



**The spectrum of Acute Rheumatic
Fever and Rheumatic Heart
Disease in children presenting to
the Pediatric Unit at Port Moresby
General Hospital**

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DCH

AIM



- To document acute rheumatic fever or rheumatic heart disease in children presenting to PMGH within the last 5 Years

INTRODUCTION



- Kado.J et al [MJA,2011] reported RHD Incidence of **15/100,000** in Fiji
- Fakakoovikaetau.T et al[Nat Clin Pract Cardiovasc Med, 2008] reported an incidence of **33.2/1000** in Tonga
- Viali S et al [NZ Med J,2011] stated RHD incidence of **31.8/100,000** in Samoa

INCIDENCE OF ARF

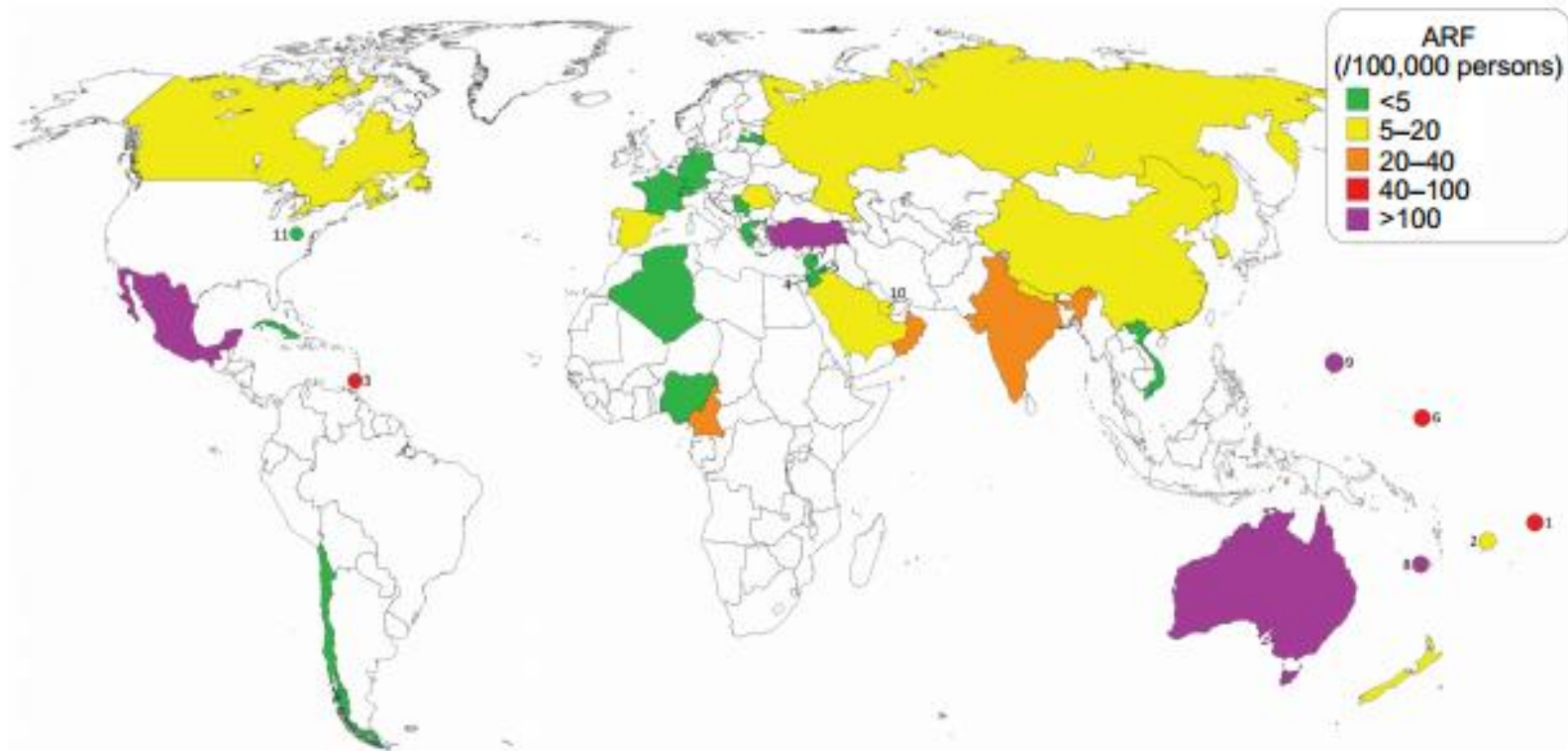


Figure 5 Map showing reported worldwide incidence of ARF from 1991 through present.^{40, 100, 111, 115, 120, 129, 156-200} (1) American Samoa,^{150,192} (2) Fiji,¹⁶⁹⁻¹⁷¹ (3) Grenada,¹⁷⁵ (4) Israel,^{120,178} (5) Jordan,¹⁷⁹ (6) Kosrae, Federated States of Micronesia,¹⁸¹ (7) Lebanon,¹⁸² (8) New Caledonia,¹⁸⁵ (9) Northern Mariana Islands,¹²² (10) Qatar,¹⁹⁰ (11) West Virginia.¹⁹⁹

Sekeler et al [2011]"The world wide epidemiology of acute rheumatic fever and rheumatic heart disease, *Clinical Epidemiology*, Vol. 3, pp. 67-84

INCIDENCE OF RHD

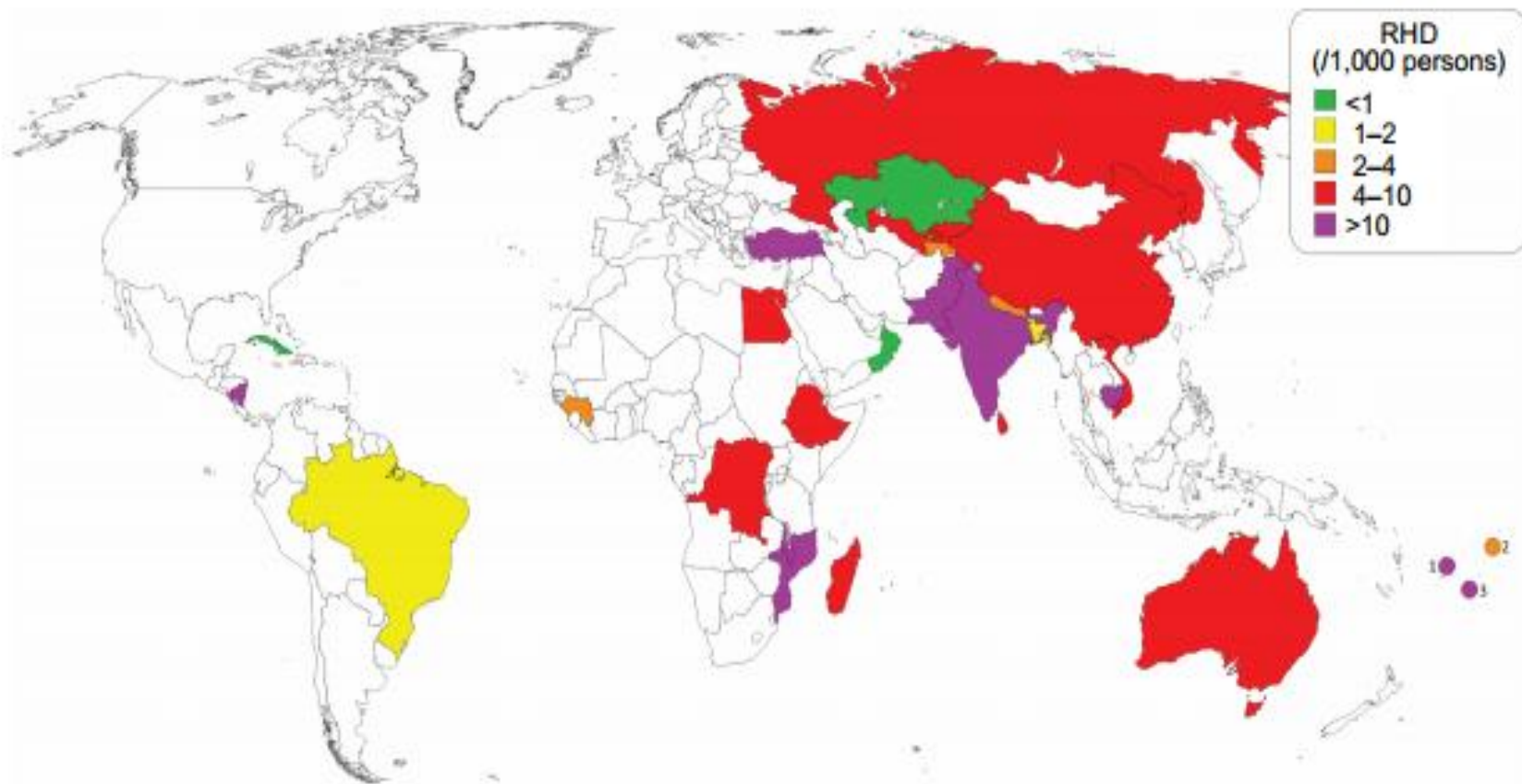


Figure 7 Map showing reported worldwide prevalence of RHD from 1991 through present.^{2-4,21,111,140,148,149,176,177,189,191,192,197,217-240} (1) Fiji,^{149,218} (2) Samoa,¹⁹² (3) Tonga.³

Sekeler et al [2011]"The world wide epidemiology of acute rheumatic fever and rheumatic heart disease, *Clinical Epidemiology*, Vol. 3, pp. 67-84

OBJECTIVES



To describe:

- the children diagnosed with
 - ARF
 - RHD
- the age distribution
- the presentation pattern
- the different cardiac valvular lesions
- Compliance of patients with prophylaxis.

METHOD



- Retrospective Descriptive study
- Period: March 2013-July 2013
- Location:
 - Pediatric Consultation Clinic
 - Cardiac Institute
 - Children's ward
 - Medical Records



- Data

- Medical Records } **Part 1**

- Admission and clinical registry } **Part 2**
[dated within 5 years 2009-7/2013]

- Standard Proforma is used



- Data includes:
 - Demographic and clinical details
 - Proportion of children seen with ARF/RHD
- Analyzed using Microsoft excel
- Ethical approval granted

CRITERIA



Inclusion Criteria:

- Children presenting to the Pediatric Units at PMGH;
- Age up to 13 years
- Children seen within the last five years: 2009-07/2013

Exclusion Criteria

- Children with
 - CHD
 - Other forms of heart diseases



Result

Part One [1]

Demographic Details

GENDER	Male	40 [62%]
	Female	25 [38%]
AGE	Youngest	3 Years
	Oldest	13 Years
	Median	11 Years
	Interquartile Range	9-13 Years
Residence	Suburb	35 [54%]
	Settlement	22 [34%]
	Village	8 [12%]

ADMISSION



- 65 recruited
 - 20 [31%] not admitted
 - 45 [69%] were admitted

Frequency Of Admission	Number of Children
1	23 [51%]
2	7 [16%]
3	3 [7%]
4	4 [9%]
5+	8 [18%]

CLINICAL PRESENTATION

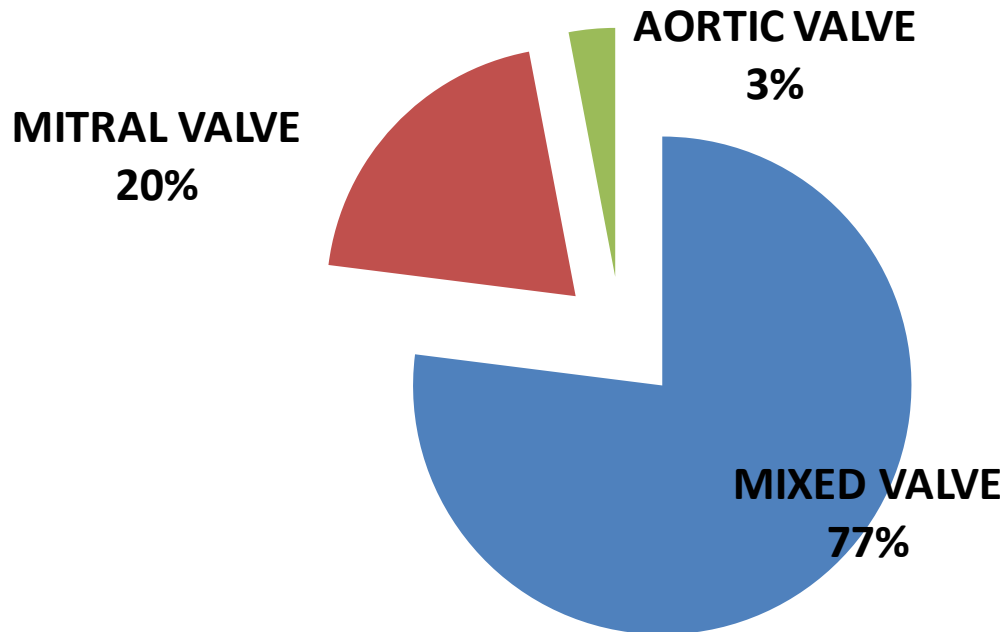


MAJOR CRITERIA		MINOR CRITERIA	
Carditis	60 [92%]	Arthralgia	59 [91%]
Arthritis	42 [66%]	Fever	54 [83%]
Chorea	6 [9%]	ASOT	36 [55%]
EM	-	Prolong P-R	3 [5%]
SN	-	ESR	-

ECHOCARDIOGRAPH FINDINGS



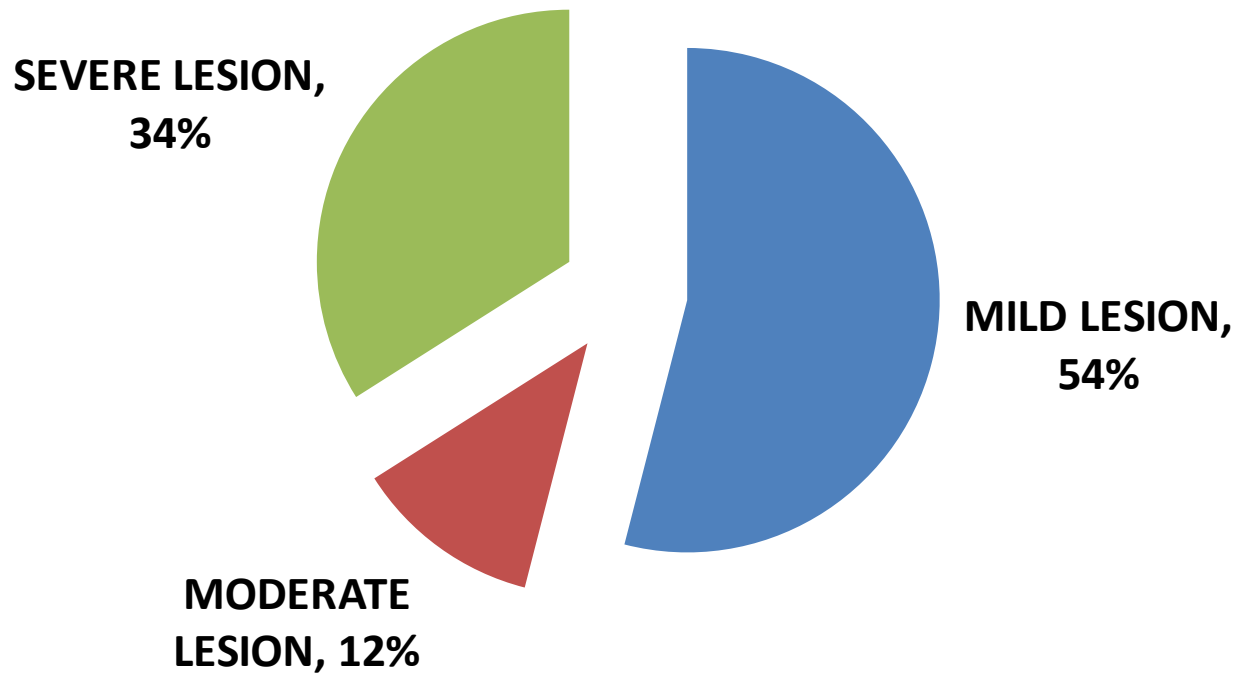
THE CARDIAC VALVE LESION SEEN IN CHILDREN WITH RHD AT PMGH



ECHOCARDIOGRAPH FINDINGS



THE SEVERITY OF VALVULAR LESION IN RHD CHILDREN SEEN AT PMGH






MANAGEMENT



Drug[s]	Number of Children
Frusemide	18 [28%]
Prednisolone	16 [25%]
Aspirin	16 [25%]
Digoxin	12 [18%]
Tuberculosis Rx	11 [17%]
Enalapril	10 [15%]
Aldacton	7 [11%]
HAART	2 [3%]

COMPLICATIONS



- HEART FAILURE  12 [18%]
- PULMONARY HYPERTENSION  10 [15%]
- INFECTIVE ENDOCARDITIS  5 [8%]

PROPHYLAXIS



PROPHYLAXIS	NUMBER OF CHILDREN
Benzathine Penicillin	55 [85%]
Penicillin Tablets	10 [15%]

COMPLIANCE



COMPLAINCE	NUMBER OF CHILDREN
PROPHYLAXIS	55 [85%]
CLINIC	55 [85%]



Result Part Two[2]

PROPORTION OF CHILDREN DIAGNOSED WITH ARF/RHD

NUMBER OF ADMISSIONS



YEAR	CHILDREN WITH RF OR RHD	TOTAL NUMBER OF ADMISSIONS [2A/2B]
2009	23 [1.17%]	1963
2010	32 [1.44%]	2219
2011	27 [2%]	1235
2012	-	-
JAN-JULY 2013	13 [0.86%]	1513

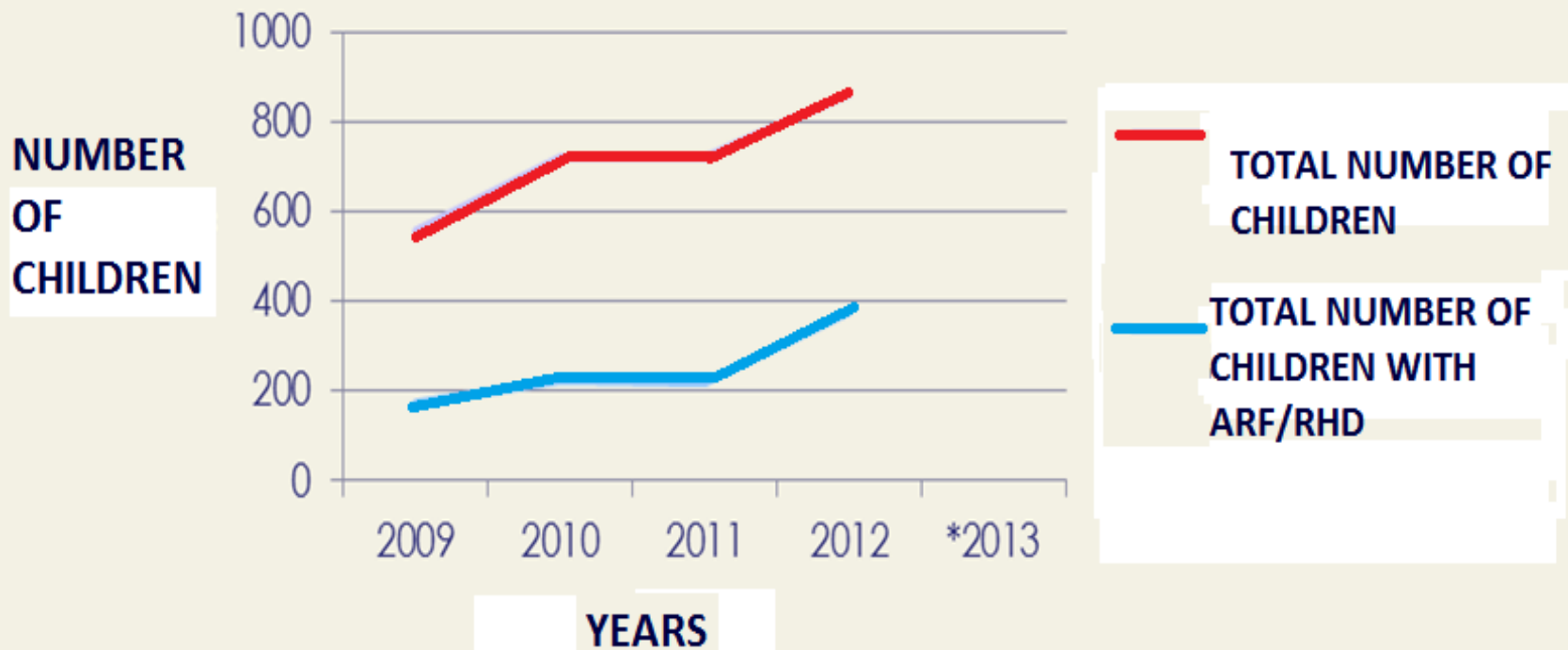
Proportion of Children with ARF/RHD seen in Cardiac Clinic



YEARS	NUMBER OF CHILDREN WITH ARF/RHD	TOTAL NUMBER OF CHILDREN
2009	171	556
2010	224	723
2011	221	720
2012	380	863
07/2013	297	618
TOTAL	1293 [37%]	3480

Proportion of Children with ARF/RHD seen in Cardiac Clinic 2009-2012

NUMBER OF CHILDREN SEEN AT THE CARDIAC CLINIC WITH ARF/RHD IN YEARS 2009-2012



Children seen at Cardiac Institute

02/2012-07/2013

CONDITION	NUMBER OF CHILDREN	%
CHD	216	43
RHD	82	16
Pericardial Effusion	56	11
Murmur	44	9
Others	33	7
Heart Failure	18	4
Congenital Abnormalities	18	4
Pneumonia	14	3
TB	12	2
Chest Pain	5	1
TOTAL	498	

DISCUSSION



- Confirms that ARF and RHD is present in school aged children
- Occurs in age group: 5-15yrs
 - Young as 3years [PMGH]



- Similar presentation to the Western Pacific Countries
 - Sekeler et al [Clinical Epidemiology,2001]
 - carditis 68%, Arthritis 64%, Chorea 8%,EM 2.8%, SN 2%
 - Fever 75%, Arthralgia 35%
 - ESR 91%, ASO 87%, Prolong P-R 20%
- ARF and RHD make up a third of all the cardiac diseases seen in Pediatric Cardiac Clinic.

CONCLUSION



- First study
- ARF/RHD is an issue

Limitations



- Small sample size
- Hospital based study
 - the end of the extreme gets to be seen.
- Retrospective information/study
 - Information not always available within the hospital setting
 - Patients information are not always documented in clinic book

Recommendation



- Need prospective population based study
 - Early screening in the school
- National Surveillance System for ARF and RHD
 - Children entered to data base and followed up

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Reference



- Fakakoovikaetau.T et al, (2008)*Evaluation of screening protocol using auscultation and portable echocardiography to detect asymptomatic RHD in Tonga school children*, Nature Clinical Practice Cardiovascular Medicine,5(7):411-7
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- Viali S et al [2011], Rheumatic Fever Programme in Samoa



THANK YOU