

Retrospective reviewing of Child morbidity and mortality at the NRH of Solomon Islands using PHR Programme as a source of primary data.

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INTRODUCTION

- ❑ Solomon Islands morbidity & mortality data are only reported for the infant and under-five MR by the MOH & medical services statistical health
- ❑ Reporting - core indicators has methodological and system problems issues, thus the number of infant's deaths is likely under reported.
- ❑ This research will evaluate the common causes of morbidity & mortality at the Paediatric Department of the National Referral Hospital.
- ❑ By using the data from the PHR – over 2 years period
- ❑ Improving neonatal and child health is a global health priority working towards SDG through the Child survival Strategy to improve health for children.

Pediatric Hospital Reporting V10.2

Data entry

 ID

 Admission date

 Hospital

 Name

 Hospital no

 Age

 Sex M F

 Weight kg

 Readmission Yes No

 Province

 District

 Village

 Referred from
SpO₂
 %

Anaemia
 Yes No

HIV
 Positive Negative Not tested

Immunised
 Fully immunised for age Partially immunised for age Unvaccinated

Nutritional
 Weight for age greater than -2 standard deviations (good weight)

 Weight for age between -2 and -3 standard deviations (underweight)

 Weight for age less than -3 standard deviations (severely underweight)

Outcome
 Survived to hospital discharge

 Transferred out

 Died

 Absconded

Discharge date

In-hospital complications

OBJECTIVES

1. To determine the common cause of morbidity and mortality of children admitted to the National Referral Hospital from March 2015 to March 2017.
2. To determine comorbidities of important diseases during the study period.
3. To identify gaps in programs implementation, and how we can improve practice and policy

METHOD

❑ **Study setting:**

- Paediatric Department of the National Referral Hospital, Solomon Islands

❑ **Study design and participants:**

- A retrospective analysis of data's entered prospectively into the PHR by the primary investigator during the study period including all admitted patient entered into the PHR system.

❑ **Data collection Methods:**

- Patient Data Form were filled after discharging patient and entered into the PHR V10.0/2.
- Cross checked with the ward admission register book records, Admission, Discharge Summary(ADS) from the Medical Registry when the data entry is incomplete.

❑ **Data Cleaning**

- Data summary was imported from the V10/10.2 data in Excel spreadsheet, merge together in a single spreadsheet, cleaned and the Excel spreadsheet then exported into SPSS22 for analysis.

❑ **Preparations for Data Analysis**

- This study is also to describe in more detail the other diagnoses that are not summarized by the PHR. This used the PHR imported Excel spreadsheet of all diagnoses
- We used this to better understand more detail than is in the summary sheets; particularly the types of childhood TB, the specific cancer diagnoses, the types of congenital malformations, and types of neonatal infections.

❑ **Data analysis**

- The PHR data is automated for the 25 common diagnoses
- Other diagnoses that are not reported using the standardised PHR summary form were analysed in SPSS 22
- Likewise, descriptive statistics were used to compare outcomes: proportions and case fatality rates of the uncommon diagnoses that are not analysed by the PHR system.

❑ **Ethical approval**

- Approval was granted by the Solomon Islands Health Research and Ethics Review Board of the MOH.

RESULTS

Baseline patient characteristics

Neonates

VARIABLE

▪ Total neonatal admissions	2080
▪ Age in months	
✓ Median (IQR)	0.25 (0.25 – 0.25)
▪ Gender	
✓ % Male	56.5
✓ % Female	43.5
▪ LOHS - days	
✓ Median (IQR)	5.0 (4.0 – 7.0)
▪ Readmission n (%)	16 (0.8%)
▪ Outcome n (%)	
✓ Discharge	1912 (91.9)
✓ Transfer out	0
✓ Absconded	7 (0.3%)
✓ Died	161 (7.7)
▪ LBWT- n (%)	537 (25.8)
✓ 1500 – 2500 g	407 (19.6)
✓ 1000 – 1499 g	91 (4.4)
✓ < 1000g	39 (1.9)

**BASELINE PATIENT
CHARACTERISTICS
- CHILDREN**

VARIABLES	
Total	2128
Age in months	
▪ Median (IQR)	18 (6.0 – 60.0)
WFA % (n)	
▪ > -2SD	66.1 (1407)
▪ -2-3 SD	12.3 (261)
▪ < -3 SD	19.0 (404)
Readmissions	25.0 (533)
LOHS – days	
▪ Median (IQR)	4.0 (2.0 -7.0)
Gender % female	40.1 (854)
Outcome % (n)	
▪ Discharge	93.6 (1994)
▪ Died	5.3 (113)
▪ Transfer out	0.3 (7)
▪ Absconded	0.3 (7)
HIV test	
▪ Done (positive)	0
▪ Done (negative) %	1.5 (31)
(n)	98.5 (2097)
▪ Not done % (n)	

ADMISSIONS, DEATHS AND CFR'S FOR COMMON DIAGNOSES - CHILDREN

	Admissions	Total deaths	CFR (%)
Total	2128 (4208)	113 (274)	5.3 (6.5)
Pneumonia	632	43	6.8
Anaemia	449	62	13.8
Diarrhoea (all cases)	282	16	4.67
Dengue fever	270	3	1.1
Severe malnutrition	250	29	11.6
Severe pneumonia	240	41	17.1
CHD	108	13	12.0
Malaria	100	5	5.0
Tuberculosis	62	6	9.6
Severe sepsis (not neonatal)	55	35	63.6
Cancer	51	10	19.6
Whooping cough	36	0	0
AFP	31	2	6.4

ADMISSIONS, DEATHS AND CFR OF COMMON DIAGNOSES - NEONATES

Total	Admissions	Total deaths	CFR (%)
LBWT	537	99	18.4
▪ LBWT	407	39	9.6
▪ VLBWT	91	24	26.4
▪ ELBWT	39	36	92.3
NNS	442	14	3.1
NNJ	251	3	1.2
Prematurity	243	66	27.1
BA/MAS	193	50	25.9
Congenital Malformation	46	8	17.4
Anaemia	47	9	19.1

TYPES OF CANCER

Cancer type	Admissions	Outcome					CFR (%)
		Discharged	Death	Absconded	Transfer out		
Leukaemia	20	15	5	0	0	25	
Lymphoma	1	0	1	0	0	100	
CNS tumour	2	1	1	0	0	50	
Tumour others	28	24	3	0	1	10.7	
Wilms tumour	*						
Retinoblastoma	*						
Neuroblastoma	*						
Cancer total	51	40	10	0	1	19.6	

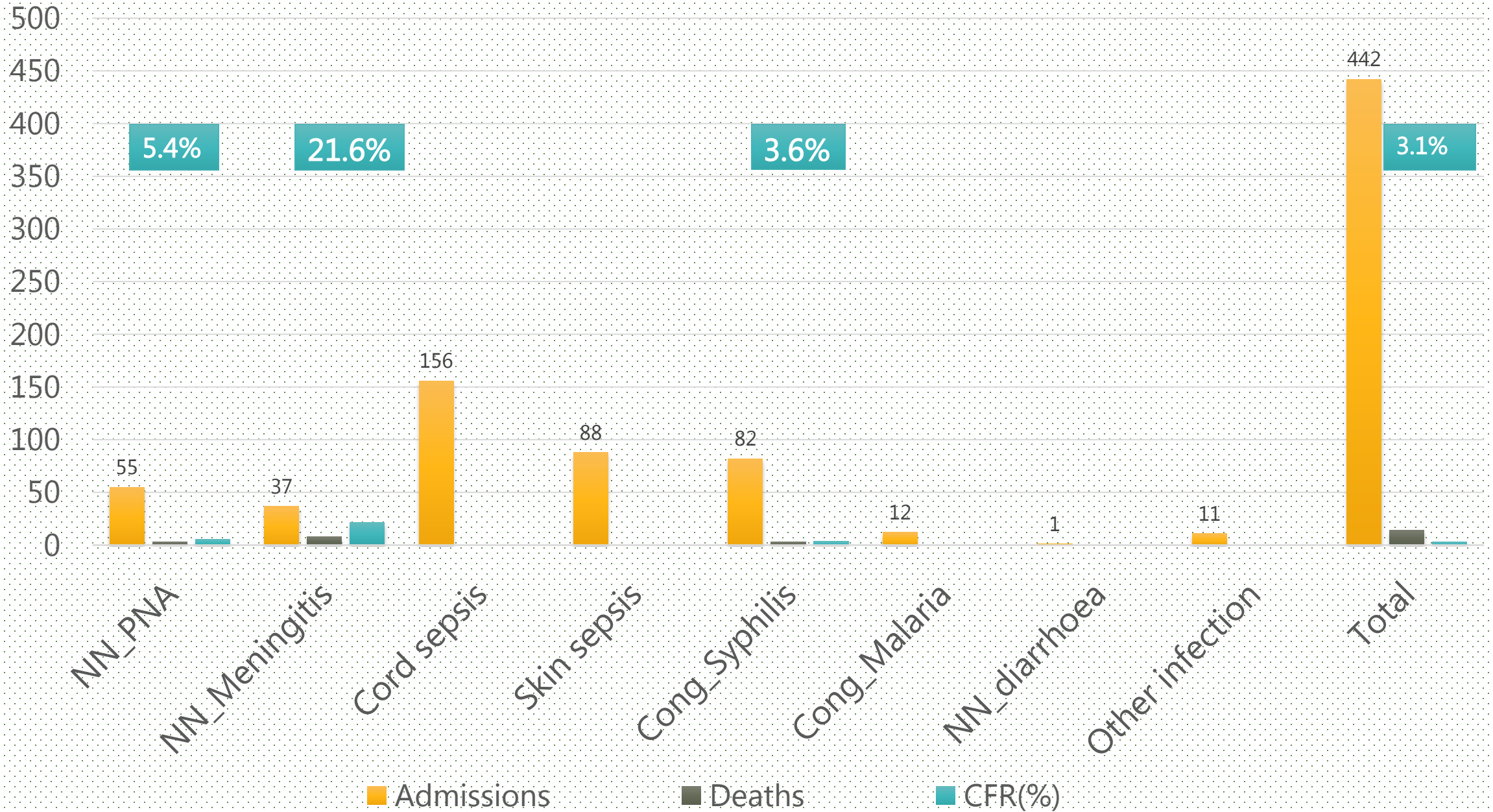
* *Not documented*

TYPES OF TB AND OUTCOME

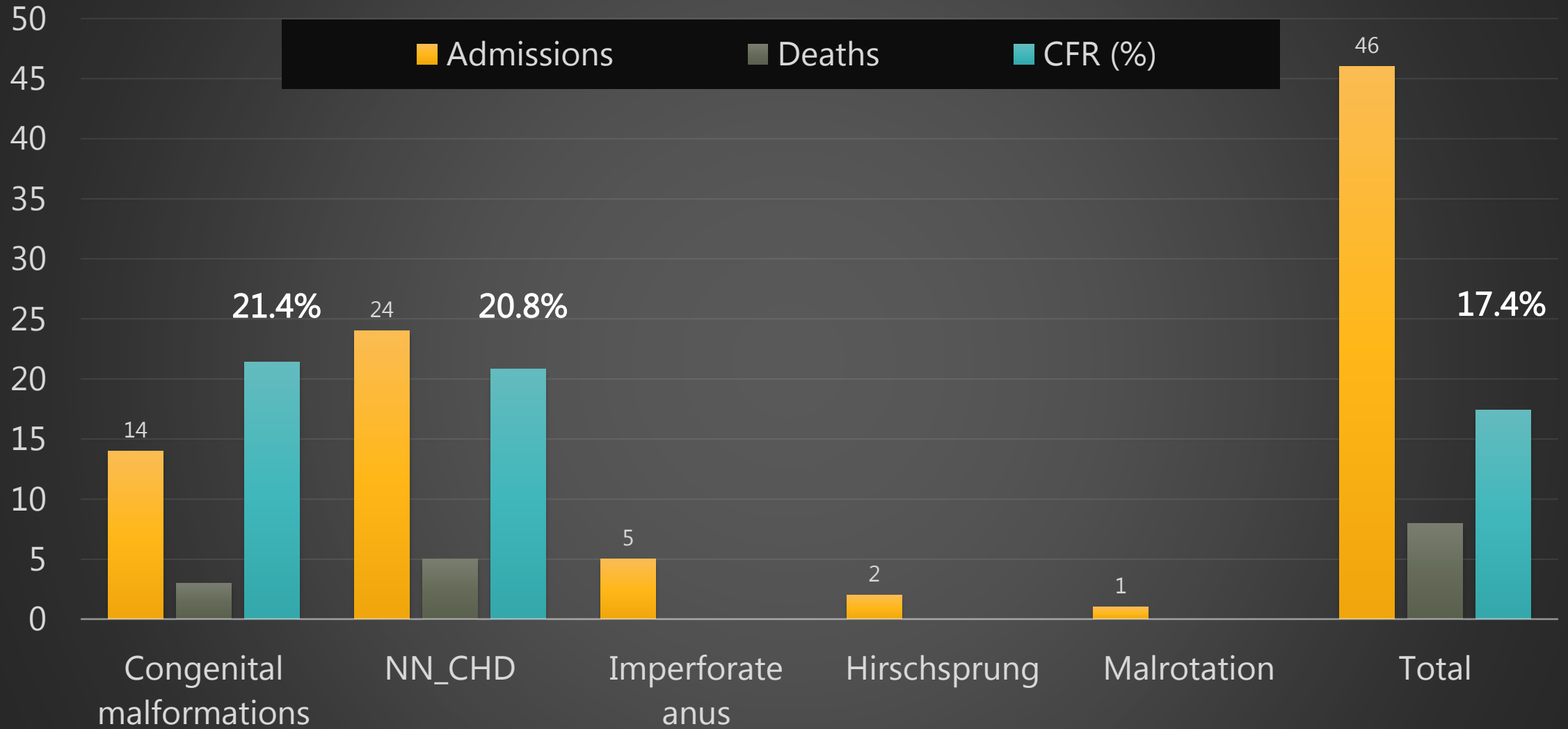
TYPES OF TB	ADMISSIONS	OUTCOME					CFR (%)
		DISCHARGED	DEATHS	ABSCONDED	TRANSFER OUT		
PTB	24	23	1	0	0	4.1	
TBM	10	4	4	1	1	40	
LNTB	18	0	0	0	1	0.0	
TB JOINT	3	0	0	0	0	0.0	
TB ABDOMEN	3	1	0	0	0	33.3	
MILIARY TB	1	0	1	0	0	0.0	
TB PERICARDIAL EFFUSION	2	0	0	0	0	0.0	
DISSEMINATED	1	0	0	0	0	0.0	
MDRTB	*		0				
TOTAL	62	6	6	1	2	9.6	

* Not documented

NNS and outcome



Congenital malformation and outcome



Malnutrition and comorbidities

Malnutrition (n=250) and comorbidities	n	%	Deaths	CFR (%)
▪ Anaemia	102	40.8	15	14.7
▪ Pneumonia	84	33.6	13	15.4
▪ Diarrhoea	55	22	5	9.09
▪ Other	60	24	8	13.3
▪ Sepsis	22	8.8	9	40.9
▪ Heart disease congenital	16	6.4	1	6.25
▪ Cerebral palsy	14	5.6	5	35.7
▪ Tuberculosis	7	2.8	3	42.8
▪ Hydrocephalus	2	0.8	1	50
▪ No - comorbid	33	13.2	3	

Other includes: bowel obstruction, bronchiectasis, **cancer other**, chicken pox, epilepsy, **GI other**, haematological other, hepatitis, renal other, **RTA**, **respiratory other**, **surgical other**, **uncomplicated malaria**, **UTI**, AFP, neurological other

DISCUSSION

- ❑ PHR programme as the primary source of data, the morbidity and mortality pattern of paediatric admissions at NRH is determined
- ❑ Clinician can now understand the epidemiology and disease pattern
- ❑ When compared to similar study done in PNG using the PHR as a tool to collect data.

- ❑ Top 17 causes of admissions are nearly the same, however with variation in the orders and inclusion of HIV and tetanus in the PNG study.
- ❑ Apart from the common diagnoses of admissions, other important disease that are not summarized in detail by the PHR summary data output were also identified.
- ❑ First time the PHR has been used for this purpose

SPECIFIC LESSONS LEARNT

- ❑ Readmissions in infants and children was 25.0%,- consider chronic issues not really well catered for and can be considered an indicator of care quality.
- ❑ 54.9% of cancer patient (diagnosed as tumour others) are not diagnosed.
- ❑ Diagnoses with high CFR needs to consider if there are preventable factors, i.e. inadequate staffing, deficits in essential drugs or equipment, lack of availability of clinical guidelines, need for staff training.
- ❑ Hopefully, to improve policy, good practice and eventual improve in these indicators over time for paediatric patient of NRH and Solomon Islands as a whole.

LIMITATION

- ❑ Improving the PHR system in small ways might improve further the accuracy of the data generated to better reflect the patterns of morbidity.
- ❑ Limited number of countries using PHR programme for further comparisons

CONCLUSION

- ❑ Sustainability of PHR data and expansion to Provincial and other hospitals in Solomon Islands to reflect a country wide disease pattern of children.

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