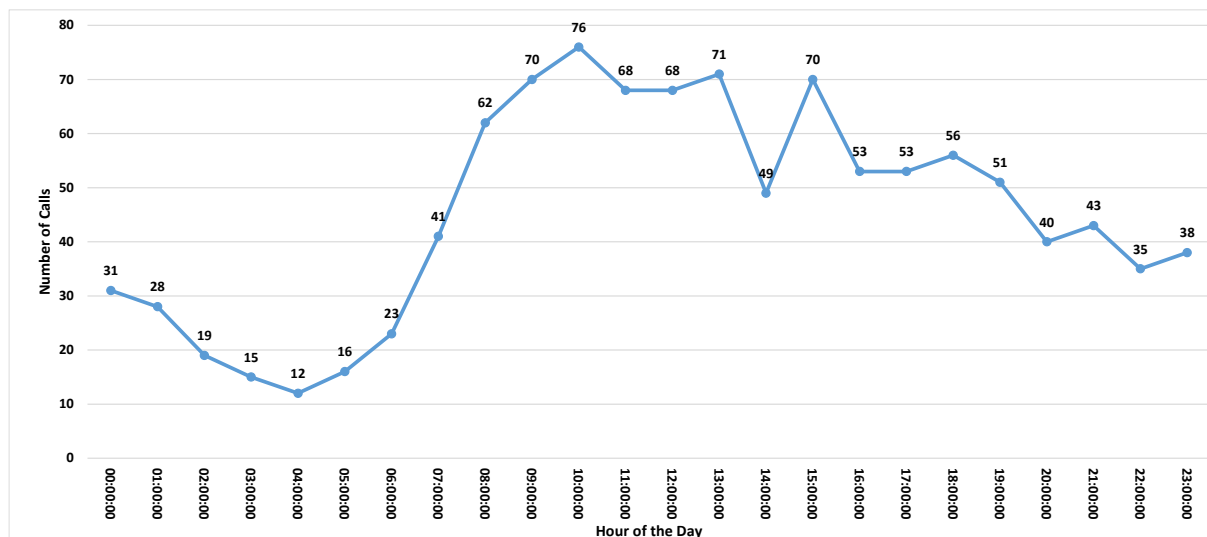
The graph **figure 3** displays a breakdown of Calls by district in the month under review. In December 2021, Western Area Urban and Rural continue to report the highest numbers of calls received – 142 and 112 respectively. Bo recorded the highest number of Calls (117) from the provinces, while Bombali district recorded (99), the district that recorded the second highest number of Calls coming from the provinces. All the regional headquarter towns (Kenema – 74, Port Loko – 47, Bombali – 99, and Bo - 117) recorded 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



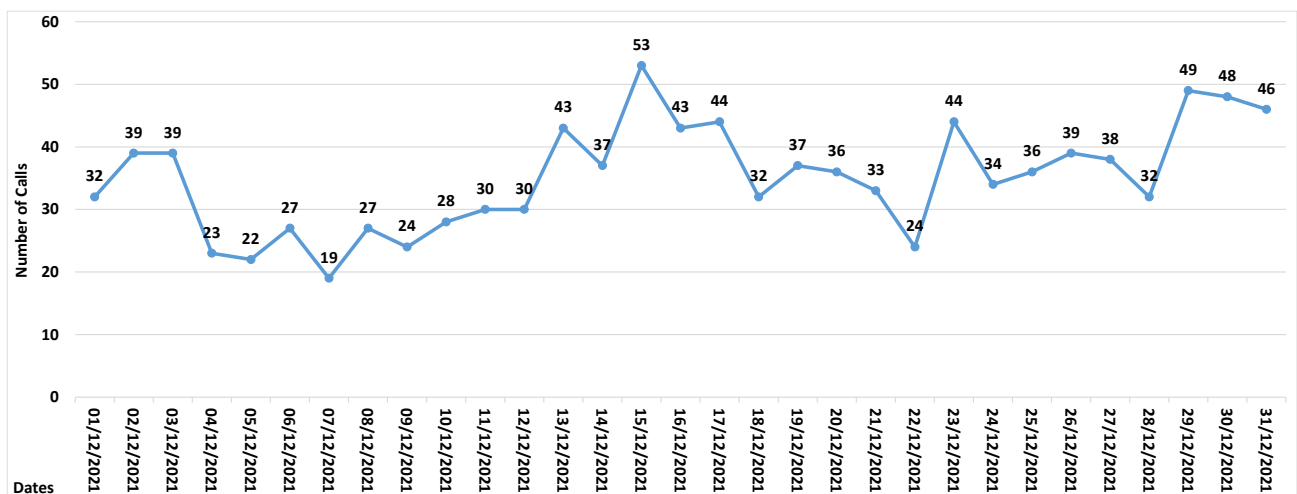
The chart **figure 4** provides a simplified analysis of the various complaints received by call center. It is obvious from the chart that in every district call with Obstetric complaints recorded the highest numbers followed by Paediatric complaints, which consistently surpass other indicators.

1.4.4 Figure 5: Number of Calls per Hour



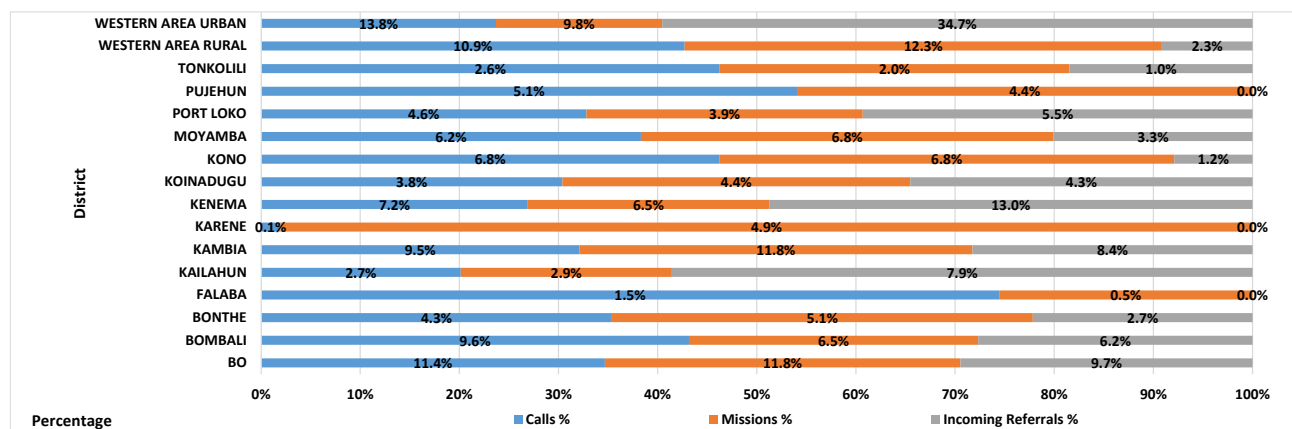
The diagram **figure 5** is a line graph that describes the number of calls received at NEMS operation center on an hourly basis. The chart above showed that, there is always a big jump in the number of calls received during the day than at mid-night. The operation center recorded its climax of calls at 10 pm in the morning hours.

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 **December** 2021. The line graph showed that there has been a decrement on the number of incoming Calls received. The least number of calls were recorded on the 19th, while on the 15th, the call system recorded its apex on calls, with 53 calls received on that day.

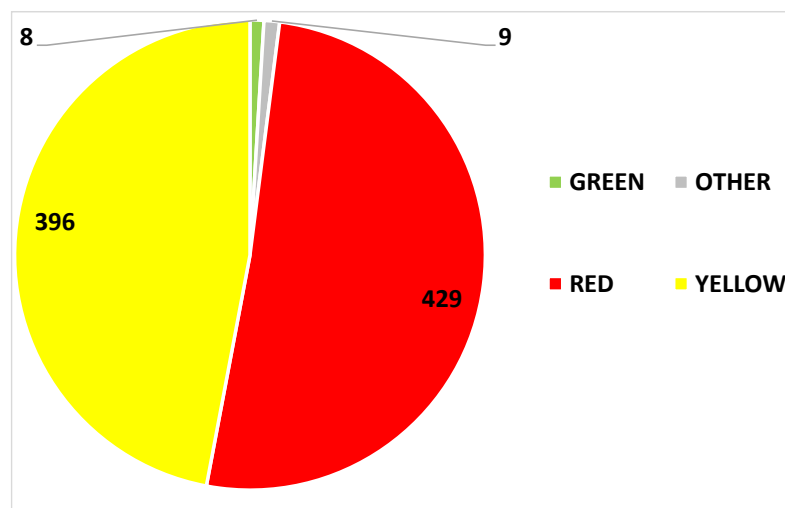
1.4.6 Figure 7: Calls, Missions, Referrals by District



The bar chart above is demonstrating the percentage of Calls, Missions and Incoming Referrals supported by NEMS per district in the month of December 2021. On Calls, Western Area Urban recorded the highest percentage and Bo is the second highest, while the least were from Karene. For Missions, Western Area Rural reported the majority of the missions undertaken, while the Bo and Kambia reported the same percentage (11.8%), but lowest were from Falaba district. For Incoming Referrals, Karene did not register any, while 34.7% of the total Incoming Referrals were from Western Area Urban.

2. Missions

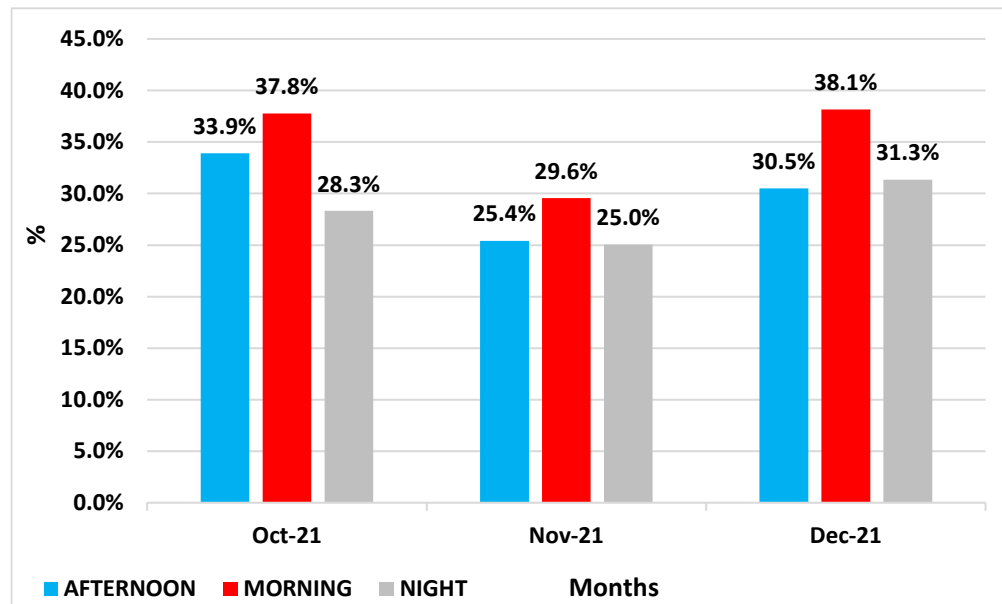
2.1 Figure 8: Categories of NEMS Missions



The pie chart **figure 8** represents the different categories represented by color codes to determine whether the complaint meet the threshold of a NEMS mission. The severity of the patient's condition is as calls that determined by the assessment (Triage) conducted during the phone conversation between the call center operators and the patients and then separated into three major categories (Red, Yellow and Green), with an additional color that EMS 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 and/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.

In December, a total of 1,088 calls were received, out of which 842 were considered to be calls with complaints that meet the threshold of a NEMS missions, only 17 did not meet the requirement to be categorized as emergencies.

2.2 Figure 9: Time of the day of the Missions



The 'hour of the day' is a measure of the time of the day 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, November and December 2021 as displays below.

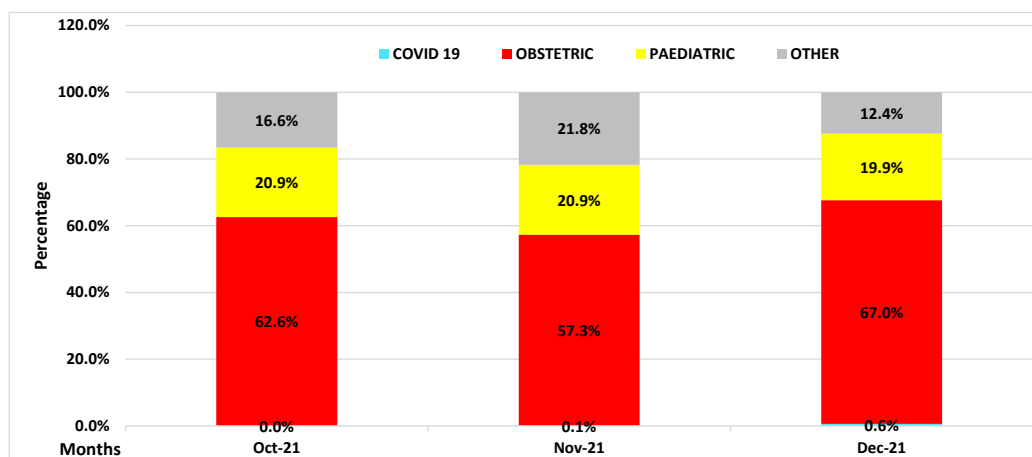
In December 2021, the bar chart above displays an overall increment on all indicators as compared to the previous month. that the data clearly shows that a significant number (**38.1%**) of the missions were undertaken in the morning hours, which was less than **8.2%** for November and **8.5%** for December respectively.

In the Afternoon period, the percentages of missions supported during the months of **October, November and December of 2021** are **33.9%, 25.4% and 30.5%** correspondingly. Between October and November, there was a decrement of **8.5%**, while between November and December, we observed a decrement of **5.1%**.

In the night or evening hour, there is an observed gradual drop between the various months. **28.3%, 25.0% and 31.3%** is for the **October, November and December** 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 December 2021



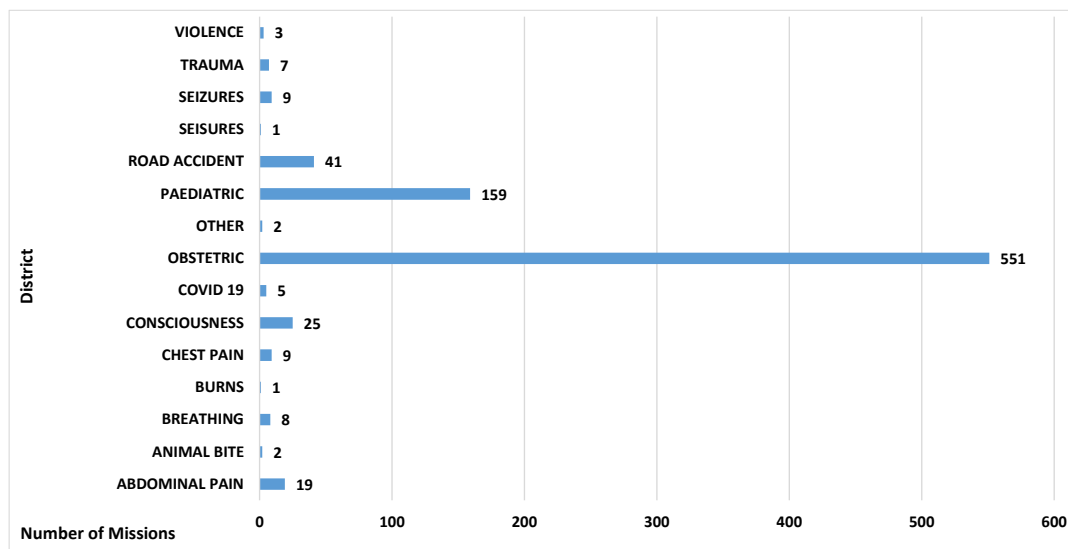
The graph (**Figure 10**) represents the major category of complaints for NEMS missions. Comparing **October, November and December** 2021 data. The data of COVID-19 missions include only confirmed. It is visible that Obstetric cases accounted for the majority of the missions supported to health facilities by NEMS.

The “Other” category is a combination of other complaints, such as Abdominal Pain, Animal Bite, Breathing, Burns, Chest Pain, Consciousness, Road Accident, Seizures, Trauma and generally Other. And these showed a percentage of 16.6%, 21.8% and 12.4% for the three months (**October, November and December**). Between October and November there was a 5.2%, while for November and December the chart showed a difference of 9.4%.

In November 2021, Sierra Leone reported only one Covid-19 positive case, which is 0.1% of the total missions supported (Transported) by NEMS, while in the October NEMS recorded zero (0) positive case of Covid-19. In December, the NEMS transported a total of 5 Covid-19 cases, which is represented on the bar chart above as 0.6%.

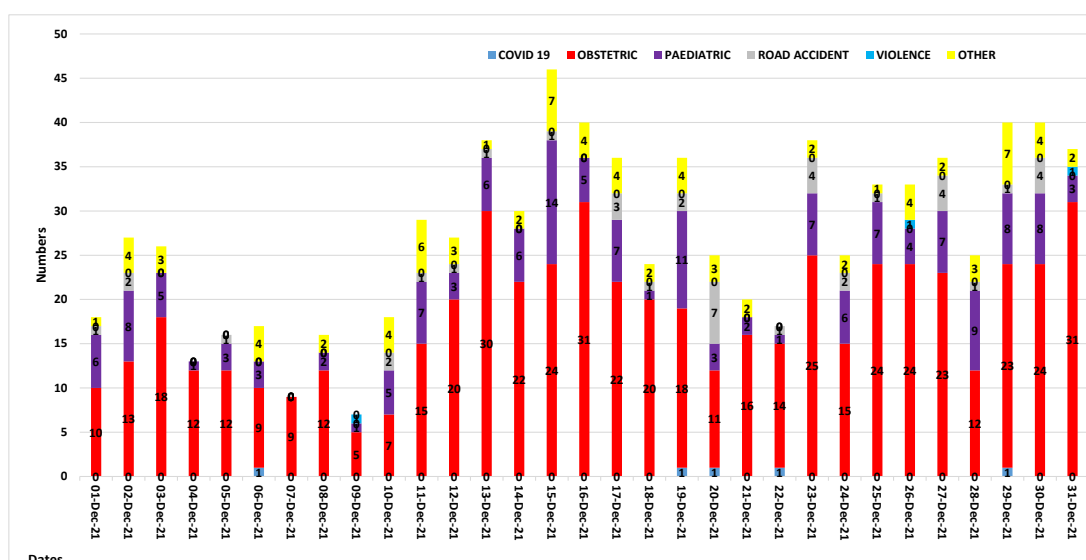
In the first two months the paediatric indicator showed the same 20.9%, while that dropped to 19.9%, with a difference of 1%.

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 continue to be 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

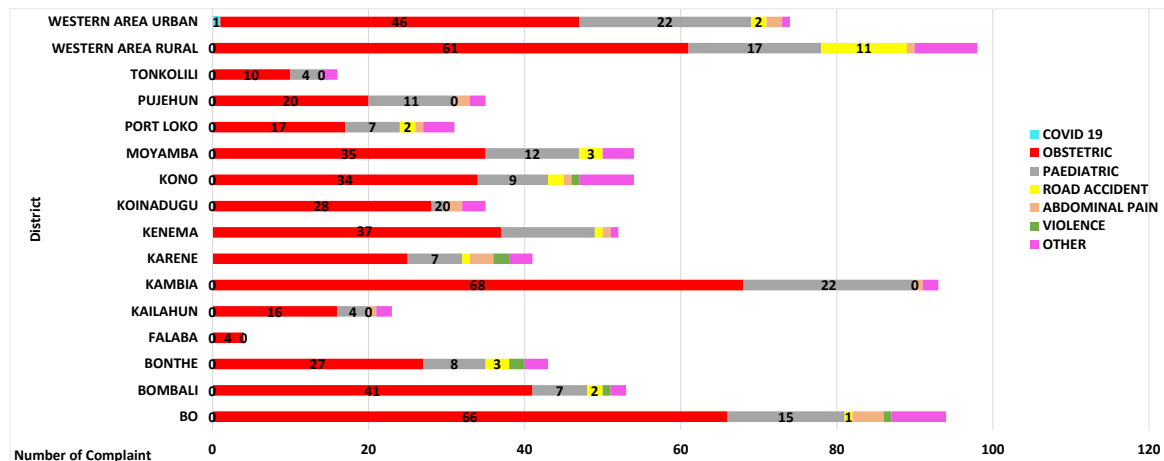


The data represented in the stacked column chart labelled **figure 12** above gives a condensed analysis of the number of complaints per day and the trend at which complaints that lead to missions are reported for the month of **December 2021**.

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

In **December 2021**, the data shows that the number of COVID-19 complaints was 5 cases suggesting that the the COVID-19 cases was put under control in that month. Road Accident occurred on most of the days in the month **December 2021**, with fewer days that shown no report on accident cases. A few numbers of violence complaints were received for fewer days.

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 segregated by district for the month under review. The data representation in the chart above justified **figure 3** and **figure 10** respectively. This confirms Western Area Rural reported the highest number of missions which in essence means that Obstetric complaints dominated the other indicators.

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

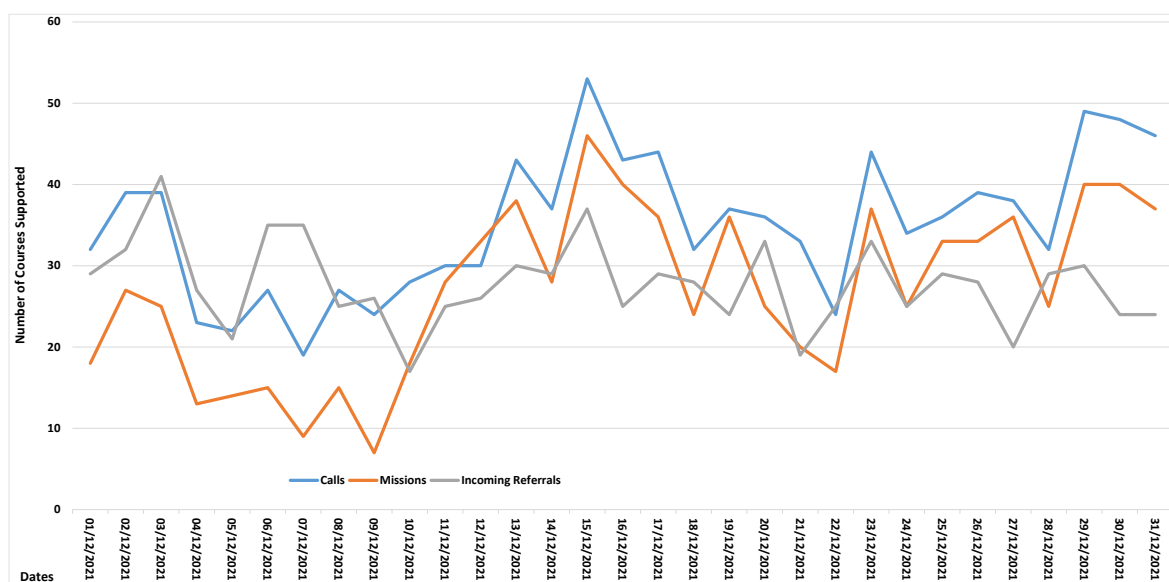


Figure 14 is a line chart that shows the number of Calls received, missions carried out, and referrals managed per day by NEMS in **December 2021**. Throughout **December 2021**, the indicators fluctuated. Hence, the average call was 36, Missions was 26 and incoming referrals stood at 27 for the month under review.

2.4 Figure 15: Outcome of the Missions

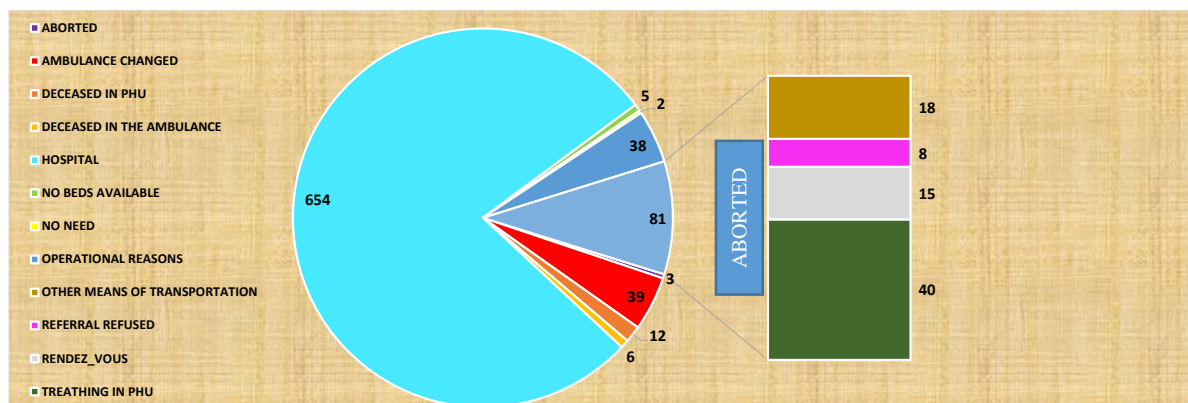


Figure 15 shows the outcome of missions carried out by NEMS in **December 2021**.

'Hospital' means 'missions leading to referral' to a pre-identified health facility (Hospital). Referencing the **December 2021** data displayed in the pie chart above shows that (654) 77.9% of the missions led to referral to a pre-identified specialist health facility compared to the November 2021 figure that showed that 78.1% of the missions referred to a pre-identified specialist health facility. This indicates a decrease in the referrals figure for **December 2021** compared to November 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	ABORTED	DECEASED	HOSPITAL	RENDEZ_VOUS	Grand Total
ABORTED	3	0	0	0	3
AMBULANCE CHANGED	39	0	0	0	39
DECEASED IN PHU	0	12	0	0	12
DECEASED IN THE AMBULANCE	0	6	0	0	6
HOSPITAL	0	0	654	0	654
NO BEDS AVAILABLE	5	0	0	0	5
NO NEED	2	0	0	0	2
OPERATIONAL REASONS	38	0	0	0	38
OTHER MEANS OF TRANSPORTATION	18	0	0	0	18
REFERRAL REFUSED	8	0	0	0	8
RENDEZ_VOUS	0	0	0	15	15
TREATING IN PHU	40	0	0	0	40
Grand Total	153	18	654	15	840

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 **December 2021** data showed that out of the 842 missions undertaken, 153 (18.2%) 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 various reasons, and these could be any of the following:



- **'Ambulance Changed'** - the data for **December 2021** revealed that out of 153 missions aborted, 39 (25.5%) of the aborted missions in **December 2021** were due to 'ambulance change',
- **'Deceased'** – this mission outcome refers to death before the arrival of the NEMS ambulance team. **December 2021** data showed that (18) of the mission were cancelled because of the patient died. Out of the 18 missions cancelled, 12 of those aborted mission occurred because the patients passed away in the PHU and 6 of the missions were aborted because the patients passed away in the ambulances.
- **'Operational reasons'** - this type of mission outcome has a strong correlation with the ambulance technical status at the time of call. The table above shows that 38 (24.4%) of the aborted missions occurred because of technical problems with the ambulances in the month of **November 2021** compared with **December 2021** with 24.1% 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 **December 2021** data showed that 18 (11.8%) 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 40 (26.1%).
- **'Referral refused'** the table above shows that out of 153 missions aborted, 8 (5.2%) was due to the patients or family members refusal to use the ambulance dispatched by NEMS,
- **'Other reasons'** includes 'no-need' of the ambulance (2), 'no beds available at the referral hospitals' (5).
- **'Rendezvous'** has been used to describe situations that may require more than one ambulance to complete a mission. The NEMS data for **December** shows that **'Rendezvous'** was use to accomplish 15 (1.8%) mission out of 1,006 mission outcomes compared to November 2021 that was (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	Pediatric Bed Capacity	% Average Bed Occupancy per Month
Bo Government Hospital	139	44	54	65	72	60
Makeni Government Hospital	95	65	27	60	41	30
Mattru UBC Hospital	36	34	12	73	19	56
Connaught Government Hospital	235	59	0		25	57
Kailahun Government Hospital	38	53	37	60	42	60
Kambia Government Hospital	40	27	23	57	35	47
Kenema Government Hospital	118	41	41	61	63	52
Kabala Government Hospital	49	33	37	42	55	37
Koidu Government Hospital	74	90	36	84	57	90
Lungi Government Hospital	40	34	20	38	20	33
Moyamba Government Hospital	48	27	24	66	39	46
Ola During Children Hospital	0		0		131	110
Princess Christian Maternity Hospital	0		115	82	18	
Port Loko Government Hospital	65	37	35	45	20	95
Pujehun Government Hospital	41	53	34	85	24	65
Tonkolilli Government Hospital	49	19	40	57	72	51
34M Military Hospital	82	22	22	49	10	78
King Harman Road Government Hospital	4	40	17	49	15	54
Rokupa Government Hospital	19	22	21	22	26	78
Lumley Government Hospital	12	0	10	0	4	0
Macauley Government Hospital	12	54	10	60	4	65
Emergency Memorial Hospital	37	88	0	0	28	88
Total National Bed Capacity	1233		615		820	

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.

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

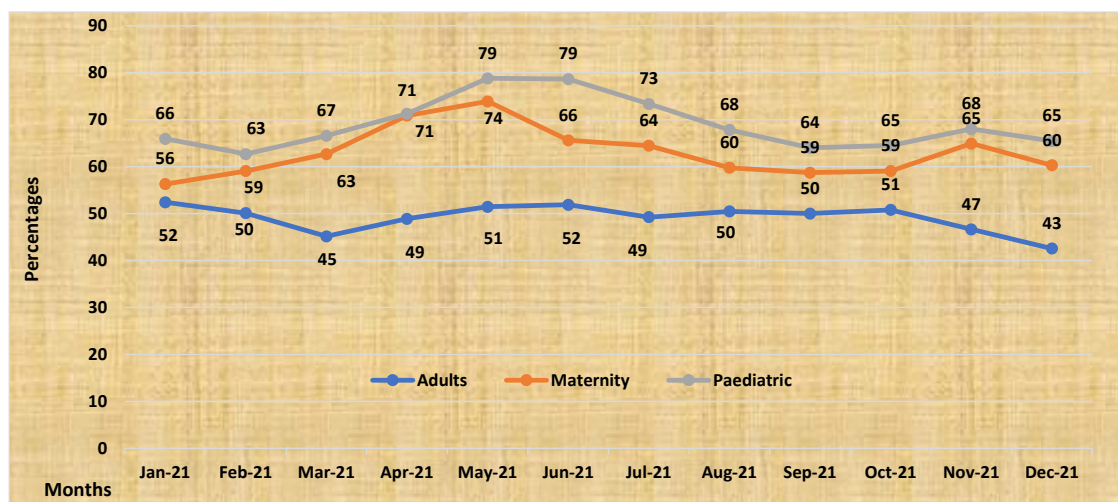
All other facilities listed in the table above provide care and has space for the various department listed in the table.

Adult Occupancy: for the adult bed capacity, no health facility reported overcrowding in the month of December 2021. However, Koidu Government Hospital and Emergency Memorial Hospital recorded 90% and 88% or over average occupancy.

Maternity Occupancy: Princess Christian Maternity Hospital and Pujehun Government Hospital recorded 84% and 82% with 85% average bed occupancy respectively, as that signals a potential overcrowding.

Paediatric Occupancy: Koidu Government Hospitals, ODCH, Port Loko Government Hospitals and Pujehun Government Hospital reported overcrowding for the month of **December 2021**, as their averages for the months under review are 90%, 110% and 95% respectively.

Figure 15: National Percentage Bed Occupancy by Department



The diagram **figure 15** above provides an average percentage of bed occupancy by month. The health facilities have various subsectors that are merged to form the major listed departments on the line chart. In 2021, the average bed occupancy has been below 80% for the different departments and all the various health facilities with Referral Coordinators attached observed a slight decrease to 65% for the month of **December 2021**.



4.NEMS National Referrals

4.1 Table 7: Number of Incoming and Outgoing Referred patients

No:	National Referrals by District, December 2021				
	Facility	Total Referrals	Incoming Referrals	Outgoing Referrals	NEMS Referrals
	National Total	951	860	91	486
	Nationwide %	100	90	10	51
1	34M	44	19	25	3
2	Bo	84	83	1	84
3	Bombali	61	53	8	41
4	Bonthe	23	23	0	19
5	Connaught	32	32	0	27
6	Emergency	35	19	16	8
7	Kailahun	70	67	3	10
8	Kambia	72	72	0	72
9	Kenema	114	112	2	37
10	King Harman Road	0	0	0	0
11	Koinadugu	44	38	6	23
12	Kono	12	10	2	11
13	Lumley	0	0	0	0
14	Lungi	1	1	0	1
15	Macauley Street	10	4	6	0
16	Moyamba	29	28	1	28
17	ODCH	151	138	13	18
18	PCMH	92	87	5	64
19	Port Loko	48	46	2	16
20	Pujehun	0	0	0	0
21	Rokupa	19	19	0	19
22	Tonkolili	10	9	1	5

From the diagram labelled **table 7** above, a total of 951 referrals were supported by NEMS. Eight hundred and sixty (860) of the 951 were classified as incoming referrals, while 91 represented the total outgoing referred patients supported. In **December 2021**, **ODCH** 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, Pujehun Government Hospital for the total number of referrals supported in December 2021 because data was not available for the listed institution.



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

Number of Incoming Referrals by patients' outcome, December 2021										
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
268	43	2	29	500	10	0	0	5	1	858
31	5	0	3	58	1	0	0	1	0	100
19	0	0	0	0	0	0	0	0	0	19
9	1	0	1	72	0	0	0	0	0	83
7	2	1	7	35	0	0	0	0	1	53
2	0	0	0	20	1	0	0	0	0	23
5	6	0	0	21	0	0	0	0	0	32
14	0	0	0	1	0	0	0	3	0	18
14	6	0	1	45	1	0	0	0	0	67
3	3	1	3	61	1	0	0	0	0	72
3	8	0	6	93	0	0	0	2	0	112
0	0	0	0	0	0	0	0	0	0	0
13	1	0	3	19	2	0	0	0	0	38
7	0	0	0	3	0	0	0	0	0	10
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	1	0	0	0	0	0	1
0	0	0	1	3	0	0	0	0	0	4
16	2	0	0	10	0	0	0	0	0	28
69	12	0	3	49	4	0	0	0	0	137
76	0	0	0	11	0	0	0	0	0	87
5	1	0	4	36	0	0	0	0	0	46
0	0	0	0	0	0	0	0	0	0	0
3	1	0	0	14	1	0	0	0	0	19
3	0	0	0	6	0	0	0	0	0	9

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. Eight hundred and fifty-eight (858) patients were referred and admitted in the health facilities. Five hundred (500) of the 860 referred patients were discharged, while 43, patients were reported dead.

The data further shows that two hundred and sixty-eight (268) of the total patients admitted 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	9	1	0	0	9	19
Bo	0	13	59	11	0	0	83
Bombali	0	4	28	19	0	2	53
Bonthe	0	3	18	2	0	0	23
Connaught	0	29	1	2	0	0	32
Emergency	0	12	0	7	0	0	19
Kailahun	1	14	33	19	0	0	67
Kambia	3	5	48	16	0	0	72
Kenema	8	11	70	23	0	0	112
King Harman Road	0	0	0	0	0	0	0
Koinadugu	3	7	22	6	0	0	38
Kono	0	2	5	3	0	0	10
Lumley	0	0	0	0	0	0	0
Lungi	0	0	1	0	0	0	1
Macauley Street	0	0	0	4	0	0	4
Moyamba	0	3	22	3	0	0	28
ODCH	0	18	0	120	0	0	138
PCMH	8	0	79	0	0	0	87
Port Loko	5	4	20	17	0	0	46
Pujehun	0	0	0	0	0	0	0
Rokupa	0	0	17	2	0	0	19
Tonkolili	0	1	2	6	0	0	9
Total	28	135	426	260	0	11	860

Table 9 above, displays the categories of incoming referred patients at the various health facilities nationwide for the month of **December** 2021. Continuously, EVD survivors have dropped significantly and are hardly captured in our datasets. The various facilities supported a total of 860 incoming referred patients.

Every hospital or recognized health facility have records for pregnant women. However, ODCH, Connaught Hospital and Emergency hospital do not provide hospitalized care for pregnant women.

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	6	1	0	1	20	0	0	0	0	0	28
Non-FHCI	49	9	1	12	58	3	0	0	3	0	135
Pregnant	123	3	0	3	293	4	0	0	0	0	426
Under 5	80	30	1	12	129	3	0	0	2	1	258
EVD Survivor	0	0	0	0	0	0	0	0	0	0	0
Yes - other	10	0	0	1	0	0	0	0	0	0	11
Total	268	43	2	29	500	10	0	0	5	1	858



The **December** data showed that, four hundred and twenty-six (426) pregnant women were admitted and two hundred and ninety-three (293) received care and were discharged. Two hundred and fifty-eight (258) patients in the under-5 categories were admitted and one hundred and twenty-nine (129) received care and were discharged. The Non-FHCI category recorded one hundred and thirty-five (135) admission cases and fifty-eight (58) were discharged.

It is key to mention that for the month of December 2021 out of the eight hundred and fifty-eight admitted, forty-three (43) deaths were recorded and the distribution by category shows **pregnant (3) deaths; under-5 (30) deaths**. The table also highlighted that two hundred and sixty-eight of all categories are still admitted in the various health facilities.



Table 10: Referral by Health Facilities (Hospitals)

REFERRAL HOSPITAL	Sep-21	Oct-21	Nov-21	Dec-21
Tertiary Facility Total	20.3%	19.2%	21.3%	18.1%
Connaught Hospital	5.3%	5.6%	7.9%	4.7%
Ola During Children's Hospital	3.6%	3.8%	3.9%	2.7%
Princess Christian Maternity Hospital	11.3%	9.8%	9.5%	10.7%
Regional and District Hospital Total	59.2%	63.7%	58.8%	61.9%
Bo Government Hospital	10.4%	8.4%	10.6%	12.0%
Bonthe Government Hospital	0.4%	0.6%	0.5%	0.1%
Kabala Government Hospital	5.3%	5.6%	4.9%	3.7%
Kailahun Government Hospital	3.2%	3.9%	3.1%	1.6%
Kambia Government Hospital	7.9%	7.1%	8.1%	10.8%
Kenema Government Hospital	7.7%	8.8%	8.6%	5.8%
Koidu Government Hospital	3.3%	4.9%	5.7%	6.5%
Lungi Government Hospital	0.7%	0.7%	0.6%	0.9%
Magburaka Government Hospital	3.7%	3.6%	1.0%	1.5%
Makeni Government Hospital	6.4%	6.5%	3.6%	5.5%
Moyamba Government Hospital	1.6%	2.6%	3.4%	4.2%
Port Loko Government Hospital	3.2%	4.4%	3.3%	4.3%
Pujehun Government Hospital	4.8%	6.1%	4.9%	4.6%
Segbwema Government Hospital	0.7%	0.5%	0.5%	0.3%
Other Government Facility	7.0%	2.3%	7.0%	4.9%
Kingharman Road Government Hospital	0.4%	0.7%	0.4%	0.6%
Other Government facilities (i.e.Macauley)	0.8%	1.3%	0.5%	-
Rokupa Government Hospital	5.6%	3.8%	5.5%	3.4%
34 MILITARY HOSPITAL	0.2%	0.4%	0.6%	0.9%
Private/NGO facility Total	7.5%	7.2%	17.1%	10.2%
Emergency	1.0%	0.7%	2.5%	0.9%
Kamakwie	1.2%	0.7%	0.4%	3.6%
Masanga	0.3%	-	0.1%	-
Mattru UBC Hospital	2.9%	3.5%	3.1%	3.3%
MSF Hospital – Kenema	0.4%	0.9%	0.9%	1.8%
SERABU	0.1%	0.1%	-	-
LIFE CARE HOSPITAL	-	0.1%	8.6%	0.1%
YELE	-	0.9%	0.9%	0.3%
CHOITHRAM MEMORIAL HOSPITAL	0.1%	0.2%	0.6%	0.1%
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%	-	-
NEW HOPE MEDICAL CENTER	-	0.1%	-	-
KPAGUMA HOSPITAL	-	0.1%	-	-
GBANGBATOKIE	-	0.1%	-	-
EMPIRE 1 HOSPITAL WATERLOO	-	0.1%	-	-
KORIBONDO CHC	-	-	-	0.1%
COVID-19 CTC/CCC/ISOLATION	0.3%	0.0%	0.1%	0.6%
RENDEZ VOUS	6.2%	3.8%	3.1%	2.4%

Table 10 shows the percentages of NEMS general monthly referrals to the main hospitals for the month of December 2021.

The analysis in the tabular diagram is a comparative analysis of the data for September 2021, October 2021, November 2021 and December 2021. In December, the tertiary facilities reported 18.1% (**Connaught Hospital (4.7%), Princess Christian Maternity hospital (PCMH) (10.7%), and Ola During Children's Hospital (ODCH) (2.7%)**), while in in **November** those set of facilities account for (21.3%) as follows: **Connaught Hospital (7.9%), Princess Christian Maternity hospital (PCMH) (9.5%), and Ola During Children's Hospital (ODCH) (3.9%)**. This indicated 3.2% decrement in the November referrals data than October data.

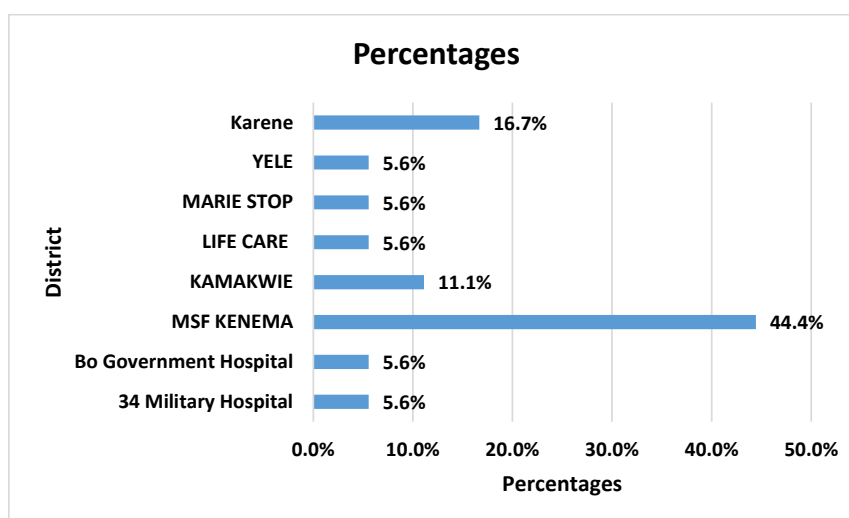


For the month under review, the **Regional and District Hospitals** received 61.9% of all referrals compared to November 2021 with 58.8% of the referrals. This indicates a drop by 3.1% in the percentage of patients referred to the **Regional and District Hospitals**.

The table further displays the percentage of patients referred to **COVID-19 Treatment Centers and Isolation Units**. There was an observed fall in the percentage of confirmed cases in November, but December 2021 experienced 0.5% increment in December that changed the December figure to 0.1% compared to November with 0.6%. It is intriguing to see that Rendezvous dropped from its previous 3.1% in November to 2.4% in December 2021.

56. Inter-hospitals Referrals

Figure 16: Showing Destination Hospitals for Inter-Hospital Referrals



It is visible that, MSF Kenema reported the highest number of inter-hospital referrals with 44.4%.

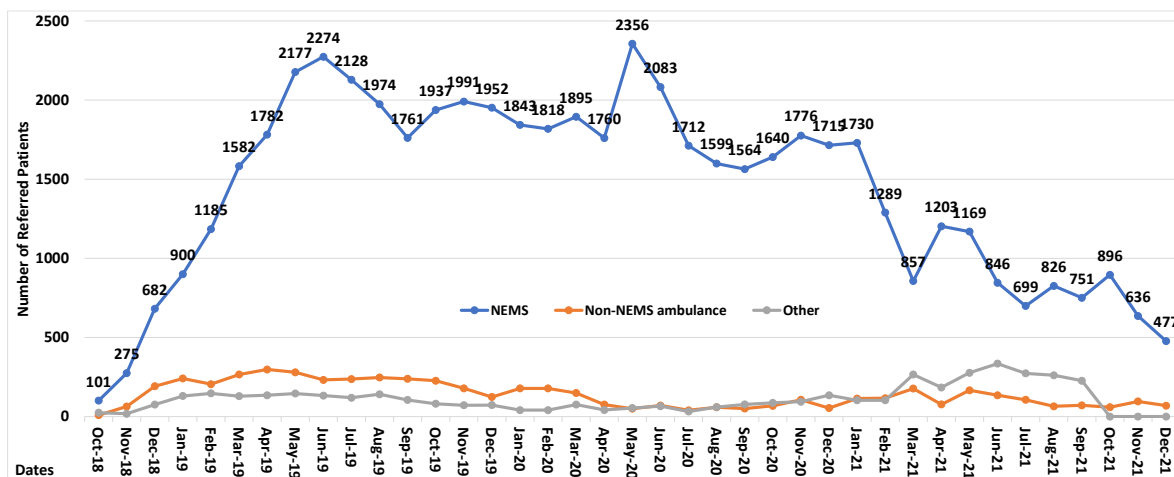
Table 11: Number of Inter – Hospital and Inter-District Missions and Referrals

INTERHOSPITAL REFERRALS	MISSIONS	REFERRALS
34 Military Hospital	1	1
Bo Government Hospital	1	1
MSF KENEMA	8	5
KAMAKWIE	2	1
LIFE CARE	1	1
MARIE STOP	1	1
YELE	1	1
Karene	3	1
INTER-DISTRICT REFERRALS (TOTAL)	18	12
Port Loko Government Hospital	9	2
Moyamba Government Hospital	1	1
KENEMA Government Hospital	5	3
Kabala	1	1
Connaught Hospital	3	1
Goderich Emergency	3	25
Makeni Government Hospital	7	1
Bo Government Hospital	8	1
Princess Christian Maternity Hospital	1	4
Pujehun Government Hospital	3	2
34 Military Hospital	2	4
Koidu Government Hospital	3	1
Mattru UBC Hospital	3	1
MSF KENEMA	4	2
SEGBWEMA	2	1
WITHIN THE SAME DISTRICT (TOTAL)	55	50
Grand Total	73	62

The tabular diagram labeled **table 11** above, illustrates the data for inter-hospital missions and referrals covered by NEMS in the month of **December** 2021. A total of 55 mission and 50 referrals were reported for inter-hospital, while 83 and 53 for missions and referrals respectively for inter-district movements supported by NEMS.

7. Arrival Methods

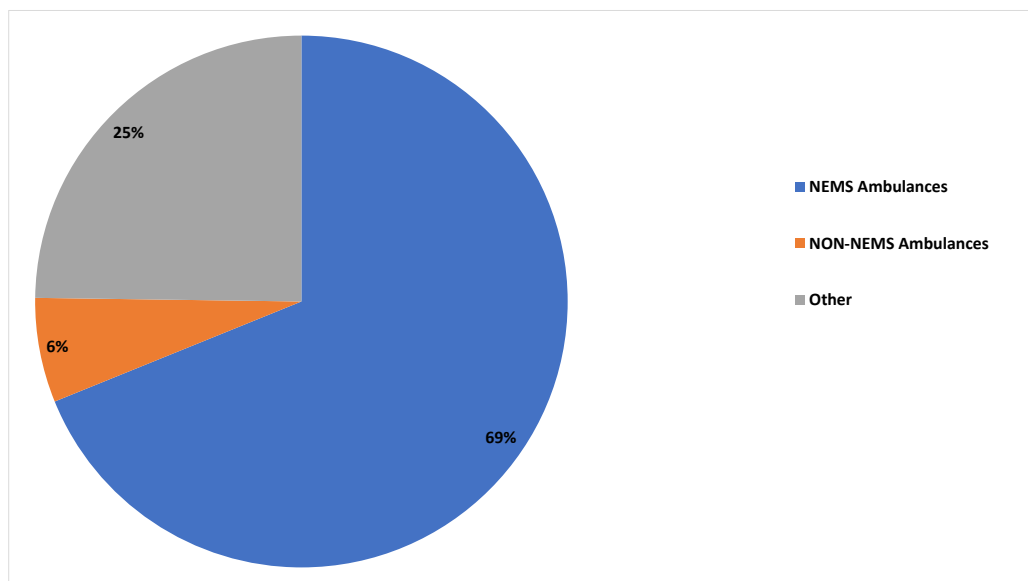
Figure 17: Number of Referred Patients by Arrival Methods



The graph labelled **figure 17** provides a detailed analysis of arrival medium of patients at the various hospital where referral coordinators are attached.

The data for **December** 2021 justifies NEMS as the most common means of arrival for patients at hospital. That is to say the most common means to get emergency cases to the specialized hospitals is by the utilization of NEMS' ambulances. This has been consistently observed since the inception of this NEMS programme in Sierra Leone's health sector.

Figure 18: Arrival Methods at the Hospital of the Referrals



The pie chart labelled **figure 18** above, is a representation of the methods of arrival at the various health facilities nationwide for the month of **December** 2021. 69% of the total number of referred cases received by the respective hospitals was transported by NEMS ambulance, while a combined total of 31% 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	57%	12%	31%
34 Military Hospital	16%	47%	37%
Connaught Hospital	84%	16%	0%
Kingharman Road Govt. Hospital	-	-	-
Lumley Govt. Hospital	55%	0%	45%
Ola Daring Children's Hospital	12%	5%	83%
Princess Christian Maternity Hospital	74%	2%	24%
Rokupa Govt. Hospital	100%	0%	0%
Private/NGO facility Total	83%	0%	17%
Matru UBC Hospital	83%	0%	17%
Regional/District Hospital	57%	3%	29%
Kabala Govt. Hospital	55%	0%	45%
Bo Govt. Hospital	100%	0%	0%
Kailahun Govt. Hospital	15%	3%	82%
Kambia Govt. Hospital	100%	0%	0%
Kenema Govt. Hospital	33%	18%	49%
Koidu Govt. Hospital	100%	0%	0%
Lungi Govt. Hospital	-	-	-
Magburaka Govt. Hospital	-	-	-
Makeni Govt. Hospital	0%	0%	0%
Moyamba Govt. Hospital	100%	0%	0%
Port Loko Govt. Hospital	12%	5%	83%
Pujehun Govt. Hospital	-	-	-
Grand Total	66%	5%	26%

The tabular representation labelled **table 12** provides a further breakdown on patients' arrival at secondary and tertiary hospital nationwide for the month of **December** 2021. For tertiary hospital, there has been an decrement on the percentage of NEMS arrival method, with Rokupa Government Hospital appears to be the only tertiary hospital in Western Area Urban to register 100% NEMS arrival method, while most others recorded less than 75% with the exception of Connaught Hospital, which has and 84%.

Bo, Kambia, Koidu, and Moyamba are the secondary hospitals that showed 100% NEMS, while Kabala, Makeni, and other facilities reported less than 80% as NEMS arrival method. Overall, the major means of transporting emergency cases from peripheral health units nationwide is through NEMS. Matru UBC Hospital has 83% NEMS arrival.



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	TONKOLU	WESTERN AREA RURAL	WESTERN AREA URBAN	Grand Total Dec 2021	Percentage Dec 2021	Grand Total Nov 2021	Percentage Nov 2021	Grand Total Oct 2021	Percentage Oct 2021
00:00:00 to 00:05:00	50	64	18	8	11	29	33	17	23	21	26	20	17	43	54	434	42.3%	447	35.9%	289	27.6%
00:05:01 to 00:10:00	39	17	11	4	12	37	23	9	23	22	13	20	7	33	41	311	30.3%	447	35.9%	403	38.5%
00:10:01 to 00:15:00	14	12	2	2	3	15	12	6	6	10	2	3	2	11	15	115	11.2%	126	10.1%	140	13.4%
00:15:01 to 00:20:00	6	3	1	0	1	3	1	4	5	4	1	3	0	7	13	52	5.1%	61	4.9%	62	5.9%
00:20:01 to 00:30:59	1	3	2	0	0	6	2	0	4	4	1	2	1	4	6	36	3.5%	57	4.6%	55	5.3%
00:31:00 to 01:59:59	3	0	9	1	1	7	3	3	6	2	3	3	0	10	9	60	5.9%	90	7.2%	73	7.0%
02:00:00 to 02:59:59	3	0	0	0	0	1	0	0	0	0	0	1	0	1	2	8	0.8%	6	0.5%	13	1.2%
03:00:00 to 03:59:59	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0.1%	5	0.4%	7	0.7%
04:00:00 to 04:59:59	0	0	0	0	0	0	0	0	1	0	1	0	0	0	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	1	0	0	0	0	0	0	1	0.1%	1	0.1%	1	0.1%
06:00:00 to 06:59:59	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1%	2	0.2%	1	0.1%
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%	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	0.0%	0	0.0%	1	0.1%
09:00:00 to 09:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.1%	0	0.0%	0	0.0%
10:00:00 to 10:59:59	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1%	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	2	2	0.2%	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%	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%	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	117	99	44	15	28	98	74	39	69	63	47	53	27	110	142	1025	100.0%	1244	100.0%	1047	100.0%

The table above displays the time taken by Call Centre to assess the severity a patient known as triage when a call is received. In December, on an average, NEMS Call Centre took 5 minutes to assess 42.3% of the total number of the calls received, while in the same month spent 10 minutes to triage 30.3% of the calls received. In November, call centre took less than 5 minutes to triage a 35.9% of the total Calls received, while in October, it took less than 5 minutes to triage 27.6% of the total calls supported.

Table 13: Time Taken to Reach the Target

Time Taken to Reach the Target	BO	BOMBALI	BONTHE	FALABA	KAILAHUN	KAMBIA	KARENE	KENEMA	KOINADUGU	KONO	MOYAMBA	PORT LOKO	PUJEHUN	TONKOLU	WESTERN AREA RURAL	WESTERN AREA URBAN	Grand Total Dec 2021	Percentage Dec 2021	Grand Total Nov 2021	Percentage Nov 2021	Grand Total Oct 2021	Percentage Oct 2021
00:00:00 to 00:30:59	41	23	17	1	13	47	18	21	8	25	36	16	16	9	71	64	291	53.3%	569	64%	401	48%
00:31:00 to 01:59:59	39	21	15	0	4	32	13	20	9	14	10	8	13	3	17	5	201	36.8%	266	30%	371	44%
02:00:00 to 02:59:59	3	1	2	1	2	4	0	4	9	2	0	0	1	0	0	0	29	5.3%	30	3%	36	4%
03:00:00 to 03:59:59	1	1	0	2	0	1	1	0	4	3	1	0	1	0	0	0	15	2.7%	10	1%	19	2%
04:00:00 to 04:59:59	0	0	0	0	0	0	0	1	0	1	1	0	1	0	0	0	4	0.7%	5	1%	8	1%
05:00:00 to 05:59:59	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	3	0.5%	1	0%	4	0%
06:00:00 to 06:59:59	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	0.4%	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%	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	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	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%	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%
12:00:00 to 12:59:59	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0.2%	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%	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%
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%
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%
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%
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%	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%	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%
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%
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%
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%
Grand Total/District	85	46	34	4	19	84	33	46	32	47	48	24	32	12	88	69	546	100.0%	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 December 2021, NEMS took an average time of two hours to reach the different PHUs, with 90.1% of the total number of missions transported, while in November, 94% of the missions transported took less than 2-hour to reach the target. 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.



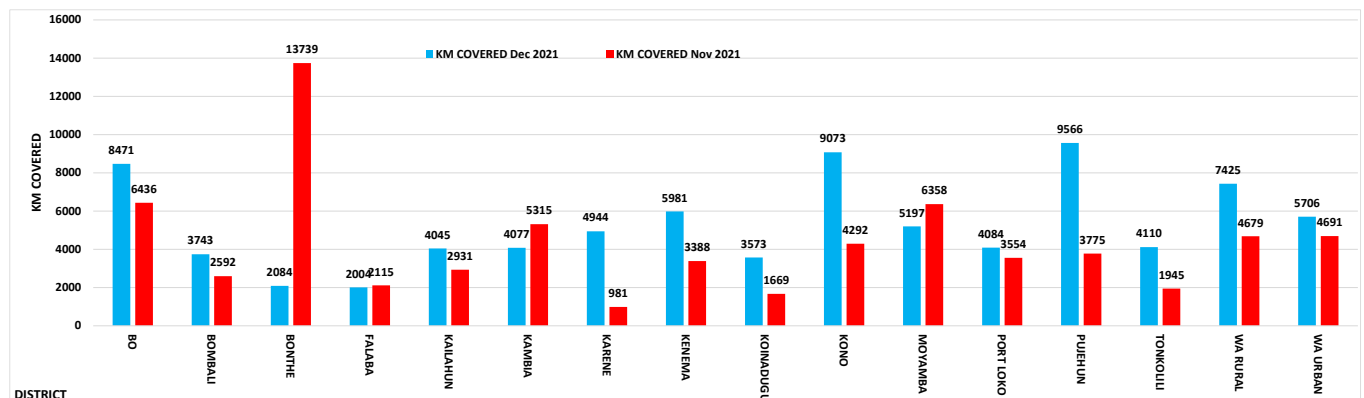
Table 14: Time Taken to Reach the Hospital

Time Taken to Reach the Hospital	BO	BOMBALU	BONTHE	KAILAHUN	KAMBIA	KARENE	KENEMA	KOINADUGU	KONO	MOYAMBA	PORT LOKO	PUJEHUN	TONKOLILU	WESTERN AREA RURAL	WESTERN AREA URBAN	Grand Total Dec 2021	Percentage Dec 2021	Grand Total Nov 2021	Percentage Nov 2021	Grand Total Oct 2021	Percentage Oct 2021
00:00:00 to 00:30:59	43	20	24	11	39	15	19	14	19	19	12	10	11	34	38	328	42.9%	423	44.8%	487	42.1%
00:31:00 to 01:59:59	40	24	14	7	47	16	25	9	16	28	13	17	4	59	30	349	45.7%	432	45.7%	528	45.7%
02:00:00 to 02:59:59	4	2	2	2	1	4	5	2	8	4	1	4	0	2	1	42	5.5%	55	5.8%	75	6.5%
03:00:00 to 03:59:59	1	0	0	2	0	0	0	1	2	1	1	1	1	0	0	10	1.3%	16	1.7%	27	2.3%
04:00:00 to 04:59:59	1	1	0	0	1	0	1	2	1	0	1	1	0	0	1	10	1.3%	9	1.0%	13	1.1%
05:00:00 to 05:59:59	1	0	0	0	0	0	1	2	2	0	1	1	0	0	0	8	1.0%	4	0.4%	4	0.3%
06:00:00 to 06:59:59	1	0	0	0	0	0	0	1	1	0	0	1	0	0	0	4	0.5%	1	0.1%	8	0.7%
07:00:00 to 07:59:59	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	3	0.4%	2	0.2%	0	0.0%
08:00:00 to 08:59:59	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0.1%	2	0.2%	0	0.0%
09:00:00 to 09:59:59	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0.1%	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%	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%	0	0.0%	2	0.2%
12:00:00 to 12:59:59	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	3	0.4%	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	1	0	1	0.1%	0	0.0%	1	0.1%
14:00:00 to 14:59:59	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0.1%	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%	1	0.1%
17:00:00 to 17:59:59	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0.1%	1	0.1%	1	0.1%
18:00:00 to 18:59:59	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0.1%	0	0.0%	0	0.0%
19:00:00 to 19:59:59	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0.1%	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%
	92	48	40	22	89	35	51	34	52	52	31	35	16	96	71	764	100.0%	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. 88.6% is the average percentage consumed by the NEMS ambulance team to reach a secondary or tertiary hospital in December. There is a decrease of 1.9%. 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



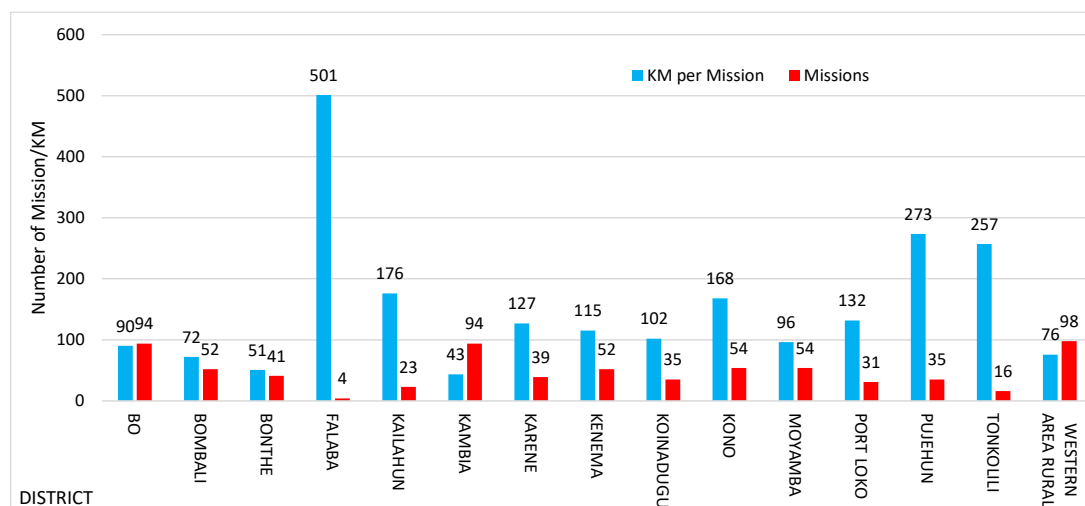
The District Ambulance Supervisors (DAS) Monthly Kilometre Reports showed that, In December 2021 data, a cumulative total of **84,083 km** was travelled, when put in contrast with the November 2021, which is **68,460 Km** indicating a significant increase by **15,623 km** in the kilometres travelled by NEMS ambulances for the month under review.

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 December 2021 with November 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, but those which required the ambulance to move from its location).

Assessment of the district data showed that, there was a general increase in the December 2021 figure compared to the November 2021 figure for most districts, with the exception of Bonthe, Falaba, Moyamba and Kambia.

Another critical revelation of the December 2021 data evaluation is that there was no district covered above thirteen thousand kilometres compared to November 2021.

Figure 20: Average Km/Mission



The Bar chart labelled **figure 20** compares the **average KM covered for a mission by district** for December 2021. For the month under review, the district with the highest average KM per mission is Falaba with 4 missions, the ambulances covered a significant 501 Kilometers per mission (km/mission). The other districts that experienced significant increases include Pujehun by (273) km/mission, and Tonkolili by 257 km/mission.

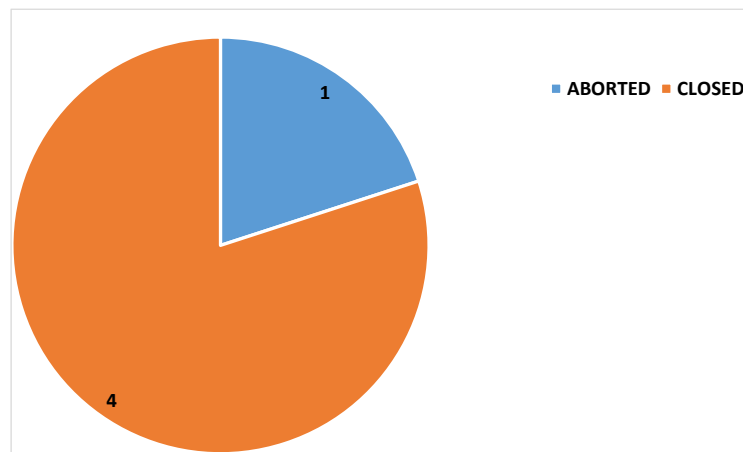
It is essential to understand that, other district NEMS ambulances transported the missions recorded by Falaba and Karene.

5. NEMS National COVID-19 Response

5.1 COVID-19 Missions

From NEMS data sources related to December 2021, we observed that the strategy to repurposing the ambulances in December 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, 5 missions that are strongly linked to COVID-19 related cases that required NEMS ambulance for transportation. 1 sample recorded.

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 4 cases that NEMS dispatched ambulances for, the four patients were transported to the various facilities listed on Table 15.

5.3 COVID-19 Missions and Samples transported

Typology of Complain	Dec-21	Nov-21	Oct-21	Sep-21	Aug-21	Jul-21	Jun-21	May-21	Apr-21	Mar-21	Feb-21	Jan-21
Covid19 Confirmed Case	5	1	-	2	16	138	197	14	9	12	24	113
Covid19 Suspected Case	-	-	-	-	3	3	-	3	-	-	6	8
Covid19 Confirmed/Suspected Case	-	-	-	-	-	-	-	-	-	-	-	7
SAMPLES	1	3	-	26	6	28	16	17	34	19	40	66
TOTAL	6	4	0	28	25	169	213	34	43	31	70	194

Table 13 for this report reinforces you with adequate information on the general COVID -19 operations for the month of December 2021. The rigorous measures implemented by the authorities responsible to management of covid-19 cases in Sierra Leone have contributed to the fall in the statistics of covid-19 cases in the month under review.

5.4 Figure 22: Trend of COVID-19 missions (con Afirmmed and suspected cases)

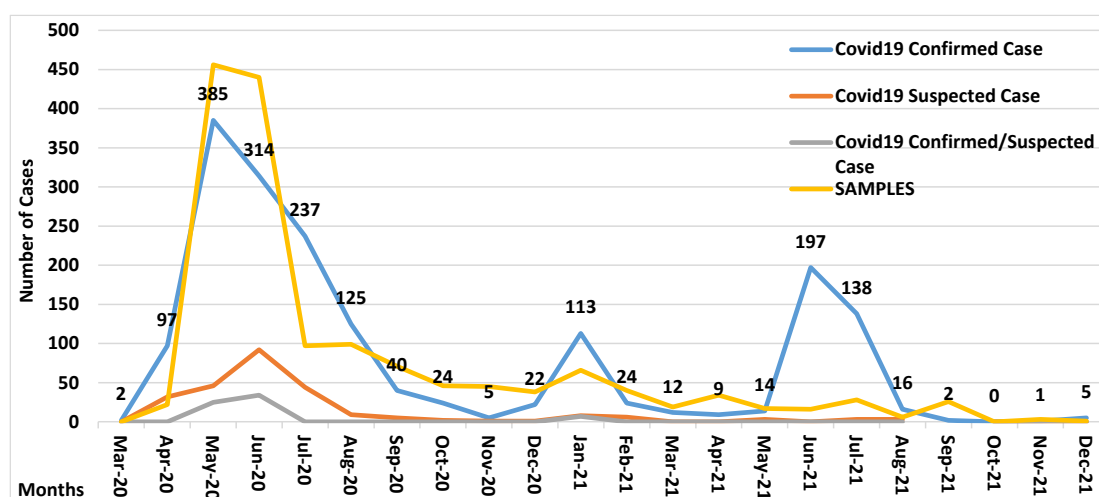


Figure 22 is a line graph that illustrates the trend at which COVID-19 cases are reported to NEMS and transported by NEMS. A critical analysis from the chart above demonstrated that there has been constantly dropping in the number of confirmed cases since the nation recorded its highest number of confirmed



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 December. The number of samples transported rise, when put in contrast to November 2021. In Western Area, samples are hardly transported, while this is common for the provincial districts.

5.5 COVID-19 Confirmed Cases

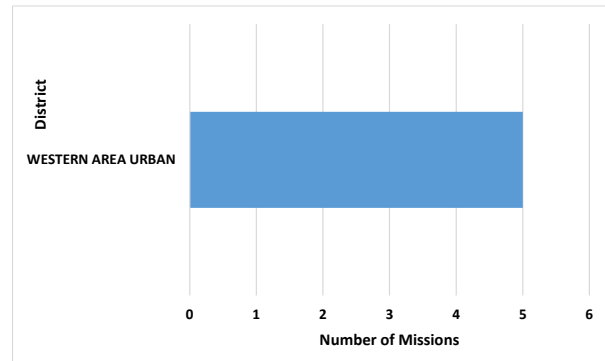
A detail analysis of the number of coronavirus (COVID-19) cases is done here. 5 cases recorded in the month of December 2021 and these were all transported by NEMS to the respective treatment centres and holding homes.

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 3,675 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 shows 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 5 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	St. Joseph - Covid-19	W U 04	80%
WESTERN AREA RURAL	Murray Town - Covid-19	W R 07	20%

5.7.1 Ambulance Station

Table 14 displays the transportation of COVID-19 confirmed cases by their respective stations. WU 04 which is the St. Joseph ambulance allocated to transport COVID-19 cases is reported to have transported **80%** in December 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.



5.8 COVID-19 Treatment Centres Destination

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

Facility	Treatment Center	%
WESTERN AREA URBAN	34 MILITARY ISOLATION	25%
WESTERN AREA URBAN	ADRA CTC	25%
WESTERN AREA URBAN	CONNAUGHT	25%
WESTERN AREA URBAN	PMTCC	25%

The diagram labelled **Table 15** on this report shows the COVID-19 confirmed cases transported to their respective treatment centres in Sierra Leone. As displayed in the table above, each of the four (4) health facilities with COVID-19 treatment center admitted the 4 patients that were transported.