

National Capital District Provincial Health Authority

Gerehu Hospital

“A prospective observational study of Paediatric referrals and outcomes – Gerehu Hospital”

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Introduction – Referral System

- Patient referral is the transfer of care for a patient from one clinician, clinic or hospital to another by request.
- Patients are usually referred from primary or secondary health care facility to a tertiary health care setting for further management.
- The design and functioning of a referral system are influenced by:
 1. Health System Determinants
 2. General Determinants

Introduction – Gerehu Hospital

2018 – Gerehu Hospital gazetted to level 4/5 Health Facility

2020 – Official launch of NCDPHA (2007 ACT PHAs)

LIMITATIONS IN MEDICAL SERVICES (CORE AND SUPPORTIVE) AT GEREHU HOSPITAL

No Birthing Facilities/Labour Ward

No Special Care Nursery/ICU

No Operating Theatre

No Radiology/Imaging/Pathology Services

Introduction

Paediatric Department at Gerehu Hospital:

	DESCRIPTION
PAEDIATRIC IN-PATIENT DEPARTMENT	<ul style="list-style-type: none">• General Paediatric Ward• 24/7• Total of 8 beds• O2 Beds - 4
CHILDREN'S OUT-PATIENT DEPARTMENT	Open 7 Days a week (8am – 4pm)
CONSULTATION CLINIC	Monday – Friday (9am – 12MD) HIV, Nutrition, Neuro/Cardiac, General, TB
PAEDIATRIC WELL BABY CLINIC/IMMUNIZATION/OUTREACH	Monday – Friday (8am – 12MD)

Introduction – Paediatric Department Gerehu Hospital

	2018	2019	2020
Total COPD Attendance	33, 717	31, 091	23, 106
Total Admissions	990	1141	962
Total Ward Referrals	143	120	169
Ward Referral Rate	14%	10.5%	17%

Table 1. Comparison of COPD Attendance, Referrals and Admissions by year

Aim & Objectives

- ❑ To Identify major reasons why patients are referred to Port Moresby General Hospital
- ❑ To observe patient clinical characteristics at the time of referral and follow up on patient outcomes at PMGH
- ❑ To recognize key strategic areas for improvement in Paediatric Services at Gerehu Hospital and remodelling the referral process to produce better patient outcomes

Methodology

- **Site:** Gerehu Hospital (NCDPHA) (Initiating facility)
Port Moresby General Hospital (Receiving facility)
- **Time frame:** January – July (7 months) : 2021
- **Study Design:** Prospective Observational Study
- **Data Collection:** Data collection form/ Referral letter/ Patient Registry/Records/Admission charts/Electronic database/PAC System

Participant Criteria:

1. All Paediatric referrals from Gerehu Hospital **Paediatric Department**. (Jan – July) 2021
2. Referrals where the outcome was identifiable.

Methodology

- **Exclusion**

Referral cases with no outcomes found/missing information/no records
Paediatric referrals from other departments.

- **Main Outcome** – Referral rates, major reasons for referrals, clinical characteristics and patient outcomes

- **Data Analysis/Interpretation** – Microsoft Excel/IBM SPSS

- **Ethical Consideration** – Approval from management of both NCDPHA and Port Moresby General Hospital

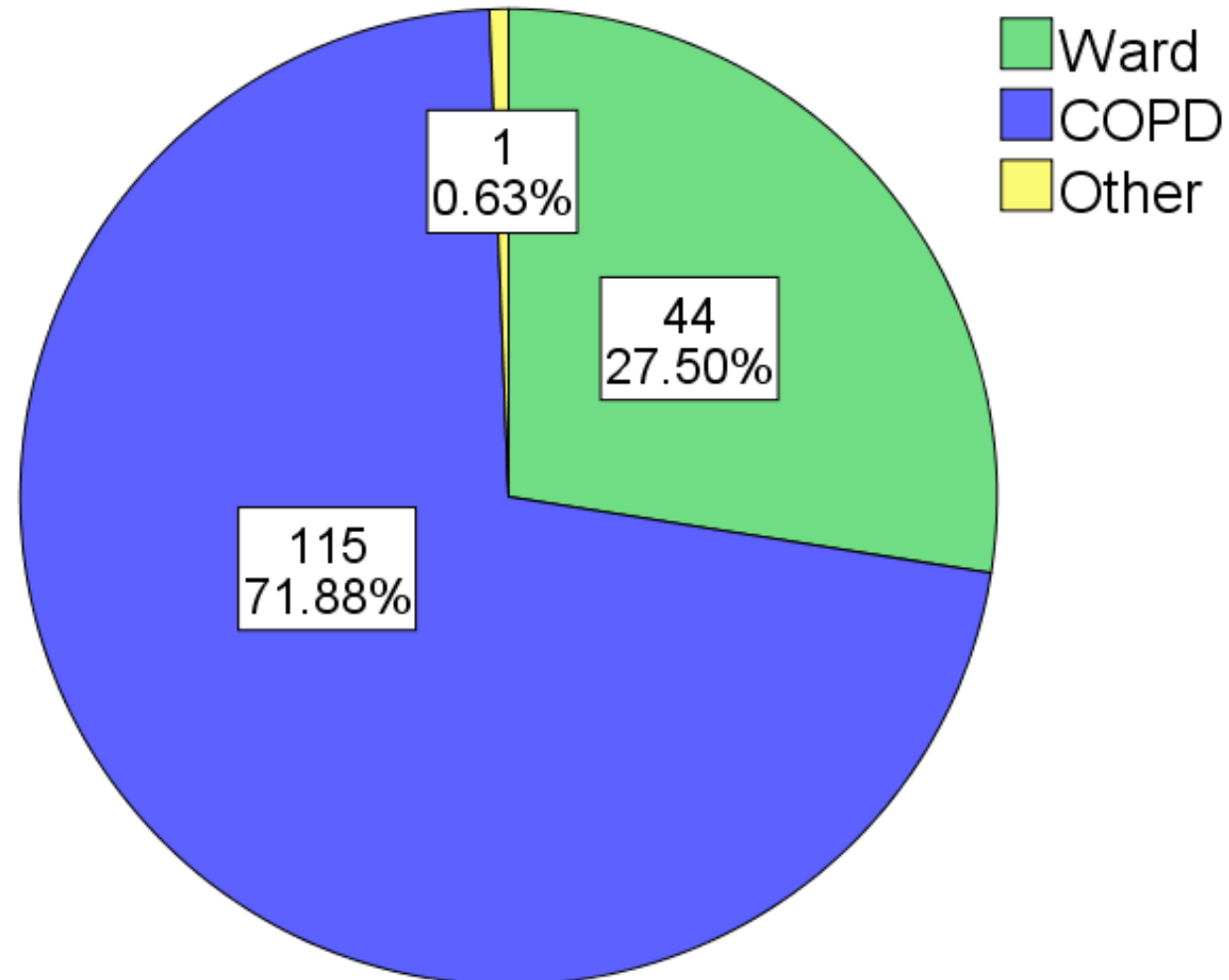
Results – Paediatric Department GEREHU Hospital

January – July 2021

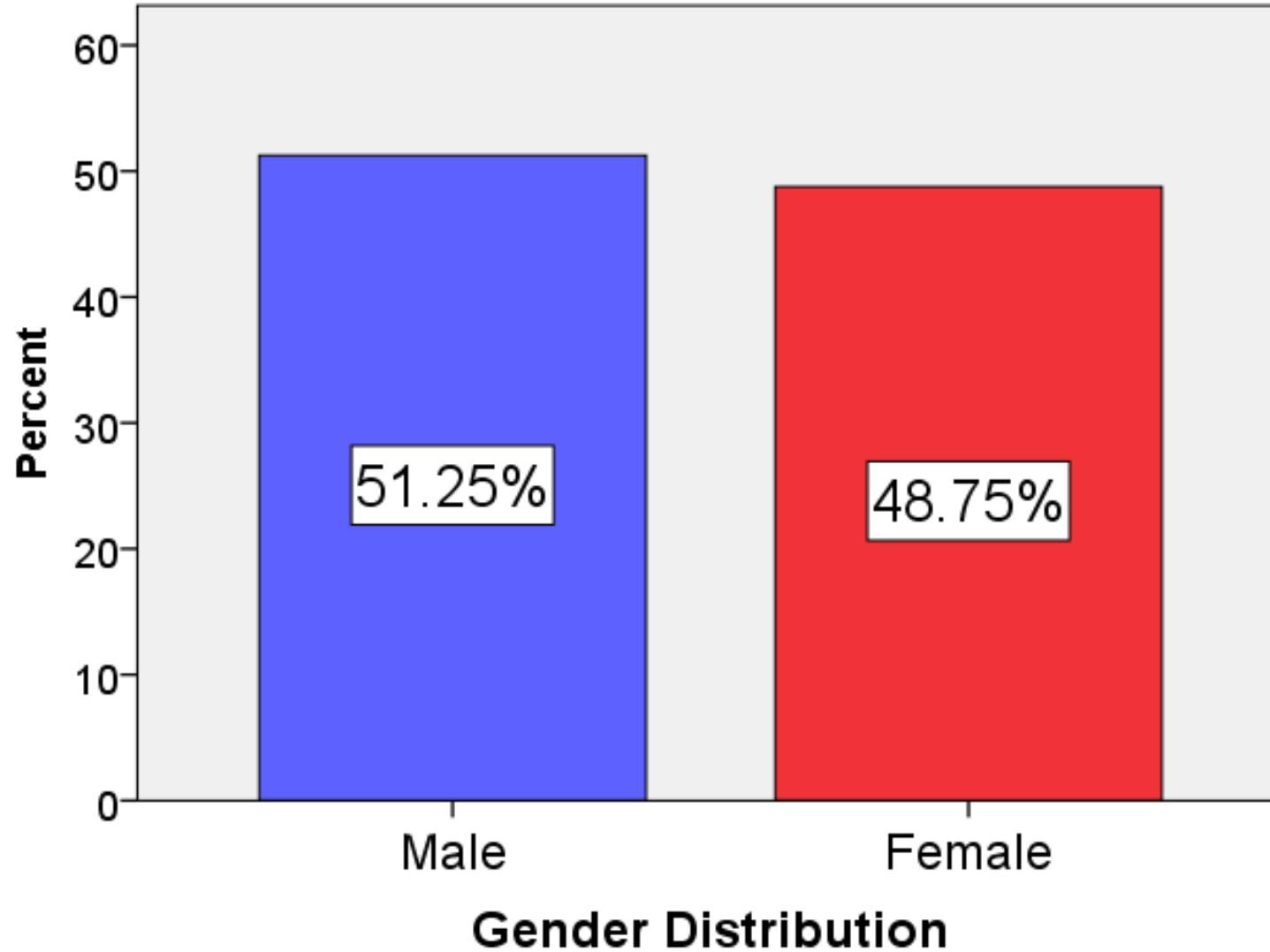
Total COPD Attendance	12, 817
Total Ward Admissions	373
Total Referrals	200
Overall Referral Rate	1.56%
Ward Referral Rate	11.79%
Total Referral Cases Investigated	160 (80%)
Total Referral Cases Excluded (no outcomes / missing information)	40 (20%)

Results

Point of Referral from Paediatric Department Gerehu Hospital



Results – Gender Distribution



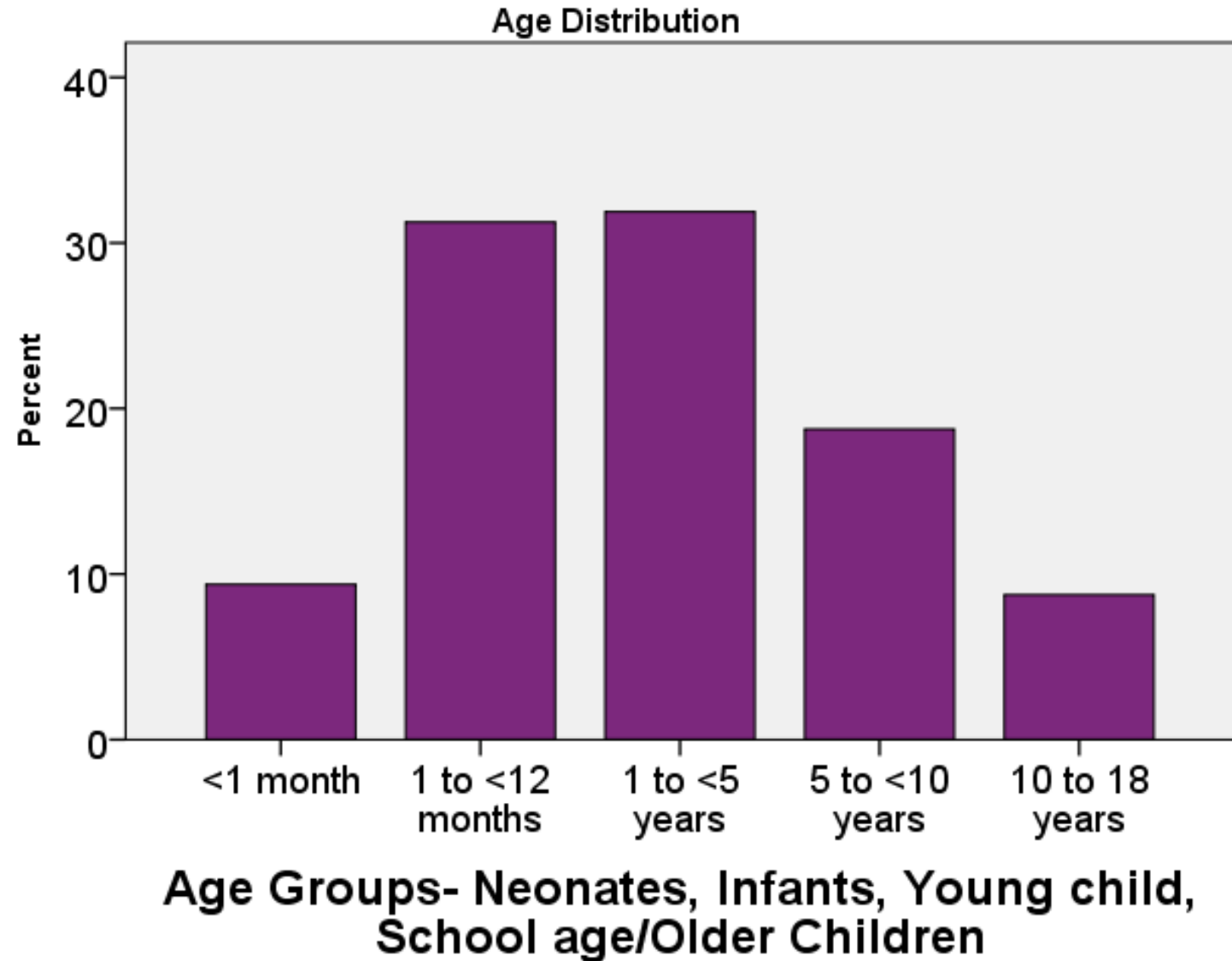
Results - Age

Age Groups		
	No	Percent (%)
< 1 month	15	9.4
1 to < 12 months	50	31.3
1 to < 5 years	51	31.9
5 to < 10 years	30	18.8
10 to 18 years	14	8.8
Total	160	100.0

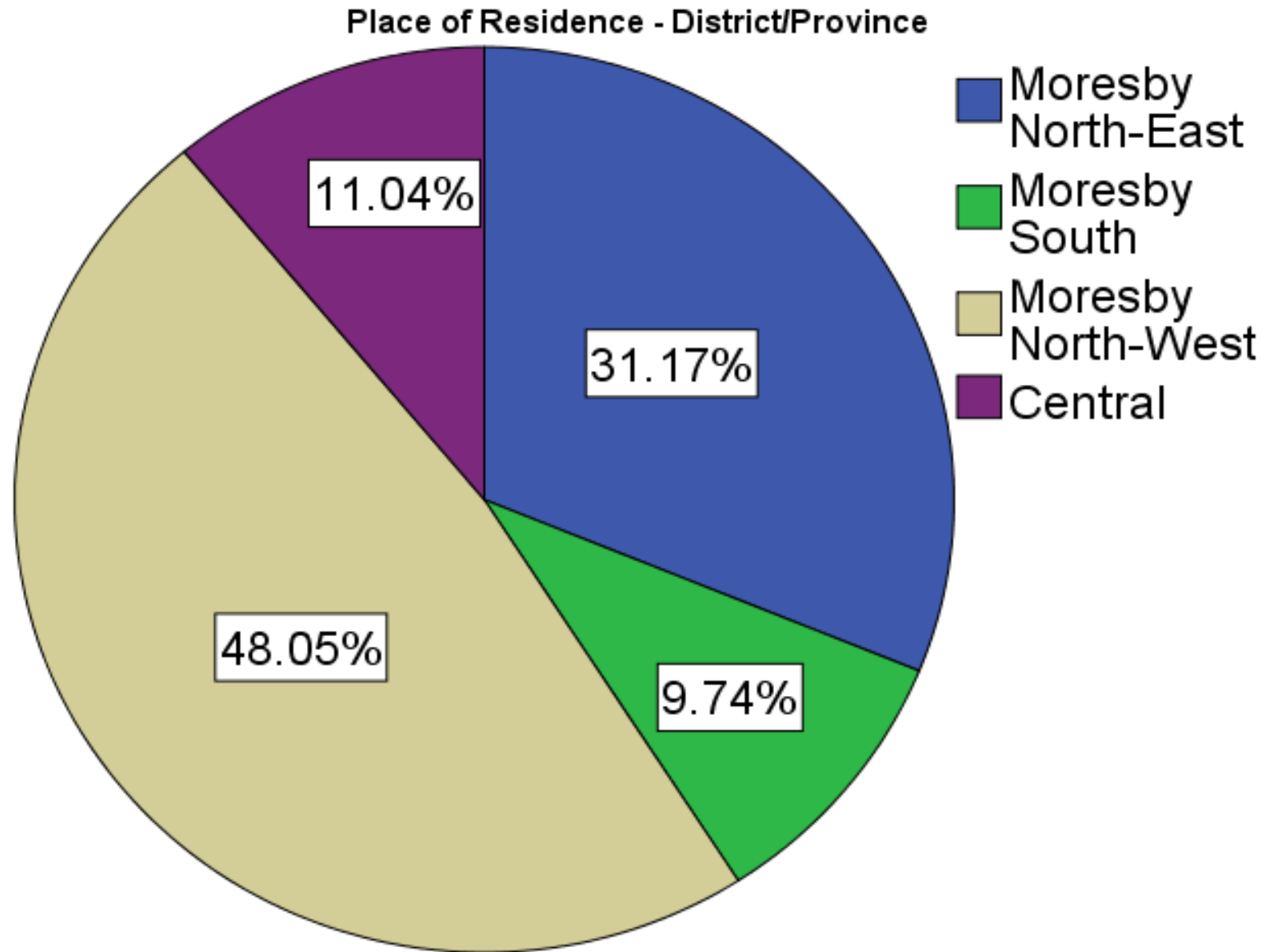
Age (Months)

Median: 20.5

IQR: 4 - 60

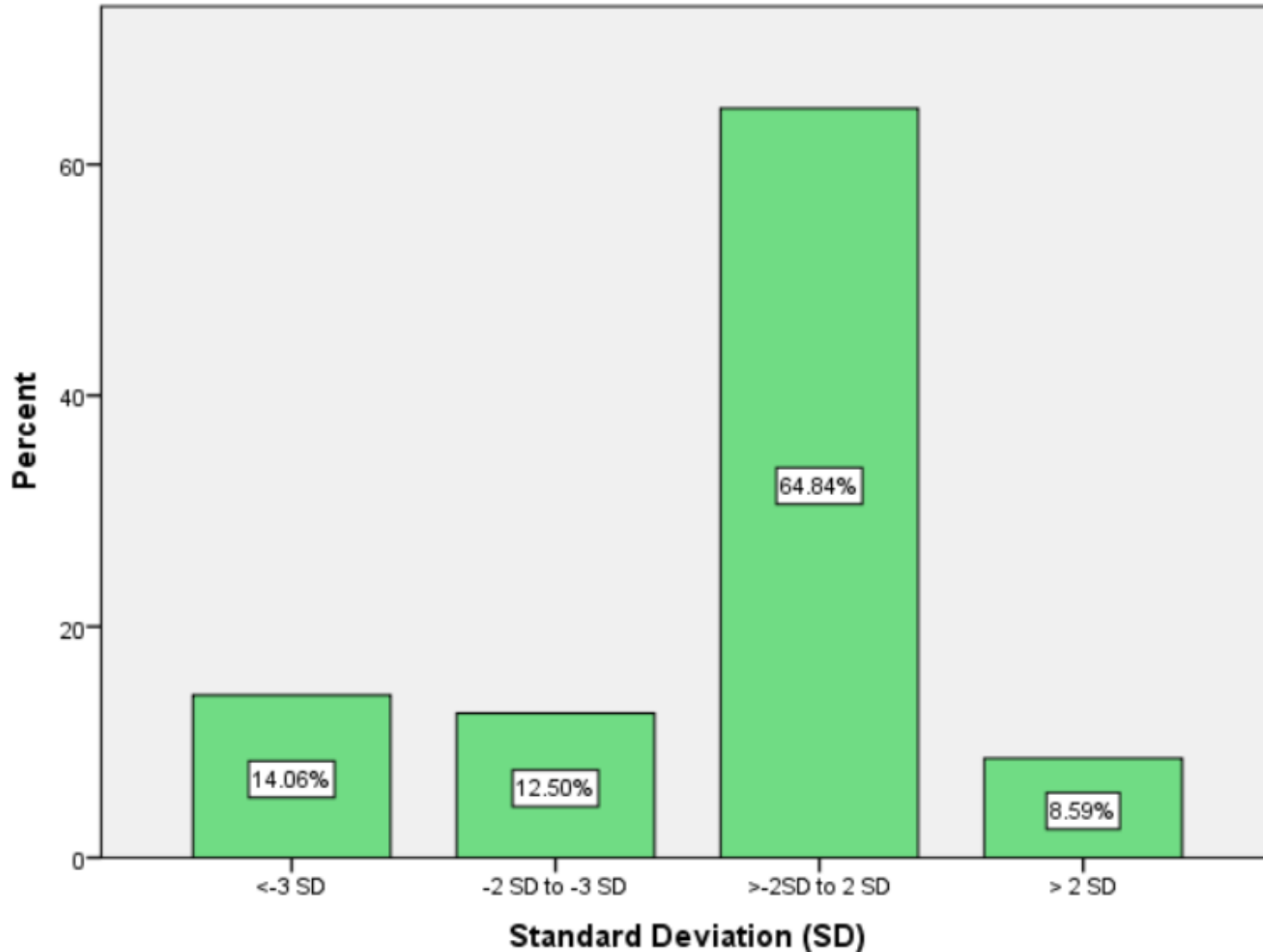


Results – Place of Residence



Results – Weight (kg)

Weight for age in Children <5 Years in Standard Deviation (SD)



Mean: 11.9

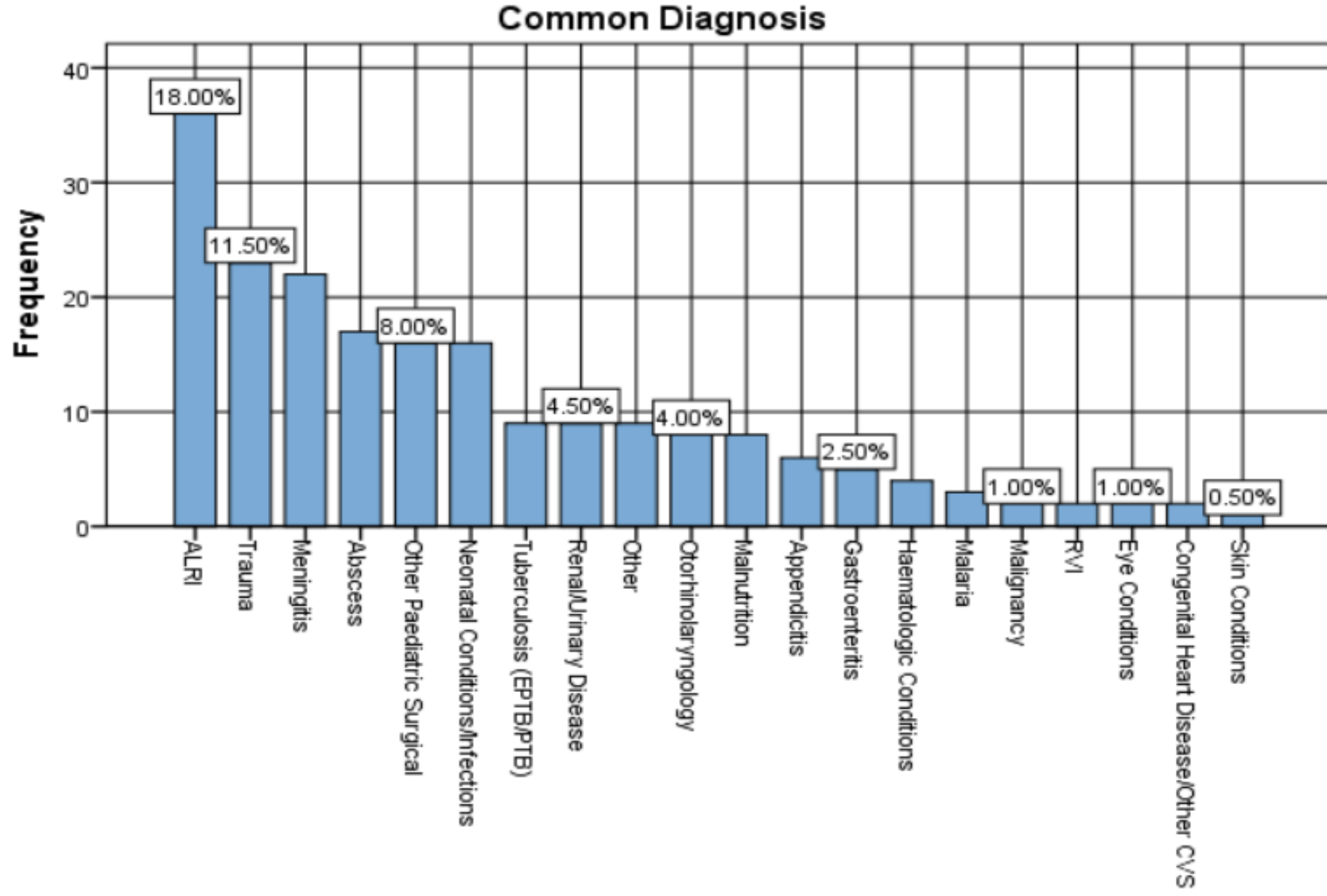
Median: 9.3

IQR : 7.0 – 16.8

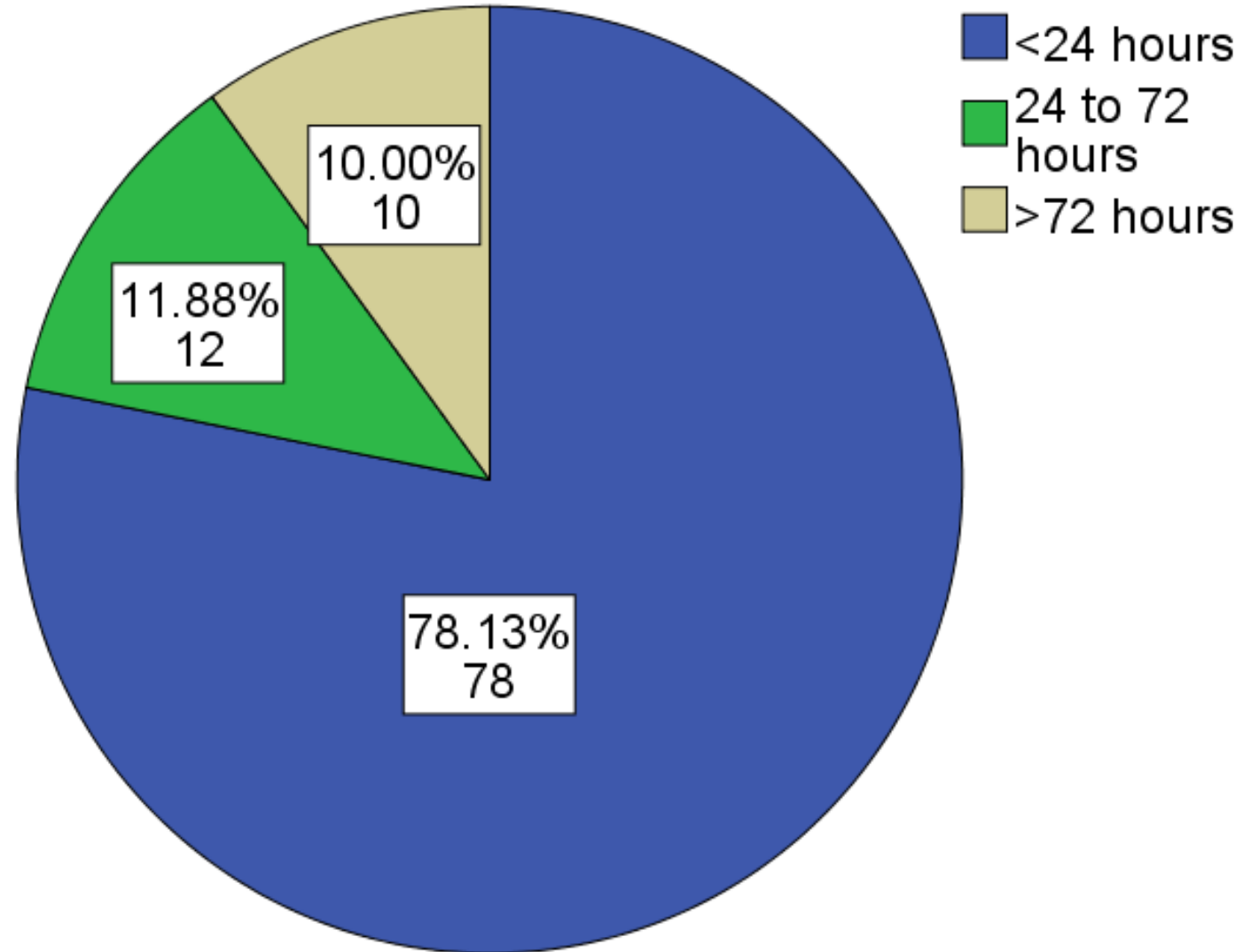
Results – Emergency Signs in Referral Cases

	Frequency	Percent %
Coma/Convulsions	14	8.8
Cyanosis	2	1.3
Rapid/Weak Pulse	1	0.6
Severe Respiratory Distress	32	20.0
> 1 Emergency sign	6	3.8
None	105	65.6
Total	160	100.0

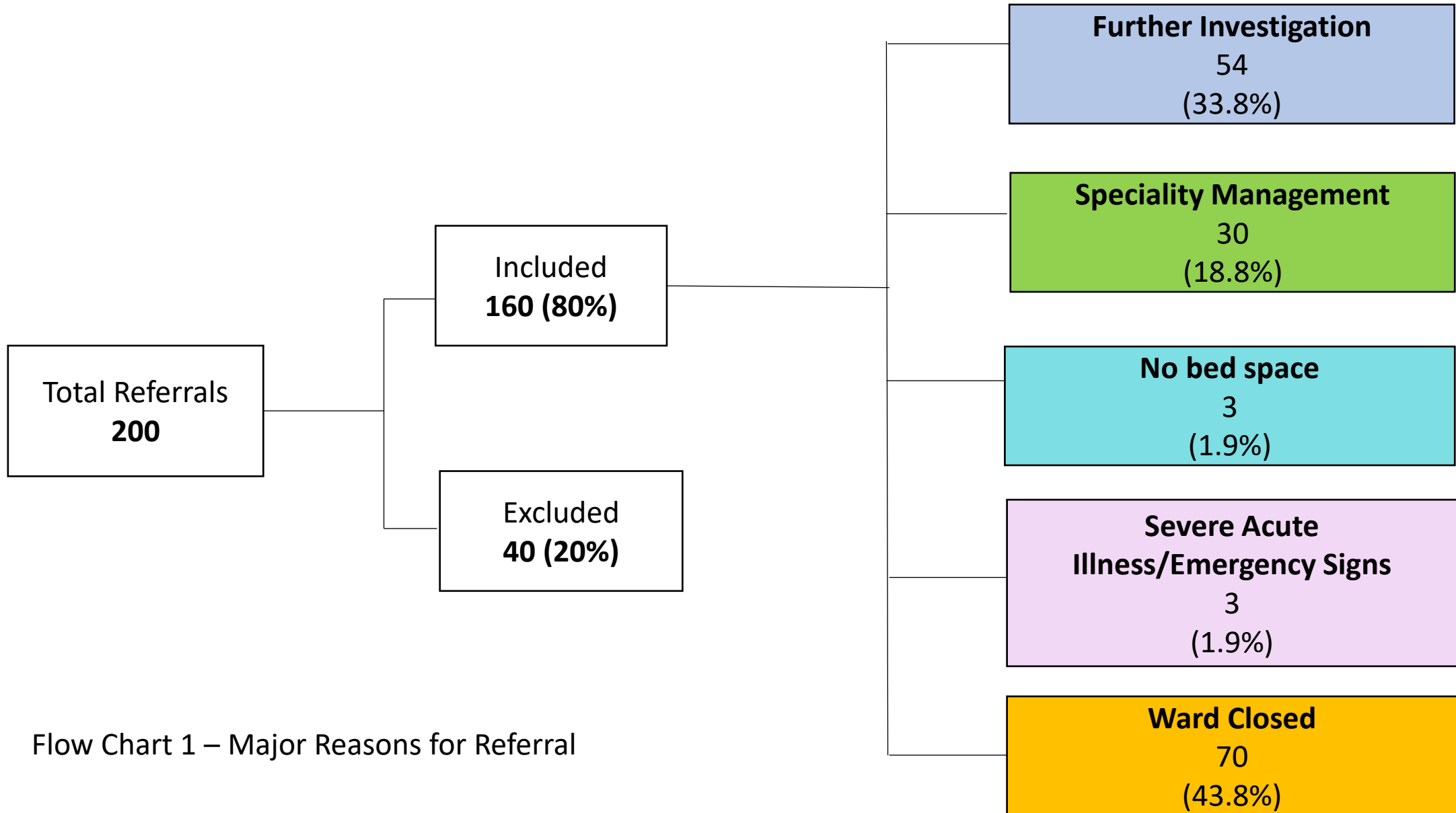
Results



Results – Length of hospital stay of Patients been referred from Gerehu Hospital

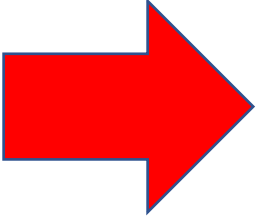


Results – Major Reasons for Referral

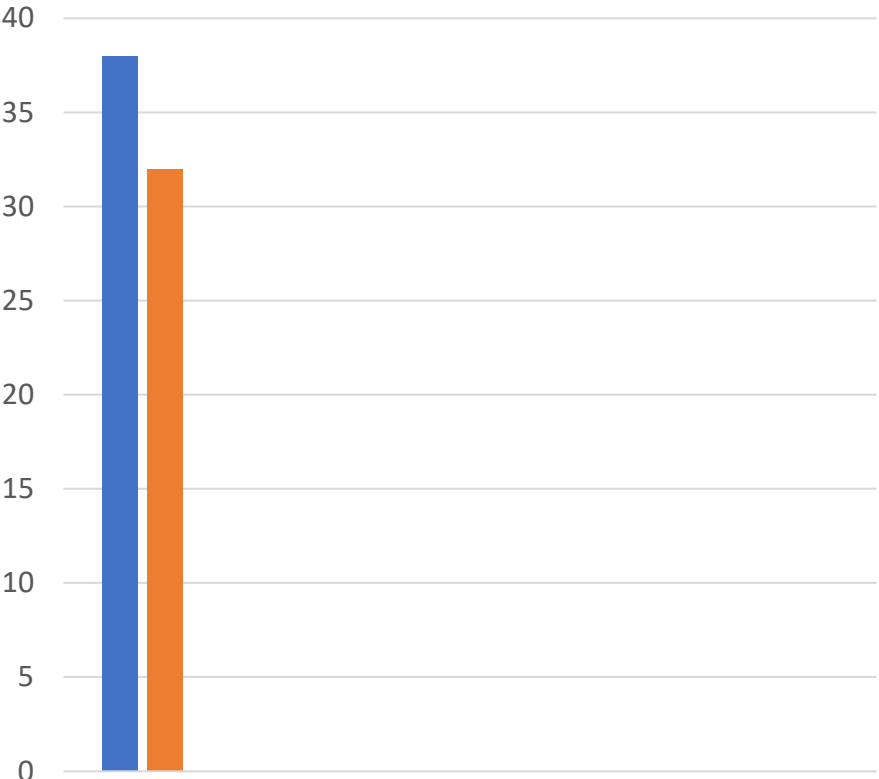


Flow Chart 1 – Major Reasons for Referral

Results

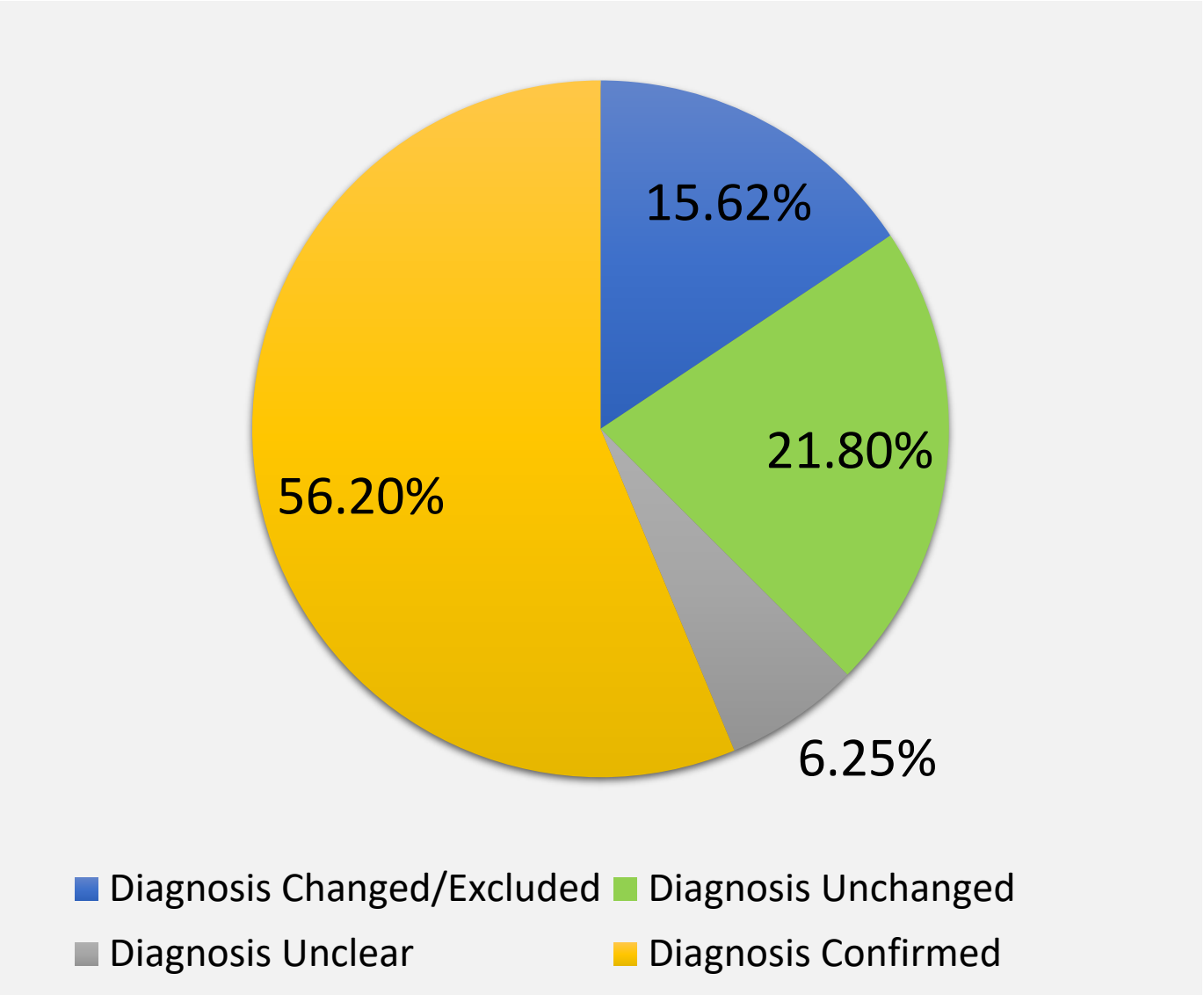
Further Investigation (n = 54)	INVESTIGATION REQUESTED		INVESTIGATIONS DONE	%
X-RAY	38 (70.37 %)		32	84.2
CT-SCAN	15 (27.8%)		9	60.0
ULTRASOUND SCAN	15 (27.8%)		11	73.3
ECHOCARDIOGRAM	2 (3.7%)		2	100

X-Rays Done and Final Diagnosis



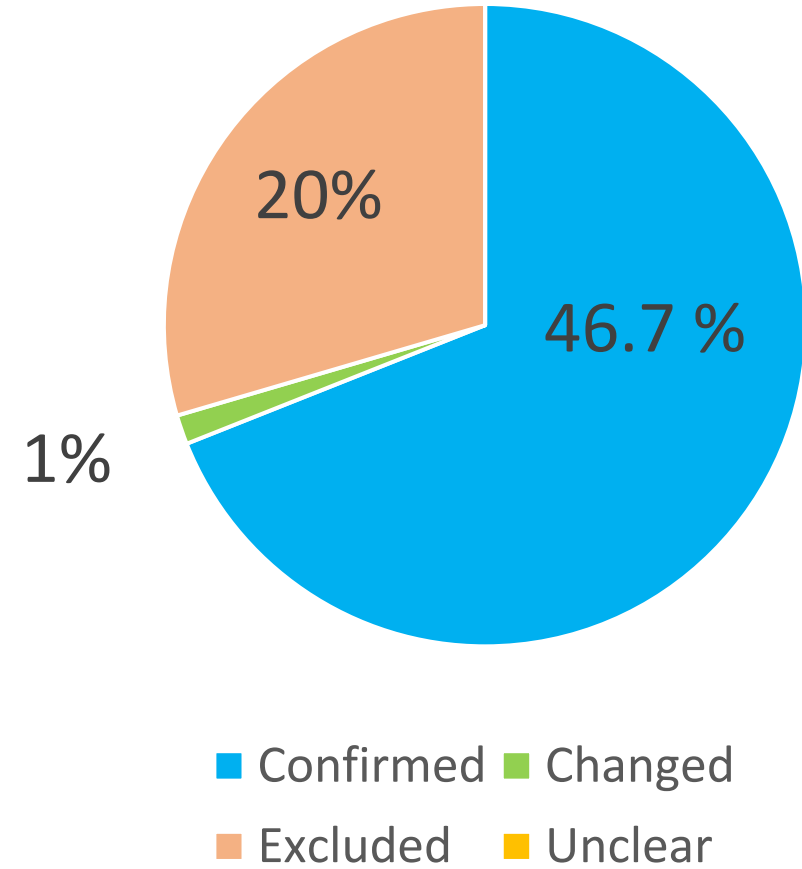
X-Rays

- Investigation Requested
- Investigation Done

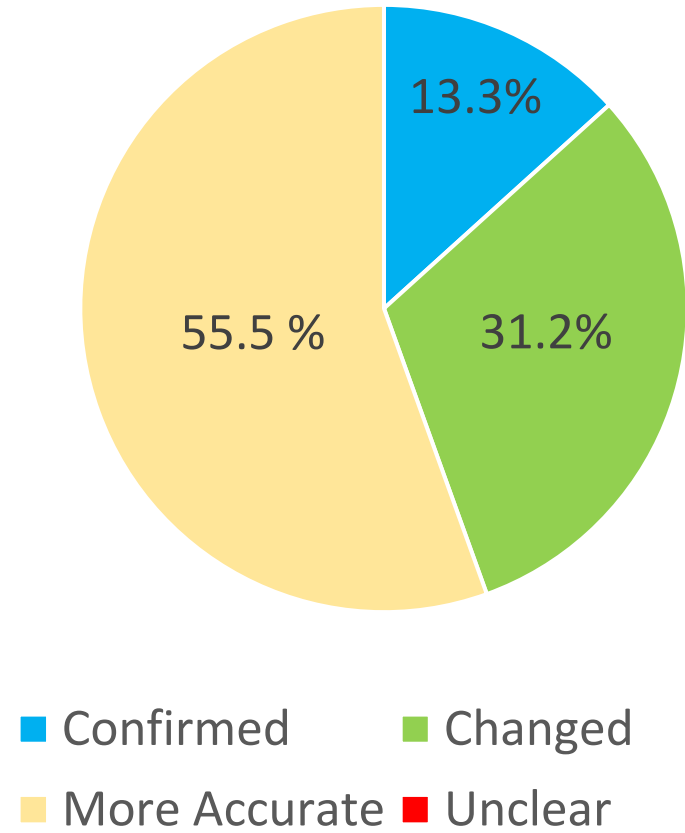


- Diagnosis Changed/Excluded
- Diagnosis Unchanged
- Diagnosis Unclear
- Diagnosis Confirmed

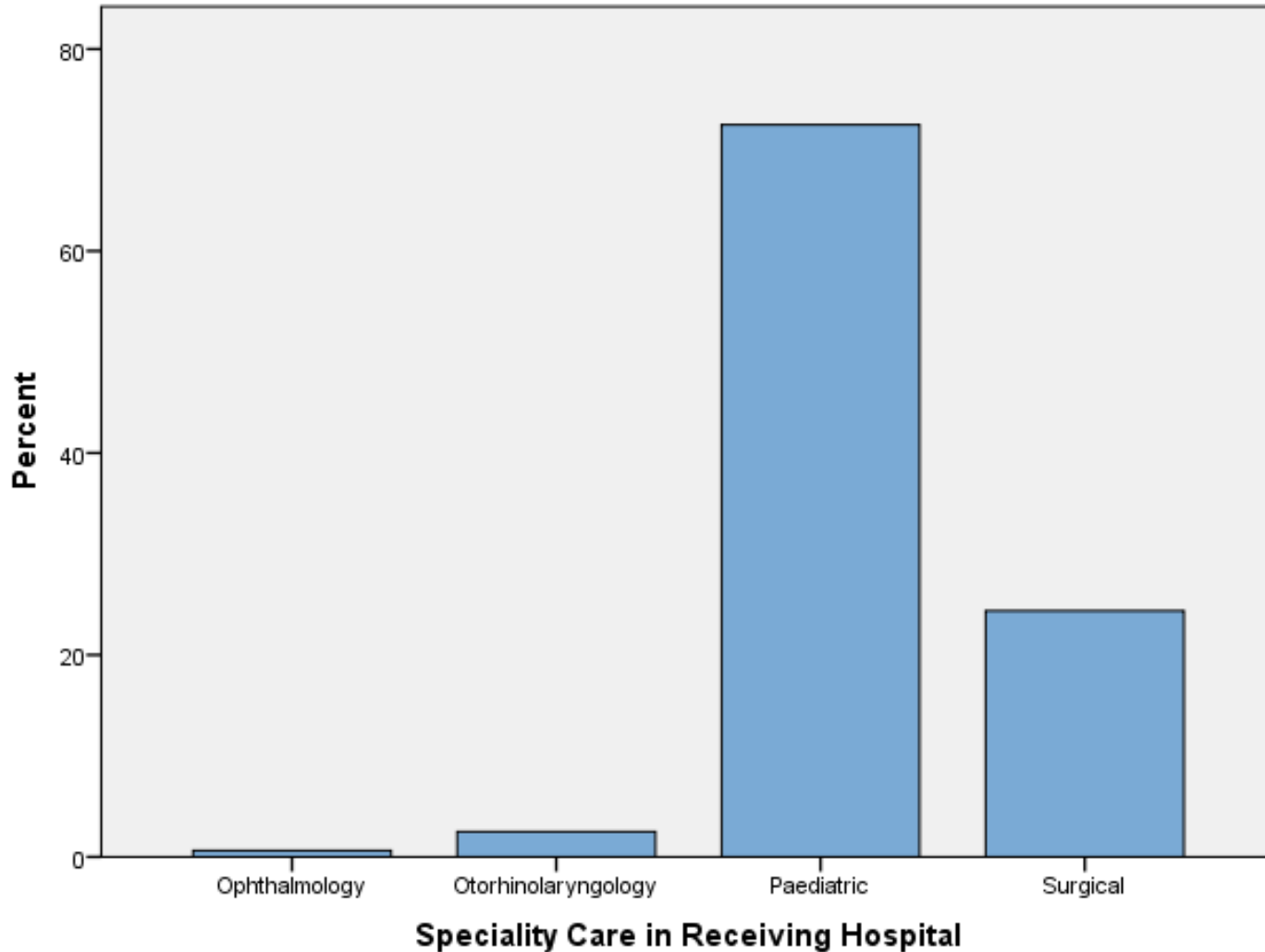
Ultrasound Scans Done and Final Diagnosis



CT Scan & Final Diagnosis



Results – Specialty Care in Receiving Hospital



	Frequency	Percent
Ophthalmology	1	0.6
Otorhinolaryngology	4	2.5
Paediatric	116	72.5
Surgical	39	24.4
Total	160	100.0

Results – Paediatric Department at Receiving Hospital

Paediatric (Further investigation/Management/No Bedspace/Severe Acute Illness)

Total Cases: **116**

Total Admissions: **97 (83.6%)**

Total Deaths: **15 (12.9%)**

Absconded: **4 (3.4%)**

LOHS: **Median – 120Hrs (5 days)**

IQR (72 – 264) (3-11 days)

Total Survived to Hospital Discharge: **78 (80.4%)**

Results – Surgical Department at Receiving Hospital

Surgery

Total Cases to Surgical Department(n=160): **39 (24.4%)**

Total Admissions: **27 (69.2%)**

LOHS Average: **48 hours**

Total Deaths: **2 (5%)**

Total Operation Done: **25 (64.1%)**

Minor Procedures: **19 (76.0%) (I&D, MUA/POP, Debridement)**

Major Procedures: **6 (24.0%)**

Total Discharges: **35**

Total Reviewed at Surgical Out-Patient Departments: **12**

Results – ENT Department at Receiving Hospital

Otorhinolaryngology

Total Cases: **4 (2.5%)**

Out-Patient Consultation Reviews: **4**

Admissions: **Nil (0%)**

Deaths: **0 (0%)**

Discharges: **3 (75%)**

Follow Up: **1 (25%)**

Minor Procedures: **3 (Removal of Foreign Body)**

Major Procedures: **0**

Results – Eye Clinic at Receiving Hospital

- **Ophthalmology**

Total Referred (n=160) – 1 (0.6%)

Outpatient Review -1

Minor Procedure – 1 (Foreign Body Removed)

Major Procedure – 0

Discharges – 1

Results – Major Patient Outcomes

Major Outcomes at Port Moresby General Hospital (n=160)

Total Admissions	124	77.5%
LOHS	Median – 120Hrs (5 days) IQR = 72 – 264 Hrs (3-11 days)	
Total Survived	103	83.1%
Total Died	17	10.6%
Absconded	4	3.2%
Total Out-Patient Speciality Cases	36	22.5%
Discharged	16	44.4%
Ongoing Reviews	7	19.4%

Results - Deaths

	No. of Deaths	Case Fatality Rate %
Meningitis (n=21)	3	14.2
Severe Pneumonia (n=15)	4	26.7
Tuberculosis (n=10)		50.0
PTB (n=6)	2	33.3
EPTB (n=4)	3	75.5
Severe Malaria (n=3)	1	33.3
Severe Sepsis (n=3)	2	66.7
Paediatric Surgical (n=39)	2	5.1
TOTAL (n=160)	17	10.6

Conclusion

- **Major Reasons For Referral**

- Ward Closed – 43.8%

- Further Investigations – 33.8%

Overall patients sent for Further Investigations (n =54)

X-Rays: 70.3%

Others – No Bed Space – 1.9%

Non-Paediatric Speciality Care Received

Surgical Department (24.4%)

Total Operation Done: **25**

- Minor Procedures: **19 (76.0%) (I&D, MUA/POP, Debridement)**

- Major Procedures: **6 (24.0%)**

Recommendation

Key Strategic Areas to improve Paediatric/Patient Services:

1. Radiological Services – Operational/Staff
2. Minor Operating Theatre – Minor/Intermediate Cases/Staff
3. Separate Ward/Holding Bay for Respiratory cases to avoid Ward Closure in surge of COVID patients
4. Increase Ward Capacity to hold more beds

If all above achieved we can see a decrease in the number of overall paediatric patient referrals.

Limitations

- Paediatric Ward closed (April-May) for 2 months
- No Patient records
- Ambiguous/In-adequate patient data/records
- Paediatric Referrals from the Gerehu - Paediatric Department only

Acknowledgement

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- Dr Kunera Kiromat
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- Diploma in Public Health Candidates – Peggy Kala, Andreyra Dalaka

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THANK YOU



Questions? Comments?