MINISTRY OF HEALTH
AND SANITATION

NEMS
National Emergency
Medical Service

49 J Spur rd, Freetown,
Sierra Leone

NEMS OPERATIONAL ACTIVITIES

MONTHLY REPORT: OCTOBER 2022

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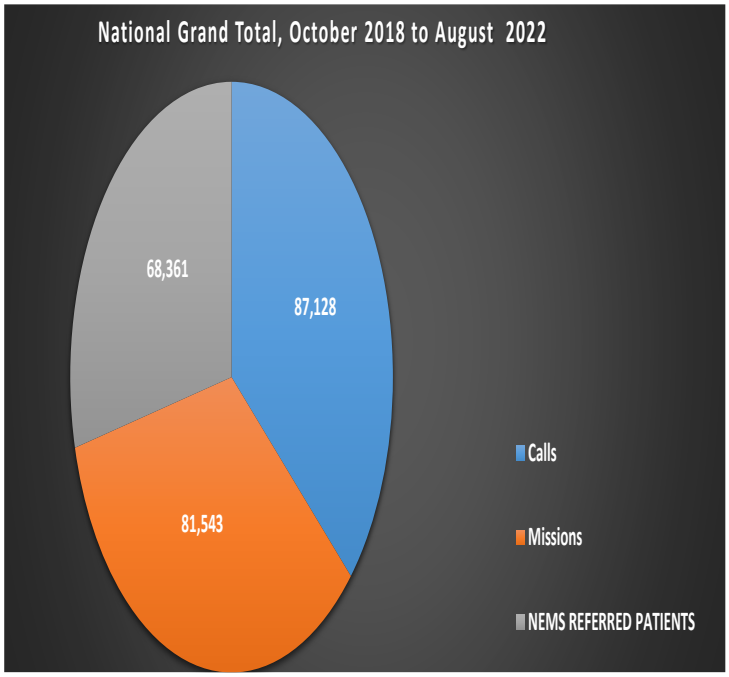
Brief description of NEMS Operational Services

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

The data collected from the NEMS database and the NEMS Referral Coordinators' database from ***15th October 2018 to the 31st October 2022***, indicate that NEMS has accomplished over four years (4yrs) of operations. The following key indicators have been delivered as follows:

Cumulative total of **87,128 Calls, 81,543 Missions and 68,361 NEMS referrals** only.



Distributions of the Ambulances

NEMS currently has **one hundred (100) ambulances** deployed to operate nationwide. Each district has one ambulance allocated to the District Ambulance Supervisor (DAS) to serve as backups in case an ambulance becomes inoperative because serious mechanical issues, which summed to the total reported figure of 100 ambulances. In August,

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 ***October***, NEMS operated with below 90% of the ambulances nation-wide; this includes the vehicles allocated to the DASs. They have travelled a cumulative total of **6,312,791 km**.

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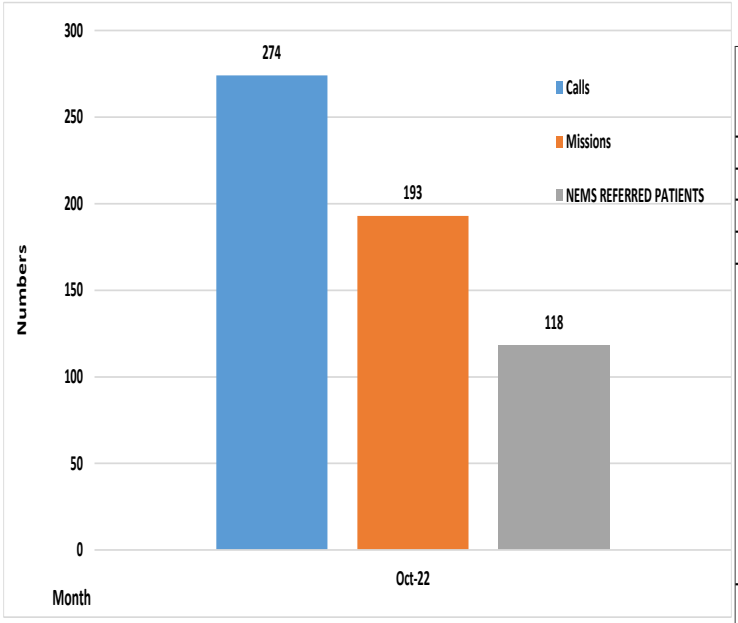
1. Overview of the Calls, Missions and Referrals

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



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

The graph shows that for the period under review, **274 Calls** were received, **193 Missions** and **118 Referrals** were supported by NEMS.

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

Year	Months	CALLS	MISSIONS	NEMS REFERRED PATIENTS
2018	15th Oct - 31st Dec	1371	1357	1094
2019	Jan-Dec	28040	27036	23792
2020	Jan-Dec	32643	31692	26510
2021	Jan-Dec	19884	17482	14461
2022	Jan-22	942	686	483
	Feb-22	639	435	255
	Mar-22	188	125	77
	Apr-22	599	463	325
	May-22	297	190	93
	Jun-22	505	400	244
	Jul-22	420	363	205
	Aug-22	740	645	392
	Sep-22	586	476	312
	Oct-22	274	193	118
Total NEMS Project		86854	81350	68243

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, August and ***September*** 2022. The cumulative grand total for **Calls 87,128, 81,543 Missions and 68,361 NEMS referrals.**

1.3.Table 2: NEMS Daily Activities Averages

Daily Operations	Calls	Missions	NEMS REFERRED PATIENTS
Oct-22	9	6	4

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

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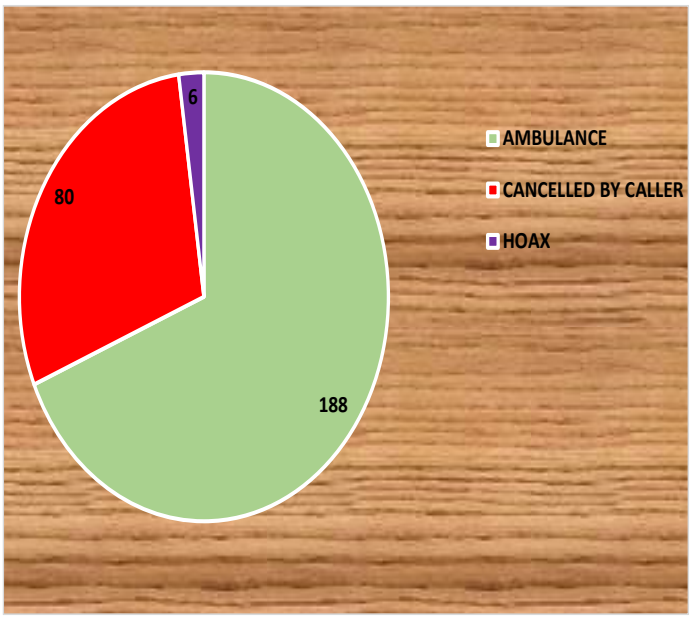
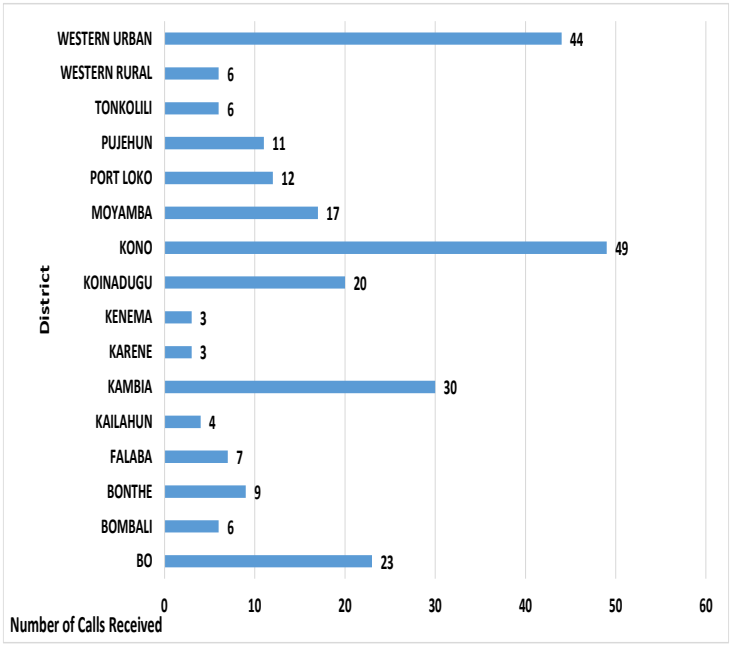
Calls Analysis

Figure 3: **Classifications of Calls**



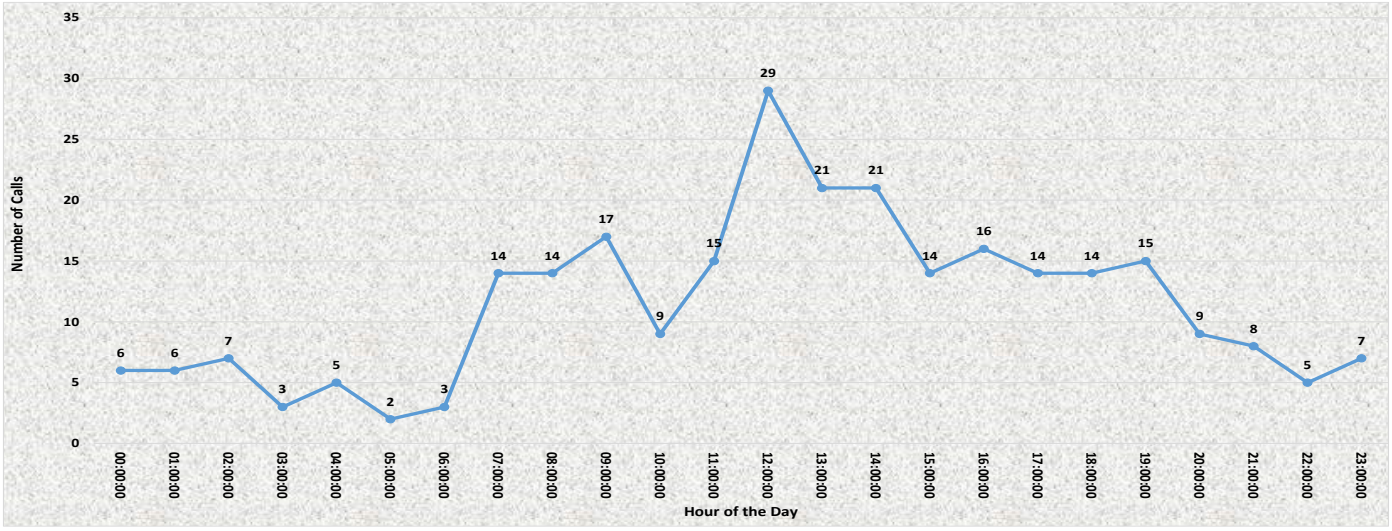
The pie chart labelled F**igure 2** outlines the classification of Calls as they were received at the NEMS Call Center. The call center operators received a cumulative total of 274 Calls. 188 of the cumulative total calls representing (68.6%) required NEMS ambulance. 80 calls representing (29.2%) were cancelled by the callers due to factors that are determined by the various callers. six (6) Calls did not call for ambulance.

2.1.Figure 3: **Breakdown of Calls by District**



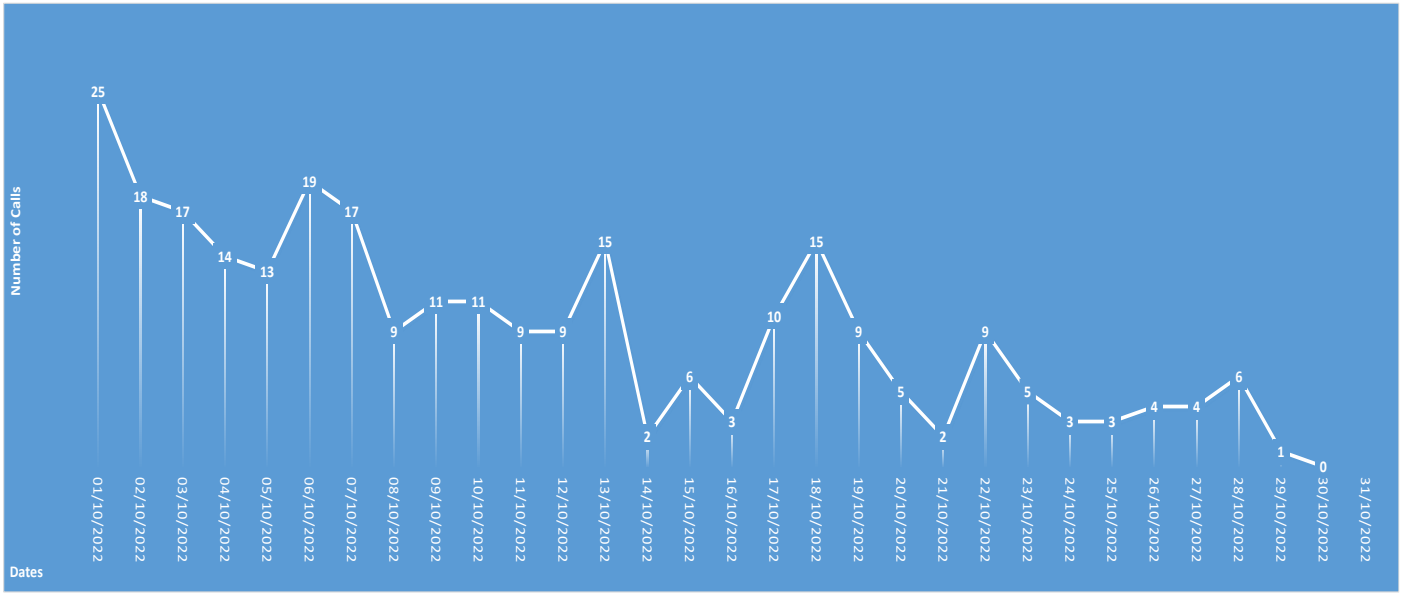
F**igure 3** shows the breakdown of Calls by district. Kono reported the highest number of calls—49 and seconded by Western Area Urban with 44 number of calls received. The least number of Calls were from Kenema and Karene recorded 3 each.

2.2.Figure 4: **Number of Calls per Hour**



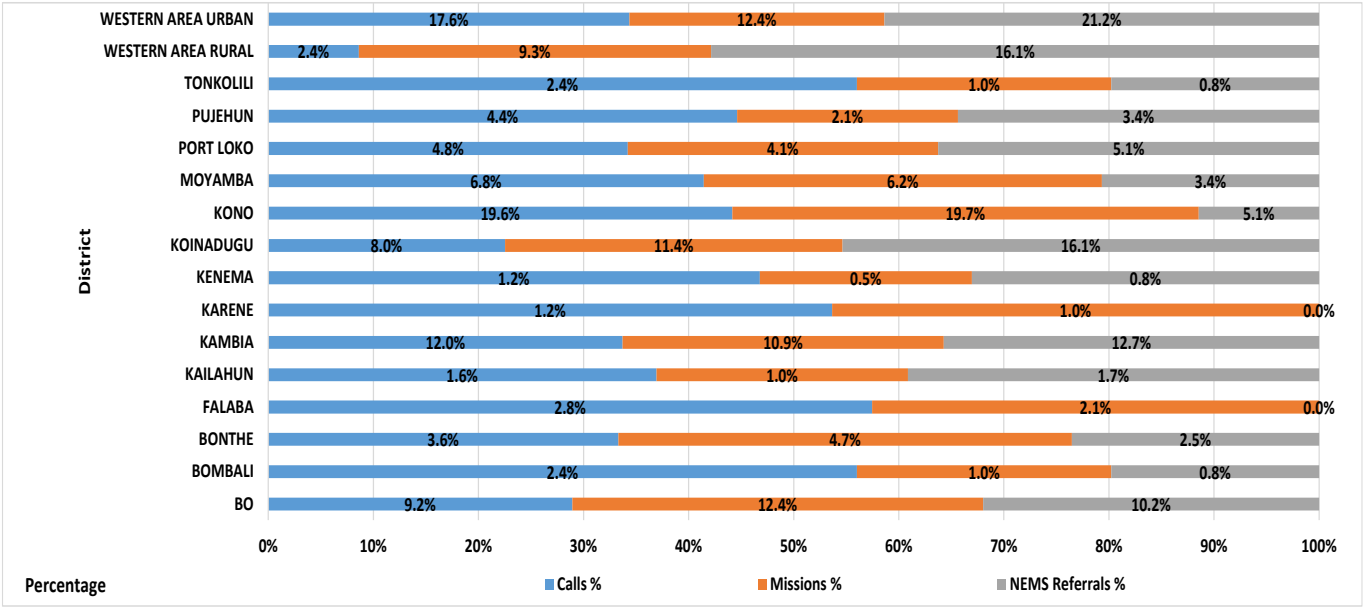
F**igure 4,** shows an oscillating line graph that describes the number of calls received at NEMS operation center on an hourly base. The chart above this narrative shows that, there was a surge in the number of calls received between the hours of 06:00 hours and 19:00hrs GMT, irrespective of its fluctuation. The operation center recorded its highest number of calls at around 12:00hrs 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 **Figure 6,** demonstrates the trend of incoming calls to the NEMS call centre per day.
The least number of Calls were recorded on the 30th and 31st of *October* with zero calls, while the highest number of Calls were registered on the 1st with 25 number calls. The chart fluctuated throughout the month of *October 2022*.

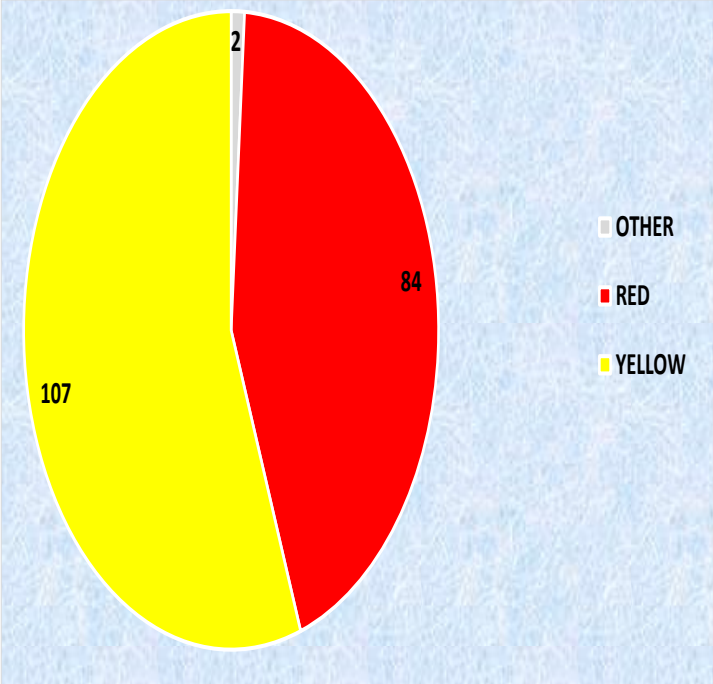
2.4.Figure 7: Calls, Missions, Referrals by District



The bar chart above demonstrates the percentage of Calls, Missions and NEMS Referrals supported by NEMS per district in the month of October. For Calls , Kono recorded the highest percentage with 19.6%, seconded by Western Area Urban with 17.6%, with the least calls from Kailahun. For Missions, Kono continues to register the highest number of Missions, seconded by Urban. Kenema reported the lowest Missions for this period. Referrals are a reflection of the number of Missions that were completed. 21.2% of the Referrals were from Western Area Urban. Rural and Koinadugu district recorded the highest number of referrals. Karene and Falaba reported zero, which is due to the fact that the referral system is not capturing them as separate district.

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 which call could meet threshold for a mission to be undertaken. The severity of the condition are segmented into three major categories that are color– coded as (Red, Yellow, Green and 'Others').

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.

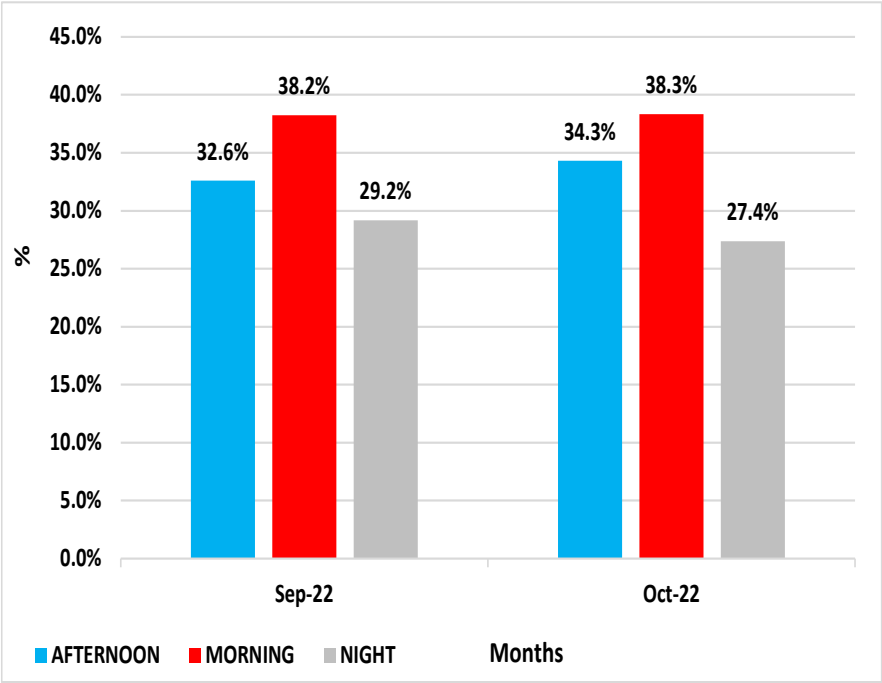
A NEMS mission can be activated by dispatching an ambulance provided the condition of the patient matches the emergency color code Yellow and/or Red. The color code Green is ascribed when the patient's condition does not match the NEMS threshold for an emergency situation that will requires the NEMS operator to activate a mission and dispatch ambulance (s).

In this month's review, a total of **274** calls were received, out of which **191** led to a missions, and **2** of those were classified as other and green, which means an ambulance is not required.

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 *October* 2022.

Figure 9 displays a comparative percentage analysis for the months of *October* and September . In September, the percentage of Missions done in the **Afternoon hours increase were 32.6%, while at Night - 29.2%, with 38.2% - Morning**. For *October*, a significant number of missions were undertaken during morning hours, with **38.3%, while 34.3% were done at Afternoon and those that were done during the Night 27.4%.**



3.2.Figure 10: Comparative Analysis of NEMS Mission's complaints

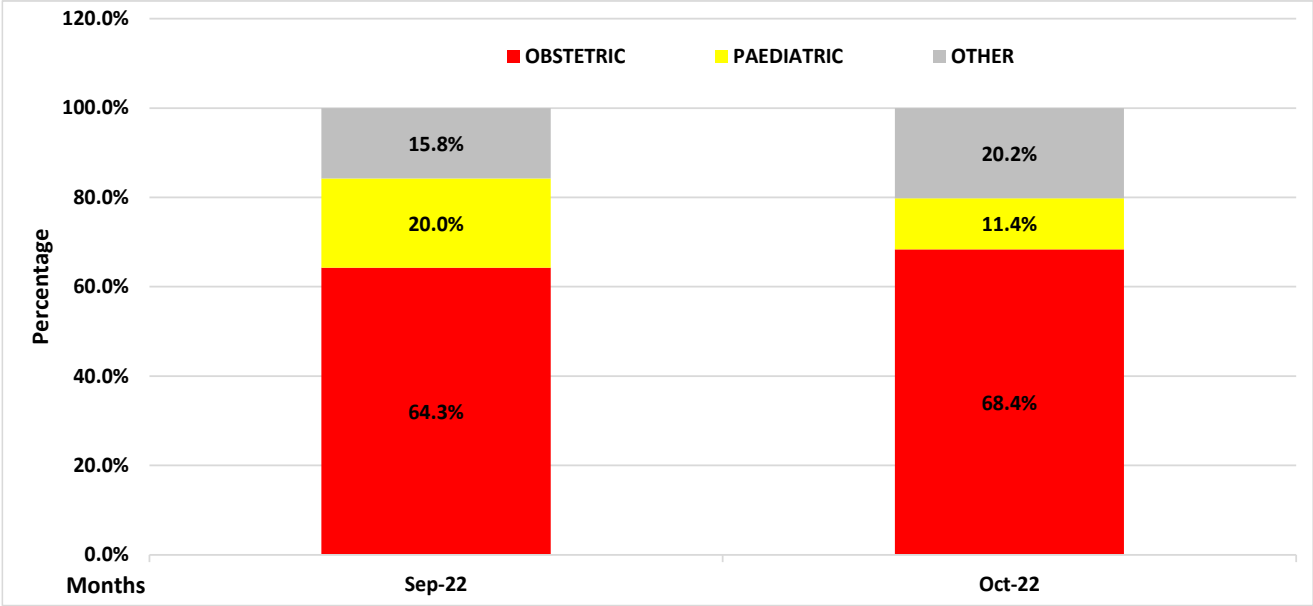


Figure 10 represents the major categories of complaints of NEMS Missions. comparing *October* **and** September **2022** data. It is visible from the data that Obstetric cases are in the majority of the missions transported to the various health facilities.

The indicator 'Other' is a combination of other complaints, such as Abdominal Pain, Consciousness, Road Accident, Trauma and etc. Between the months of *October* **and** September, there is a –**4.4%** increment in other cases. For Obstetric, there is 4.1% increment from the previous month, and for Paediatric a 8.6% decrease.

3.3.Figure 11: Typology of complaints that lead to Missions

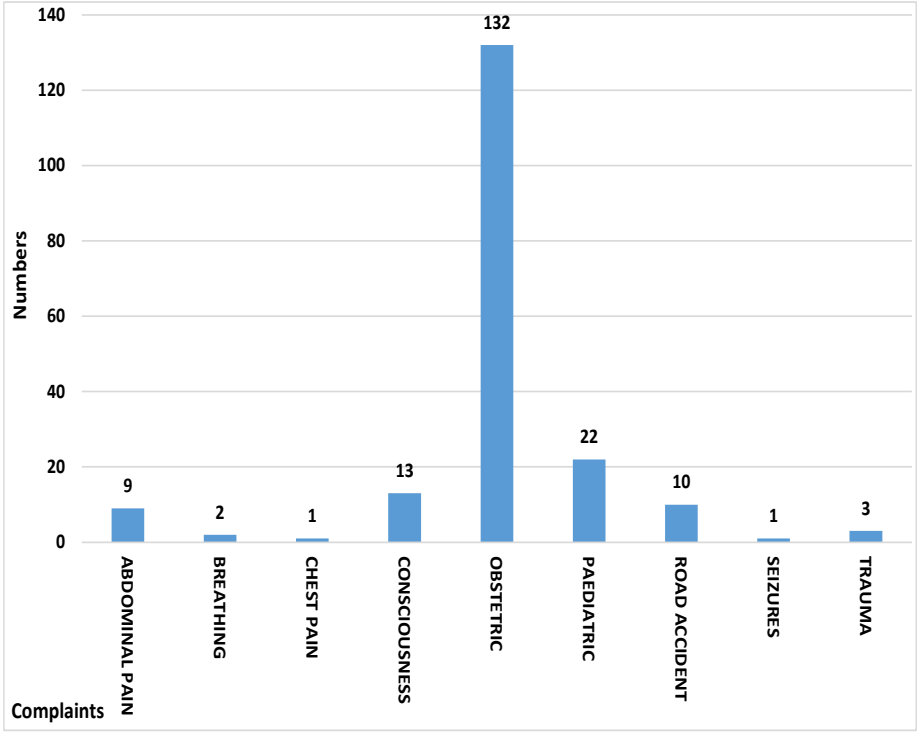
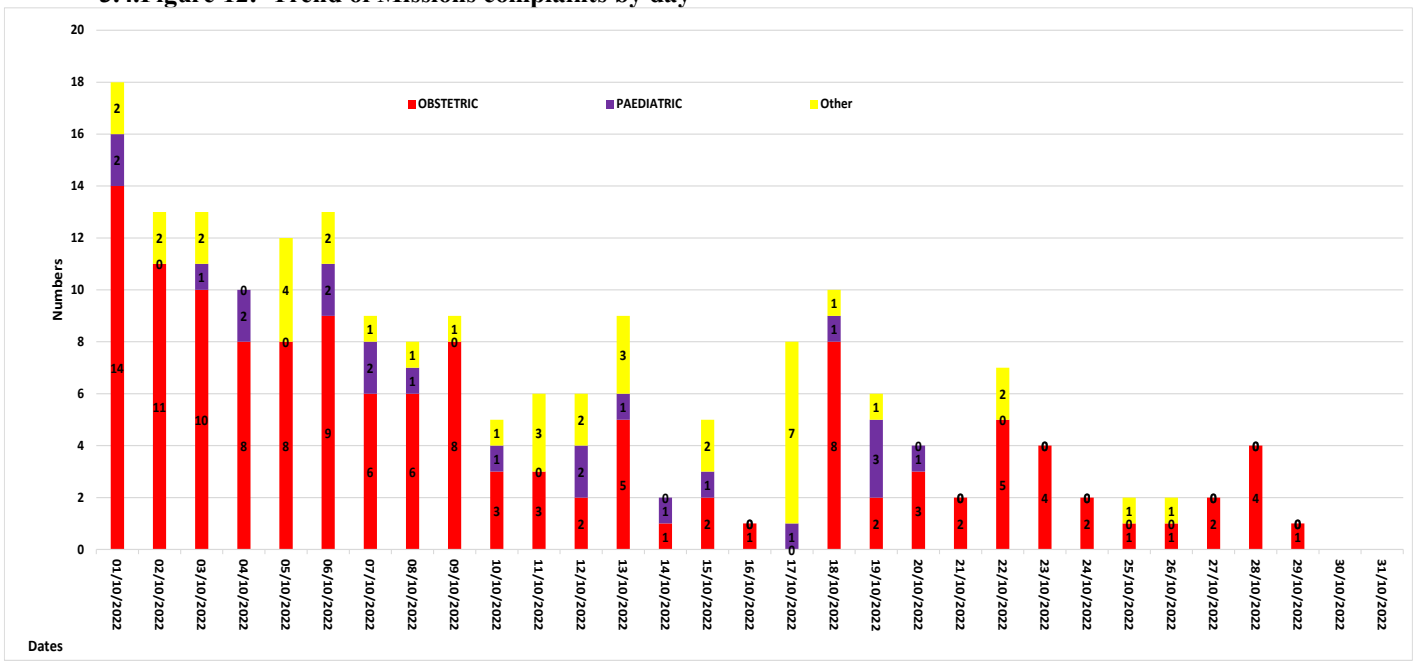


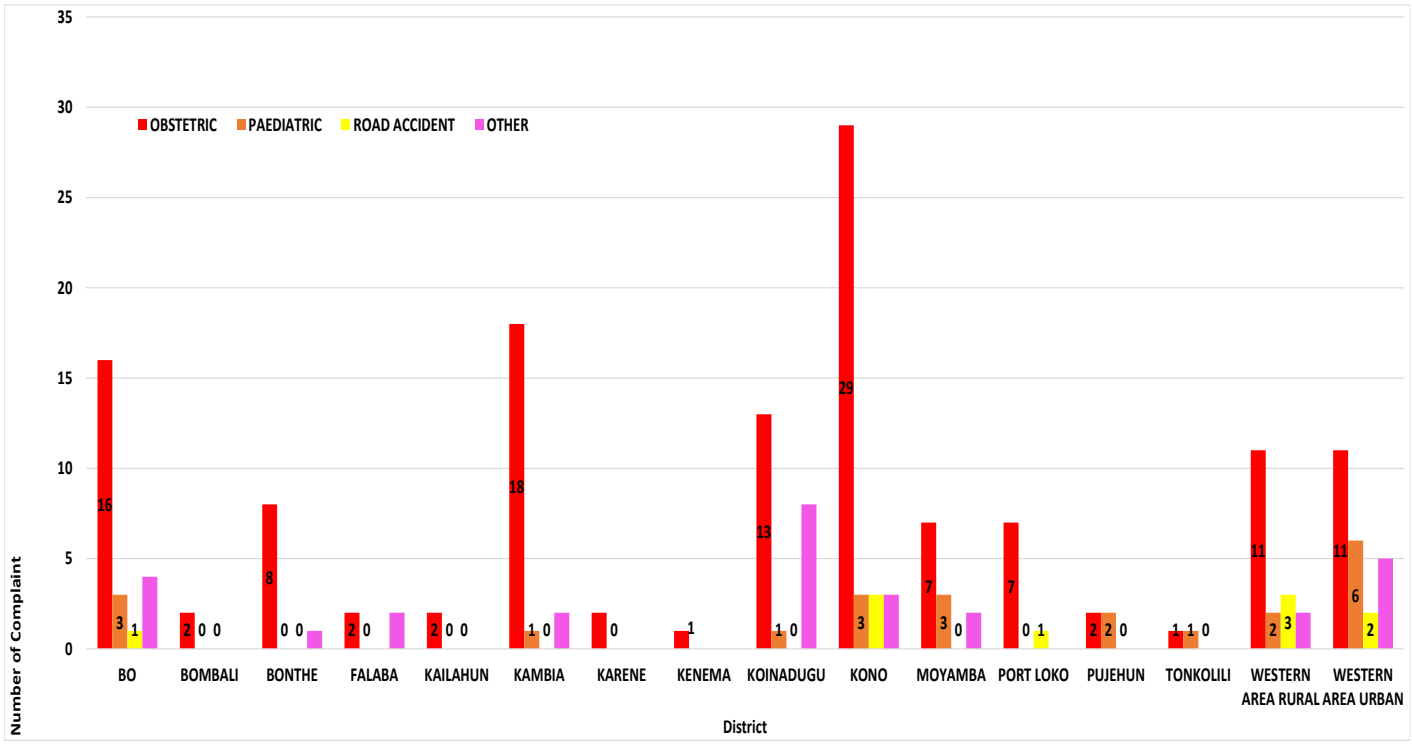
Figure 11 provides a detailed breakdown of the number of complaints received that are considered as missions.
It is evidently clear that obstetric (132) complaints were the most occurring, seconded by Paediatric (22), while Road Accident (10), Consciousness (13) and Seizures (1), while combining Trauma, Abdominal Pain, Breathing and Chest Pain account for (15) cases complaints received for the month under review.

3.4.Figure 12: Trend of Missions complaints by day



The bar chart displays the number of missions undertaken in the month of *October* 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 1st.

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. Kono happens to be the district with the highest obstetric cases, and reported the highest number of missions overall.

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

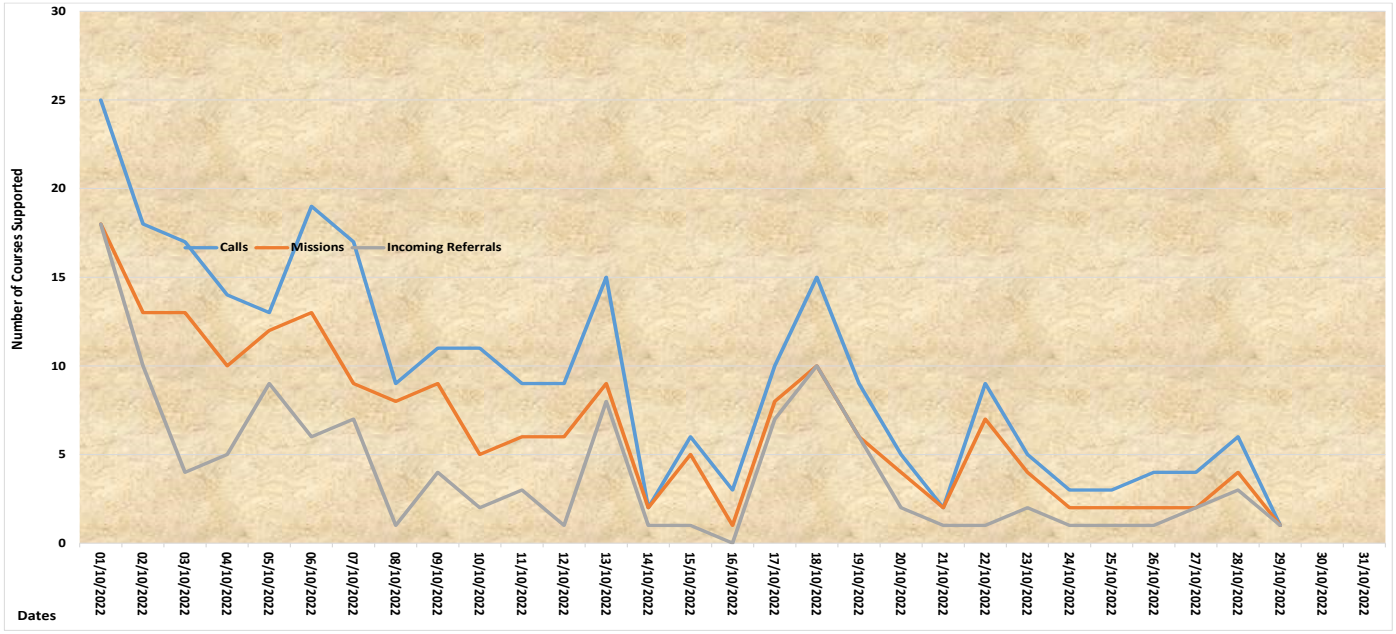


Figure 14 is a line chart that shows the number of Calls received, Missions carried out, and NEMS referrals managed per day. Throughout *October*, the indicators fluctuated. The average call were 9, Missions is 6 and referrals 4 for the month under review.

3.7.Figure 15: Outcome of the Missions

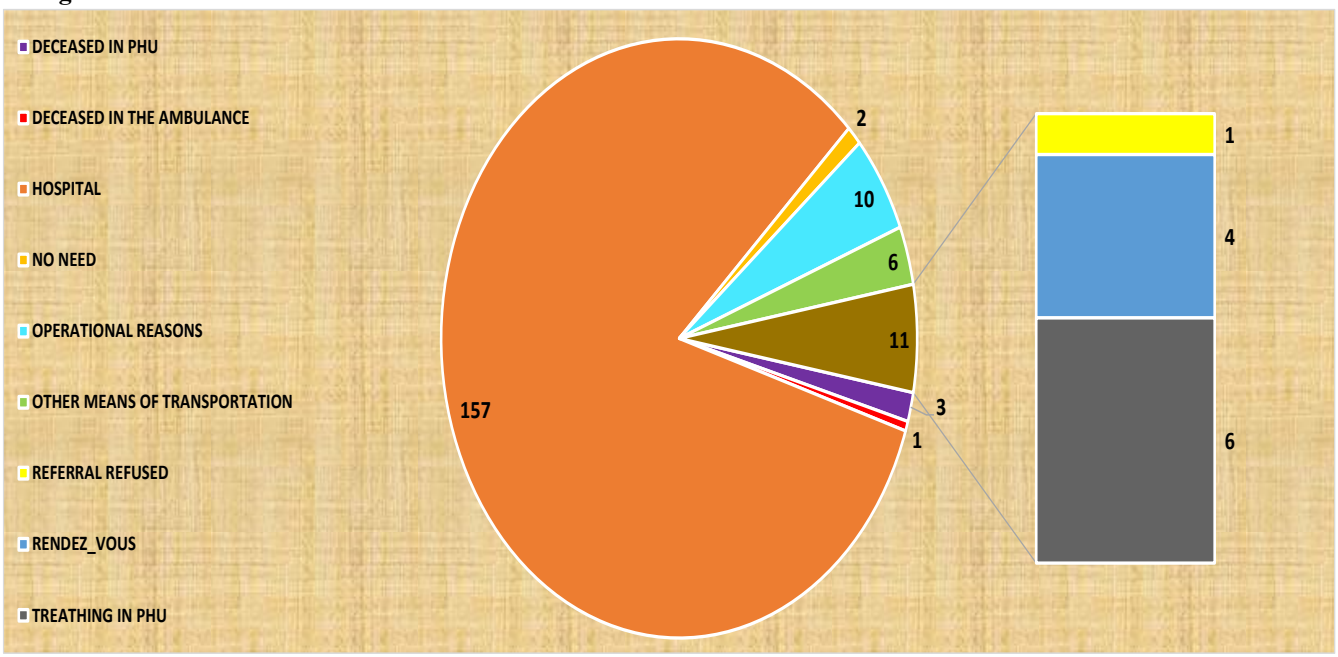


Figure 15 shows the outcome of missions carried out by NEMS in *October* 2022.

'Hospital' refers to mission lead referrals to a pre-identified health facility (Hospital).
Referencing the data displayed in the pie chart above, for *October* shows that (157) 81.3% of the missions lead to referrals to a pre-identified specialist health facility, compared to the September 2022 data that shows that 83% of the missions were referred to a pre-identified specialist health facility. This indicates a decrease of 1.7% in the referrals when the data for *October* 2022 is compared to that of September 2022.

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

INDICATORS	ABORTED	DECEASED	HOSPITAL	RENDEZ_VOUS	Grand Total	% of Aborted Cases
AMBULANCE CHANGED	3	0	0	0	3	10.7%
DECEASED IN PHU	0	3	0	0	3	0.0%
DECEASED IN THE AMBULANCE	0	1	0	0	1	0.0%
HOSPITAL	0	0	157	0	157	0.0%
NO NEED	2	0	0	0	2	7.1%
OPERATIONAL REASONS	10	0	0	0	10	35.7%
OTHER MEANS OF TRANSPORTATION	6	0	0	0	6	21.4%
REFERRAL REFUSED	1	0	0	0	1	3.6%
RENDEZ_VOUS	0	0	0	4	4	0.0%
TREATHING IN PHU	6	0	0	0	6	21.4%
Grand Total	28	4	157	4	193	100.0%
%	14.5%	2.1%	81.3%	2.1%	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 *October* 2022 data shows that out of the 193 missions undertaken, 14.5% 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 28 missions aborted, **3 (10.7%)** of the aborted missions were due to 'ambulance changed'.
- **'Deceased'** – this mission outcome refers to the death before the arrival of the NEMS ambulance team. *October* 2022 data shows that a total of **4 (2.1%)** death were reported and breakdown to; the **4** missions cancelled was due to the fact that the patients passed away in the PHU—3 and 1 died in the ambulance.
- **'Operational reasons'** - this type of mission outcome has strong correlation with the ambulance technical problems. The table above shows that **10 (17.5%)** of the aborted missions occurred because of technical problems with the ambulances in the month of *October* compared to September with **17.5%** 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 *October* data shows that 6 (21.4%) 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 6 (21.4%) of such cases were recorded for the month under review.
- **'Other reasons' includes'** no-need' of the ambulance (2) and Refused referral 1.
- **'Rendezvous'** 4 (2.1%).

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	40	54	61	72	75
Makeni Government Hospital	68	49	30	71	43	58
Mattru UBC Hospital	36	38	12	91	19	28
Connaught Government Hospital	235	4	0		28	5
Kailahun Government Hospital	38	44	37	61	42	58
Kambia Government Hospital	29	41	24	56	35	57
Kenema Government Hospital	123	45	41	62	63	38
Kabala Government Hospital	49	32	37	39	55	33
Koidu Government Hospital	74	43	36	40	57	51
Lungi Government Hospital	40	46	20	35	20	47
Moyamba Government Hospital	48	19	24	69	39	42
Ola During Children Hospital	0	0	0		131	94
Princess Christian Maternity Hospital	0	0	134	38	18	
Port Loko Government Hospital	65	32	35	36	20	76
Pujehun Government Hospital	42	44	41	82	35	40
Tonkolilli Government Hospital	36	24	35	52	62	47
34M Military Hospital	82	89	22	49	10	95
King Harman Road Government Hospital	4	40	17	40	15	81
Rokupa Government Hospital	19	65	21	68	20	115
Lumley Government Hospital	12	0	10	0	4	0
Macauley Government Hospital	12	56	10	45	4	67
Emergency Memorial Hospital	23	84	0	0	44	87
Total National Bed Capacity	1174		640		836	

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 September, nationwide, hospital facilities **2,831** and this change in the month of October 2022 to this **2650.**
- 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 *October* 2022 shows that no facility reported overcrowding. 34 Military Hospital and Emergency Memorial Hospital recorded 89% and 84% respectively, as the average bed occupancy status and that is the highest for Adults.
- **Maternity Occupancy**: the table shows that Mattru UBC Hospital reported —91%, which is the highest.
- **Paediatric Occupancy**: Rokupa Government Hospitals reported 115% average bed capacity for *October* 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-

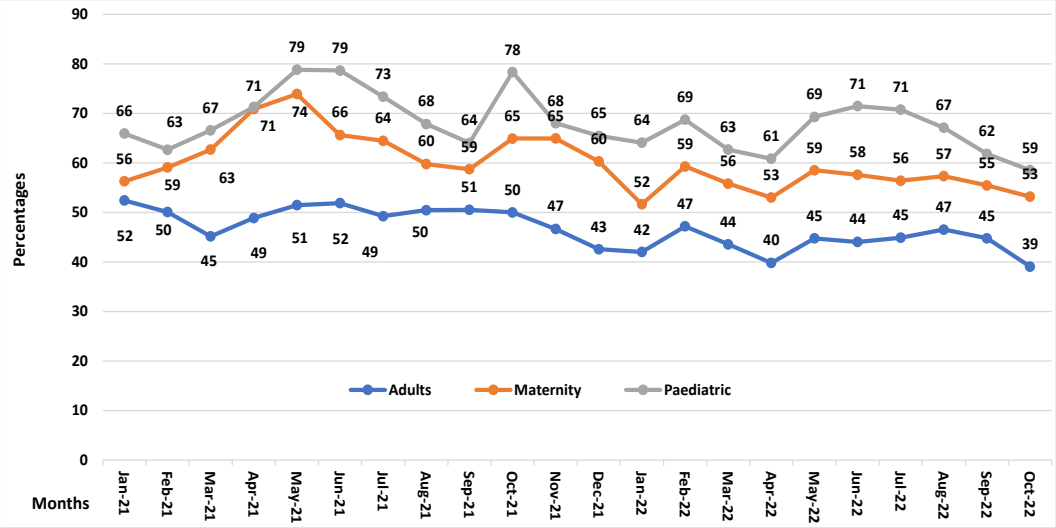


Figure 15 provides an average percentage bed occupancy by month. Health facilities have various subsectors that are merged to form the major listed departments on the line chart. Since the commencements of 2021, the average bed occupancy has been below 80% for the different departments and all the various health facilities. There is a slight decrease to 59% for the month of *October*.

Chapter– 5 Referrals

5.0.Table 7:

From the diagram labelled table 7 adjacent this narrative shows the total of 813 referrals were supported by NEMS. In that number 762 were classified as incoming referrals, while 51 represented the total outgoing referred patients supported.
In *October*, Connaught recorded the highest number of incoming referred patients, while Rokupa, Lumley, Lungi and Macauley Street Hospitals recorded the least number of referrals on all indicators.

No:	National Referrals by District, October 2022				
	Facility	Total Referrals	Incoming Referrals	Outgoing Referrals	NEMS Referrals
	National Total	813	762	51	118
	Nationwide %	100	94	6	15
1	34M	25	14	11	1
2	Bo	23	19	4	16
3	Bombali	0	0	0	0
4	Bonthe	3	3	0	3
5	Connaught	137	134	3	17
6	Emergency	40	26	14	4
7	Kailahun	21	21	0	2
8	Kambia	18	17	1	16
9	Kenema	85	79	6	1
10	King Harman Road	6	5	1	0
11	Koinadugu	31	29	2	21
12	Kono	6	5	1	5
13	Lumley	0	0	0	0
14	Lungi	0	0	0	0
15	Macauley Street	0	0	0	0
16	Moyamba	33	32	1	4
17	ODCH	117	113	4	4
18	PCMH	78	78	0	13
19	Port Loko	29	29	0	6
20	Pujehun	93	92	1	4
21	Rokupa	0	0	0	0
22	Tonkolili	68	66	2	1

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

Number of Incoming Referrals by patients' outcome, October 2022										
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
296	14	1	9	426	6	0	0	10	0	762
39	2	0	1	56	1	0	0	1	0	100
13	0	0	0	0	1	0	0	0	0	14
0	0	0	1	18	0	0	0	0	0	19
0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	2	0	0	0	0	0	3
1	1	0	0	132	0	0	0	0	0	134
21	0	0	0	1	0	0	0	4	0	26
17	1	0	0	3	0	0	0	0	0	21
11	0	0	0	6	0	0	0	0	0	17
14	4	0	5	51	0	0	0	5	0	79
3	1	0	0	1	0	0	0	0	0	5
3	1	1	0	22	1	0	0	1	0	29
4	0	0	0	0	1	0	0	0	0	5
0	0	0	0	0	0	0	0	0	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	0	0	0	8	1	0	0	0	0	32
55	4	0	2	51	1	0	0	0	0	113
33	0	0	0	45	0	0	0	0	0	78
25	1	0	1	2	0	0	0	0	0	29
66	1	0	0	24	1	0	0	0	0	92
0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	60	0	0	0	0	0	66

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 (426), while out of that 10 were unable to admit, 14 of those were reported dead. 296 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	2	0	3	0	0	5
Bo	0	0	5	1	0	0	6
Bombali	0	0	0	0	0	0	0
Bonthe	0	0	3	0	0	0	3
Connaught	0	18	0	15	0	0	33
Emergency	0	1	0	1	0	0	2
Kailahun	0	1	11	3	0	0	15
Kambia	0	0	1	1	0	0	2
Kenema	1	0	15	7	0	0	23
King Harman Road	0	0	0	5	0	0	5
Koinadugu	1	1	5	3	0	0	10
Kono	0	1	3	1	0	0	5
Lumley	0	0	0	0	0	0	0
Lungi	0	0	0	0	0	0	0
Macauley Street	0	0	0	0	0	0	0
Moyamba	0	2	2	3	0	0	7
ODCH	0	2	0	25	0	0	27
PCMH	0	0	25	0	0	0	25
Port Loko	1	2	7	2	0	0	12
Pujehun	0	1	12	6	0	0	19
Rokupa	0	0	0	0	0	0	0
Tonkolili	0	0	16	21	0	0	37
Total	3	31	105	97	0	0	236

Table 9 explains the categories of incoming referred patients at the various health facilities nationwide for the month of *October*. EVD survivors have dropped significantly and continued to be zero. The various facilities supported a total 762 incoming referred patients.
All active hospitals have recorded for pregnant women, with the exception of Connaught, Emergency, King Harman Road, Macauley Street, ODCH and Rokupa that did not record pregnant cases for the month of October.

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	1	0	0	0	2	0	0	0	0	0	3
Non-FHCI	10	1	1	0	18	1	0	0	0	0	31
Pregnant	38	0	0	1	66	0	0	0	0	0	105
Under 5	29	2	0	2	64	0	0	0	0	0	97
EVD Survivor	0	0	0	0	0	0	0	0	0	0	0
Yes - other	0	0	0	0	0	0	0	0	0	0	0
Total	78	3	1	3	150	1	0	0	0	0	236

The October 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. Pregnant women reported the highest number of death.

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

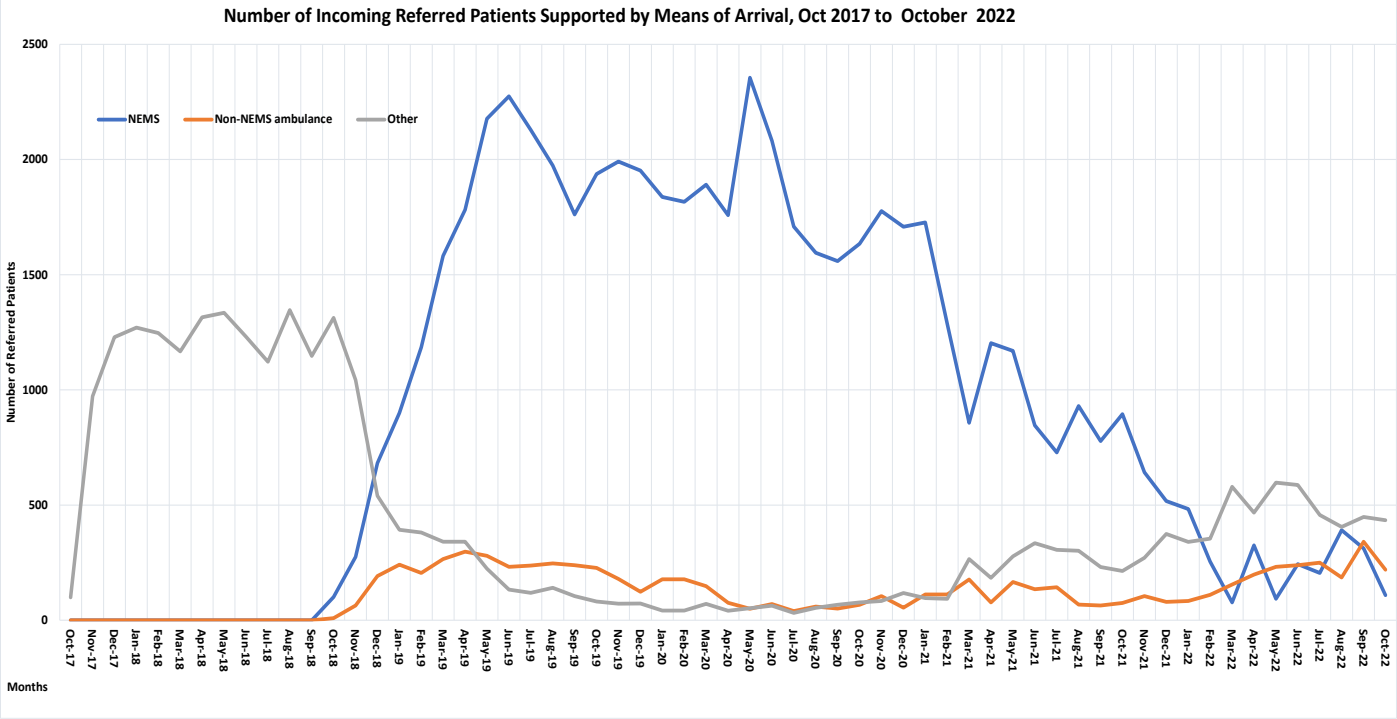
REFERRAL HOSPITAL	Jul-22	Aug-22	Sep-22	Oct-22
Tertiary Facility Total	58	109	105	36
Connaught Hospital	9	44	26	13
Ola During Children's Hospital	3	7	11	4
Princess Christian Maternity Hospital	46	58	68	19
Regional and District Hospital Total	179	291	223	101
Bo Government Hospital	23	28	28	13
Bonthe Government Hospital	1	-	-	-
Kabala Government Hospital	20	23	17	19
Kailahun Government Hospital	7	22	15	2
Kambia Government Hospital	25	31	32	15
Kenema Government Hospital	12	45	20	-
Koidu Government Hospital	22	24	32	30
Lungi Government Hospital	-	6	2	-
Magburaka Government Hospital	8	8	13	-
Makeni Government Hospital	13	28	20	2
Moyamba Government Hospital	7	18	10	8
Port Loko Government Hospital	4	31	18	7
Pujehun Government Hospital	37	25	16	5
Segbwema Government Hospital	0	2	-	-
Other Government Facility	15	25	15	3
Kingharman Road Government Hospital	-	1	2	-
Other Government facilities (i.e.Lumley & Macauley)	-	-	1	-
Rokupa Government Hospital	12	19	6	2
34 MILITARY HOSPITAL	3	5	6	1
Private/NGO facility Total	34	90	39	9
Emergency	1	22	4	1
Kamakwie	7	8	3	-
Masanga	4	7	2	1
Mattru UBC Hospital	13	27	18	3
MSF Hospital – Kenema	4	8	7	-
LIFE CARE HOSPITAL	1	4	1	-
YELE	2	6	1	1
CHOITHRAM MEMORIAL HOSPITAL	1	-	2	2
CHINESE HOSPITAL	-	2	-	1
LION HEART HOSPITAL YELEH	-	-	-	-
AT HOME	1	0	1	-
SAROWLLA	-	1	-	-
TREASURE HOSPT. KING HARMAN	-	2	0	-
MAMA SIA LIFE SAVING HOSPITAL - BO	-	2	0	-
KINGTOM POLICE HOSPITAL	-	1	0	-
LUNGI INTERNALNAL AIRPORT	-	-	1	1
LUNSAR	-	-	1	-
KISSY MENTAL HOSPITAL	-	-	1	-
NEW HOPE HEALTH CENTER	-	-	-	1
LAKKA	-	-	-	1
magbeseneh	-	-	-	1
MEDSAV HOTEL, LUNGI	-	-	-	1
RENDEZ_VOUS	9	28	12	4

Table 11 shows the NEMS general monthly referrals to the main hospitals for the month of October. The table compares the data between July, October and September 2022. You can see that for the month under review (October), the other facilities accounts for the least recipient of referrals (3) as follows:

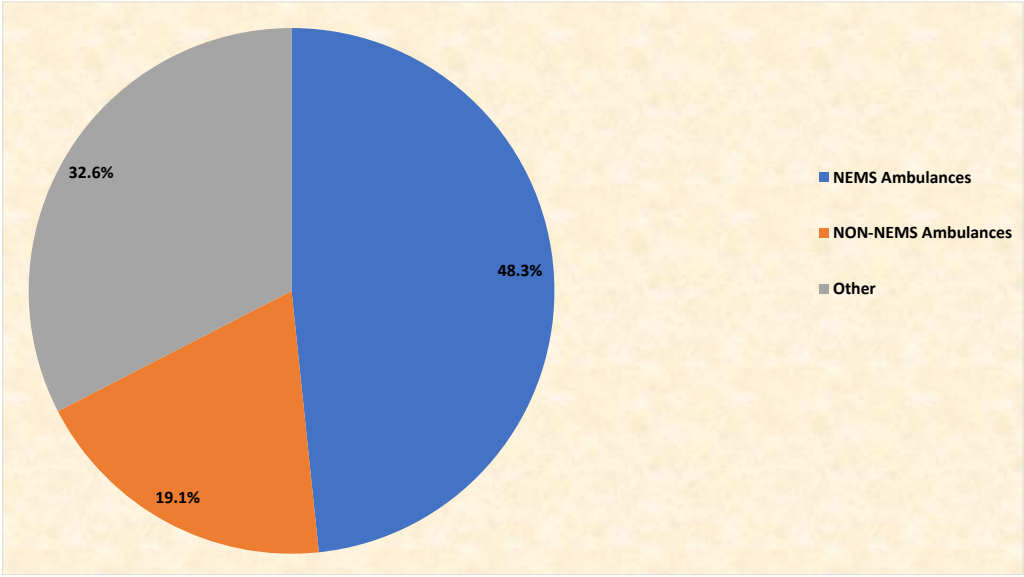
- King Harman Road (0), Macauley (0), Rokupa (2) and 34 Military (1) compared to August with a total receipt of 15. This indicates a significant decrease in the following months.
- The Regional and District Hospitals received 101 for October, a decrease from the previous month. This indicates a decrement 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 June, July, August, September and October 2022.
- The table shows that the Rendezvous reported a overwhelming decrease 4.

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 October 2022 data demonstrates that the most common means of arrival at hospital is through the utilization of other means.



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 October 2022. The data as displayed in the pie chart above shows **48.3%** of the total number of referred cases received by the respective hospitals were transported by NEMS, while **32.6%** of the total referred cases were transported by 'other means' and **19.1%** of the total number of referred cases that used Non-NEMS ambulances 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	**8.0%**	**46.4%**	**45.6%**
34 Military Hospital	**7.1%**	**42.9%**	**50.0%**
Connaught Hospital	**12.7%**	**87.3%**	**0.0%**
Kingharman Road Govt. Hospital	**0.0%**	**100.0%**	**0.0%**
Lumley Govt. Hospital	-	-	-
Ola During Children's Hospital	**3.5%**	**1.8%**	**94.7%**
Princess Christian Maternity Hospital	**16.7%**	**0.0%**	**83.3%**
Rokupa Govt. Hospital	-	-	-
Private/NGO facility Total	**100.0%**	**0.0%**	**0.0%**
Matru UBC Hospital	**100.0%**	**0.0%**	**0.0%**
Regional/District Hospital	**37.0%**	**10.9%**	**52.1%**
Kabala Govt. Hospital	**69.0%**	**0.0%**	**31.0%**
Bo Govt. Hospital	**63.2%**	**5.3%**	**31.6%**
Kailahun Govt. Hospital	**9.5%**	**0.0%**	**90.5%**
Kambia Govt. Hospital	**88.2%**	**0.0%**	**11.8%**
Kenema Govt. Hospital	**1.3%**	**31.6%**	**67.1%**
Koidu Govt. Hospital	**100.0%**	**0.0%**	**0.0%**
Lungi Govt. Hospital	-	-	-
Magburaka Govt. Hospital	**1.5%**	**62.1%**	**36.4%**
Makeni Govt. Hospital	-	-	-
Moyamba Govt. Hospital	**12.5%**	**6.3%**	**81.3%**
Port Loko Govt. Hospital	**20.7%**	**3.4%**	**75.9%**
Pujehun Govt. Hospital	**4.3%**	**0.0%**	**95.7%**
Grand Total	**48.3%**	**19.1%**	**32.6%**

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 October 2022. For tertiary hospitals, there has been an increase on the percentage of arrival method supported by other means.
It is essential to know that King Harman Road reported 100% NEMS means of arrival method.
It is only Koidu Government Hospital that reported 100% NEMS arrival method for Regional/District hospital.
It is essential to note that Kambia Government Hospital reported 88.2% of NEMS referrals.

100% of the Missions to Mattru used NEMS ambulance to transport patients to their facility.

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 October 2022	Percentage October 2022	Grand Total September 2022	Percentage September 2022
00:00:00 to 00:05:00	3	5	3	1	1	17	2	0	2	16	6	6	7	4	0	0	73	36.7%	122	29.8%
00:05:01 to 00:10:00	8	0	2	3	1	6	1	3	12	18	4	3	3	1	0	0	65	32.7%	139	33.9%
00:10:01 to 00:15:00	2	0	0	1	1	4	0	0	2	4	2	0	0	0	0	0	16	8.0%	52	12.7%
00:15:01 to 00:20:00	5	1	1	0	1	1	0	0	1	1	0	2	1	0	0	0	14	7.0%	25	6.1%
00:20:00 to 00:30:59	2	0	1	1	0	2	0	0	1	6	3	0	0	1	0	0	17	8.5%	33	8.0%
00:31:00 to 01:59:59	1	0	2	0	0	0	0	0	2	2	2	1	0	0	0	0	10	5.0%	32	7.8%
02:00:00 to 02:59:59	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2	1.0%	4	1.0%
03:00:00 to 03:59:59	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.5%	2	0.5%
04:00:00 to 04:59:59	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.5%	1	0.2%
05:00:00 to 05:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%
06:00:00 to 06:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%
07:00:00 to 07:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%
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	23	6	9	7	4	30	3	3	20	48	17	12	11	6	0	0	199	100.0%	410	100.0%

The table above delineates the time taken by Call Centre to triage a patient when a call is received. In October 2022, call centre took less than 15 minutes to triage **77.4%** of the total Calls received, while in September 2022, it took less than 15 minutes to triage **76.4%** of the total calls supported, with a difference of **1.0%** increment. The calls data shows that **22.6%** 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 October. In comparison with September, which showed a total of **23.4%** 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 October 2022	Percentage October 2022	Grand Total September 2022	Percentage September 2022
00:00:00 to 00:30:59	16	0	4	2	2	17	2	1	13	32	10	7	3	0	17	23	149	93.1%	387	93.5%
00:31:00 to 01:59:59	1	1	3	1	0	0	0	0	4	0	0	0	0	0	1	0	11	6.9%	27	6.5%
02:00:00 to 02:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%
03:00:00 to 03:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%
04:00:00 to 04:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%
05:00:00 to 05:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%
06:00:00 to 06:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%
07:00:00 to 07:59:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0	0.0%
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	17	1	7	3	2	17	2	1	17	32	10	7	3	0	18	23	160	100.0%	414	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 October 2022, **100%** of the missions undertaken took less than 3-hour to reach the targeted PHU, while in September 2022, **100%** 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 **0.0%** of the missions in October 2022 took more than 2-hours to locate the respective PHUs.

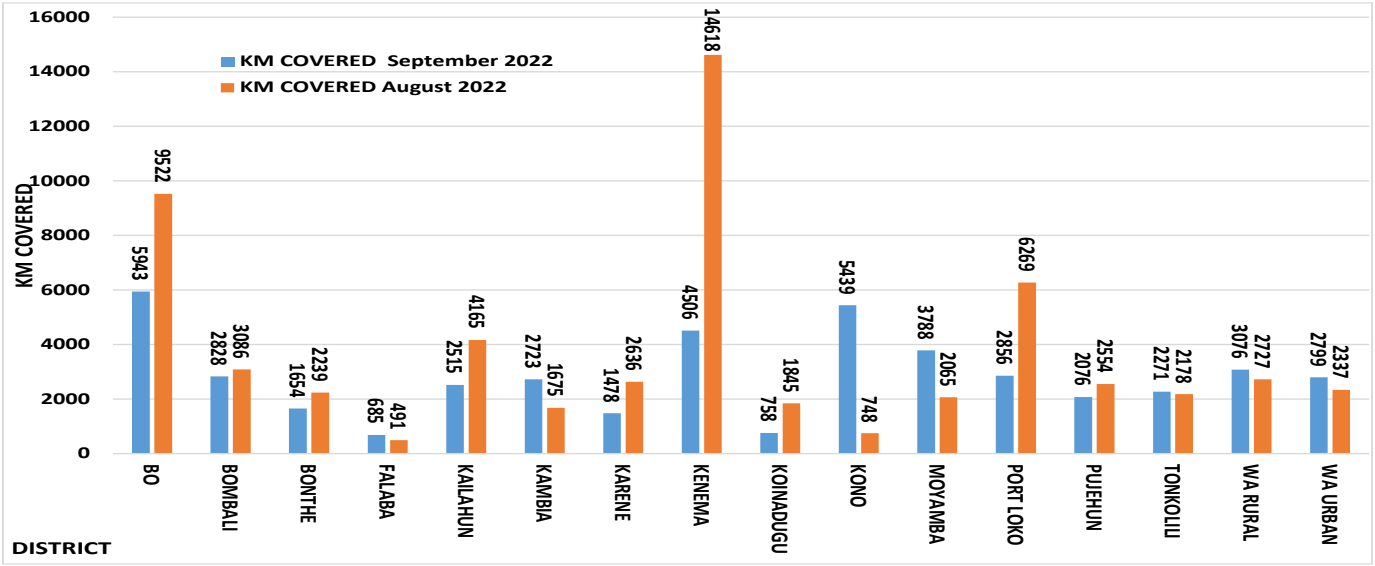
5.2.2.Table 14: Time Taken to Reach the Hospital

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 October 2022	Percentage October 2022
00:00:00 to 00:30:59	3	0	3	0	6	1	7	0	7	3	1	1	0	8	7	47	30.9%
00:31:00 to 01:59:59	9	0	3	1	5	0	5	2	14	6	5	2	0	10	11	73	48.0%
02:00:00 to 02:59:59	2	0	0	0	0	0	3	0	4	1	1	1	0	0	1	13	8.6%
03:00:00 to 03:59:59	0	1	0	0	1	0	2	0	2	0	0	0	0	0	1	7	4.6%
04:00:00 to 04:59:59	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4	2.6%
05:00:00 to 05:59:59	0	0	0	0	2	0	1	0	1	0	0	0	0	0	0	4	2.6%
06:00:00 to 06:59:59	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0.7%
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%
08:00:00 to 08:59:59	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	3	2.0%
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%
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%
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%
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%
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%
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%
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%
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%
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%
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%
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%
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%
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%
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%
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%
	17	1	7	1	14	1	18	2	32	10	7	4	0	18	20	152	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 October 2022, **78.9%** of the missions supported took less than 3 hours to reach the required health facilities, while in September, we saw a total of **90.5%** of the number of missions supported by NEMS within 3-hour to reach their various health facilities, which decreased by **11.6%** to the previous month.

Missions by Ambulances:

Figure 19: Km Travelled by District

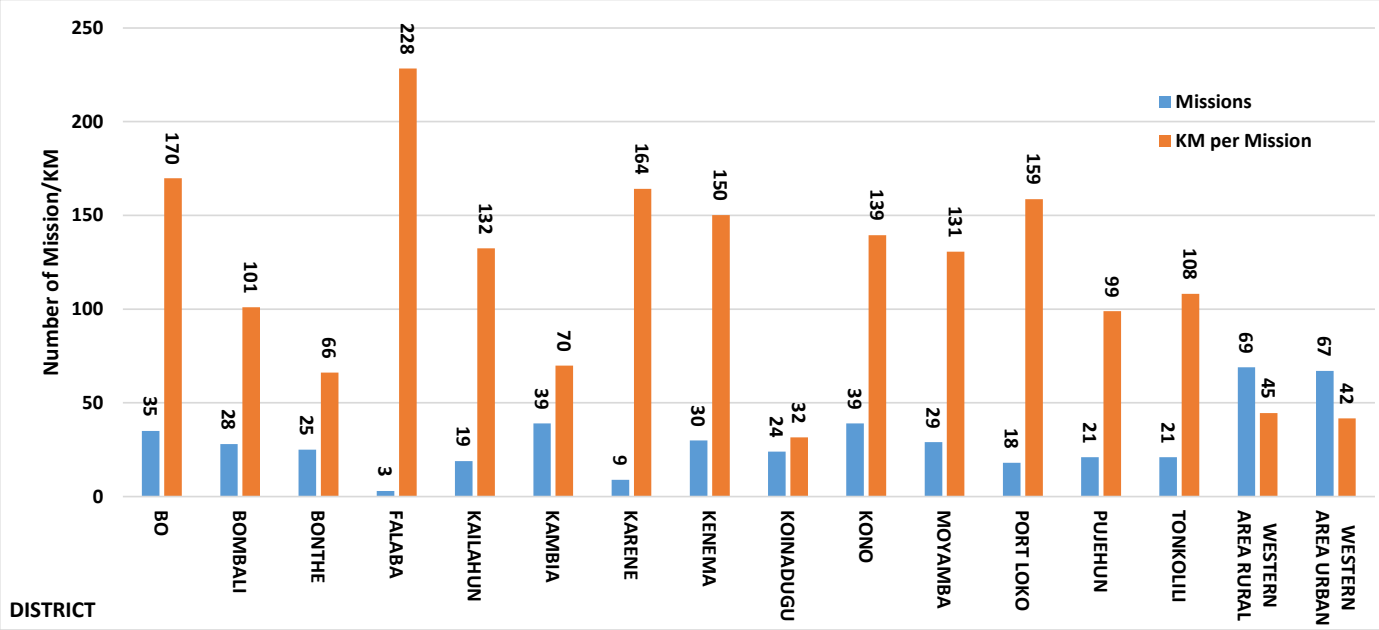


The District Ambulance Supervisors (DAS) provides a Monthly Kilometre Reports showed that, In September 2022 data, a cumulative **45,395 km** was travelled, when put in contrast with the August 2022—**59,155** Km indicating a significant drop by **13,760 km** in the kilometres travelled by NEMS ambulances 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 September and August 2022.

Assessment of the district data showed that, there was a general rise in the September 2022 figure compared to the August 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 September 2022. For the month under review, the district with the highest average KM per mission is Falaba with 3 missions, while the ambulances covered a significant 228 Kilometre per mission (km/mission). The other districts that experienced significant increases include Kenema by (150) km/mission, Kailahun by 132 km/mission and Karene by 164 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).