NEMS OPERATIONAL ACTIVITIES

MONTHLY REPORT: AUGUST 2022

**MINISTRY OF HEALTH
AND SANITATION**

*49 J Spur rd, Freetown,
Sierra Leone*

NEMS
National Emergency
Medical Service
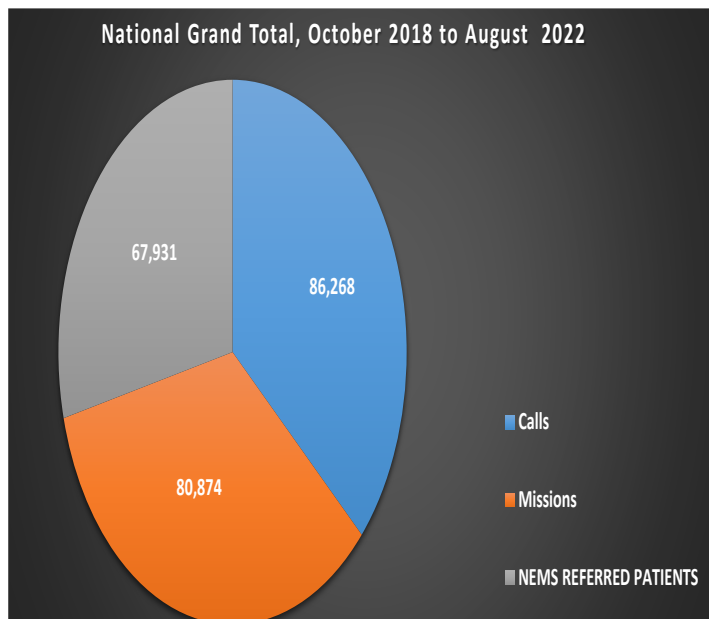
Table of Content

Brief description of NEMS Operational Services

Figure 1: Cumulative Number of Supported Indicators

The data collected from the NEMS database and the NEMS Referral Coordinators' database from **15th of October 2018 to the 31st of August 2022**, indicates that NEMS has accomplished over three years and ten months (3.10) of operations; delivering the following:

Cumulative total of **86,268 Calls, 80,874 Missions and 67,931 NEMS referrals** only.

National Grand Total, October 2018 to August 2022

- Calls — 86,268
- Missions — 80,874
- NEMS REFERRED PATIENTS — 67,931

Distributions of the Ambulances

NEMS currently has **one hundred (100) ambulances** in operation nationwide. Each district has one ambulance allocated to the District Ambulance Supervisor (DAS) to serve as replacement in case an ambulance becomes inoperative, which summed to the total reported. In August, 91% of the ambulances were operational.

Ambulance Distributions	
District	**Grand Total**
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**

Km Travelled

In *August*, NEMS operated with below 70% of the ambulances around the country; this includes both the DAS' allocated vehicles. They have travelled a cumulative total of **6,267,396 km**. In *August* 2022, a total of **59,155** kilometre covered by all the ambulances that were used to transport the various patients to the referred health facilities.

COVID-19 Response

The total number of **COVID-19** confirmed cases transported by NEMS ambulances in *August* 2022 are zero, with no suspected case reported, while the cumulative figures since the COVID-19 outbreak in the country in March 2020 is **3,683 confirmed**, 258 **suspected**. **These numbers have not changed since January 2022. The nation has continued to registered no case of COVID-19 that required further referral for specialist care at tertiary hospitals.**

1. Overview of the Calls, Missions and Referrals

Figure 2: *Calls, Missions and Referrals (June 2022)*

1.2. Table 1: *Cumulative and Percentage Trend of Calls, Missions, Referrals*

Year	Months	CALLS	Trend	MISSIONS	Trend	NEMS REFERRED PATIENTS	Trend
2022	Jan-22	942	0%	686	-32%	483	-3%
	Feb-22	639	-1%	435	-59%	255	-31%
	Mar-22	188	-1%	125	-128%	77	-54%
	Apr-22	599	52%	463	57%	325	62%
	May-22	297	-34%	190	-42%	93	-56%
	Jun-22	505	26%	400	36%	244	45%
	Jul-22	420	-9%	363	-5%	205	-9%
	Aug-22	740	28%	645	28%	392	31%
Total NEMS Project		86268		80874		67931	

The graph above displays the number of **Calls, Missions and NEMS Referrals** supported by NEMS in the month of **August** 2022.

The graph shows that for the period under review, **740 Calls**, **645 Missions**, and **392 NEMS Referrals** were supported.

Table 1 above gives a comparative percentage trend analysis for the three (3) major indicators **(i.e., Calls, Missions, and NEMS Referrals)** by NEMS for the month of January, February, March, April, May, June, July and August 2022. The cumulative grand total for **Calls 86,268, Missions 80,874 and NEMS Referrals only 67,931.**

It is observed that there is a dramatic decrease in the percentage Calls by 28%, Missions by 28% and Incoming Referrals by 31%.

1.3. Table 2: *NEMS Daily Activities Averages*

Daily Operations	Calls	Missions	NEMS REFERRED PATIENTS
Aug-22	23	20	14

Table 2 shows the average daily Calls, Missions and Incoming NEMS Referrals for the same period.

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Calls Analysis

Figure 3: Classifications of Calls

- **AMBULANCE**
- **CANCELLED BY CALLER**
- **HOAX**
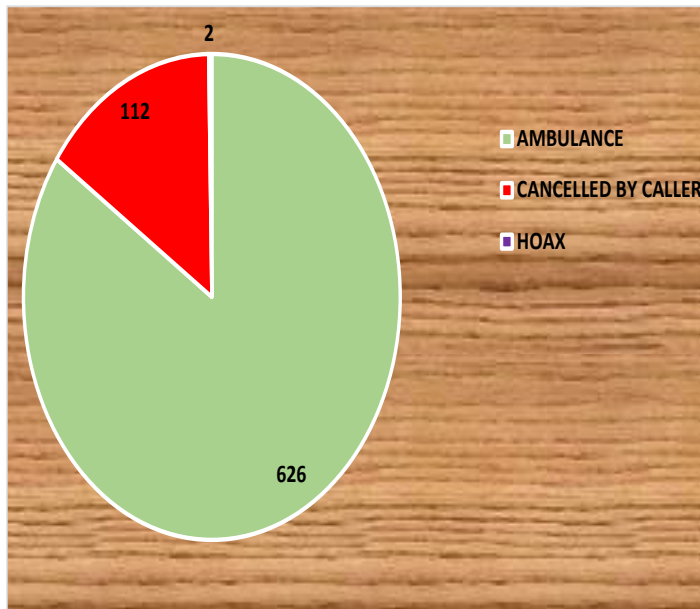
The pie chart labelled **Figure 2** outlines the classification of Calls as they are received at the NEMS Call Center. The call center operators received a cumulative total of 740 Calls with 626 (84.6%) requiring ambulance, 112 (15%) cancelled by callers due to factors that are determined by the various callers, with 2 Calls that says Hoax.

2.1.Figure 3: Breakdown of Calls by District
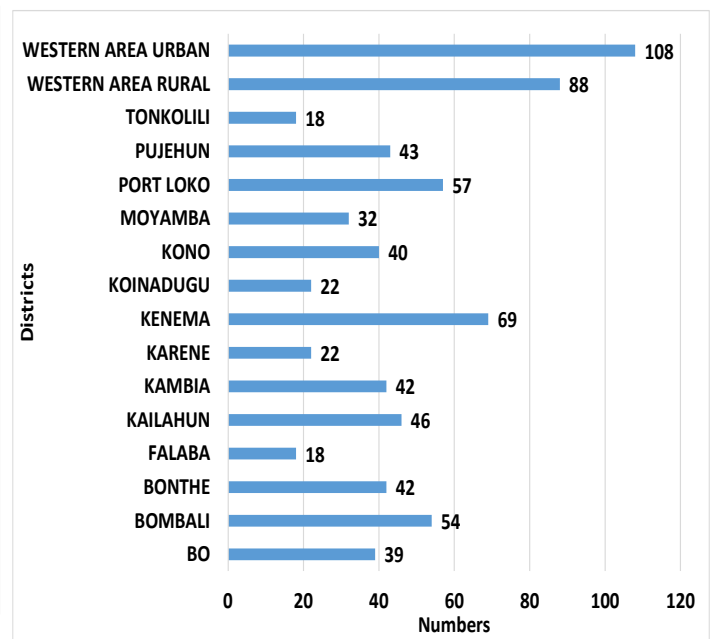
Figure 3 shows the breakdown of Calls by district. Western Area Urban reports the highest—108 and seconded by Rural with 88 number of calls received.
The least number of Calls were from Falaba recorded 18.

2.2.Figure 4: Number of Calls per Hour
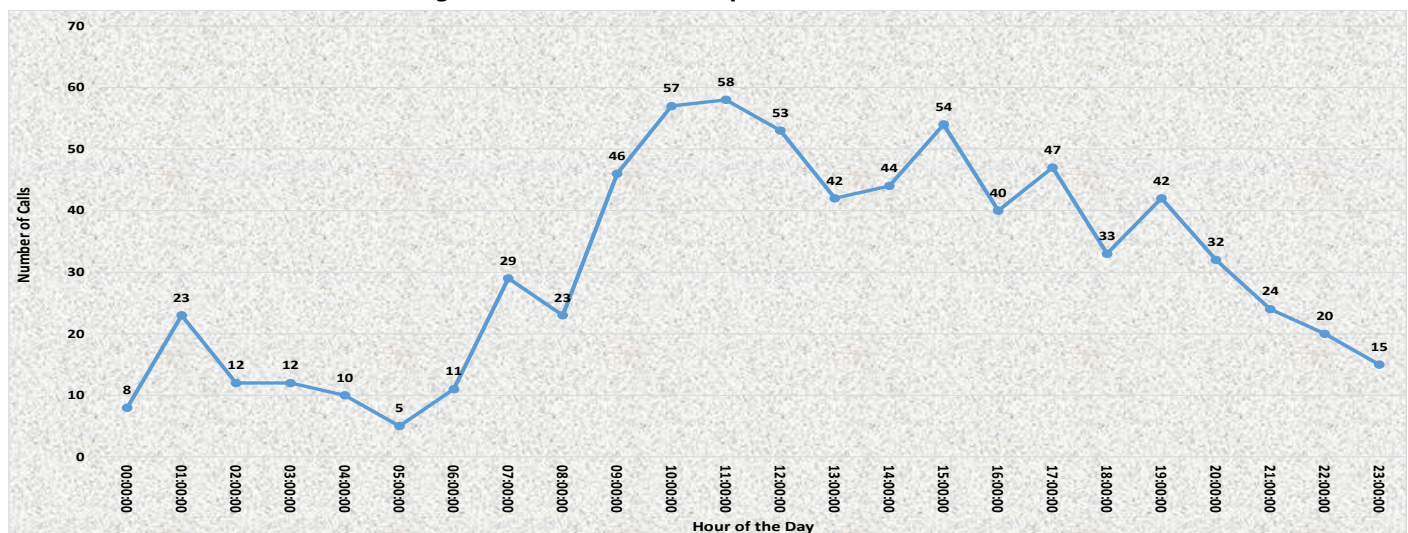
Figure 4, shows an oscillating line graph that describes the number of calls received at NEMS operation center on an hourly base. The chart above this narrative shows that, there was a surge in the number of calls received between the hours of 09:00 hours and 19:00hrs GMT, irrespective of its fluctuation. The operation center recorded its climax calls at around 11:00hrs GMT, while the least number of calls were received at around 05:00 hour.

2.3. Figure 6: Number of Calls per Day
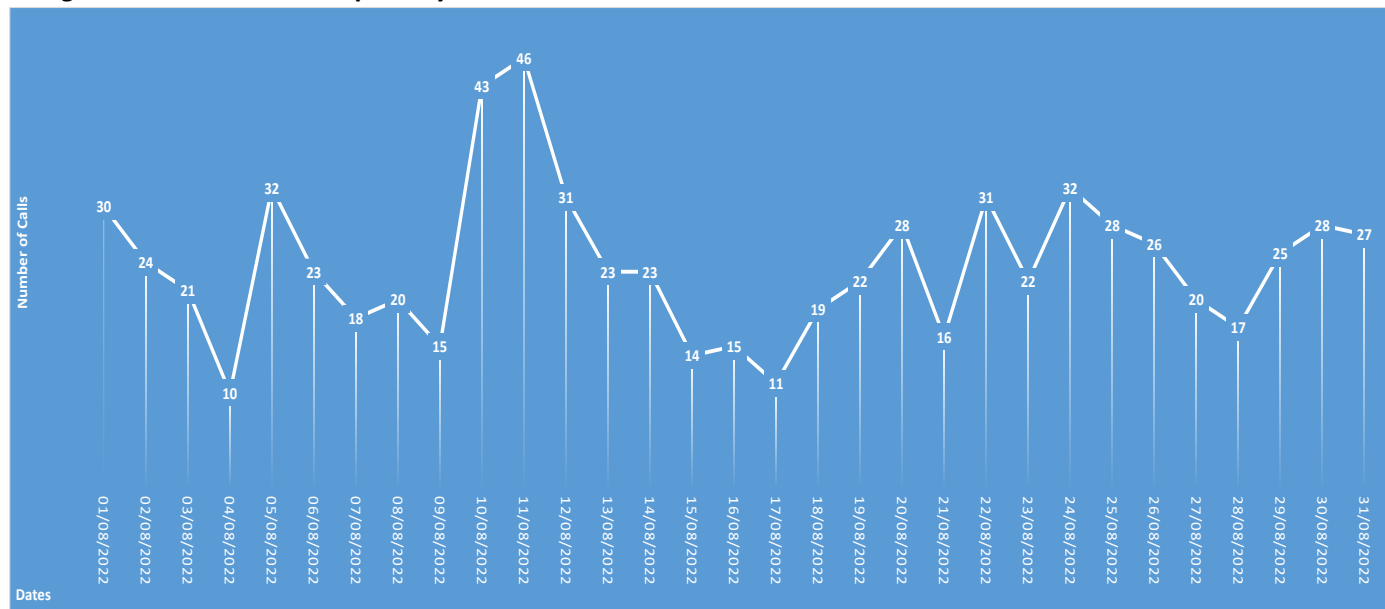
The chart demonstrates the trend of incoming calls to the NEMS call centre per day.
The least number of Calls were recorded on the 4th with 10 calls, while the highest number of Calls were registered on the 11th with 46 calls. The chart fluctuated throughout the month of August.

2.4. Figure 7: Calls, Missions, Referrals by District
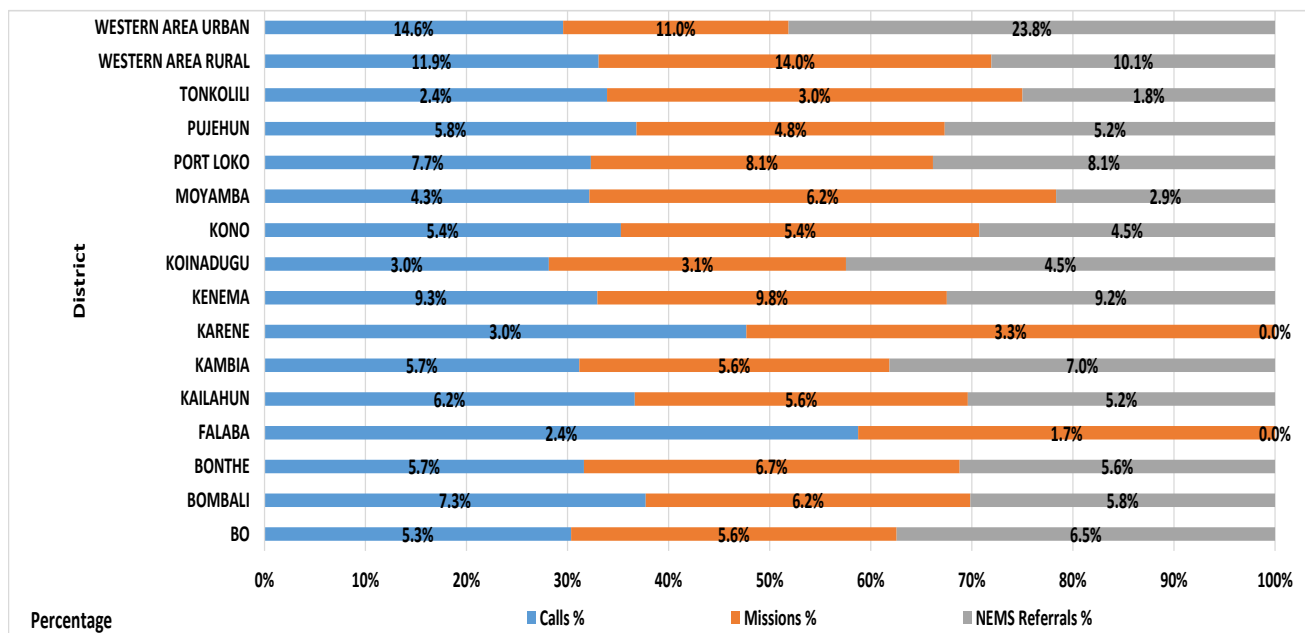
The bar chart above demonstrates the percentage of Calls, Missions and NEMS Referrals supported by NEMS per district in the month of August. For both Calls , Western Area Urban recorded the highest percentage with 14.6%, seconded by Western Area Rural with 11.9%, with the least calls from Tonkolili. For Missions, in which Western Area Rural registered the highest, seconded by Urban. Tonkolili as well reported the lowest Missions. Referrals are a reflection of the number of Missions that were completed. 23.8% of the Referrals were from Western Area Urban. Moyamba district recorded the least number of referrals recorded.

Chapter 3 -Missions

3.0.Figure 8: Categories of NEMS Missions
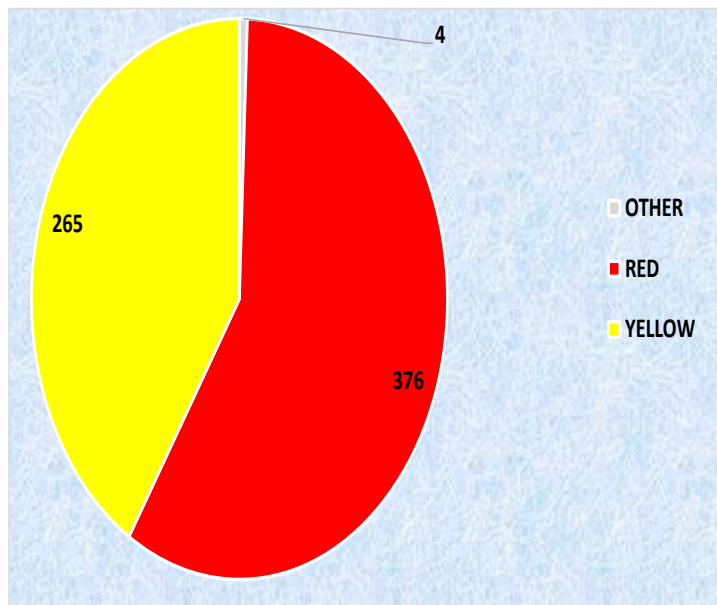
The pie chart labelled **figure 8** gives an insight on how calls are categorized to determine a mission. The severity of the condition are segmented into three major categories, with an additional color described as 'Other' (Red, Yellow and Green).

Triage system is used to determine the severity of the condition of patients, separating the stable patient from the severely ill and then prioritize available resources. NEMS utilizes the triage process to determine whether the patient's condition matches the threshold of an emergency for an ambulance to be dispatched.

A NEMS mission can be activated by dispatching an ambulance provided the condition of the patient in line with the severity criteria for Yellow and/or Red. The color code Green is ascribed when the patient's condition does not match the NEMS threshold for an emergency and the formation is shared with call center, for the operator to activate a mission and dispatch ambulance (s).

In this month's review, a total of **740** calls were received, out of which **641** led to a missions, and **4** of those were classified as other.

3.1.Figure 9: Time of the day of the Missions

The 'time of the day' is a measure of the period of the time within the day the call centre activates a 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 daily percentages for the month of August 2022.

Figure 9 displays a comparative percentage analysis for the months of July and August. In July, the percentage of Missions done in the **Afternoon hours increase were 36.9%, while at Night - 30.2%, with 32.9% - Morning**. For August , a significant number of missions were undertaken during morning hours, with **37.7%, while 35.3% were done at Afternoon and those that were done during the Night 27.0%.**

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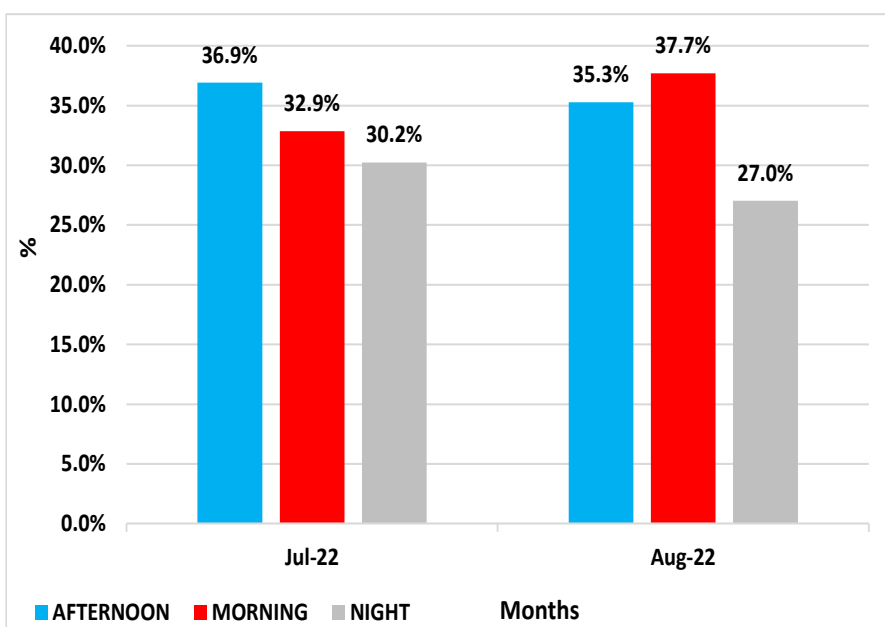
3.2.Figure 10: Comparative Analysis of NEMS Mission's complaints for the Previous month (April 2022) to Current month (June 2022)
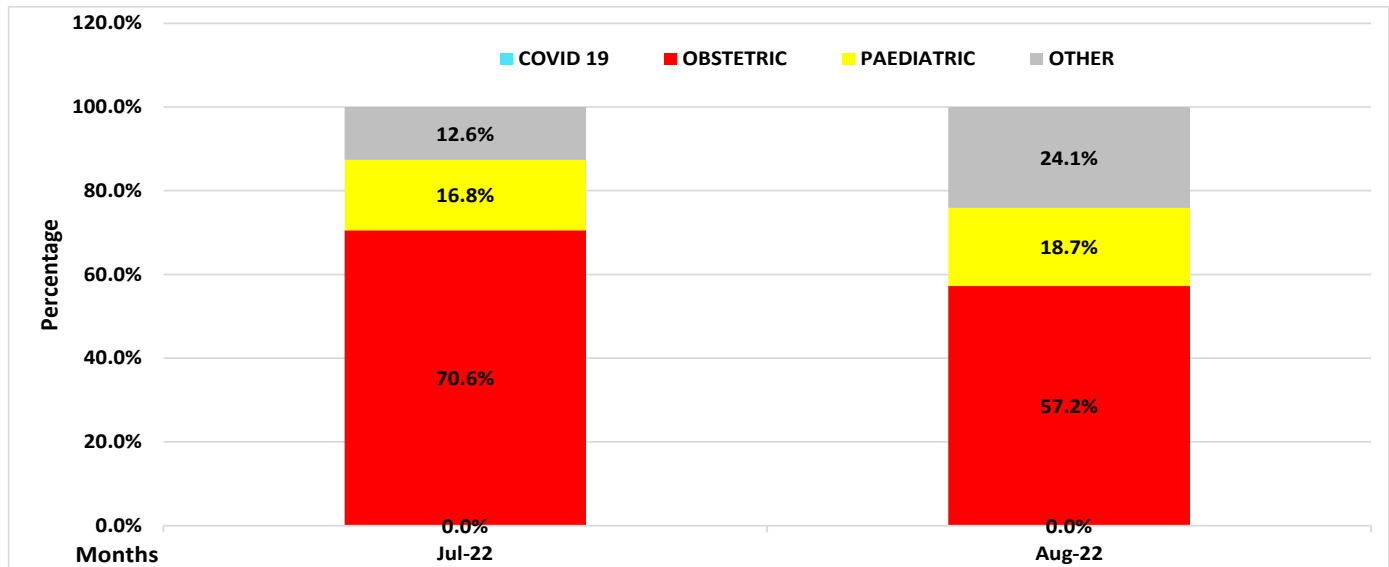
Figure 10 represents the major categories of complaints of the Missions comparing August **and July 2022** data. The data for COVID-19 Missions continues to be zero for both suspected and confirmed cases for the last eight months. It is visible from the data that Obstetric cases are in the majority of the missions transported to the various health facilities.

The indicator 'Other' is a combination of other complaints, such as Abdominal Pain, Animal Bite, Consciousness, Road Accident, Trauma and etc. Between the months of August **and July**, there is a –**11.5%** decrement in other cases. For Obstetric, there is 13.4% increment from the previous month, and for Paediatric a 1.9% decrease.

3.3.Figure 11: Typology of complaints that lead to Missions
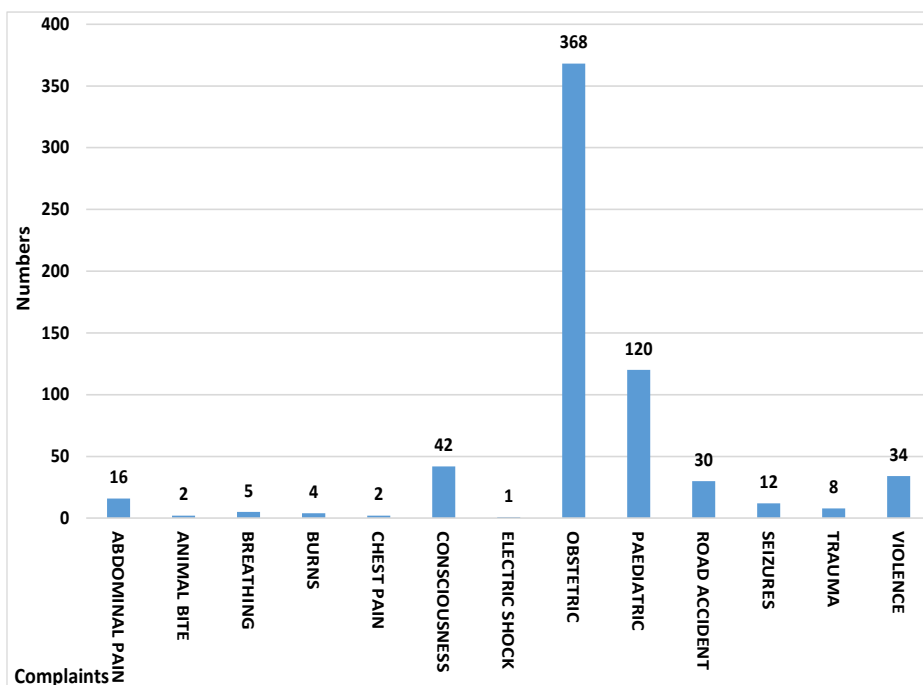
Figure 11 provides a detailed breakdown of the number of complaints received that are considered as missions.
It is evidently clear that obstetric (368) complaints were the most occurring, seconded by Paediatric (120), while Road Accident (30), Consciousness (42) and Seizures (12), while combining Trauma, Abdominal Pain, Breathing, Violence, Animal Bite and others account for (72) cases complaints received for the month under review.

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3.4.Figure 12: Trend of Missions complaints by day
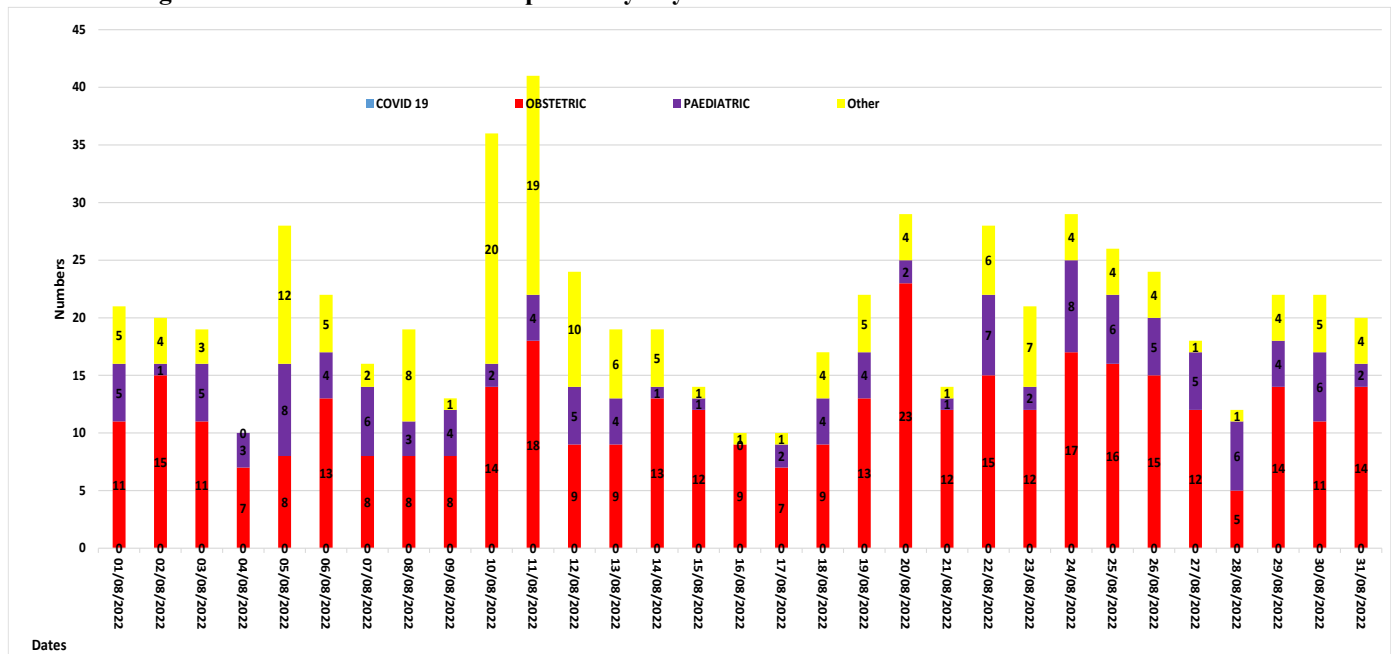
The bar chart displays the number of missions undertaken in the month of August 2022 on a daily basis, with a special attention to the various complaints. Obstetric cases appear to be the only complaint that was transition to a mission for almost every other day of the month, while an enormous number of the total missions done on the 11th.

3.5.Figure 13: Missions Complaints by District
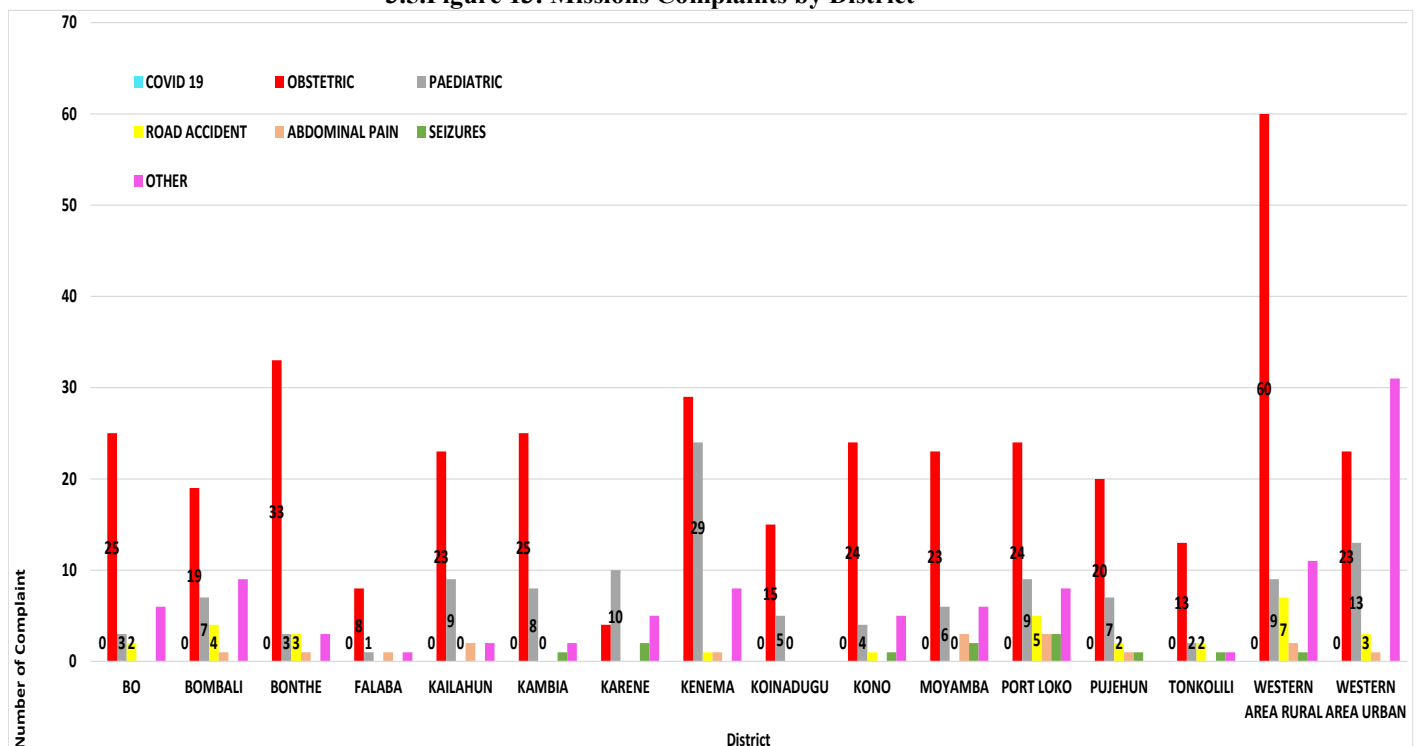
A breakdown on the number of complaints by the different districts nationwide. Every district in Sierra Leone reported obstetric, while the others complaint did not happen at every other district. Western Area Urban happens to be the district with the highest obstetric cases, and reported the highest number of missions overall.

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3.6.Figure 14: Number of Calls, Missions and Referrals Supported per Day
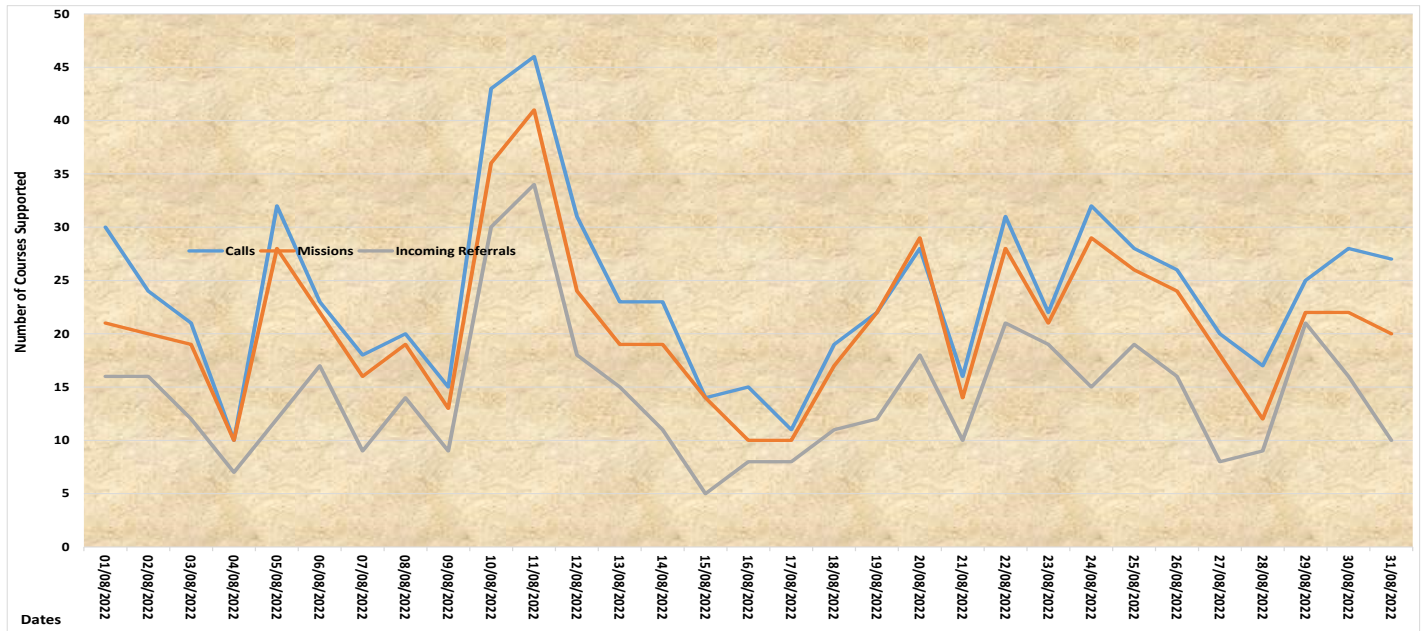
Figure 14 is a line chart that shows the number of Calls received, Missions carried out, and NEMS referrals managed per day. Throughout August, the indicators fluctuated. The average call were 23, Missions is 20 and referrals 14 for the month under review.

3.7.Figure 15: Outcome of the Missions
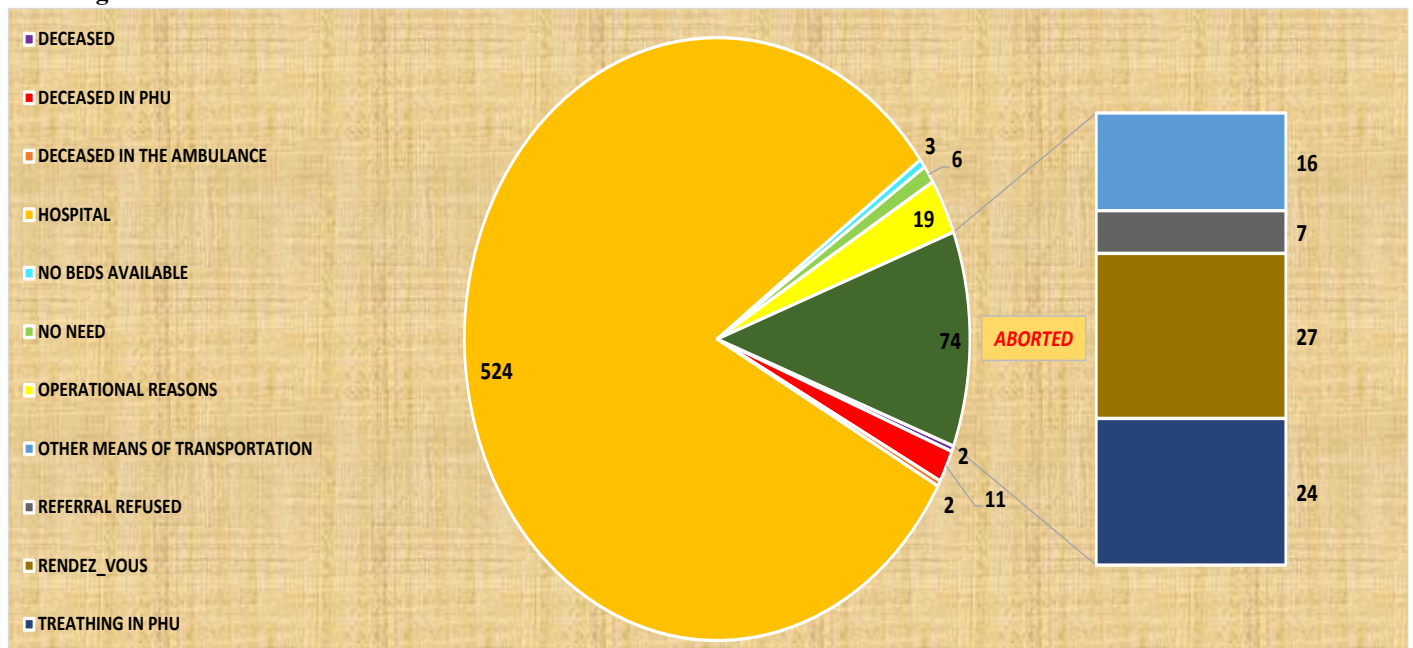
Figure 15 shows the outcome of missions carried out by NEMS in August 2022.

'Hospital' refers to mission lead referrals to a pre-identified health facility (Hospital).
Referencing the data displayed in the pie chart above, for August shows that (524) 81.2% of the missions lead to referrals to a pre-identified specialist health facility, compared to the July 2022 data that shows that 79.6% of the missions were referred to a pre-identified specialist health facility. This indicates a decrease of 1.6% in the referrals when the data for August 2022 is compared to that of July 2022.

3.8.Table 4: Missions Outcome and the Reasons why missions are aborted

INDICATORS	ABORTED	DECEASED	HOSPITAL	NO NEED	RENDEZ_VOUS	Grand Total	% of Aborted Cases
AMBULANCE CHANGED	4	0	0	0	0	4	5.2%
DECEASED	0	2	0	0	0	2	0.0%
DECEASED IN PHU	0	11	0	0	0	11	0.0%
DECEASED IN THE AMBULANCE	0	2	0	0	0	2	0.0%
HOSPITAL	0	0	524	0	0	524	0.0%
NO BEDS AVAILABLE	3	0	0	0	0	3	3.9%
NO NEED	4	0	0	2	0	6	5.2%
OPERATIONAL REASONS	19	0	0	0	0	19	24.7%
OTHER MEANS OF TRANSPORTATION	16	0	0	0	0	16	20.8%
REFERRAL REFUSED	7	0	0	0	0	7	9.1%
RENDEZ_VOUS	0	0	0	0	27	27	0.0%
TREATHING IN PHU	24	0	0	0	0	24	31.2%
Grand Total	77	15	524	2	27	645	100.0%
%	11.9%	2.3%	81.2%	0.3%	4.2%	100.0%	

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 August 2022 data shows that out of the 77 missions undertaken, 11.9% of those missions were cancelled before or after the arrival of the NEMS ambulance team at the target. For a mission to be cancelled, there are diverse reasons, and these could be any of the following:

♦ **'Ambulance Changed'** - the data reveals that out of 4 missions aborted, **4 (5.2%)** of the aborted missions were due to 'ambulance changed'.

♦ '**No Beds Available'** - with **3 (3.9%).**

♦ **'Deceased'** – this mission outcome refers to the death before the arrival of the NEMS ambulance team. August 2022 data shows that a total of **15 (2.3%)** death were reported and breakdown to; **2** of the mission were cancelled because the patient died. The **11** missions cancelled was due to the fact that the patients passed away in the PHU, while the other **2** died in the ambulance while in transit.

♦ **'Operational reasons'** - this type of mission outcome has strong correlation with the ambulance technical problems. The table above shows that **19 (24.7%)** of the aborted missions occurred because of technical problems with the ambulances in the month of August compared to July with **18.2%** of aborted missions relating to 'operational reasons'.

♦ **'Other Means of transportation'** – refers to a situation where the patients or families of the patient decides to employ other medium of transportation after requesting for an ambulance. The August data shows that 16 (20.8%) 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. The data shows that 24 (31.2%) of such cases were recorded for the month under review

♦ **'Other reasons' includes'** no-need' of the ambulance (4) and Refused referral 7.

♦ **'Rendezvous'** 27 (4.2%).

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Chapter– 4 BEDS

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4.0 National Hospital Bed capacity

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	42	54	59	72	61
Makeni Government Hospital	68	40	30	68	43	55
Mattru UBC Hospital	36	41	12	120	19	57
Connaught Government Hospital	235	39	0		28	41
Kailahun Government Hospital	38	43	37	54	42	57
Kambia Government Hospital	29	64	24	49	35	53
Kenema Government Hospital	123	47	41	60	63	42
Kabala Government Hospital	49	39	37	51	55	50
Koidu Government Hospital	74	89	36	94	57	122
Lungi Government Hospital	40	39	20	35	20	58
Moyamba Government Hospital	48	24	24	36	39	56
Ola During Children Hospital	0	0	0		131	56
Princess Christian Maternity Hospital	0	0	134	80	18	
Port Loko Government Hospital	65	37	35	44	20	94
Pujehun Government Hospital	42	56	41	75	35	68
Tonkolilli Government Hospital	49	31	40	49	72	69
34M Military Hospital	82	92	22	54	10	92
King Harman Road Government Hospital	4	45	17	32	15	62
Rokupa Government Hospital	19	70	21	63	26	96
Lumley Government Hospital	12	0	10	0	4	0
Macauley Government Hospital	12	51	10	43	4	42
Emergency Memorial Hospital	38	78	0	0	29	80
Total National Bed Capacity	1202	967	645	1068	837	1309

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. In July, nationwide, hospital facilities **2,831**, while in August it is this **2,684** useable beds, which is a dropped on the usual beds available to admit patients.

♦ There are currently no referrals for admission to 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 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 all the required services and has space for the various department listed in the table.

♦ **Adult Occupancy:** The data for the month under review indicates the adult bed capacity situation for the following health facilities. The data for August 2022 shows that no facility reported overcrowding. Koidu Government Hospital recorded 89% as the average bed occupancy status and that is the highest for Adults.

♦ **Maternity Occupancy**: the table shows that only one facility reported overcrowding which is Mattru UBC Hospital — 120%.

♦ **Paediatric Occupancy**: Koidu Government Hospitals reported 122% average bed capacity for August 2022, while all other facilities registered less than 100% indicating that they operated below full capacity.

4.1.Figure 15: National Percentage Bed Occupancy by Depart-
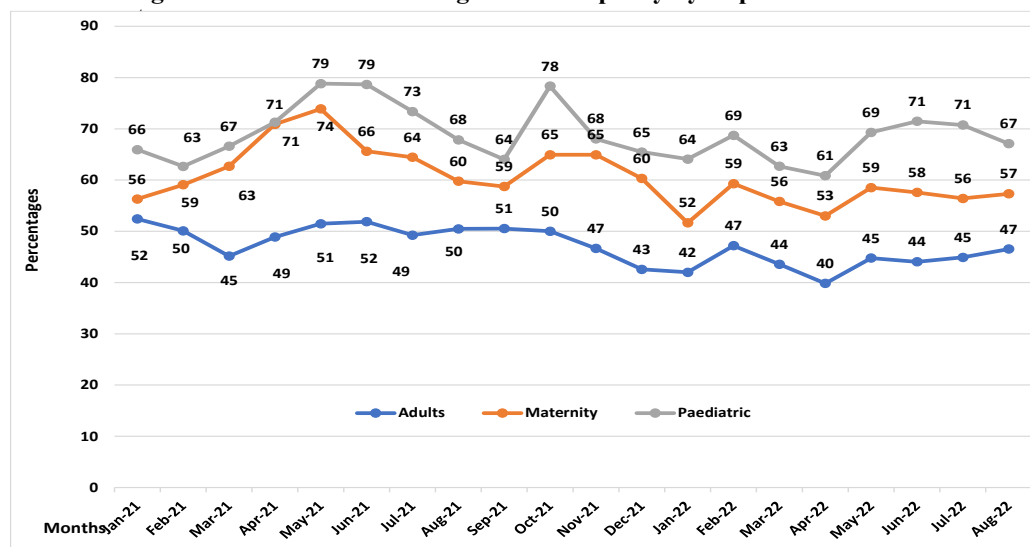
Figure 15 provides an average percentage bed occupancy by month. Health facilities have various subsectors that are merged to form the major listed departments on the line chart. Since the commencements of 2021, the average bed occupancy has been below 80% for the different departments and all the various health facilities. There is a slight decrease to 67% for the month of August.

Chapter– 5 Referrals

5.0.Table 7: Number of Incoming and Outgoing Referred pa-

From the diagram labelled table 7 adjacent this narrative shows the total of 1,138 referrals were supported by NEMS. In that number 1,020 were classified as incoming referrals, while 118 represented the total outgoing referred patients supported.

In August, Connaught recorded the highest number of incoming referred patients, while Lungi recorded the least number of referrals.

No:	Facility	Total Referrals	Incoming Referrals	Outgoing Referrals	NEMS Referrals
	National Referrals by District, August 2022				
	National Total	**1138**	**1020**	**118**	**445**
	Nationwide %	**100**	**90**	**10**	**39**
1	34M	65	50	15	4
2	Bo	30	25	5	30
3	Bombali	38	29	9	26
4	Bonthe	35	32	3	28
5	Connaught	129	118	11	48
6	Emergency	52	34	18	23
7	Kailahun	84	83	1	23
8	Kambia	34	34	0	31
9	Kenema	104	97	7	41
10	King Harman Road	10	7	3	1
11	Koinadugu	39	32	7	22
12	Kono	21	19	2	20
13	Lumley	12	4	8	2
14	Lungi	7	7	0	7
15	Macauley Street	8	3	5	0
16	Moyamba	37	34	3	13
17	ODCH	89	83	6	4
18	PCMH	97	96	1	51
19	Port Loko	71	65	6	33
20	Pujehun	116	116	0	23
21	Rokupa	13	6	7	13
22	Tonkolili	47	46	1	2

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5.1. 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
385	37	3	23	516	40	1	0	7	0	1012
38	4	0	2	51	4	0	0	1	0	100
49	0	0	0	0	0	0	0	0	0	49
12	0	0	0	13	0	0	0	0	0	25
12	0	0	0	16	1	0	0	0	0	29
15	1	0	0	15	1	0	0	0	0	32
15	1	0	2	65	35	0	0	0	0	118
23	2	0	0	5	0	0	0	4	0	34
27	2	1	1	52	0	0	0	0	0	83
13	0	0	0	20	0	1	0	0	0	34
11	5	0	7	74	0	0	0	0	0	97
1	1	0	0	4	1	0	0	0	0	7
20	1	0	0	8	0	0	0	0	0	29
19	0	0	0	0	0	0	0	0	0	19
1	0	0	0	1	0	0	0	2	0	4
0	0	0	0	7	0	0	0	0	0	7
0	0	0	0	3	0	0	0	0	0	3
27	2	1	0	3	0	0	0	0	0	33
40	5	0	4	33	1	0	0	0	0	83
18	3	0	0	75	0	0	0	0	0	96
32	8	1	8	13	0	0	0	1	0	63
41	4	0	1	69	0	0	0	0	0	115
0	0	0	0	5	1	0	0	0	0	6
9	2	0	0	35	0	0	0	0	0	46

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 (516), while out of that 7 were unable to admit, 37 of those were reported dead. 385 of the total patients were reported to still be in the various facilities receiving care.

5.2. Table 9: Number of Incoming Hospital Referrals supported by Cate-

Facility	Lactating	Non-FHCI	Pregnant	Under 5	EVD Survivor	Yes - other	Total
34M	0	42	6	0	0	2	50
Bo	0	3	17	5	0	0	25
Bombali	0	6	13	10	0	0	29
Bonthe	1	5	23	3	0	0	32
Connaught	4	64	0	50	0	0	118
Emergency	0	27	0	7	0	0	34
Kailahun	4	9	47	23	0	0	83
Kambia	1	2	24	7	0	0	34
Kenema	8	19	50	20	0	0	97
King Harman Road	0	0	1	6	0	0	7
Koinadugu	0	3	20	8	0	0	31
Kono	0	3	13	3	0	0	19
Lumley	0	1	3	0	0	0	4
Lungi	0	0	5	2	0	0	7
Macauley Street	0	0	0	2	0	1	3
Moyamba	0	2	18	14	0	0	34
ODCH	0	14	0	69	0	0	83
PCMH	5	0	91	0	0	0	96
Port Loko	0	18	22	25	0	0	65
Pujehun	2	9	47	57	0	0	115
Rokupa	0	1	4	1	0	0	6
Tonkolili	0	0	38	8	0	0	46
Total	25	228	442	320	0	3	1018

Table 9 explains the categories of incoming referred patients at the various health facilities nationwide for the month of August. EVD survivors have dropped significantly and continued to be zero. The various facilities supported a total 1,018 incoming referred patients.
All active hospitals have recorded for pregnant women, with the exception of ODCH that do not have records for the month of August that related to pregnant women.

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5.3.Table 10: Outcome of Referred Patients by Free Health Care Catego-

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	0	0	0	20	0	0	0	0	0	25
Non-FHCI	105	7	1	7	97	5	1	0	5	0	228
Pregnant	162	5	0	5	263	2	0	0	2	0	439
Under 5	112	25	2	11	135	33	0	0	0	0	318
EVD Survivor	0	0	0	0	0	0	0	0	0	0	0
Yes - other	1	0	0	0	1	0	0	0	0	0	2
Total	385	37	3	23	516	40	1	0	7	0	1012

The August 2022 data shows 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. Under 5 continues to report the highest number of death.

5.4.Table 11: Referral by Health Facilities (Hospitals)

REFERRAL HOSPITAL	Jun-22	Jul-22	Aug-22
Tertiary Facility Total	73	58	109
Connaught Hospital	16	9	44
Ola During Children's Hospital	-	3	7
Princess Christian Maternity Hospital	57	46	58
Regional and District Hospital Total	191	179	291
Bo Government Hospital	22	23	28
Bonthe Government Hospital	-	1	-
Kabala Government Hospital	27	20	23
Kailahun Government Hospital	9	7	22
Kambia Government Hospital	20	25	31
Kenema Government Hospital	27	12	45
Koidu Government Hospital	28	22	24
Lungi Government Hospital	2	-	6
Magburaka Government Hospital	2	8	8
Makeni Government Hospital	16	13	28
Moyamba Government Hospital	11	7	18
Port Loko Government Hospital	4	4	31
Pujehun Government Hospital	22	37	25
Segbwema Government Hospital	1	0	2
Other Government Facility	18	15	25
Kingharman Road Government Hospital	4	-	1
Other Government facilities (i.e.Lumley)	1	-	-
Rokupa Government Hospital	11	12	19
34 MILITARY HOSPITAL	2	3	5
Private/NGO facility Total	43	34	90
Emergency	4	1	22
Kamakwie	-	7	8
Masanga	-	4	7
Mattru UBC Hospital	26	13	27
MSF Hospital – Kenema	1	4	8
LIFE CARE HOSPITAL	-	1	4
YELE	4	2	6
CHOITHRAM MEMORIAL HOSPITAL	2	1	-
CHINESE HOSPITAL	6	-	2
LION HEART HOSPITAL YELEH	-	-	-
AT HOME	-	1	0
SAROWLLA	-	-	1
TREASURE HOSPT. KING HARMAN	-	-	2
MAMA SIA LIFE SAVING HOSPITAL - BO	-	-	2
KINGTOM POLICE HOSPITAL	-	-	1
COVID-19 CTC/CCC/ISOLATION	-	-	-
RENDEZ_VOUS	9	9	28

Table 11 shows the NEMS general monthly referrals to the main hospitals for the month of August. The table compares the data between June, July and August 2022. You can see that for the month under review (August), the other facilities accounts for the least recipient of referrals (25) as follows:

♦ King Harman Road (1), Lumley (0), Rokupa (19) and 34 Military (5) compared to July with a total receipt of 15. This indicates a significant increase in the following months.

♦ The Regional and District Hospitals received 291 for August, a increase from the previous month. This indicates a increment in the number of patients referred to the Regional and District Hospitals.

♦ Furthermore, the table adjacent to this narratives displays the number of patients referred to COVID-19 Treatment Centres and Isolation Units, with a drop to 0 on the number of confirmed cases for both April, May, June, July and August 2022.

♦ The table shows that the Rendezvous reported a overwhelming increase 28.

5.5.1Figure 17: Number of Referred Patients by Arrival

The graph labelled **figure 17** provides a detailed analysis on patients' arrival method at the various hospital where referral coordinators are attached. The August 2022 data demonstrates that the most common means of arrival at hospital is through the utilization of other means.

Number of Incoming Referred Patients Supported by Means of Arrival, Oct 2017 to August 2022
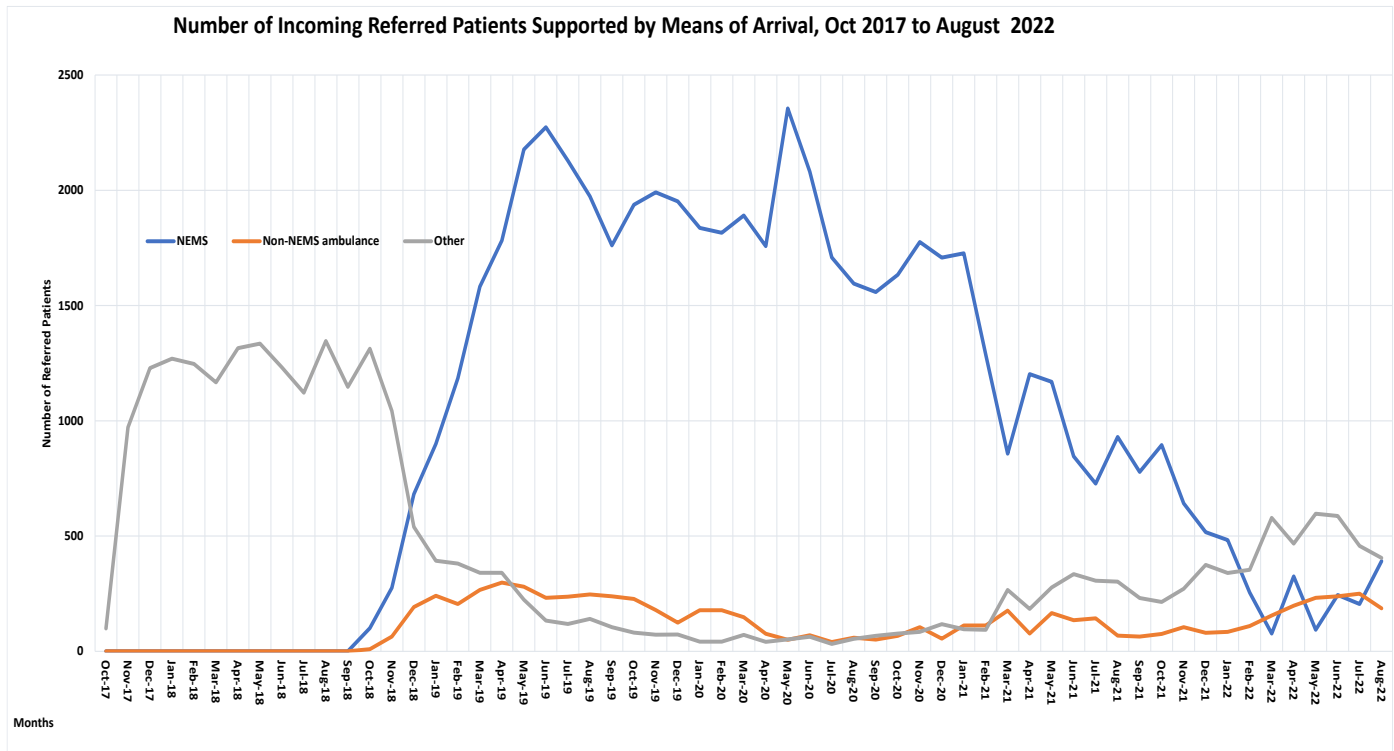
5.2.Table 12: Arrival Methods of the Referrals by Hospital
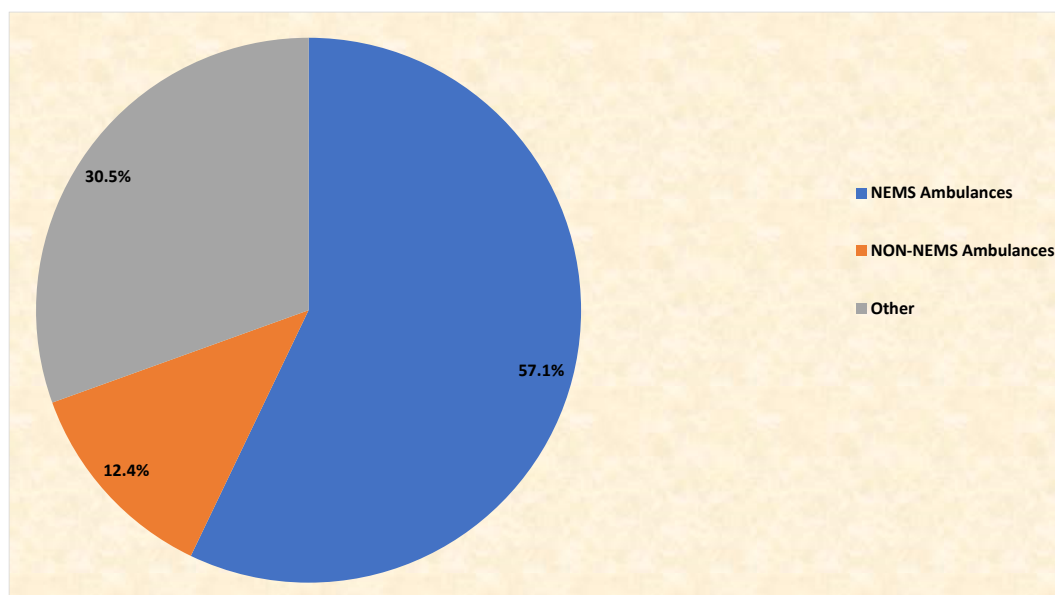
The pie chart labelled figure 12 above, exemplifies the methods of arrival provided by NEMS, Non-NEMS ambulances and other means to the various health facilities nationwide for the month of August 2022. The data as displayed in the pie chart above shows **57.1%** of the total number of referred cases received by the respective hospitals were transported by NEMS, while **30.5%** of the total referred cases were transported by 'other means' and **12.4%** of the total number of referred cases that used Non-NEMS ambulances 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	**34.0%**	**25.0%**	**41.0%**
34 Military Hospital	**6.0%**	**40.0%**	**54.0%**
Connaught Hospital	**34.7%**	**46.6%**	**18.6%**
Kingharman Road Govt. Hospital	**14.3%**	**71.4%**	**14.3%**
Lumley Govt. Hospital	**25.0%**	**0.0%**	**75.0%**
Ola During Children's Hospital	**4.8%**	**16.9%**	**78.3%**
Princess Christian Maternity Hospital	**53.1%**	**0.0%**	**46.9%**
Rokupa Govt. Hospital	**100.0%**	**0.0%**	**0.0%**
Private/NGO facility Total	**78.1%**	**0.0%**	**21.9%**
Matru UBC Hospital	**78.1%**	**0.0%**	**21.9%**
Regional/District Hospital	**59.2%**	**12.2%**	**28.6%**
Kabala Govt. Hospital	**65.6%**	**3.1%**	**31.3%**
Bo Govt. Hospital	**100.0%**	**0.0%**	**0.0%**
Kailahun Govt. Hospital	**27.7%**	**0.0%**	**72.3%**
Kambia Govt. Hospital	**91.2%**	**0.0%**	**8.8%**
Kenema Govt. Hospital	**42.3%**	**26.8%**	**30.9%**
Koidu Govt. Hospital	**100.0%**	**0.0%**	**0.0%**
Lungi Govt. Hospital	**100.0%**	**0.0%**	**0.0%**
Magburaka Govt. Hospital	**4.3%**	**95.7%**	**0.0%**
Makeni Govt. Hospital	**82.8%**	**0.0%**	**17.2%**
Moyamba Govt. Hospital	**35.3%**	**14.7%**	**50.0%**
Port Loko Govt. Hospital	**41.5%**	**3.1%**	**55.4%**
Pujehun Govt. Hospital	**19.8%**	**2.6%**	**77.6%**
Grand Total	**57.1%**	**12.4%**	**30.5%**

The tabular representation labelled **table-12** provides a simplified display of patients' arrival methods at the secondary and tertiary hospital nationwide for the month of August 2022. For tertiary hospitals, there has been an increase on the percentage of arrival method supported by other means. It is only Rokupa Hospital that reported 100% NEMS arrival method. It is essential to note that King Harman Road Government Hospital reported 71.4% of Non-NEMS referrals.

78.1% of the Missions to Mattru used NEMS ambulance to transport patients to their facility, while the remaining 21.9% used other means.

For Regional/District hospital, it is only Bo and Koidu Government Hospitals that used 100% NEMS ambulances for the month of August 2022, while the others health facilities reported receiving less than 95% of NEMS referrals.

5.2. Table 13: Time Taken to Triage

Time Taken to Triage	BO	BOMBALI	BONTHE	FALABA	KAILAHUN	KAMBIA	KENEMA	KARENE	KOINADUGU	KONO	MOYAMBA	PORT LOKO	PUJEHUN	TONKOLILI	WESTERN AREA RURAL	WESTERN AREA URBAN	Grand Total August 2022	Percentage August 2022	Grand Total July 2022	Percentage July 2022
00:00:00 to 00:05:00	10	18	8	9	18	9	21	6	4	13	10	16	14	4	25	24	209	28.3%	127	31.2%
00:05:01 to 00:10:00	16	16	6	3	17	24	32	8	10	7	9	14	15	4	33	37	251	34.0%	146	35.9%
00:10:01 to 00:15:00	4	9	4	3	5	6	7	2	4	5	4	10	4	2	10	17	96	13.0%	55	13.5%
00:15:01 to 00:20:00	1	4	3	2	3	2	4	1	1	2	3	4	3	2	3	8	46	6.2%	24	5.9%
00:20:00 to 00:30:59	1	1	1	0	1	1	2	3	0	10	2	2	1	3	6	9	43	5.8%	17	4.2%
00:31:00 to 01:59:59	6	5	15	1	1	0	3	2	3	2	1	1	3	2	9	11	65	8.8%	25	6.1%
02:00:00 to 02:59:59	0	0	4	0	0	0	0	0	0	0	1	0	1	1	0	1	8	1.1%	6	1.5%
03:00:00 to 03:59:59	0	1	1	0	0	0	0	0	0	0	1	9	2	0	1	1	16	2.2%	0	0.0%
04:00:00 to 04:59:59	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0.3%	1	0.2%
05:00:00 to 05:59:59	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1%	0	0.0%
06:00:00 to 06:59:59	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	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%	1	0.2%
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	0.0%
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%
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%
11:00:00 to 11:59:59	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0.1%	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%
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%
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%
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%
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%
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%	4	1.0%
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%
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%
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%	1	0.2%
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%
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%
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%
Grand Total/District	39	54	42	18	45	42	69	22	22	40	32	57	43	18	88	108	739	100.0%	407	100.0%

The table above delineates the time taken by Call Centre to triage a patient when a call is received. In July 2022, call centre took less than 15 minutes to triage **75.2%** of the total Calls received, while in June 2022, it took less than 15 minutes to triage **80.6%** of the total calls supported, with a difference of **5.4%** increment. The calls data shows that **24.8%** 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 August. In comparison with July , which showed a total of **19.4%** of the Calls supported took more than 15 minutes to triage a patient and make a decision to send an ambulance.

5.2.1. 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	TONKOLILI	WESTERN AREA RURAL	WESTERN AREA URBAN	Grand Total August 2022	Percentage August 2022	Grand Total July 2022	Percentage July 2022
00:00:00 to 00:30:59	12	21	23	8	17	26	12	37	9	16	15	30	20	7	45	33	331	62.1%	176	60.3%
00:31:00 to 01:59:59	13	11	10	2	8	4	4	12	4	16	13	8	8	6	28	27	174	32.6%	98	33.6%
02:00:00 to 02:59:59	0	2	0	0	1	0	0	2	1	1	0	1	1	0	2	2	13	2.4%	10	3.4%
03:00:00 to 03:59:59	0	1	0	0	0	0	0	2	2	0	0	1	0	0	2	0	8	1.5%	6	2.1%
04:00:00 to 04:59:59	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0.4%	1	0.3%
05:00:00 to 05:59:59	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0.6%	1	0.3%
06:00:00 to 06:59:59	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0.2%	0	0.0%
07:00:00 to 07:59:59	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0.2%	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	0.0%
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%
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%
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%
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%
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%
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%
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%
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%
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%
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%
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%
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%
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%
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%
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%
Grand Total/District	26	35	35	10	28	30	16	53	16	33	29	40	29	13	78	62	533	100.0%	292	100.0%

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), a health facility or private homes is shown in the table above. In August 2022, **97.2%** of the missions undertaken took less than 3-hour to reach the targeted PHU, while in July 2022, **97.3%** of the total missions supported by NEMS took less than 3-hour to get to the particular health facility that requested for an ambulance. The data further shows that **0.1%** of the missions in August 2022 took more than 2-hours to locate the respective PHUs.

5.2.2.Table 14: Time Taken to Reach the Hospital

Time Taken to Reach the Hospital	BO	BOMBALI	BONTHE	KAILAHUN	KAMBIA	KENEMA	KOINADUGU	KARENE	KONO	MOYAMBA	PORT LOKO	PUJEHUN	TONKOLILI	WESTERN AREA RURAL	WESTERN AREA URBAN	Grand Total August 2022	Percentage August 2022	Grand Total July 2022	Percentage July 2022
00:00:00 to 00:30:59	5	8	13	6	14	13	6	8	10	9	10	10	1	20	12	145	27.6%	176	60.3%
00:31:00 to 01:59:59	14	22	14	17	12	32	7	7	19	17	28	16	13	45	42	305	58.1%	98	33.6%
02:00:00 to 02:59:59	0	4	3	3	1	7	1	0	1	4	1	1	3	6	8	43	8.2%	10	3.4%
03:00:00 to 03:59:59	1	0	0	1	2	3	0	0	0	0	0	0	0	1	1	9	1.7%	6	2.1%
04:00:00 to 04:59:59	3	1	2	1	0	0	0	0	0	2	0	0	0	2	0	11	2.1%	1	0.3%
05:00:00 to 05:59:59	1	0	2	0	0	1	0	0	1	0	0	0	0	0	0	5	1.0%	1	0.3%
06:00:00 to 06:59:59	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0.2%	0	0.0%
07:00:00 to 07:59:59	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0.2%	0	0.0%
08:00:00 to 08:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	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%	0	0.0%
10:00:00 to 10:59:59	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0.2%	0	0.0%
11:00:00 to 11:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.2%	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%
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%
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	1	0	0	0	0	0	0	0	0	1	0.2%	0	0.0%
17:00:00 to 17:59:59	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0.2%	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%
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%
	24	35	34	29	30	57	15	15	31	32	39	28	17	75	64	525	100.0%	292	100.0%

Immediately after the collecting the patient from the PHU, the NEMS ambulance team then travel with the patients to a specific or selected 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 August 2022, **93.9%** of the missions supported took less than 3 hours to reach the required health facilities, while in July, we saw a total of **97.3%** of the number of missions supported by NEMS within 3-hour to reach their various health facilities, which decreased by **3.4%** to the previous month.

**Missions by Ambulances:**   **Figure 19: Km Travelled by District**
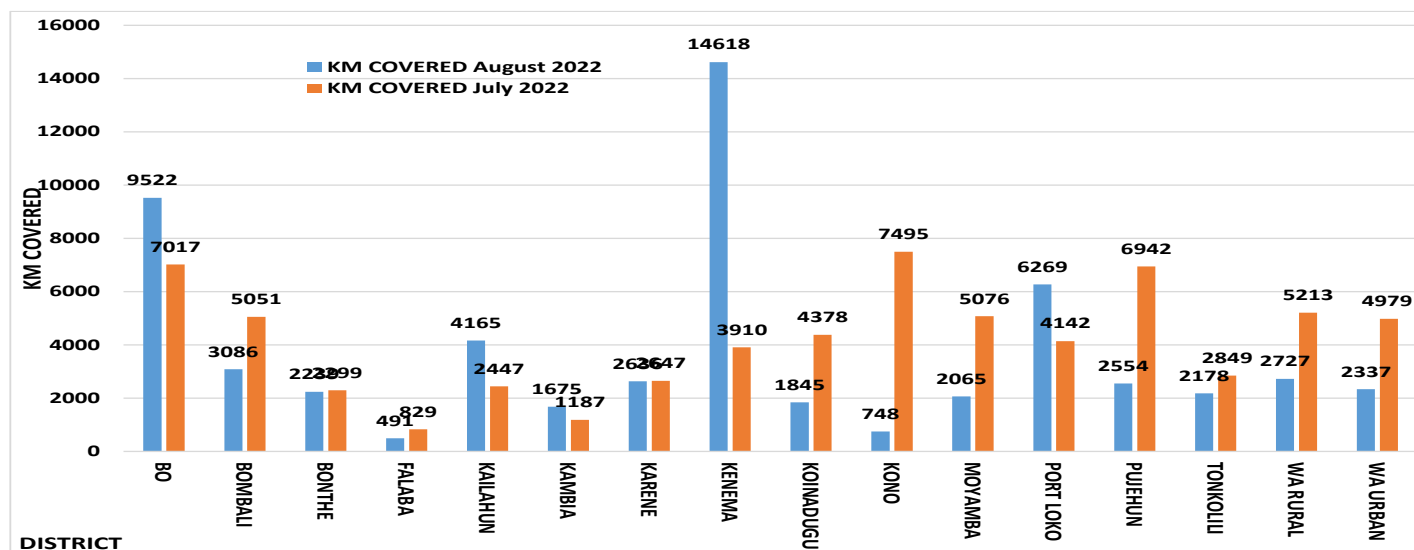
The District Ambulance Supervisors (DAS) provides a Monthly Kilometre Reports showed that, In August 2022 data, a cumulative **59,155 km** was travelled, when put in contrast with the July 2022—**20,900** Km indicating a significant rise by **66,461 km** in the kilometres travelled by NEMS ambulances 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 July and August 2022.

Assessment of the district data showed that, there was a general rise in the August 2022 figure compared to the July 2022 figure for every districts in Sierra Leone.

Figure 20: Average Km/Mission
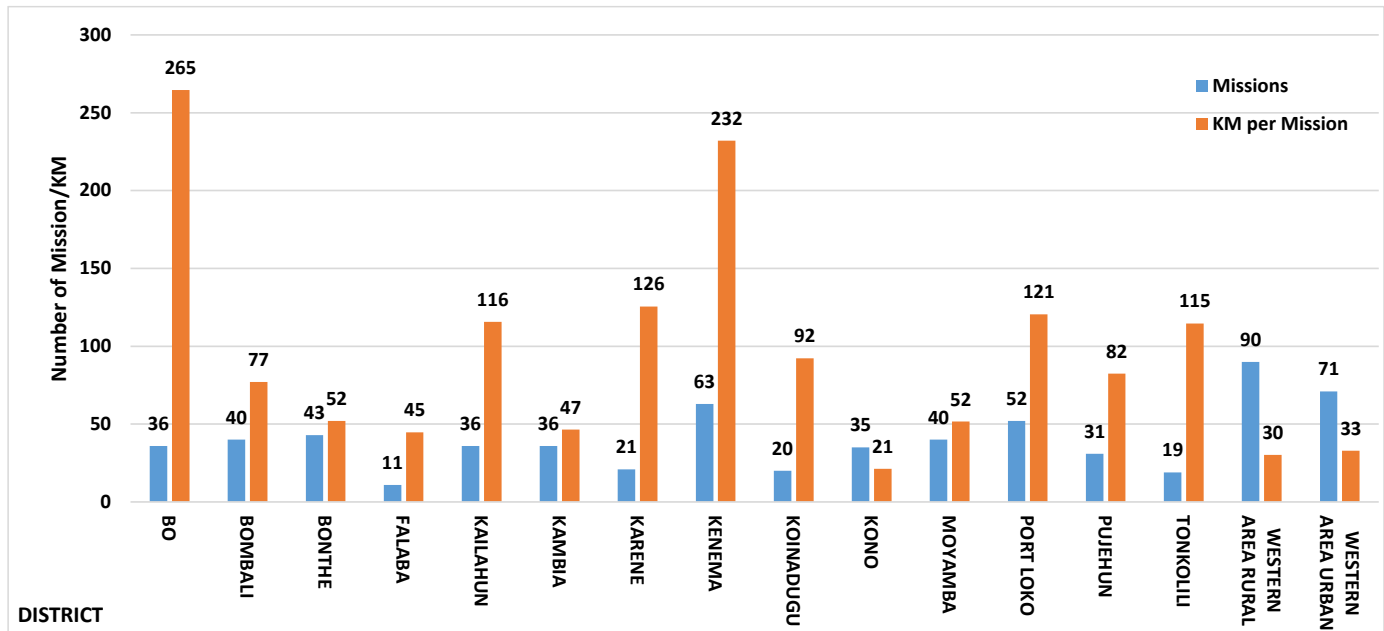
The Bar chart labelled figure 20 compares the average KM covered for a mission by district for August 2022. For the month under review, the district with the highest average KM per mission is Bo with 36 missions, while the ambulances covered a significant 265 Kilometre per mission (km/mission). The other districts that experienced significant increases include Kenema by (232) km/mission, Kailahun by 116 km/mission and Karene by 126 km/mission. It is essential to understand that, other district NEMS ambulances transported the missions recorded by Falaba and Karene. 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).