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

Mission Report for Paediatric Cardiac Surgical Mission
24th July – 6th August 2024
at Sri Sathya Sai Sanjeevani Children's Hospital
Suva, Fiji

The Hearts4Kids Trust is a New Zealand volunteer medical team who provide free-of-charge lifesaving services to Paediatric patients with heart disease. There are limited 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 seventh time our Hearts4Kids Paediatric Cardiac Surgical team have visited Fiji since 2014.

Collaboration with Pasifika Medical Association Group

In 2023 we were approached by Pasifika Medical Association Group (PMA) with an offer of financial and logistic support for the 2024 visit, and potentially for future visits. PMA is a non-government organisation funded from the Ministry of Foreign Affairs and Trade with a mandate to support health and education initiatives in the Pacific Islands. They were already funding cardiology clinics in several Pacific Islands and offered to help with the transfer and accommodation of children needing cardiac surgery, to go to Suva to be operated on during our visit there. Hearts4Kids Trust welcomed this offer, given the current uncertainties around raising charitable funds, and the increasing number of teams visiting Fiji to operate every two months. It seemed timely to move our focus towards Samoa, Tonga, Vanuatu and Kiribati where surveillance clinics were finding children, but access to surgery for them remained a problem. Integral to this offer was the requirement for Hearts4Kids Trust to not only operate, but to educate and train the local staff in the care of the cardiac children during our time in Fiji and with ongoing support. We were also encouraged to use Pacific Island staff from New Zealand wherever possible. In the future the visits should then become less reliant on New Zealand specialist staff, and therefore less expensive and more sustainable, for the long term.

Preparation for the mission

Pasifika Medical Association Group notified us of the government requirements for overseas teams. This involved a considerable amount of extra paperwork for the individuals going, but Hearts4kids Trust understood the need for the PMA group to have these documents, and the members travelling did their best to provide the extra details and forms in a timely manner, although not all were completed. Registrations of both nurses and doctors were rather slow, and partly held up by IT/website issues in Fiji, but all eventually confirmed with the help of the PMA logistics team.

As per our usual process, Hearts4Kids made requests for medical equipment and supplies by donation, special discounted pricing, loan or purchase, and we were very appreciative that companies and organisations responded so generously. Equipment and supplies necessary for the mission were itemized, boxed, packed on pallets, and made ready for shipping by container in mid-June to Fiji. The container left the warehouse on 29th June, arrived in Suva on 4th July and cleared by Customs on 19th July. This year a team of 34 volunteers were on the mission.

Hearts4Kids Paediatric Cardiac Team

Designation	Numbers
Paediatric Cardiac Surgeon	1
Paediatric Cardiologist	1
Cardiac Surgical Registrar	1
Anaesthetist	2
Intensivists	1
Perfusionist	2
Anaesthetic Technicians	2
Theatre Nurses	2
PICU Team Leader and Nurses	11
Ward Team Leader and Nurses	8
Clinic Nurse – Admissions/Pre-op/Discharge	1
Mission Co-ordinator	1
Database Specialist & Cardiac Physiologist	1
Total	34

Pre-operative Phase: Arrival in Fiji – 24th & 25th July 2024

Triage clinic - Wednesday, 24th July - 16 patients were introduced by Dr Maryanne Koraai, Consultant and team (Drs Torika and Hinau, Echo Technicians Deepak and Kartik), Dr John Wright - Cardiologist, Dr Kirsten Finucane – Paediatric Cardiac Surgeon and Chris Orchard – Registered Nurse from New Zealand. Local paediatrician Dr Farah, from Samoa, also attended, as did two nurses from Vanuatu and Kiribati, who functioned as interpreters and nursing support in the hotel accommodation in Suva. All data was reviewed, very few additional echoes were required, ECG and CXR and some bloods also checked. All patients fit for surgery, after excellent treatment provided by the local team led by Dr Maryanne Koraai over the previous 10 days. 15 were chosen for surgery, and one Fijian deferred safely until September to be done by the next visiting team.

Setup day - Thursday, 25th July. The theatre and ICU team arrived very late Wednesday night due to unavoidable plane scheduling changes. The team at Sanjeevani Hospital had already unpacked the supplies from the container, so the Hearts4Kids team just had to unpack their boxes and setup the clinical areas ready for operating to start early Friday morning. Fantastic work!

Operating days - 26th – 30th July 2023 and Early Post-operative Phase

Five operating days from 26th – 30th July, working from 0730hrs to approximately 2100hrs. PICU opened with three beds, increasing to five as needed.

There were 5 males and 10 females, ages from 3 months to 15 years, weights 4.5 kg to 72 kg. There were 2 babies from Fiji, 2 children from Kiribati, 3 from Samoa, 1 from Tuvalu, 7 children from Vanuatu, all brought to Fiji and accommodated by the Pasifika Medical Association. One 4-year-old with a large patent Ductus Arteriosus had Trisomy 21.

Some of the infants had heart failure and chest infections that needed preoperative drug treatment to make them fit for surgery, and two older children had skin lesions requiring preoperative antibiotics or antifungals. This treatment was completed by Dr Maryanne Koraai prior to the arrival of the NZ team, using the planned two week preop period the children spent in Fiji especially for this purpose.

Summary of Procedures

Bypass procedures (10)	
Atrial septal defect – primum or secundum	3
Ventricular septal defects	4
Ventricular septal defect and aortic leaflet repair	1
Tetralogy / Double outlet RV repair	2
Non-Bypass (5)	
Patent ductus division	5
Total	

Domiciles of Patients

Fiji	2
Kiribati	2
Samoa	3
Tuvalu	1
Vanuatu	7

Post-operative Phase

The stepdown ward opened 27th July and ran until Sunday 3rd August, with Fijian (Sanjeevani Hospital) staff rostered every day alongside NZ staff, and 100% Fijian staff by Saturday night. The final two patients were discharged on Sunday morning. During this time there were junior doctors loaned to us from the CWM hospital in Suva, who did Rounds every day, clinics, and overnight cover.

Clinics opened from Friday, 1st August, to do wound/postop checks. Run by Ashona (Sanjeevani Charge Nurse) and Chris Orchard. The final clinic with Kirsten Finucane was on Monday, 5th August, but clinics by Dr Maryanne Koraai continued over the following weeks ensuring all the children made a full recovery before planning their transfer back to their Pacific home country.

By Sunday 4th August all children had recovered well enough to be discharged, although some were having a prompt clinic check, and physiotherapy, and dietary input was ongoing. Clinics were open every day if any problems arose the local nurses referred them back.

Dr Maryanne Koraai and the local team were closely involved in our ward rounds and checks to ensure continuity of care, and the paediatric medical team also gained bedside teaching on the specific cases and their particular issues. Together we developed a good system for going over all details, and making daily plans, and confirming and documenting discharge plans.

Quality Initiatives

Teaching and Education: The PICU staff delivered a 6-hour lecture to four Pacific nurses over two sessions - 2 PICU nurses from SSSCH, 1 ER nurse from Colonial War Memorial Hospital, 1 paediatric nurse from Vanuatu. These staff received a PICU workbook and over the two days they received bedside teaching and mentoring in the following areas: 1) Cardiac takeback and extubation, 2) Drain, arterial and central line removal, 3) Blood gases, 4) Surgical pathways.

Five intern doctors who worked in the Ward received workbooks and mentoring and participated in daily rounds. A registered Nurse was educated at a Hearts4Kids Cardiac Workshop. Maryanne Koraai received a teaching session about the World Database. Further teaching sessions and opportunities included: 1) Pacing, arrhythmias including supraventricular tachycardia and atrial fibrillation, 2) Pacing wire removal, 3) Observing cardiac surgery.

Clinics: There were also some visiting clinics in Lambasa, Lautoka and Suva (one day each) by John Wright, with local paediatricians including James Auto and Dr Ili. Dr Wright saw some of our postoperative cases from earlier years. Follow-up data was recorded, allowing us to track patients, even those done nine years back in some cases!

Audit: Sue Brett recorded all operations and taught Dr Koraai how to enter these on the World Database. The aim is for Sanjeevani Hospital to enter more data as the year goes on. We are working to obtain more long-term follow-up data and putting in place a process to track and document patient progress, at least at one-year post-operation, which would provide valuable feedback on our patient selection.

Debrief: Theatre debrief held Wed July 31st with all team members present. Minutes taken.
Sanjeevani Hospital debrief held Aug 1st, including PMA on Zoom. Minutes taken.

Feedback: Positive feedback from all team members with regard to case selection, preparation, and postoperative care. Equipment ready and managed well. No major deficits in supplies or disposables. Common comment from everyone was that the processes had run much more smoothly this year than last.

Positive feedback from Ashona, thanks for including theatre nurse in scrubs for several cases, and ward nurses in participating with patient care, and lectures on ICU on the first morning of operating. Pacific nurses from Vanuatu and Kiribati particularly grateful.

Conclusion

This was the seventh visit to Fiji since 2014 and the Hearts4Kids Paediatric Cardiac Surgical team has now performed heart surgery on 106 babies, children and young adults with congenital or rheumatic heart defects. Early survival has been excellent; we know of only one death, in a child who developed sepsis after mechanical aortic valve insertion at 30 days postoperatively.

This year Hearts4kids succeeded in extending our cardiac service outside of Fiji to children of Samoa, Vanuatu, Kiribati, and Tuvalu, and we could not have done that without the Pasifika Medical Association whose outreach effort brought children and their families from remote Pacific Islands to Suva, where we could help them. The Sanjeevani Hospital was accepting of every child, whatever their country, and their well -designed facilities and local staff allowed us to do the operations safely and efficiently. We look forward to collaborating with the PMA group and Sanjeevani Hospital in years to come, together we can achieve much more.

Acknowledgements

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- Sonosite
- Sri Sathya Sai Sanjeevani Children's Hospital
- Starship Children's Hospital
- Technisonic
- Teleflex
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- Peter and Crystal Wilkinson

**Our grateful thanks to ALL our sponsors, for donations large and small,
for supporting the 2024 Hearts4Kids Mission to Fiji – we couldn't do this without you!**