



**St John**



# Activity Report

## Ambulance Service

01 October – 31 December  
2021

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## Introduction

This document reports the activity of the St John Ambulance Services for the period of 01 October 2021 until 31 December 2021. Activities are described by their clinical, demographical and geographical characteristics in NCD, Central, East New Britain, Morobe and Simbu Provinces.

## Summary of the reporting period

St John attended a total of **3,966** patients during the reporting period.

There was an increase of 437 cases between Q4 (3,966) and Q3 (3,529) 2021.

This represents a 12% increase compared to Q3 2021.

## St John Ambulance

St John is a trusted Papua New Guinea civil protection charity that has operated as an independent non-government statutory body since 1976. St John Ambulance is engaged under Memorandum of Agreement with the national department of health (and respective provincial authorities) to provide PNG's primary emergency ambulance services.

In 1983, the department of health handed responsibility to St John to operate the emergency ambulance service in PNG's southern region.

Since then, St John has partnered with provincial governments and provincial health authorities to open ambulance stations in all four regions of the country, and covers a population of around 4 million people.

St John now provides PNG's primary emergency ambulance service, serving a combined population of about 3 million people by road, and the entire population by air. St John has stations in each of the following provinces;

- National Capital District
- Central Province
- East New Britain
- Morobe Province
- Simbu Province



## Prehospital Care is essential to good health care

Emergency ambulance services are the primary mechanism for delivering prehospital care to a community. Well-coordinated prehospital care is an essential component of an effective emergency care system according to the World Health Organization.

Emergency ambulance services, also known as emergency medical services or paramedic services, are emergency services that provide urgent pre-hospital treatment and stabilisation for serious illness and injuries and transport to definitive health care.

St John ambulance can be summoned by members of the public (as well as medical facilities, other emergency services, businesses and authorities) via the national ambulance emergency number 111, which puts them in contact with the St John national ambulance control centre (NACC). The control centre will then dispatch suitable ambulance resources for the situation.

Ambulances are the primary vehicles for delivering ambulance services, though St John also uses cars, aircraft, and boats.

St John ambulance services provide prehospital care for patients with illnesses and injuries and have a key role in providing quality health services to people, minimising the degree of injury and reducing fatalities<sup>2</sup>.

The response time of an ambulance service is a fundamental factor for prehospital care to be successful and therefore must be managed in order to increase the chances of survival<sup>3</sup>.

1. Aringhieri R, Carello G, Morale D. Supporting decision making to improve the performance of an Italian Emergency Medical Service. *Ann Oper Res.* 2016;236:131-48. doi: 10.1007/s10479-013-1487-0.

2. Lawner BJ, Hirshon JM, Comer AC, Nable JV, Kelly J, Alcorta RL, Pimentel L, Tupe CL, Vanhoy MA, Browne BJ. The impact of a freestanding ED on a regional emergency medical services system. *Am J Emerg Med.* 2016 Aug;34(8):1342-6. doi: 10.1016/j.ajem.2015.11.042

# Ambulance service resource overview

## National Ambulance Control Centre

Role	Operator	Trainer	Call-taker	Dispatcher	RN	Duty Commander	Other	Total staff
111 Ambulance Control Centre	6	1	12	8	4	4	0	33

## Professional Ambulance Staff

Role	Reservist	Trainee	Qualified	RN	HEO	Paramedic	CMO	Total staff
NCD	18	13	12	3	2	2	1	51
Central	0	0	0	0	0	0	0	0
Lae	3	0	3	1	0	0	0	7
Kokopo	3	0	2	0	0	0	0	5
Kundiawa	3	1	0	0	0	0	0	4
Total	27	14	17	4	2	2	1	60

## Ambulance related Equipment

	Stryker Stretcher	% serviced	Pager	HF Radio	UHF radio	Satellite radio	Monitor/defibrillator	AED
NCD	39	0%	12	0	14	0	Life pack 12 x14 Zoll x6 Life pack 15 x1	14
Central	1	0%	0	0	0	0	0	0
Lae	4	0%	3	0	2	0	Life pack 12 x1 Life pack 15 x1	0
Kokopo	2	0%	1	0	0	0	1	1
Kundiawa	2	0%	3	0	0	0	2	1
Total	48	0%	19	0	16	0	26	16

## Ambulance Vehicles Operated by St John

Ambulances	Landcruiser Ambulance	% serviced this period	4WD Vehicles	% serviced this period	Van Ambulance	% serviced this period	Car	% serviced this period
NCD	3	100%	5	100%	19	31.25%	5	100%
Central	1	100%	-	-	-	-	-	-
Lae	1	100%	1	100%	2	100%	-	-



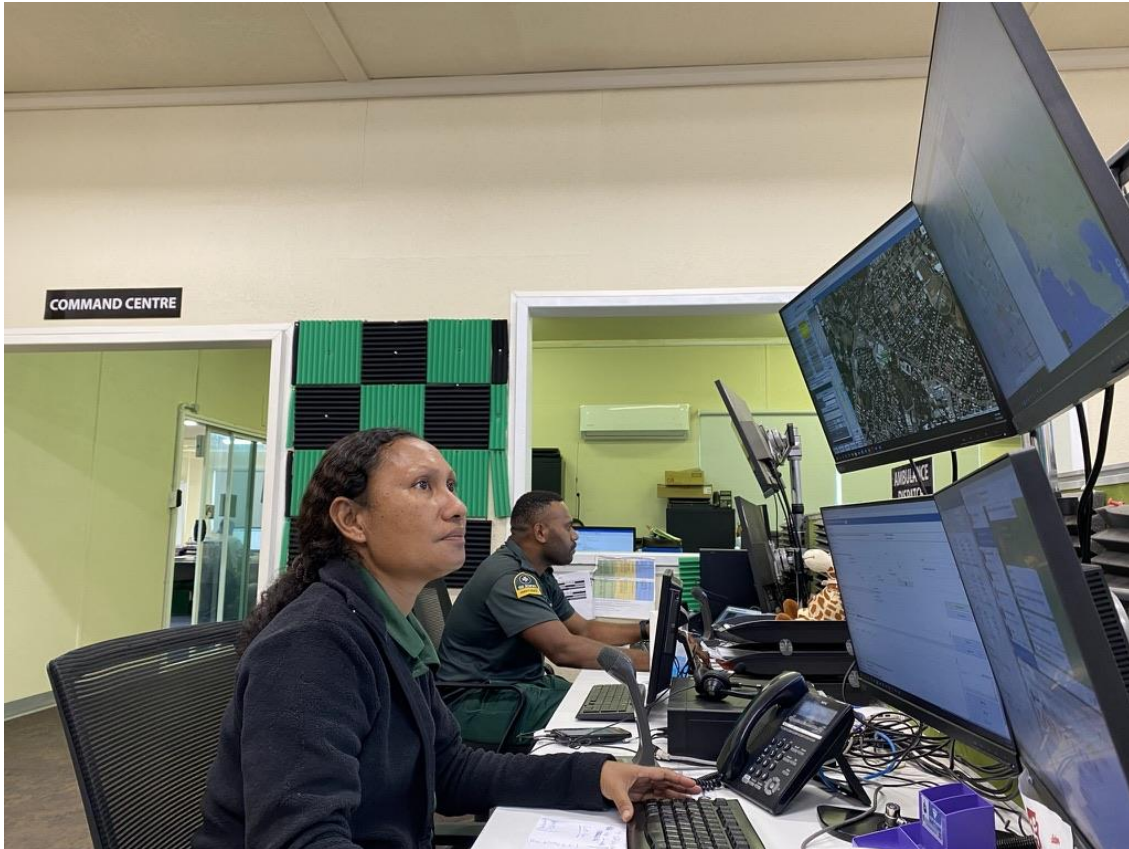
**Ambulance Service  
Papua New Guinea**

Kokopo	2	100%	-		1	100%	-	-
Kundiawa	1	100%	1	100%	0	-	-	
Total	8	100%	7	100%	22		5	100%

## Training conducted this period

Ambulance training	Q1	Q2	Q3	Q4
NCD	Reaccreditation courses  Standalone reservist course  Hybrid reservist/trainee AO course	Advance airway management training	Accelerated Trainee Ambulance Officer course  Health Emergency Support Team training	Graduate Nursing Program for provisionally registered nurses  Amii electronic Patient Care Record Systems
Central	Nil	Nil	Nil	Nil
Lae	N/A	IPC training  Basic CPR training  Kit familiarisation	Nil	Refresher training  Infection prevention control training  Basic emergency life support training
Kokopo	Refresher training	IPC training  Basic CPR training  Kit familiarisation		
Kundiawa	N/A	N/A	Nil	Nil
NACC	Nil	Nil	GoodSam	Nil
ASTA courses	Standalone reservist course  Hybrid reservist/trainee AO course		Accelerated Trainee Ambulance Officer course  Health Emergency Support Team training	





## 111 Ambulance Control Centre

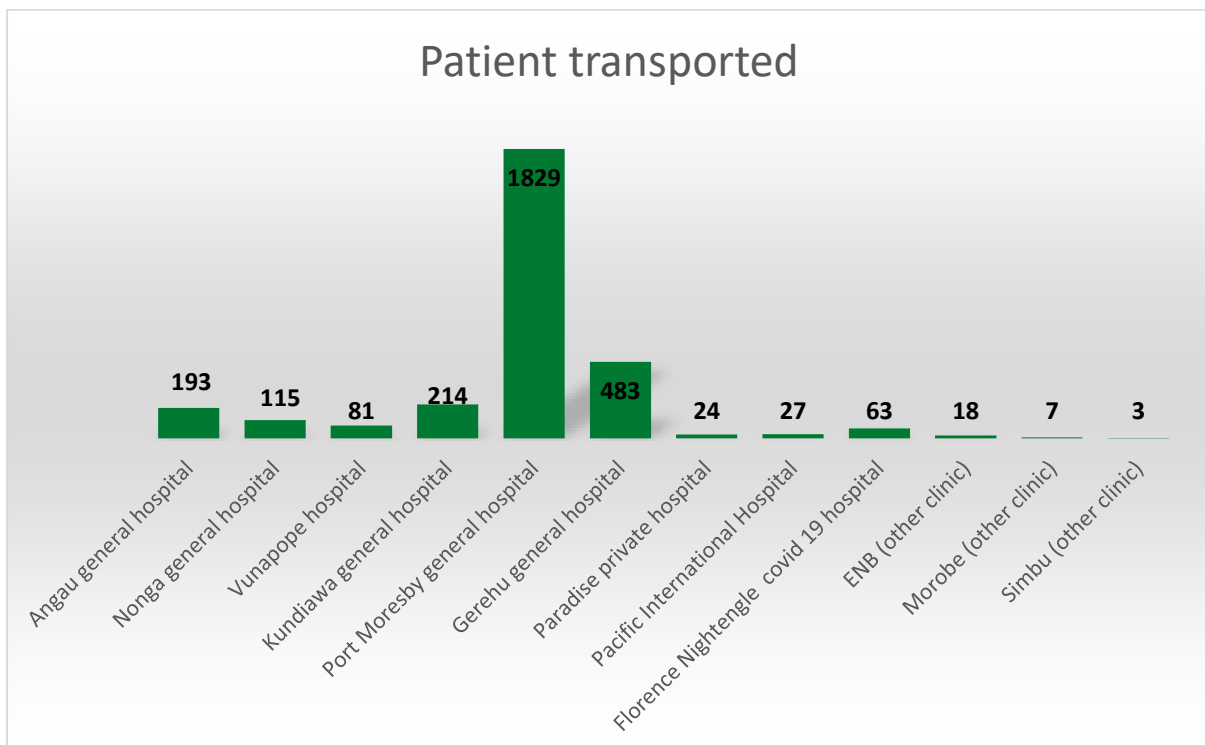
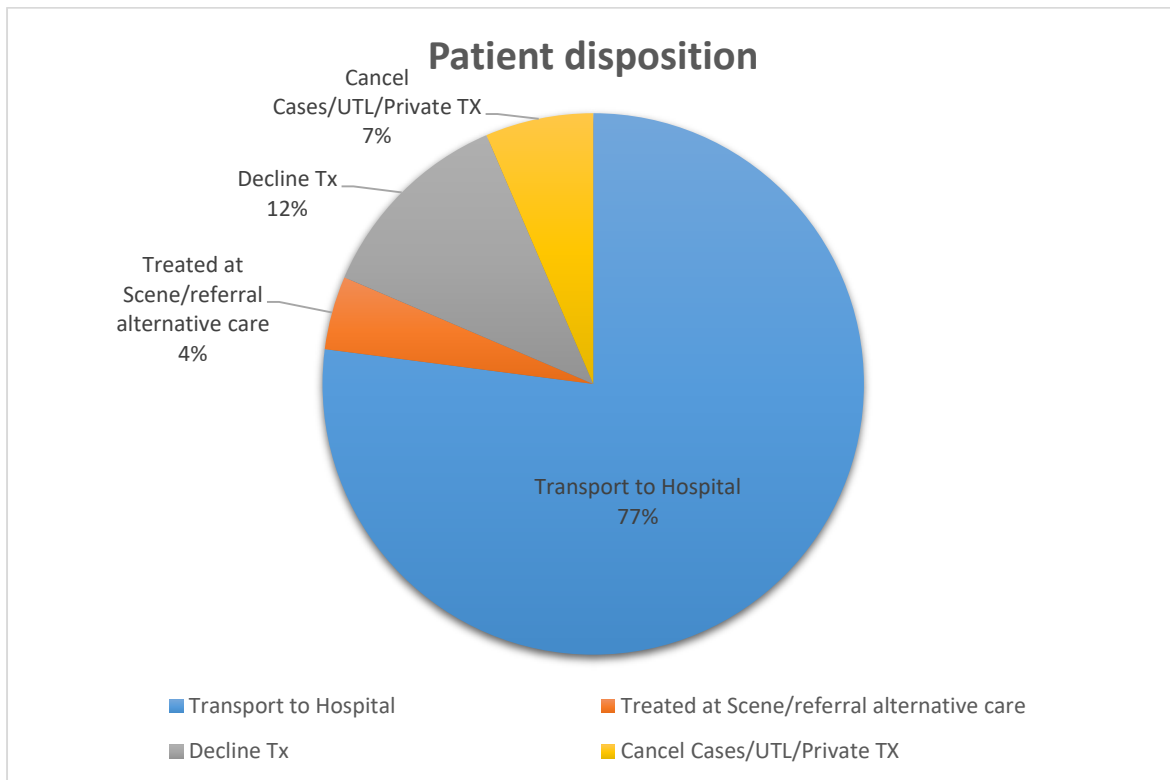
The St John Control centre answered **254,994** calls in quarter 4 2021.

Of the calls answered, **4,400** were created as cases in the Responder One computer-aided dispatch (CAD) system because they were deemed as cases requiring some form of health assistance, whether that was first aid advice, tele medical assistance from a health professional, or an ambulance or aircraft response to the patient.

## Patient disposition

A total of **3,966** cases were responded to by St John Ambulance; 3,710 patients attended to and 256 were regarded as private transportation, cancel cases or clinicians unable to locate the patient.

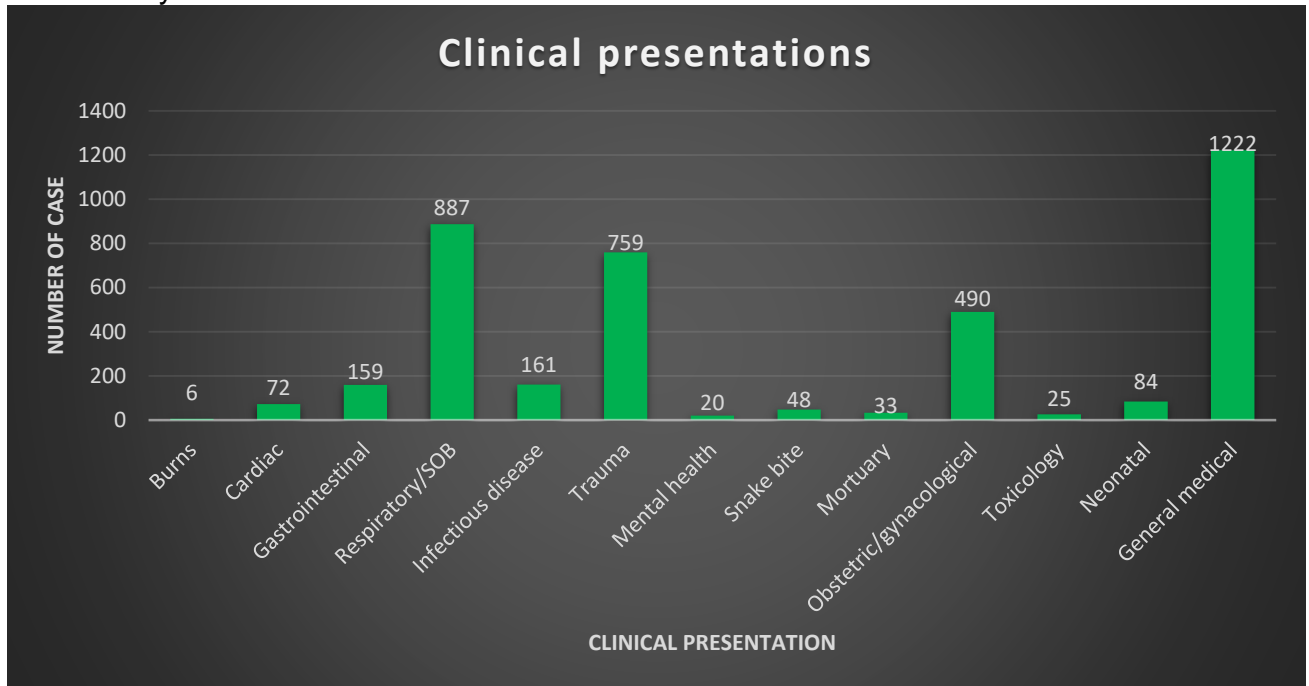
Of the total, 3,056 patients were transported to a hospital or health facility, 174 were treated at scene and referred alternative care and 480 declined transport to hospital.



## Medical issues attended by ambulance service

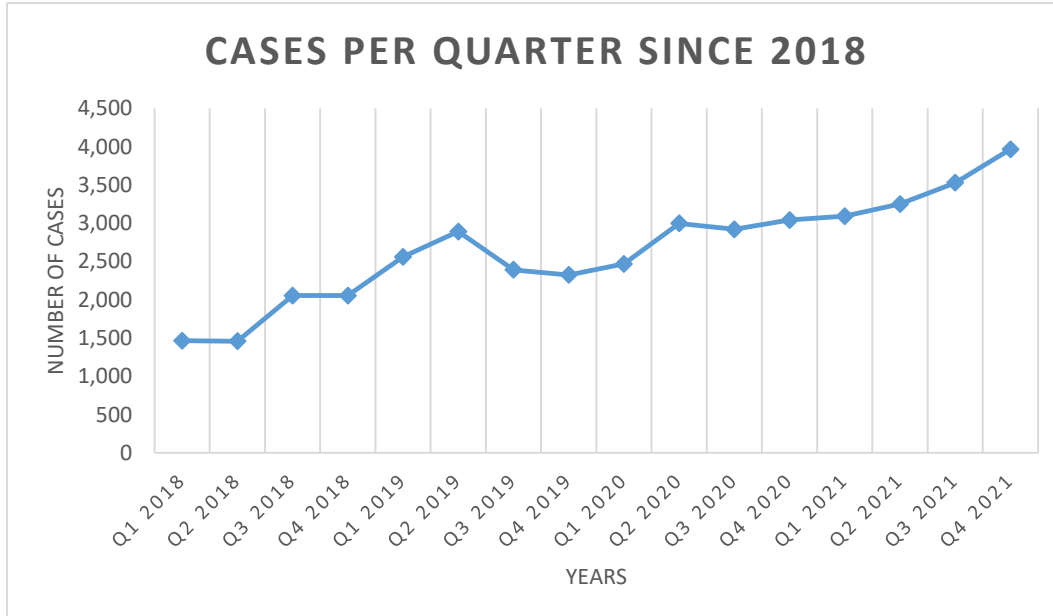
During the reporting period, St John attended to 3,966 cases and incidents. This is 336 **increased** compared to quarter three (3) 2021.

The graph below shows the type of clinical issue and the total number of cases attended by clinical issue.



The table below shows the number of cases and the type of clinical issues attended to in 2021 compared to 2020.

Clinical Presentations	Q4 2021	%	Q3 2021	%	Δ %
Burns	6	0.2	10	0.3	-1
Cardiac	72	1.8	89	2.5	-4
Gastrointestinal	159	4	264	7.5	-24
Respiratory	887	22.4	691	19.6	+45
Infectious disease	161	4.1	187	5.3	-6
Trauma	759	19.1	704	19.9	+13
Mental health	20	0.5	37	1.0	-4
Snake bite	48	1.2	43	1.2	+1
Mortuary	33	0.8	76	2.2	-10
Obstetric/maternal	490	12.4	513	14.5	-5
Toxicology	25	0.6	27	0.8	0
Neonatal	84	2.1	50	1.4	+8
Medical general (other)	1,222	30.8	838	23.7	+88
<b>Total</b>	<b>3966</b>	<b>100</b>	<b>3,529</b>	<b>100</b>	<b>100</b>



## CEO's Analysis of clinical presentations variances

St John is observing an exponential growth in cases requiring assistance from St John each quarter. This growth has been consistent since 2018.

The current workload indicates an absolute need to staff and operate more ambulances in NCD, Lae, Kokopo and Kundiawa.

By way of background, to operate a single ambulance 24hrs requires a 9.0 FTE ambulance officers who work in shifts of two. The additional officer covers routine and unplanned leave of others on the crew.

## Case presentations by incident type

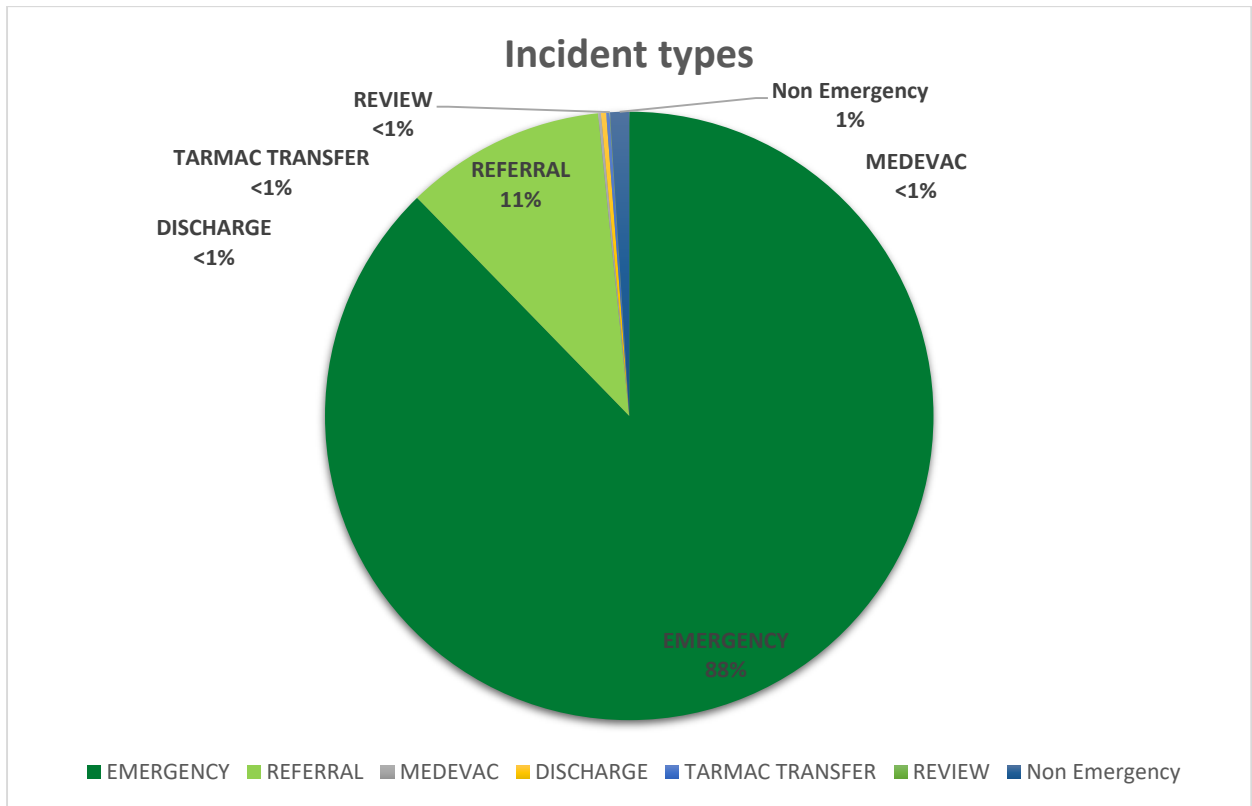
During the report period, 88% of cases St John attended were classified as Emergency.

**'Emergency'** means a primary incident to which St John was requested through the 111 call centre to send an ambulance to the scene. In an emergency, the patient usually requires some form of treatment to be administered by ambulance officers.

**'Referral'** means a case where a health professional has booked transport of a patient usually to-or-from a health facility. Referrals accounted for 11% of the total number of cases St John attended.

The remaining 1% includes medical evacuations (medevac), tarmac or discharge transfers and non-emergency calls, such as the transportation of the deceased and other non-life-threatening cases.

The chart below illustrates cases by percentage type.

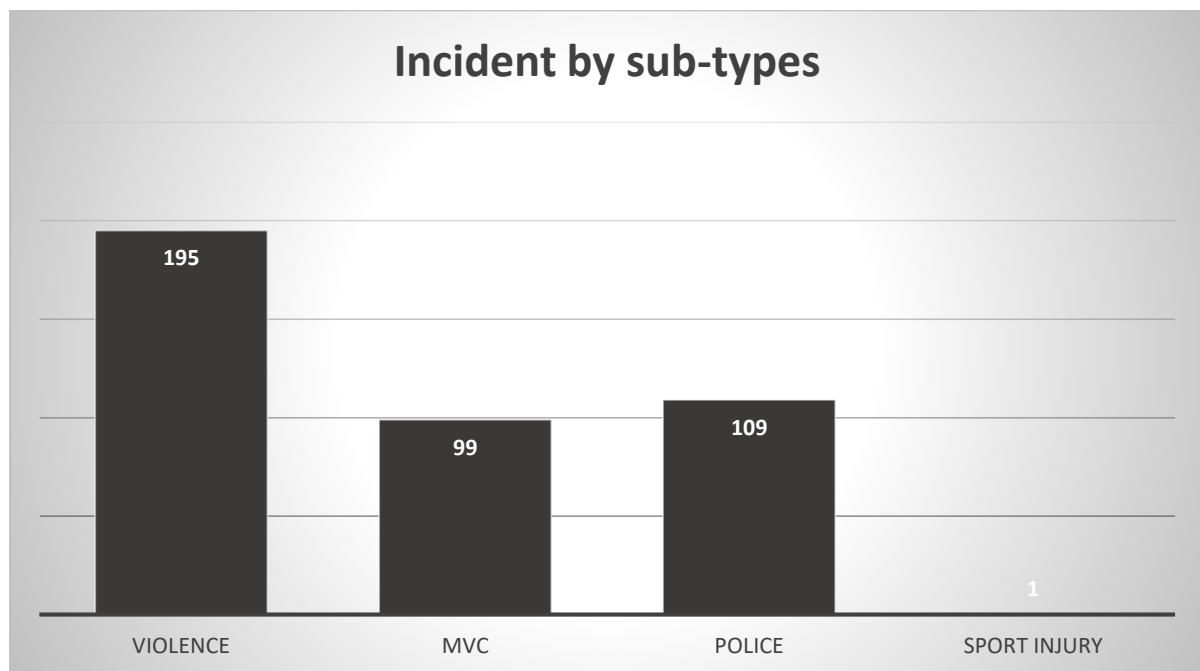


## Special incident sub-types

Certain types of cases are of reporting significance to special interest organisations, such as law enforcement, Motor Vehicle Insurance Limited or UN agencies.

The five main special incident categories reported are violence, motor vehicle collisions (MVC), fire, police and events (e.g. sport/ other).

This graph shows the number of cases by incident sub-type.



Electorate	MVC		Police		Violence		Sports Injury	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
Moresby North East	21	21%	48	44%	73	37%	0	0%
Moresby North West	35	35%	46	42%	30	15%	0	0%
Moresby South	12	12%	8	7%	32	16%	0	0%
Central	14	14%	3	3%	13	7%	1	100%
East New Britain	6	6%	0	0%	13	7%	0	0%
Morobe	2	2%	2	2%	16	8%	0	0%
Simbu	9	9%	2	2%	19	10%	0	0%
<b>Total:</b>	<b>99</b>	<b>100%</b>	<b>109</b>	<b>100%</b>	<b>196</b>	<b>100%</b>	<b>1</b>	<b>100%</b>

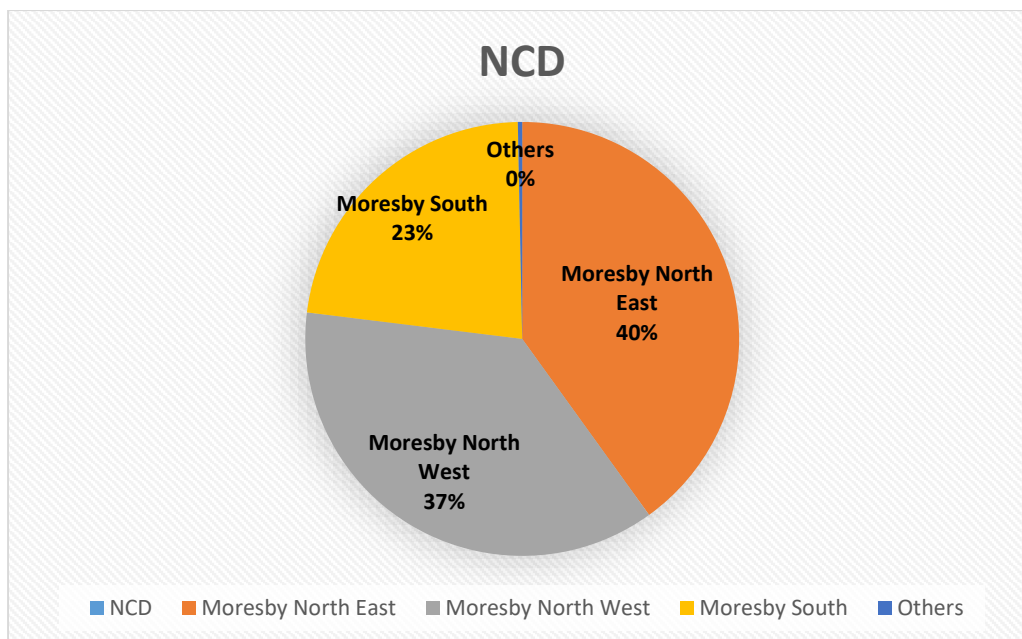
## Cases by Electorate –

St John operates full ambulance service in the National Capital District, Central and East New Britain provinces.

Our services in other provinces are currently limited to air ambulance response.

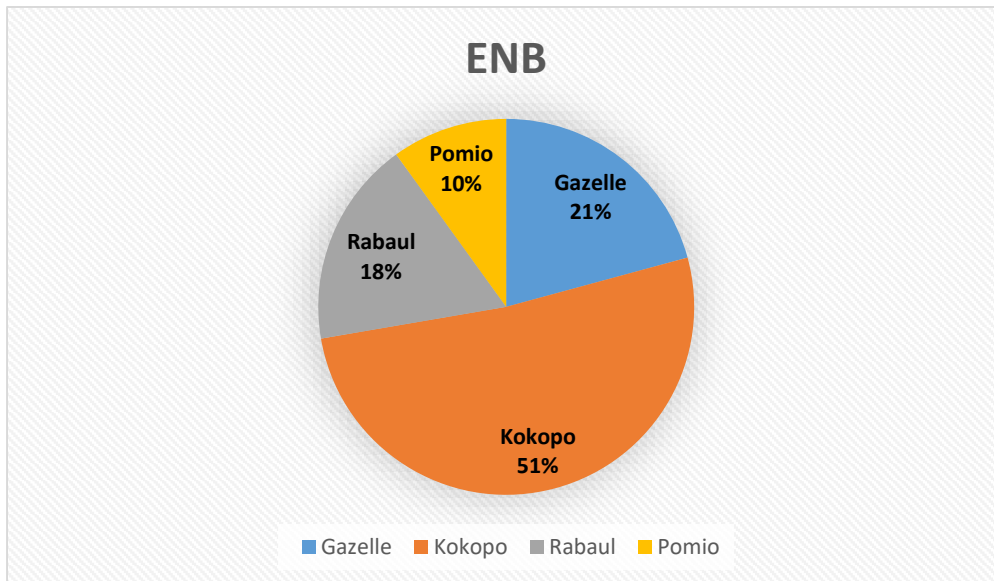
### NCD

ELECTORATE	Q4 2021		Q3 2021	
	Cases	%	Cases	%
Moresby North West	1,026	37%	987	37%
Moresby North East	1,114	40%	1060	40%
Moresby South	632	23%	631	23%
Others	0	0%	15	<1%



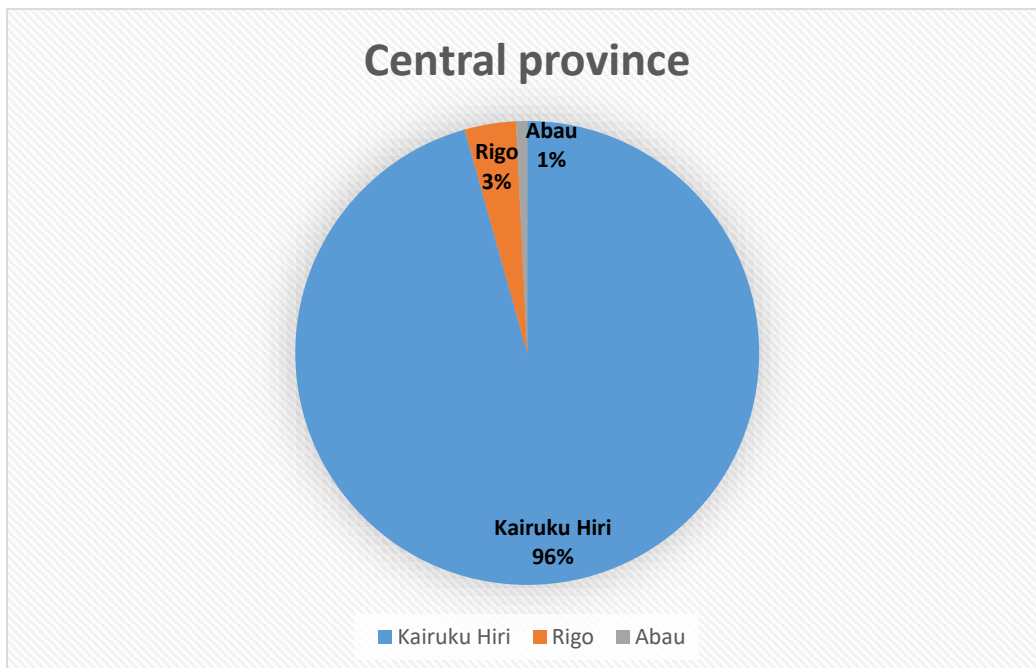
### East New Britain

ELECTORATE	Q4 2021		Q3 2021	
	Cases	%	Cases	%
Kokopo	119	52%	96	48%
Gazelle	48	21%	43	22%
Rabaul	41	18%	34	17%
Pomio	23	10%	26	13%



## Central Province

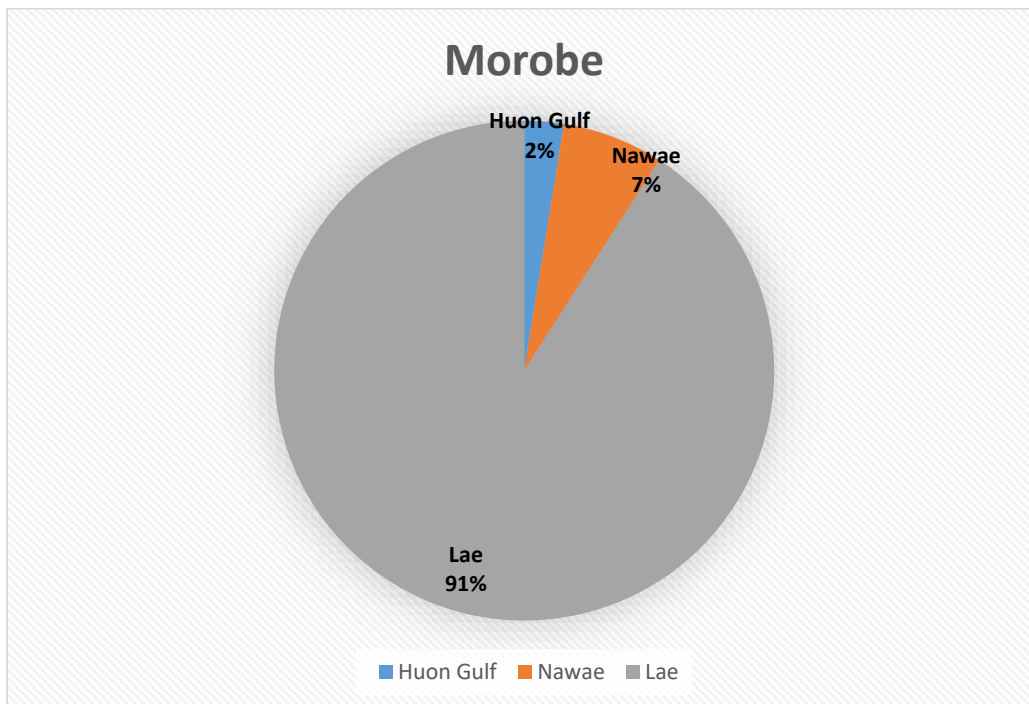
ELECTORATE	Q4 2021		Q3 2021	
	Count	Percentage	Count	Percentage
Abau	3	<1%	3	1%
Rigo	14	4%	12	3%
Goilala	0	0%	0	0%
Kairuku-Hiri	374	96%	393	96%





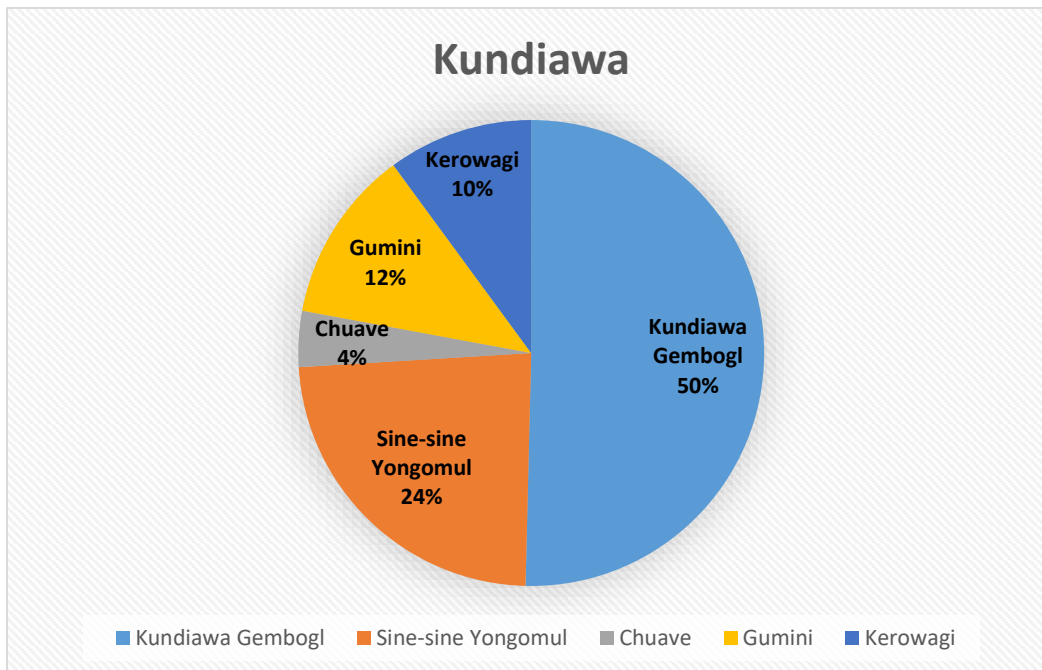
## Morobe

ELECTORATE	Q4 2021		Q3 2021	
	Count	Percentage	Count	Percentage
Lae	250	90.9%	105	94.6%
Bulolo	0	0.0%	0	0.0%
Finschhafen	0	0.0%	0	0.0%
Huon	7	2.5%	6	5.4%
Kabwum	0	0.0%	0	0.0%
Markham	0	0.0%	0	0.0%
Menyamaya	0	0.0%	0	0.0%
Nawae	18	6.5%	0	0.0%
Tewae-Siassi	0	0.0%	0	0.0%



## Simbu

ELECTORATE	Q4 2021		Q3 2021	
Chauve	10	4%	7	6.2%
Gumine	31	12%	1	0.9%
Karimui-Nomane	0	0%	2	1.8%
Kerowagi	26	10%	5	4.4%
Kundiawa	130	50%	78	69.0%
Sina Sina-Yonggumugl	61	24%	20	17.7%



## Response Performance by Priority (Median)

The response time of Emergency Ambulance Services (EAS) is an elemental factor for prehospital care to be successful and, therefore, must be controlled to increase the chances of survival<sup>3</sup>. Calls are assessed and triaged, with priority given in order of severity and acuteness of illness/injury, with priority 1A being the highest, and priority 8 being the lowest.

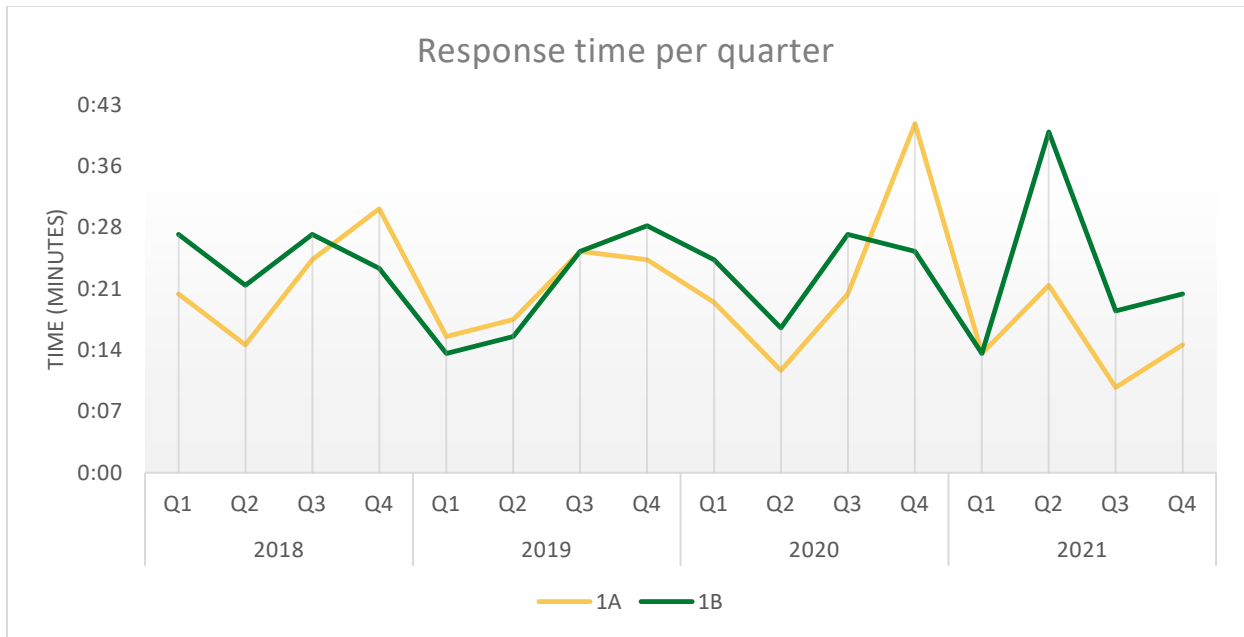
'Dispatch time' is defined as the time between when the call-taker first receives the call about a case and the dispatcher tasks an ambulance crew to attend the case by sending a message to crew (usually by radio or pager).

Dispatch Priority	Target	National Capital District		Central Province		East New Britain		Morobe		Simbu
		Q4 2021	Q3 2021	Q4 2021	Q3 2021	Q4 2021	Q3 2021	Q4 2021	Q3 2021	Q4 2021
(minutes)										
1A	1	3	1	4	4	5	-	4	-	5
1B	1.5	3	3	4	3	3	3	4	3	5
1C	1.5	5	4	6	4	6	8	6	6	4
2A	3	11	4	10	4	11	8	5	4	4
2B	3	13	5	20	5	5	4	5	6	5
3	20	27	12	41	7	11	9	4	4	4
4	-	5	3	-	-	25	-	28		-
5	-	39	3	-	-	-	-	-		-
6	-	59	-	-	-	96	-	-		-
7	-	9	4	-	-	-	-	18		-
1P (COVID-19)		14	-	19	-	17	-	2		11
2P (COVID-19)		16	-	51	-	16	-	3		7



‘Response time’ is defined as the time between notification of an occurrence and the ambulance arrival at the scene.  
According to the WHO, an ideal response time is equivalent to less than 8 minutes<sup>1</sup>.

Graph showing the median response time per case priority 1A and 1B.



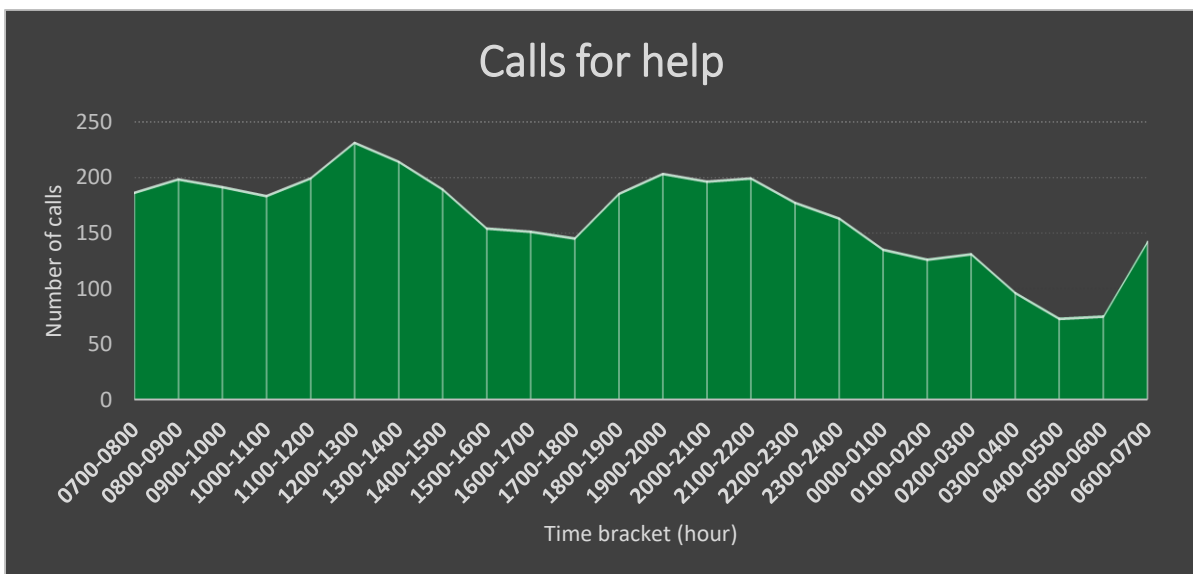
Response Priority	Target	National Capital District		Central Province		East New Britain		Morobe		Simbu
		Q4 2021	Q4 2020	Q4 2021	Q4 2020	Q4 2021	Q4 2020	Q4 2021	Q3 2021	Q4 2021
(minutes)										
1A	10	13	17	48	41	8	50	16		16
1B	15	15	17	43	50	25	26	35	21	35
1C	15	21	27	55	83	34	35	32	30	32
1P (COVID-19)	15	42	86	[xx]	[xx]	32	32	50		50
2A	30	37	31	67	79	32	40	30	25	30
2B	60	40	32	68	72	34	35	27	14	27
2P (COVID-19)	60	60	[xx]	94	[xx]	31	[xx]	108		108
3	90	54	33	130	69	41	39	34	23	34
4	120	49	44	[xx]	-	50	74			
5	180	67	33	[xx]	16		44			
6	180	276	25	[xx]	60	241	57			
7	720	31	31	[xx]	-	[xx]	-			



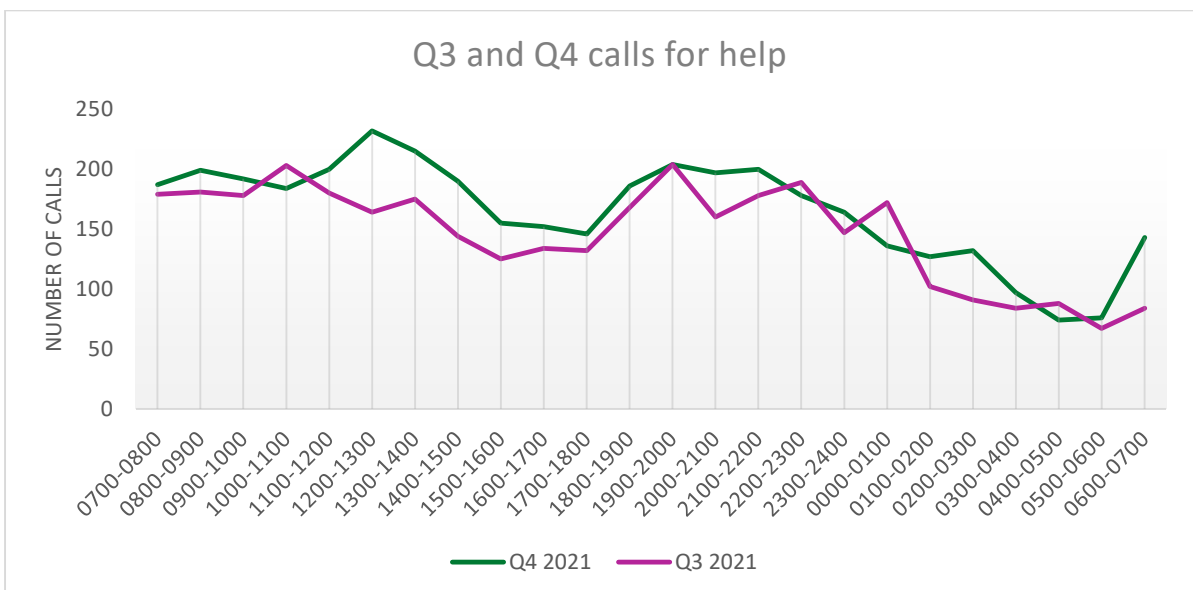
## Peak call periods

We keep track of the times in which calls for help are received.

For this period, the highest number of calls for help were received between 12:00-13:00 hours with a total of 232 calls.

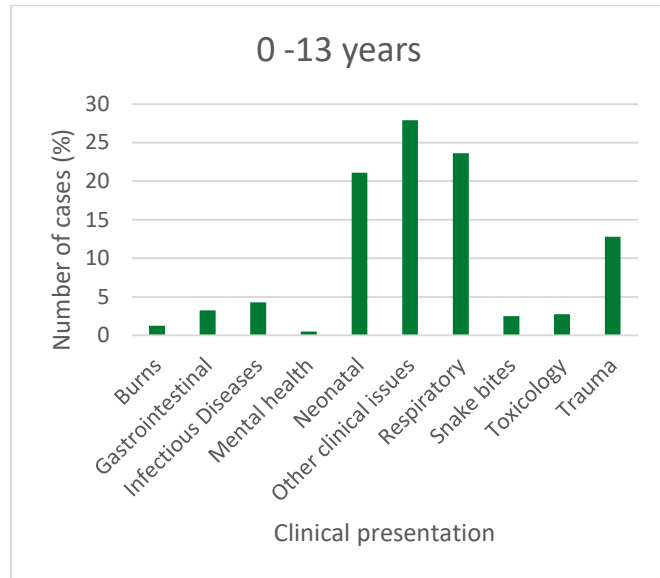


During the reporting period, the busiest time for St John Ambulance was between 12:00 and 13:00 hours during the day and 19:00 and 20:00 hours during the night. (Daytime period: 06:00 to 18:00); Night-time period: 18:01 to 05:59)

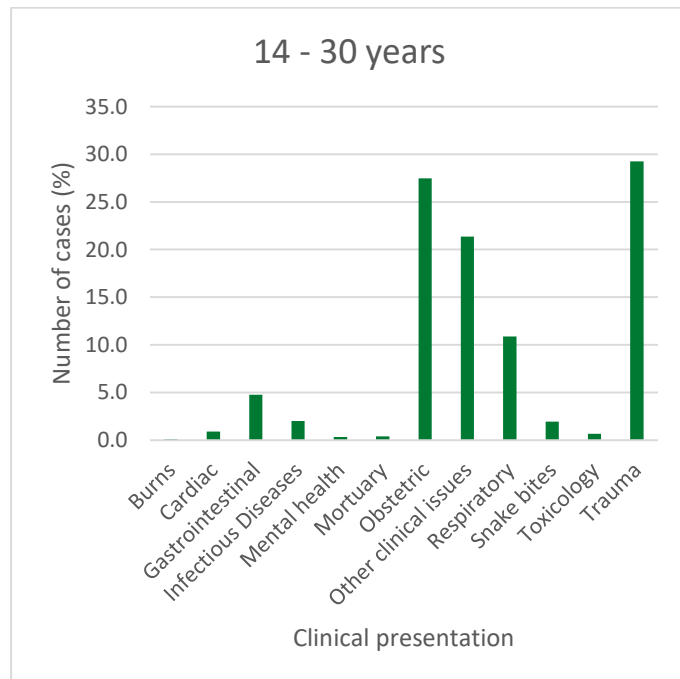


## Patients by condition and age group

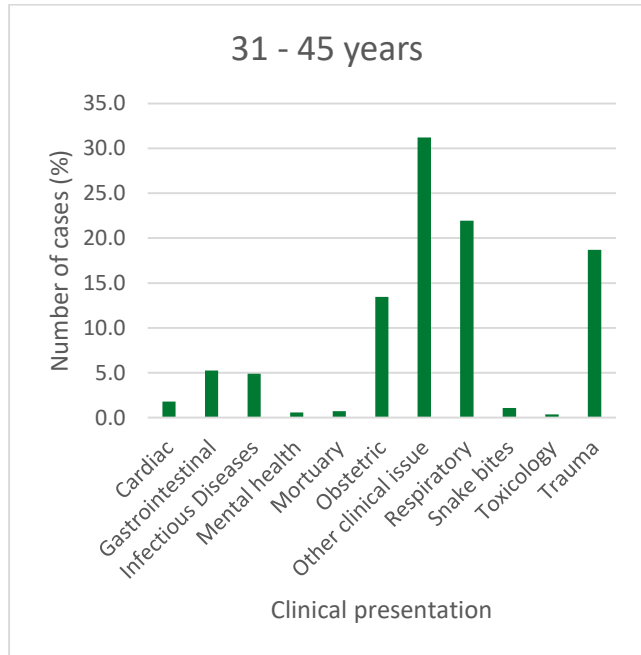
≤13 years	Q4 2021	Q4 2020
<b>Clinical presentation</b>	%	%
Burns	1	0
Gastrointestinal	3	4
Infectious Diseases	4	6
Mental health	1	0
Neonatal	21	0
Other clinical issues	28	29
Respiratory	24	52
Snake bites	3	2
Toxicology	3	0
Trauma	13	7



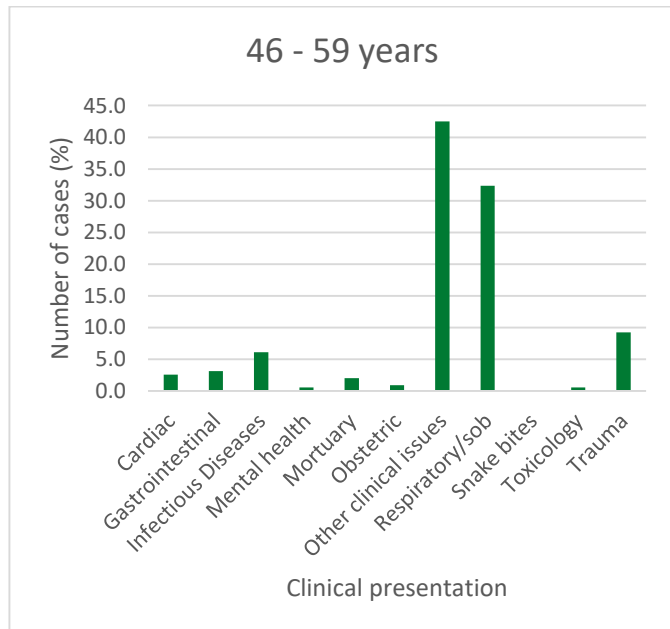
Age ≥14 - ≤30	Q4 2021	Q4 2020
<b>Clinical presentation</b>	%	%
Burns	0.1	0
Cardiac	0.9	0
Gastrointestinal	4.8	7
Infectious Diseases	2.0	7
Mental health	0.3	0
Mortuary	0.4	0
Obstetric	27.5	20
Other clinical issues	21.4	25
Respiratory	10.9	10
Snake bites	1.9	1
Toxicology	0.6	0
Trauma	29.3	30



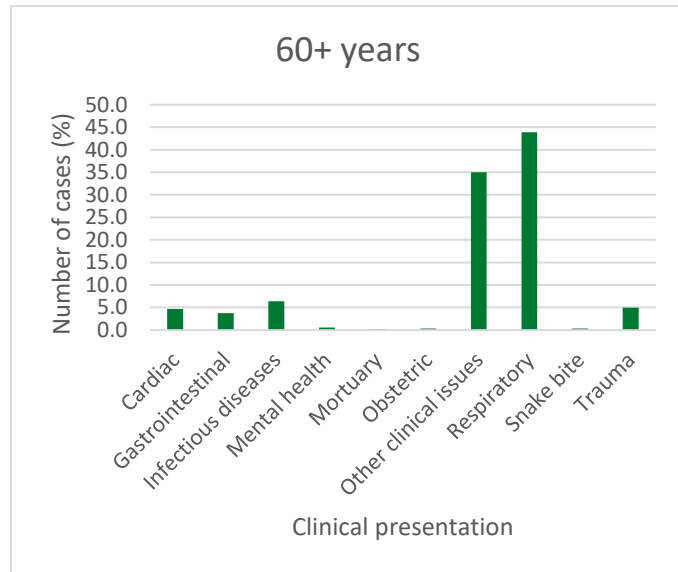
Age ≥31 - ≤45	Q4 2021	Q4 2020
<b>Clinical presentation</b>	%	%
Cardiac	1.8	0
Gastrointestinal	5.2	9
Infectious Diseases	4.9	12
Mental health	0.6	0
Mortuary	0.7	0
Obstetric	13.5	11
Other clinical issue	31.2	26
Respiratory	21.9	17
Snake bites	1.1	0
Toxicology	0.4	0
Trauma	18.7	23



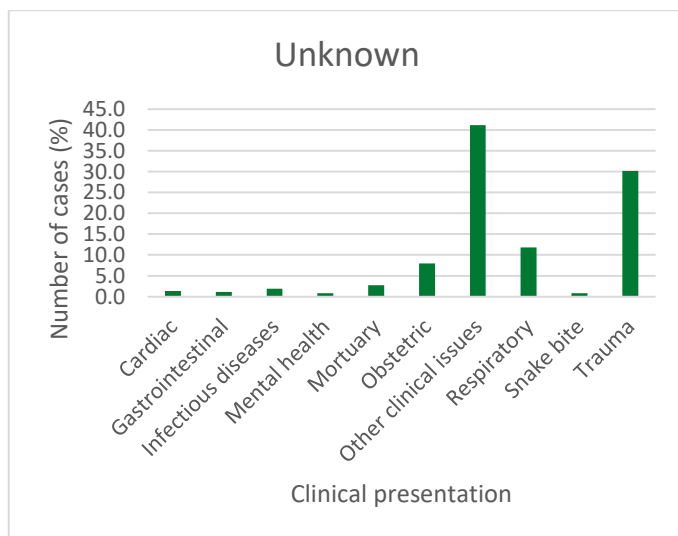
Age ≥46 - ≤59	Q4 2021	Q4 2020
<b>Clinical presentation</b>	%	%
Cardiac	2.6	9
Gastrointestinal	3.1	6
Infectious Diseases	6.1	14
Mental health	0.6	0
Mortuary	2.0	0
Obstetric	0.9	1
Other clinical issues	42.5	34
Respiratory/sob	32.3	25
Snake bites	0.0	1
Toxicology	0.6	0
Trauma	9.2	10



Age ≥60	Q4 2021	Q4 2020
<b>Clinical presentation</b>	%	%
Cardiac	4.6	7
Gastrointestinal	3.8	7
Infectious diseases	6.3	20
Mental health	0.5	
Mortuary	0.2	
Obstetric	0.3	
Other clinical issues	35.0	30
Respiratory	43.9	31
Snake bite	0.3	
Trauma	5.0	6

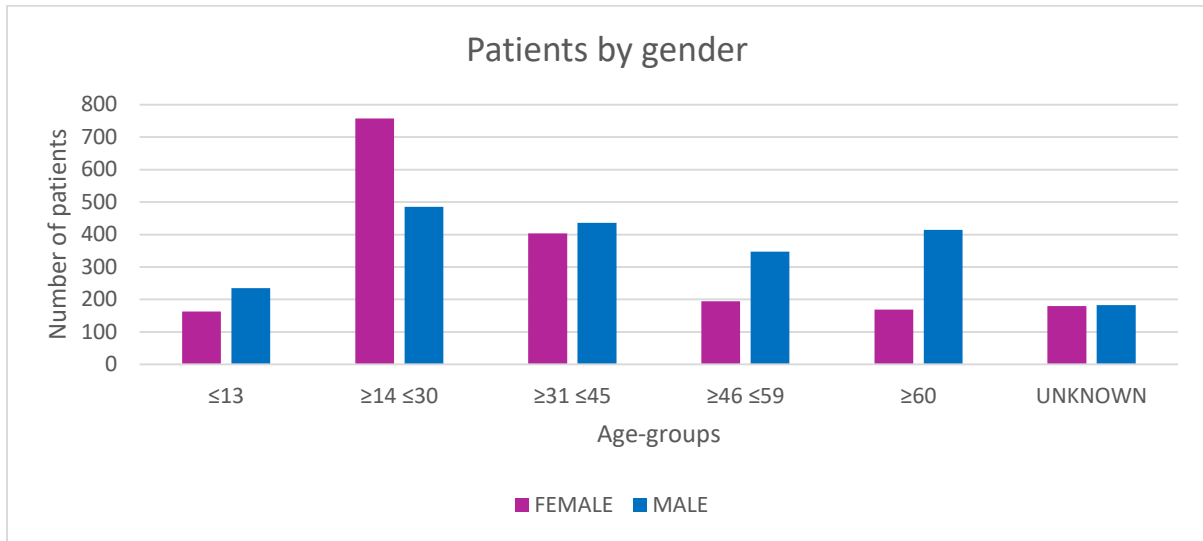


Unknown	Q4 2021
<b>Clinical presentation</b>	%
Cardiac	1.4
Gastrointestinal	1.1
Infectious diseases	1.9
Mental health	0.8
Mortuary	2.7
Obstetric	8.0
Other clinical issues	41.2
Respiratory	11.8
Snake bite	0.8
Trauma	30.2



## Case type by gender

St John attends to people of all gender and ages. The table below shows cases as a percentage by age group.



*The graph showing number of casualties per gender and age group.*



## Ambulance Service Papua New Guinea

Activity	NCD		Central		ENB		Morobe		Simbu		YTD total
	Q4 2021	Q3 2021	Q4 2021	Q3 2021	Q4 2021	Q3 2021	Q4 2021	Q3 2021	Q4 2021	Q3 2021	2021
Assist with delivery of baby (baby delivered in care of ambulance officers)	21	15	5	5	0	3	2	2	0	0	53
CPR given by SJA	29	29	4	1	0	0	3	0	0	0	66
Patient is defibrillated by SJA	29	29	4	0	0	0	3	0	0	0	65
Patient administered salbutamol by SJA	285	269	11	12	5	14	0	0	0	0	596
Patient administered O2 by SJA	460	328	63	41	22	32	12	0	0	1	959
Patient administered simple analgesia (paracetamol, ibuprofen)	100	256	19	60	0	4	13	7	10	2	471
Patient administered advanced analgesia (fentanyl, morphine, ketamine)	43	36	4	20	0	0	0	0	0	0	69
Number of medicines administered	942	1110	138	198	30	37	59	7	5	3	2529
Patient has pelvic splint applied	24	4	13	2	0	0	0	0	0	0	43
Patient has arterial tourniquet applied	2	0	0	1	0	0	0	0	0	0	3
A BVM is used on an adult	29	29	4	0	0	0	3	0	0	0	65
A BVM is used on a child	0	1	0	1	0	0	0	0	0	0	2
A BVM is used on a neonate	0	0	0	0	0	0	0	0	0	0	0
A basic airway is used (OPA / NPA)	15	6	1	0	0	0	1	0	0	0	23
An LMA is used	1	0	0	0	0	0	0	0	0	0	1
An ETT is used	0	0	0	0	0	0	0	0	0	0	0
An IV cannula is placed	34	22	9	4	0	2	4	0	0	0	75
RSI is performed by a SJA doctor or paramedic	0	0	0	0	0	0	0	0	0	0	0
A patient is transported on a ventilator	0	0	0	0	0	0	0	0	0	0	0
A patient is transported with an ETT in situ between health facilities	0	0	0	0	0	0	0	0	0	0	0

### Clinical Practice ATP

<b>Activity</b>	<b>NCD</b>	<b>Central</b>	<b>ENB</b>	<b>Morobe</b>	<b>Simbu</b>
	<b>2021</b>	<b>2021</b>	<b>2021</b>	<b>2021</b>	<b>2021</b>
Total staff with ATP	74	0	5	8	4
AO1	16	0	3	3	3
AO2	35	0	2	3	1
AO3	1	0	0	1	0
AO4	1	0	0	0	0
RN (general)	2	0	0	0	0
RN (ambulance)	2	0	0	1	0
HEO	2	0	0	0	0
Paramedic	2	0	0	0	0
RMO (reservist)	0	0	0	0	0
SMO (reservist)	1	0	0	0	0

## ANNEXE A – Key Performance Targets

## Ambulance Service

Name	Target	Q4 2021	Q3 2021
Minimum ambulance crewing	Minimum of five ambulances are staffed 95% at all time.	Minimum of seven ambulances are staffed 80% of the time.	Minimum of six ambulances are staffed 80% of the time.
Response time (NCD) 1A	An ambulance arrives on scene within 11 minutes from time of call for 1A cases	It takes 0:13 minutes for responding to 1A cases	It takes 10 minutes to respond to 1A cases
Response time (NCD) 1B, 1C	An ambulance arrives on scene within 15 minutes from time of call for 1B & 1C cases	0:15 minutes for 1B cases and 0:21 minutes for 1C cases.	1B is 16 minutes and 1C is 20 minutes
Response time (Regional Professional)	An ambulance arrives on scene within 15 minutes from time of call for 1A & 1B cases	0:12 minutes response time for 1A cases and 0:17 minutes response time for 1B cases in Morobe Province	Morobe; Did not respond to 1A case. 1B is 31 minutes
Response time (Regional Lite)	An ambulance arrives on scene within 30 minutes from time of call for 1A & 1B cases	0:15 minutes for 1A cases and 0:28 minutes for 1B cases in ENB. 0:16 minutes for 1A cases and 0:35 minutes for 1B cases in Kundiawa.	ENB did not respond to 1A cases, 1B response time is 21 minutes. Simbu 1B response time is 47 minutes



## National Ambulance Coordination Centre (111)

The National Ambulance Coordination Centre (NAAC) is the hub for the 111-emergency call centre and ambulance dispatching systems. It facilitates communication with and coordination of the ambulance service across NCD, Central, East New Britain, Morobe and Kundiawa province and the tracking of the Air Ambulance missions.

The NACC also provides clinical advice to communities and health workers in other provinces. The NACC enables interagency cooperation with other emergency service providers during times of mass casualty or complex incidents such as earthquakes.

Name	Target	Q4 2021	Q4 2020
Dispatch time	The median time for an ambulance to be dispatched to a 1A case within 90 seconds of call received	0:04 minutes (240 seconds) for 1A cases in all provinces. Additional training is required for all dispatchers especially the new recruits to maintain and decrease dispatched time.	0:07 minutes (420) seconds dispatched time for 1A cases in NCD, Central and ENB.
Staff succession planning and cross-training	Four (4) additional staff are cross trained as dispatchers and call takers	In progress	In progress

## Clinical & Operation Support Group (COSG) KPIs

Name	Target	Q4 2021	Q3 2021
Clinical case review	75% of case sheets reviewed and positive and constructive feedback given on 20% of cases.	65% of case sheet were reviewed and the constructive feedback in planning of the 2022 reaccreditation program and CRCG meeting.	82% completed
Skills maintenance records	All operational staff will have a skills maintenance record by September 2020	Completed skills training for Q4 with 2022 training planned.	Completed skills training sign off for Q3
Electronic Patient Care Records	90% of cases completed on the ePCR system by 30 December 2020.	Roll out commenced in mid-December with 86% compliance rate.	On track for roll out in December 2021.





**Ambulance Service  
Papua New Guinea**

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