



THE SPECTRUM OF PAEDIATRIC CARDIAC DISEASE IN VANUATU

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Introduction

- Heart disease in children can be either congenital or acquired.
- Congenital heart disease (CHD) accounts for nearly one-third of all major congenital anomalies. (*Journal of the American College of Cardiology, 2011*)
- Rheumatic heart disease (RHD) which makes up about 2% of deaths related to cardiovascular disease worldwide. (*Cardiovascular diseases, WHO Report, 2017*)

Background

- Population of Vanuatu: 277,503 (*Vanuatu National Statistics office report, 2015*)
- Birth rate 2.2%
- No. of births/year = 6,105
- Therefore in Vanuatu = 37 - 42 children with CHD annually

Vanuatu Paediatric Cardiology Services



BILL
HORNE

Aim

To document the spectrum of paediatric cardiac diseases presenting to Vila Central Hospital (VCH) and Northern Provincial Hospital (NPH) from 2010 to 2016 as identified by the Visiting Specialist Team

Objectives

- To describe the age and geographical distribution of children with cardiac disease
- To describe the presentation pattern of children with cardiac disease
- To discuss the outcomes of post surgical and medical interventions

Methodology

- *Study Setting:* VCH and NPH
- *Study Design:* Descriptive Retrospective study
- *Study Group:* Children aged 0-14 years
- *Study Period:* 2010 – 2016
- *Ethics Approval from Research and Ethics committee, Ministry of Health*

Data collected from patient folders, cardiac summaries, using a questionnaire

N = 310

N = 212

Excluded
N = 98

Data cleaning on excel

Data Analysis using SPSS

INCLUSION CRITERIA

- All children aged 0-14 years seen in 2010 – 2016 by visiting cardiologist

EXCLUSION CRITERIA

- Children outside the age group (>14 years old), and those seen outside the study period (2010 – 2016)
- Children with functional murmurs

RESULTS

Table 1. Distribution of patients by gender

Sex	Number (%)
MALE	110 (51.9)
FEMALE	100 (47.2)
No Gender recorded	2 (0.9)
TOTAL	212

Table 2. Distribution of patients by age

Cohort (n)	AGE IN MONTHS Median (interquartile range)
Study group (212)	11 (2 – 72)
CHD (166)	6 (1- 24)
RHD (44)	84 (57 – 123)

Figure 1. Geographical Distribution of patients

n = 212 (%)

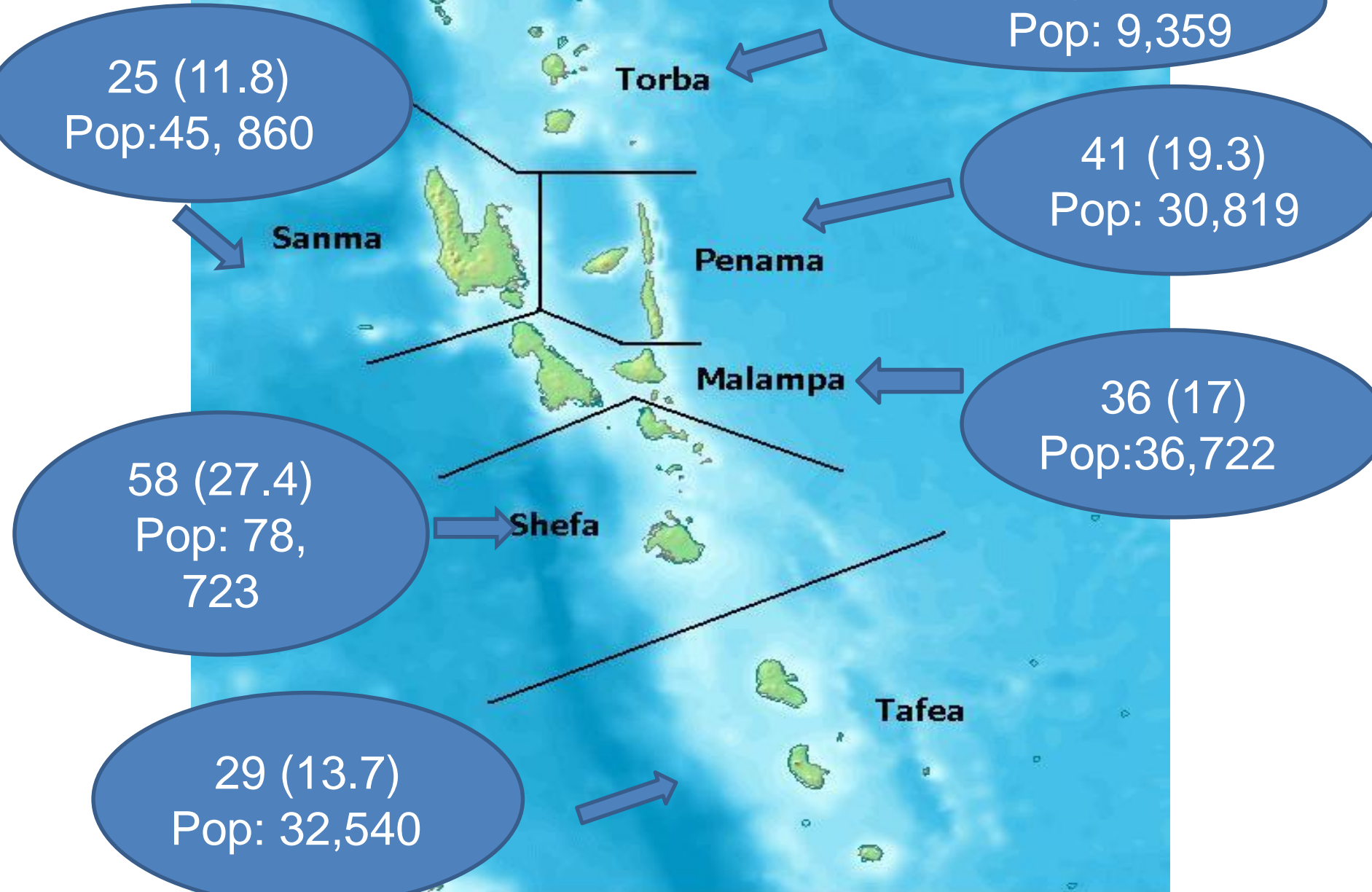


Table 3. Spectrum of cardiac disease (CHD)

Congenital Heart Disease	N = 166 (78%)
Persistent Ductus Arteriosus	40 (24)
Ventricular Septal Defect	26 (15.7)
Tetralogy of Fallot	21 (12.6)
Pulmonary Stenosis	11 (6.63)
Atrial Septal Defect	8 (4.82)
AV Canal Defect	4 (2.41)
Other cyanotic CHD	
• Transposition with VSD or variant	8 (4.82)
• TAPVD with ASD or variant	5 (3.01)
• Truncus Arteriosus	3 (1.81)
Others (COA, PA, Mixed lesions)	38 (22.9)

Table 4. Spectrum of cardiac disease (RHD)

Rheumatic Heart Disease	n = 44 (%)
Mitral Valve	19 (9.0)
Aortic Valve	3(1.4)
Mixed	16 (7.5)

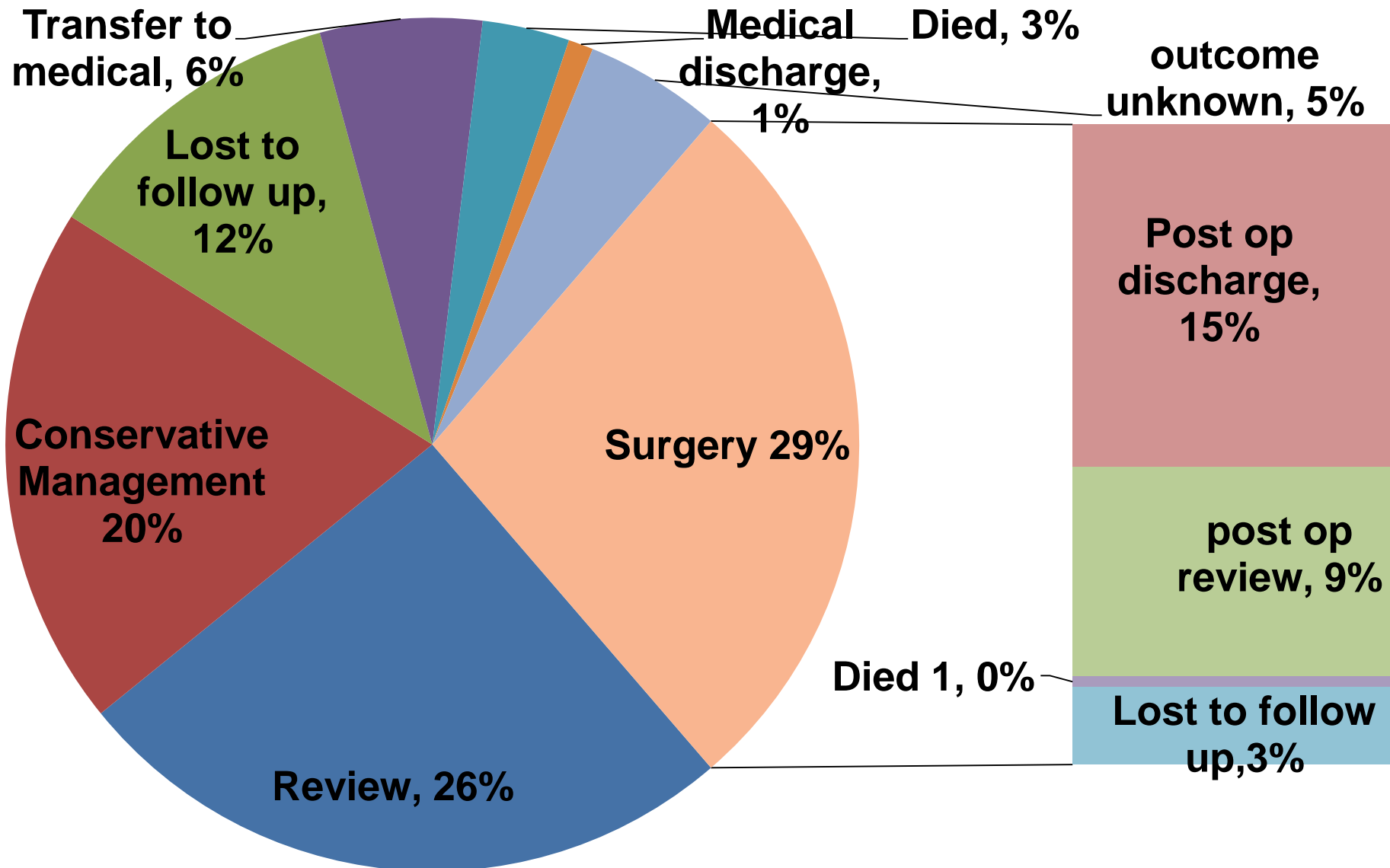
Table 5. OUTCOMES

Surgical Procedure	n = 61 (%)
PDA Repair	
• Closure	13 (21.3)
• Ligation	11 (18)
TOF Repair	11 (17.7)
Repair of VSD	2 (3.3)
Repair of ASD	2 (3.3)
Mitral Valve Replacement	2 (3.3)
Others	8 (12.9)
Unknown	12 (19.4)

Table 6. Interim to Surgical Treatment

Time between diagnosis to surgery (age at surgery – age at diagnosis)	Time in months
Mean	32
Median (IQR)	15 (6 – 30)
Earliest possible time	1
Longest possible time	156

GRAPH SHOWING OUTCOME OF CARDIAC PATIENTS n = 212



Discussion

- There are more males than females affected by cardiac disease
- Children with heart disease lived mainly in SHEFA province, followed by PENAMA province.
- CHD more common in children compared to RHD, the commonest cause being PDA.

Discussion

- Nearly a third of cardiac cases need surgery. All those who have had surgery have GOOD outcomes.
- 20% of patients are on conservative treatment. Most are inoperable due to severe pulmonary hypertension. This is a result of late presentation and/or late diagnosis.

Limitations

- Missing folders
- Initially had a prospective arm to the study as well – follow up was difficult and also because of time constraints

Conclusion

- This research identified 166 cases with CHD which is 56 to 64% of expected cases (259 – 294 babies).
- Access to specialist paediatric cardiologist service and cardiac surgery continues to be limited with significant delays.
- Patients who have had surgery have excellent outcomes

Recommendations

- 1) Professional and Educational Development of medical staff – e.g. **ECHO TRAINING**
- 2) Pro forma document for every cardiac patient seen and having a national cardiac registry
- 3) Political Support for case finding and referrals

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TANKIU TUMAS