Severe Pneumonia in Children at Sir Joseph Nombri Memorial Kundiawa General Hospital: a retrospective study

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Introduction

- Pneumonia – the leading killer of children < 5 years of age. **(UNICEF/WHO Pneumonia.2006)**

- Worldwide – >2million children die each year **(UNICEF/WHO Pneumonia.2006)**

- PNG – commonest cause for admission (30%) with a CFR of 5.2%

(PNG Department of Health child morbidity & mortality -2013)

- Case Management Strategy – WHO, early 1980,s

- Theodoratou et al (2010) – CCM of pneumonia ↓ 70%
- Sazawal et al (2003) – CCM of pneumonia ↓ 36 %

➢ Difficult to quantify hospital case management.

- PNG adapted – National & IMCI guidelines.

- Pneumonia remains – top cause of admissions to major hospitals with a high case fatality rate.

Aim

To describe the management of severe pneumonia in affected children admitted to Sir Joseph Nombri Memorial, Kundiawa General Hospital (SJNM KGH).

Objectives

To describe

1. The cases that were diagnosed.
2. The course of anti-biotic treatment.
3. The detection of hypoxia and oxygen therapy.
4. The duration of hospital stay.
5. The complications encountered.
6. Ultimate outcome.

Method

- Study design - Retrospective Descriptive study

- Period – January 2012 – December 2013.

Study Criteria

Inclusion

- Age: 2 months – 59 months.
- Severe pneumonia. National classification (WHO - very Severe). Hypoxia - SPO2 <90% and hepatomegaly of >2cm below the right costal margins.

Exclusion

- Age <2 months or >59 months.
- Children with AIDS, CHD, syndromic, severely malnourished and severe anaemic are not included.
- Severe diarrhoea with acidotic breathing without any chest signs
- Moderate pneumonia.

\Year	2012	2013	Total
*Recorded as Severe Pneumonia	108	114	222
Available from Medical Records Department	63	89	152
Severe Pneumonia	43	78	88
Excluded from study	*15*	*32*	*47*
Included in Study	28	46	**74**

*Figures abstracted from Pediatric ward Discharged Registry

- Standard Proforma

- Analysis – Excel 2010 and SPSS Version 19

- Ethical approval granted – SMHS research committee.

RESULT

Sex and Age

- Table 1. Sex Distribution

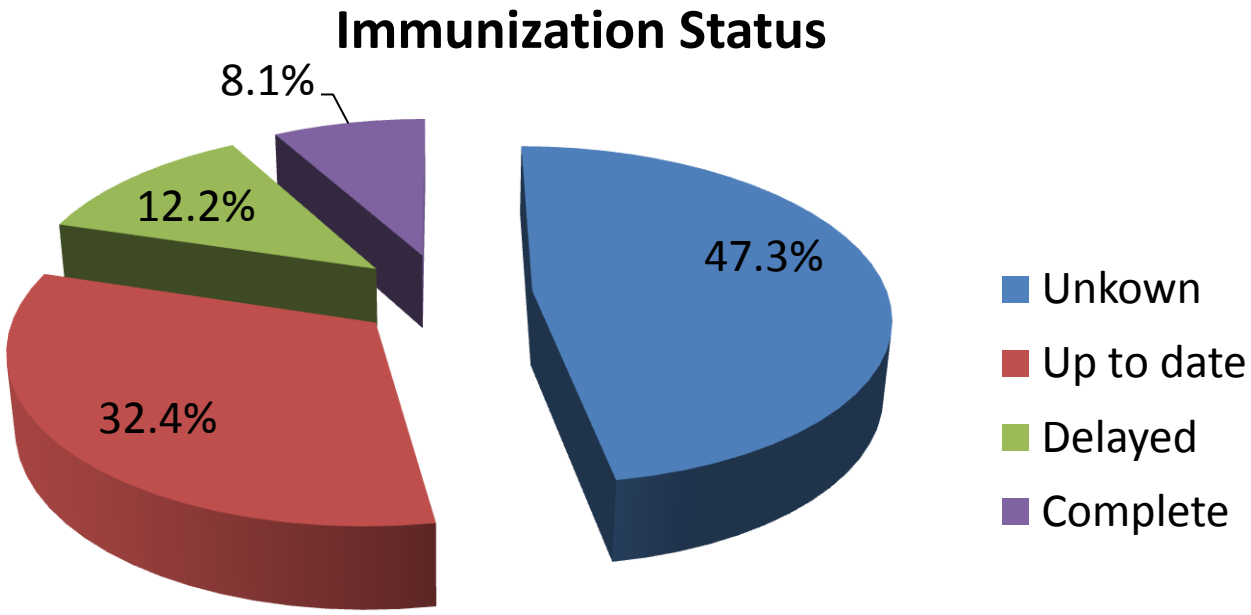
Sex		Frequency	Percent (%)
	Male	37	50
	Female	37	50
N=74		74	100

- Table 2. Age

Age (months)	Minimum	Maximum	Mean	SD
N = 74	2	59	9.12	8.454

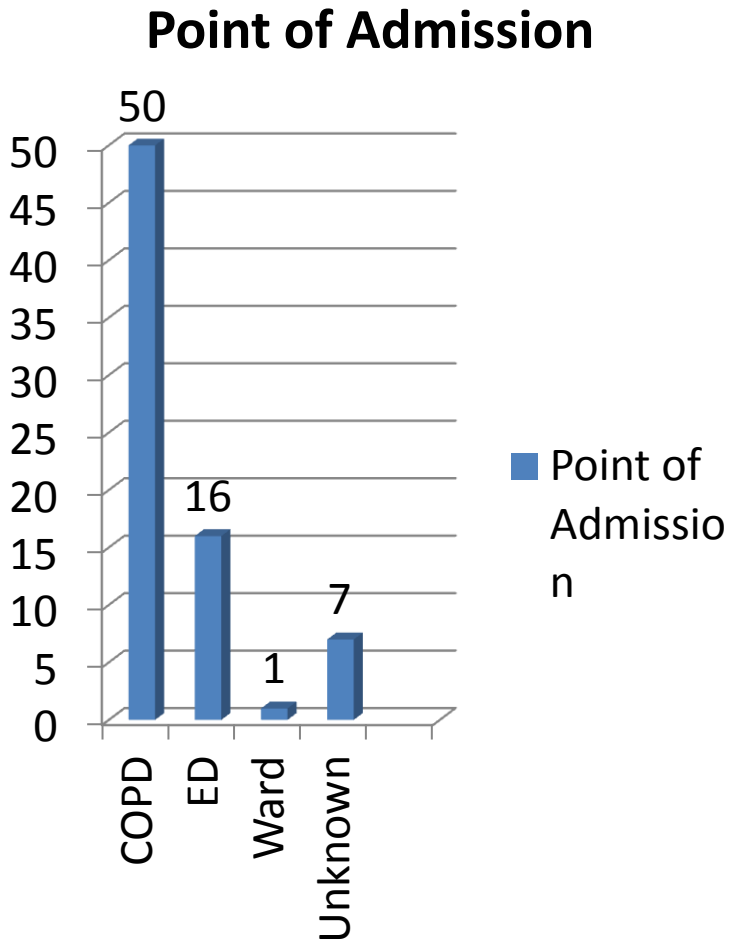
Immunization

- Figure 1 .

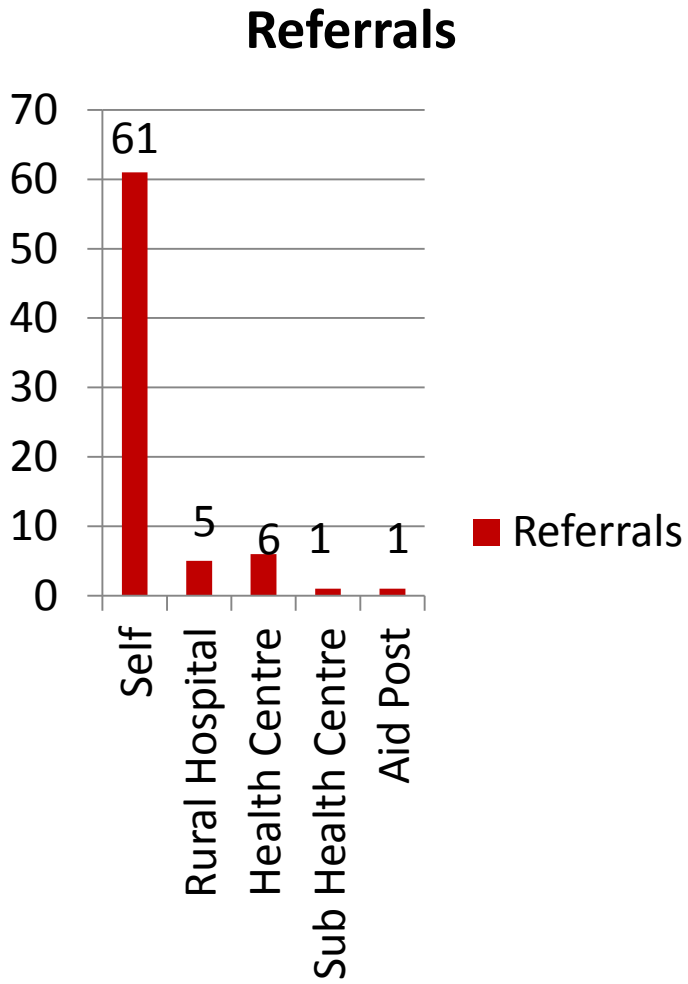


Admission Route & Referral

- Figure 2



- Figure 3



Diagnosis on Admission

- Table 3.Diagnosis on Admission

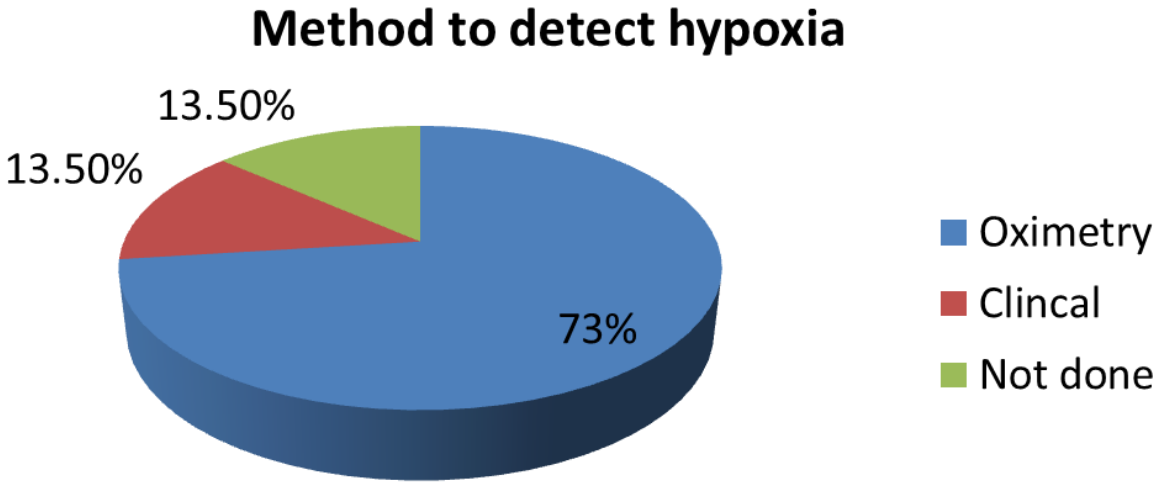
	Frequency	Percent (%)
Severe Pneumonia	42	56.8
Moderate Pneumonia	14	18.9
Severe PNA in HF	7	9.5
Severe PNA + Bacterial infection	4	5.4
Severe Bronchiolitis	5	6.8
Moderate Pneumonia + Bacterial Infection	1	1.4
Moderate Bronchiolitis	1	14
Total	***74***	***100***

Detection of Hypoxia

- Table 4.

	Frequency	Percent
Pulse Oximetry	54	73
Clinical	10	13.5
Not done	10	13.5
Total	74	

- Figure 4.



Hypoxia detection by Pulse Oximetry (n=54)

- On admission – 21/27
- Within 24 hours – 11/21
- Within 48 hours – 1/6

❑Hypoxia present – 61%

Oxygen

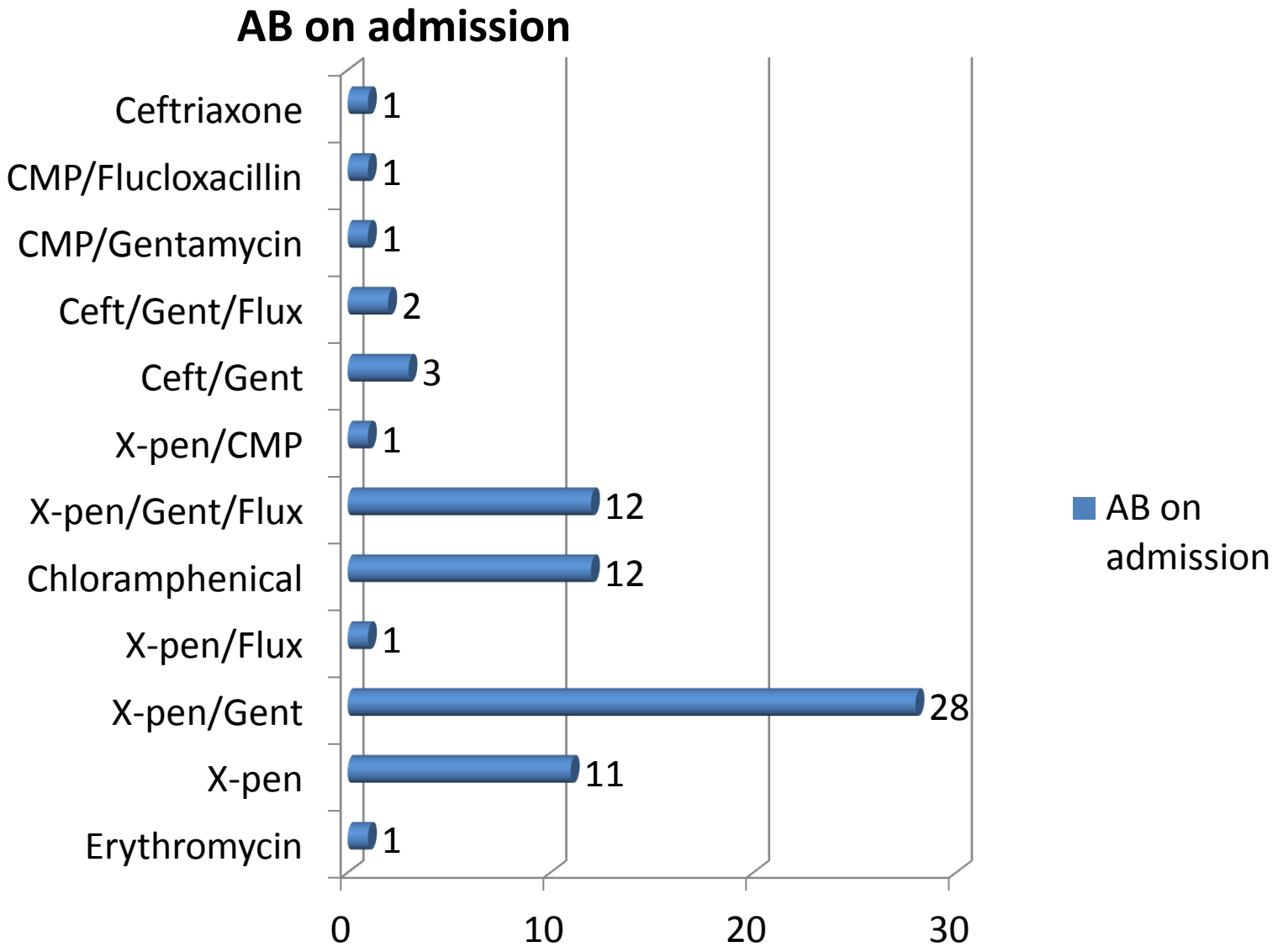
- 60 patients received oxygen therapy - 81%

- Table 5. Time to commence oxygen therapy

	Minimum	Maximum	Mean	Std. Deviation
Oxygen commencement time N=60	.1	48.0	9.273	16.54

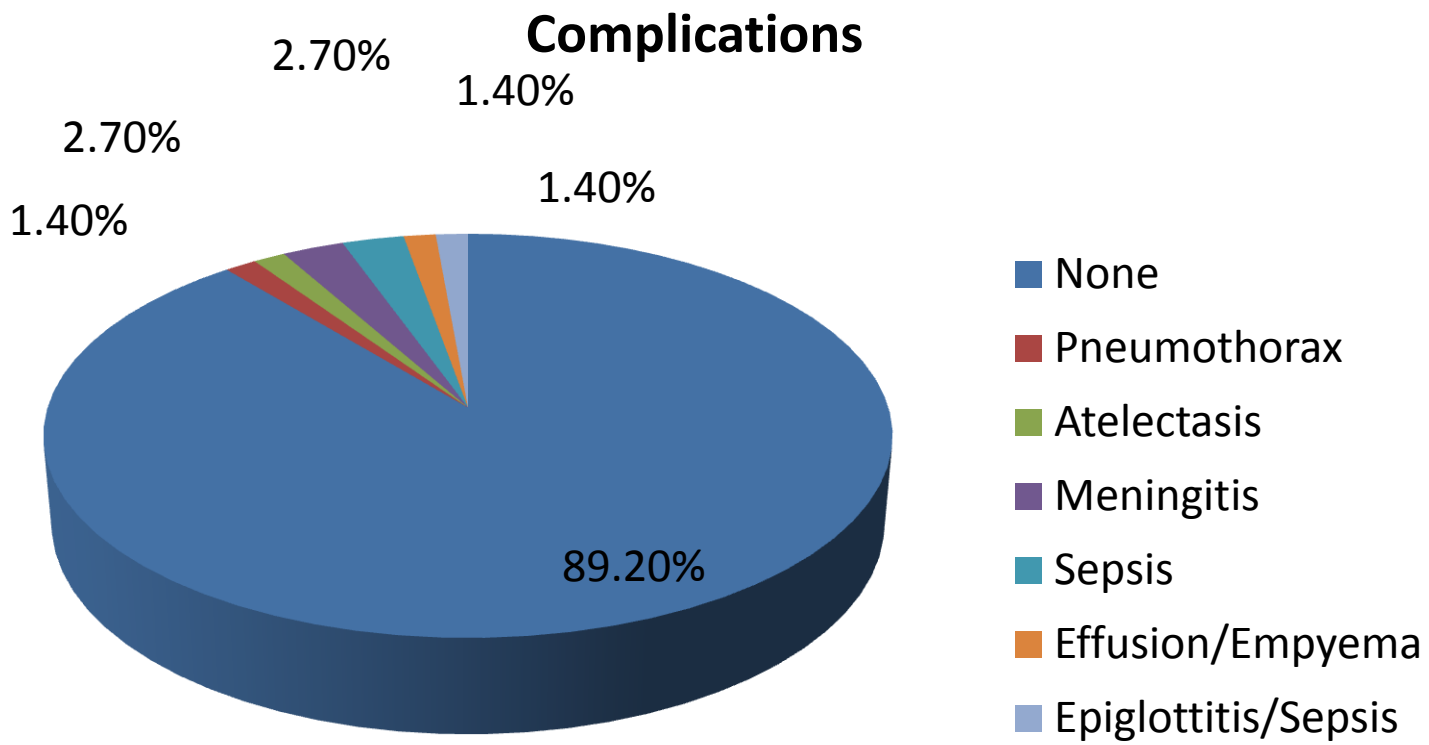
Antibiotic

- Figure 5.



Complications

- Figure 6



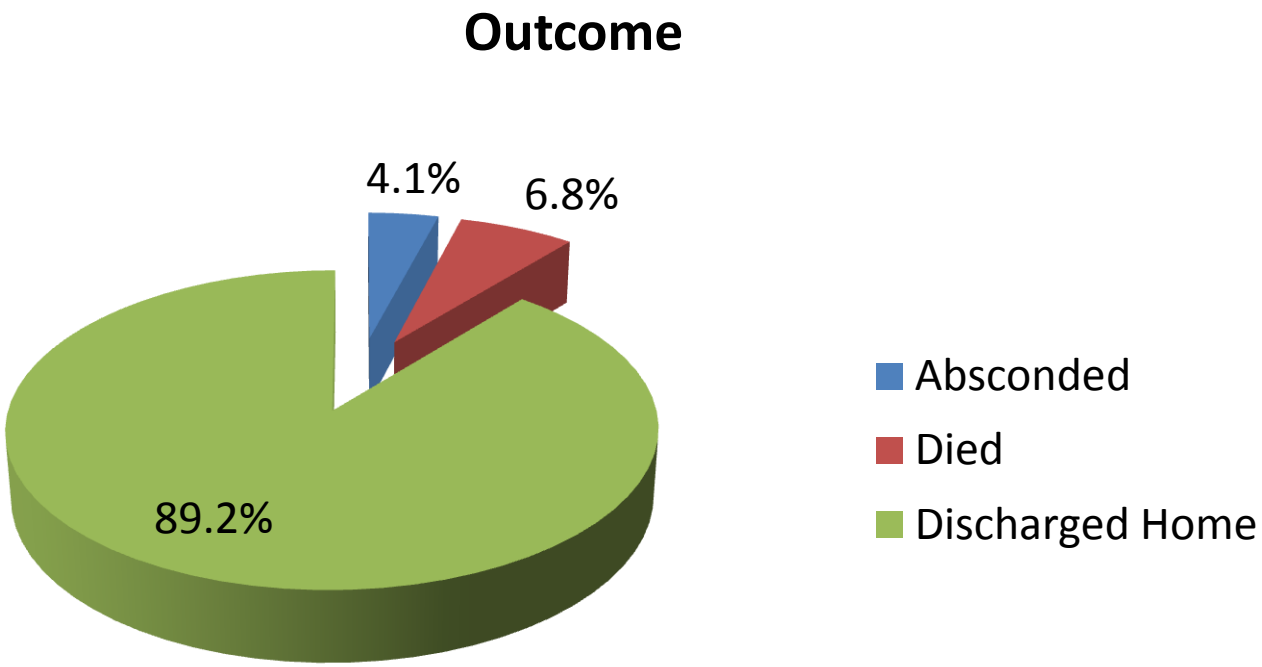
Length of Hospital stay

N = 74

- Minimum –1
- Maximum – 20
- Mean – 6.10
- SD – 4.23

Ultimate Outcome

- Figure 7.



Discussion

- More children under 12 months old
- Nearly half (47.3%) have unknown immunization status
- 17.7 % were referrals from peripheral clinics.

- Pulse Oximetry use in screening of hypoxia – 73%
- High prevalence of hypoxaemia – 61%
- Oxygen commencement time – Mean time (hrs) – 9.2 hours
- Commonest anti- biotic – Combination Benzyl Penicillin/ Gentamycin
- <10% developed complications
- Nearly 90% discharged home

Conclusion

- SJNM – KGH practices standard case management in their approach to patients presenting with severe pneumonia.

- High CFR (6.7)

Limitations

- Missing/unavailable charts
- Poor hospital recording system
- Small study sample

Recommendations

1. Data management systems: proper in-hospital system and curriculum for medical ward clerks.
2. Oxygen concentrators – proper monitoring
3. Regular in-services/training for health workers in the public system.
4. Strengthen/Empower the Primary Health Care System in PNG.

Acknowledgement

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Reference

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Thank you.