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Our vision is to extend lifesaving cardiac care to children born in our neighbouring countries of the Pacific.

2017 Paediatric Cardiac Surgical Mission to Fiji

The Hearts4Kids Trust is a New Zealand volunteer medical team who provide free-of-charge lifesaving services to Paediatric patients born with congenital heart disease. There are no children's heart surgery facilities in the Pacific Islands. Our aim is to treat children with congenital and rheumatic heart disease who would not otherwise have access to surgery, due either to being too unwell to travel to an overseas facility or without the resources to be transferred. This was the third time our Paediatric Cardiac Surgical team have visited Fiji, following successful missions in 2014 and 2015.

Cardiology Triage Clinics prior to the mission

Dr John Wright, Consultant Paediatric Cardiologist, visited Fiji 24-28 October 2016 to assess and advise treatment on children with congenital and rheumatic heart disease. Clinics were held in Suva (1½ days), Labasa (1 day) and Lautoka (1½ days). A total of 79 patients were seen in the clinic setting, with another 7 acute in-patients (3 in Suva, 4 in Lautoka). All in-patients had congenital heart disease, while 24 seen in the clinics had rheumatic valvular disease.

Cardiology clinics to assess potential surgical candidates were held 26-30 June 2017 with Dr John Wright again visiting Suva, Labasa and Lautoka. 75 patients were reviewed, of whom 21 were identified as suitable for operation during the September 2017 mission. Data on these patients was shown to colleagues and considered back in Auckland before confirming suitability to the Fijian Paediatricians.

Preparation for the mission

Preparation for the mission began in February, when the dates were set and planning commenced. Fundraising included Bake Sales, film evenings and a Fashion Show. Financial sponsorship was sought, and requests were made for medical equipment and supplies by donation, reduced cost, loan or purchase. In July equipment and supplies necessary for the mission were itemized, boxed, packed on pallets, and made ready for shipping by container. The Hearts4Kids mission was timed to follow the Friends of Fiji Heart Foundation (FOFHF) Adult Cardiac Surgical Team which operated 31st August to 6th September 2017. The Hearts4Kids equipment and medical supplies were transported in containers to (and from) Fiji courtesy of FOFHF.

6-17th September 2017 Hearts4Kids Surgical Mission

The majority of the team members traveled from New Zealand to Fiji on 6th September 2017. The first couple of days were used to unpack equipment and supplies brought from NZ, and to set up theatre, intensive care unit and general ward for recovery.

At the Pre-surgical Assessment Clinic on 6th & 7th September, 26 children were reviewed by Dr John Wright and Dr Kirsten Finucane, including several who were newly referred and required urgent treatment. Following this clinic, the final shortlist of 19 patients was drawn up to have operations over the five days of allocated theatre time. The most urgent patients were listed first. Of the remaining 7, some patients were able to wait for treatment until 2018, and others were assessed as too high risk to have operations in Fiji and were recommended for transfer to New Zealand. In addition, other patients were seen at the request of local Lautoka teams. One child, a 14 year old, required urgent surgery in Auckland which we went on to arrange.

While surgery was taking place, three inpatients were reviewed, and advice given by Dr John Wright. Two patients with arrhythmias, one of whom had that deteriorating rheumatic heart disease, and another two

babies with congenital heart disease on ventilators in the Intensive Care Unit. These baby were also reviewed by Intensivist, Brent McShary, who gave advice on their intensive care management.

Hearts4Kids Paediatric Cardiac Team

Designation	Numbers
Paediatric Cardiac Surgeon	1
Paediatric Cardiologist	1
Surgical Assist (RNFSA)	1
Cardiology Registrar	1
Anaesthetist /Intensivist	3
Perfusionists	2
Anaesthetic Technicians	2
Theatre Nurses	2
ICU Nurses	8
Ward Nurses	7
Other volunteers*	5
Total	33

*Volunteers include: Mission Co-ordinator, Hearts4Kids Administrator, a medical company representative, a student, and local co-ordinator.

Friday 8th - Tuesday 12th September 2017 – Operating Days

19 patients, aged between 2 months and 13 years, were operated on over 5 days. 14 bypass heart procedures and 5 non-bypass. The theatres ran from 7am to 8pm. See list below.

Operating List

	Date	Age	Gender	Height	Weight	Domicile	Bypass/Non-Bypass Operation
1	8/9/17	7y 3m	F	131cm	27.8kg	Lautoka	Resection of right ventricular outflow tract muscle obstruction via right atrium
2	8/9/17	8y 6m	M	150cm	25kg	Lautoka	Left anterior thorocotomy, pericardial debridement and window creation
3	8/9/17	4y 5m	F	102cm	15.4kg	Lautoka	Open pulmonary valvotomy, insertion of Bovine pericardial patch into main pulmonary artery
4	8/9/17	6m	F	61.5cm	4.5kg	Labasa	Left thoracotomy, division of patent ductus arteriosus
5	9/9/17	1y	F	80cm	10kg	Suva	Closure of conal ventricular septal defect (VSD). Right ventricular outflow tract muscle division.
6	9/9/17	3m	F	62cm	6kg	Suva	Closure of VSD via pulmonary artery. Closure of Patent foramen ovale.
7	9/9/17	8y	F	123cm	21kg	Suva	Mitral valve repair
8	10/9/17	2m	M	54cm	3.8kg	Suva	Closure of conal VSD via main pulmonary artery. Patent foramen ovale left open.
9	10/9/17	11m	F	66cm	5.2kg	Lautoka	Left thorocotomy and division patent ductus arteriosus
10	10/9/17	11m	F	81cm	6.5kg	Lautoka	Repair of pulmonary artery and removal of ductus aneurysm (dissected). 12/9/17 Exploration of Chyle leak.
11	10/9/17	13y	F	158cm	43kg	Suva	Division of patent ductus Arteriosus via sternotomy
12	11/9/17	12 y	M	142 cm	36kg	Labasa	Closure of conal VSD and aortic valve repair
13	11/9/17	6m	F	65cm	5.8kg	Suva	Closure of inlet VSD and atrial septal defect (ASDI). Ligation of patent foramen ovale.
14	11/9/17	5y	M	103cm	15kg	Labasa	Open pulmonary valvotomy, closure of ASD.
c	11/9/17	7m	M	69cm	6.8kg	Suva	Division of patent ductus arteriosus via left

							thorocotomy
16	12/9/17	10y	F	141cm	33kg	Lautoka	Mitral valve repair (posterior leaflet prolapse). Rheumatic valve disease.
17	12/9/17	1y	M	76cm	7.5kg	Labasa	Repair of Tetralogy of Fallot via right atrium
18	12/9/17	7m	M	69cm	8.1kg	Lautoka	Closure of VSD via main pulmonary artery
19	12/9/17	9y	F	129cm	21kg	Labasa	Closure of conal VSD via main pulmonary artery

Summary of Procedures

Bypass procedures (14)	
Ventricular septal defects	4
Mitral value repair	2
Pulmonary stenosis/sub pulmonary stenosis	3
Tetralogy of Fallot repair	1
Aortic valve perforation repair with VSD	1
Massive duct aneurysm with dissection	1
Canal defect repair	1
Secundum ASD	1
Non-Bypass (6*)	
Patent Ductus Division	4
Urgent pericardial window	1
Exploration for Chylothorax (*re-operation)	1

Post-Surgical Clinics

Post-operative review clinic on 13th, 15th and 16th September. All patients had post-operative echocardiogram assessments, all of which demonstrated good repairs.

On 13th September Dr John Wright held a Cardiology clinic to assess and advise on a further 6 patients from other centres in Fiji.

Patient Outcomes

All 19 children have had excellent outcomes. One re-operation was required on patient #10 (see above list) who developed a Chyle leak which was successfully closed. Most patients were able to be discharged from hospital on the third to fifth day post-operatively, and were followed up in Lautoka at 7-10 days with good wound healing and excellent cardiac echo findings. Two patients developed post-operative chest infections (viral bronchiolitis) which responded to oxygen and with medical support settled to allow discharge 2-4 days later. One of these bronchiolitis patient required drainage of a pleural effusion.

Patient Transferred

Arrangements were made for a 14-year-old girl to be escorted back to Starship Hospital with the Hearts4Kids team at the end of the mission. Costs for this patient were covered by a Rotary Global Grant. She and her mother were accommodated at Ronald McDonald House. Liaison and support from ROMAC (Rotary Oceania Medical Aid for Children) and North Harbour Rotary Club during their stay. She successfully underwent her double valve surgery about 10 days later and has since recovered well.

Teaching of local medical staff

The Hearts4Kids medical team worked closely with local staff at Lautoka Hospital. There were local staff allocated to every shift in theatre, intensive care and ward, who looked after allocated patients with supervision.

Pen drives were created containing a list of important documents related to intensive care and provided these to all the local nurses and doctors.

Tutorials were held by senior nurses to teach local nurses on critical issues. Evening teaching sessions to educate parents of children on general healthcare issues were given in the wards.

A hospital Grand Round lecture was held on the two topics of Conal VSD with Aortic Regurgitation and Arrhythmias. It was well attended and during the session a video of one of the operations was used to demonstrate the anatomy. This video had been filmed and beautifully edited by volunteer student.

Dr Rigamoto Taito gave us a summary following her Debrief Meeting with the Lautoka Hospital staff. In general, feedback was very positive, with many nurses describing our team as the most easy to communicate with and inclusive of all of their visiting teams. However, they did request more teaching sessions next time we visit, due to the fact that they had missed out on the usual teaching day of 7th September because it was a public holiday.

Acknowledgements

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- Friends of Fiji Heart Foundation for Customs and shipping, and loan of equipment
- Staff at Lautoka Hospital, including consultants Dr Rigamoto Taito and Dr Joseph Kado, also Dr Khizar Niazi and Dr Losalini Ravulo Leweniqila
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 - Device Technologies – surgical instruments
 - Downs Medical – saw blades
 - Draeger – loan of monitoring equipment
 - Edwards Life Sciences – implants
 - Global Medics- Clinell wipes
 - Halyard Medical– surgical gowns and drapes
 - Johnson & Johnson Medical– sutures
 - LivaNova – perfusion
 - Macquet Medical Systems - perfusion
 - Medical Aid Abroad – warehouse space and supplies
 - Medtronic – sutures, surgical supplies, perfusion
 - Obex Medical – perfusion, sutures, loan of fine instruments
 - Rem Systems – loan of sternal saws
 - Spectrumed – valves and pericardial patches
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 - USL Medical – defibrillators and pads
 - Vortek NZ - headlamp
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- Starship Children’s Hospital

Thanks to all our sponsors, large and small, for such wonderful support.

Quote from a Thank You card

“WORDS CANNOT DESCRIBE THE JOY AND HOPE FOR A SECOND LIFE THAT YOU ALL HAVE GIVEN AMANDA”