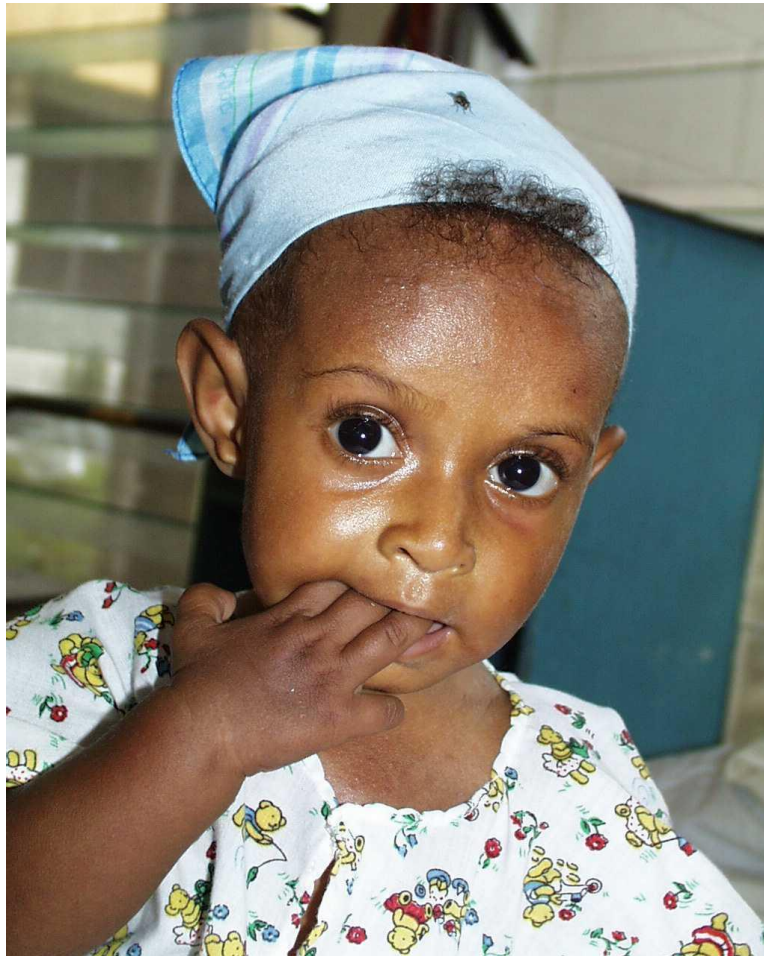


# **Tertiary Health Services Project - Papua New Guinea**

## **Paediatric Surgery and Anaesthesia**



**A Report for 14<sup>th</sup> - 22<sup>nd</sup> February 2003**

**Professor Paddy Dewan, Dr Andrew Jeffreys**

## Overview

Without doubt the care of children with surgical disease in PNG has progressed markedly since the start of the program in 1993, due largely to the efforts of the surgical, nursing and anaesthetic staff in both Australia and Papua New Guinea. There is, however, a long way to go. Patients are still referred late and the community of both doctors and the public are not sufficiently aware of the care available for children with conditions that can be treated surgically. The program has taken further steps toward in-country sustainability, with the first PNG Paediatric Surgical, Dr Mclee Mathew, now in Lae, providing a high standard of local care and easier access for subspecialty consultations and surgery in Papua New Guinea. Dr Okti Poki will be the second such candidate, and is currently in Sydney, undertaking further surgical training, following a year in Canberra. Dr Albert Shun and Dr Errol Simpson have contributed enormously to the progress of PNG surgery by assisting Poki. There are two other impressive young men who have shown an interest in assisting with the development of Paediatric Surgery, namely Dr Benjamin Yapo (the country counter-part on this visit) and Dr Charlie Turharus (Surgical registrar in Lae). The program has also been assisted by one of the previous Paediatric Anaesthetic trainees, Dr Ringko Sitang being appointed to a consultant post in Lae.



The Paediatric Surgical team is now coming of age; thus Dr Ben Yapo set about the task of purchasing the team theatre caps, which were worn at the second annual knot tying competition (right).

There is still much progress to be made, which will be assisted by the work of the Paediatric Surgical Foundation, chaired by Mr Hugh Greer. Donations to the Foundation are now coming from various sources and will assist in enabling the skill acquired by Papua New Guinean surgeons to be applied to a larger number of patients, and more equipment to be made available.

One further visit is planned for 2003, by Dr Albert Shun and his team from Sydney. It is intended that there be an increasing focus on the service development for more complex disease, without the creation of the need for more extensive facilities. Dr Mclee Mathew will be providing outreach services to Goroka, Lae, Rabaul and other locations, as well as having undertaken the teaching and service visit to Port Morsby in the week following the Lae visit.

The Paediatric Surgical training program, since commencing in 1993, has involved three Australian Paediatric Surgeons, supported by the AUSaid funded IDP/MONAHIP or PIP management groups. Over the many visits, the program budget has been supplemented by a number of additional sources, including the Huon Gulf Rotary Club and the Lae International Hotel have provided accommodation, equipment and meals in theatre, in Lae. More recently, under the chairmanship of Mr Hugh Greer, and with the association of Rotary and Lionesses, a Paediatric Surgical Foundation has provided many resources, including fitting out Dr Mclee Mathew's office, and the funding of the two nurses' visits to Papua New Guinea. Also, Tyco International have donated company products for a number of the 26 visits, and recycled items have been collected by the nursing and other staff in the theatres of several Victorian Hospitals, including The Royal Children's Hospital, Western Hospital Sunshine, Mercy Private Hospital, The Geelong Hospital and St John of God Hospital, Geelong: Qantas and Air Niugini have kindly transported these items free of charge. Also, a number of people have provided transportation in Lae.

The Lae hospital certainly, has its problems, including a major white ant infestation, ongoing difficulties with essential supplies, such as suture material. Further limiting the program is a lack of funds for transporting patients from other centres, which was particularly relevant for two girls with a cloacal anomaly from Alatoi.

Initially it was intended that Mclee Mathew go to the Solomon Islands to help further the links around the Pacific. Unfortunately, due to insurance requirements this was not able to happen in the timeframe available. The default position was to have a visit to Lae, where further support was given to the Paediatric Surgical Foundation, which will continue to assist. Mclee's skills were used to provide service and teaching in Port Moresby, to substitute for the lack of a visit by Professor Dewan, furthering the hand-over.



Part of the teaching involved discussion of the indications and conduct of the xrays, ably assisted by the Radiographer (left) and Radiology Nurse, seen with Dr Yapo and Dr Mathew (far right).

## **Teaching**

**Ward Rounds** were conducted once or twice per day and ward duties for teaching were divided between Mclee Mathew and Professor Dewan and focussed on the surgical management of the patients, and for resuscitation and pain management, the anaesthetic team were also involved. Dr Charlie Turharus and Benjamin Yapo played an important role in the education of the residents, and in coordination of the management of the peri-operative care and investigation of the patients. Nursing staff were always involved in the rounds, and usually 2 or 3 on each occasion.

**Theatre Sessions/Operations:** These were the focus of the teaching, with the involvement of the trainees in many of the operations, both in anaesthesia and surgery. The 21 operative patients had 24 visits to theatre for 29 operations, during 24 visits to theatre. Once again the teaching in theatre was mainly focused on the honing of the technical and diagnostic skills of Dr Mclee Mathew, Dr Charlie Turharus and Benjamin Yapo. The number of registrars involved in the theatre cases, plus the team work in the ward was impressive and is a reflection of the interest of the Lae hospital in general and and Dr Turharus and Dr Yapo in particular, facilitated by the training provided by Dr Mclee Mathew as a teacher.

Dr Rinko Stitang is now a full time specialist anaesthetist at Lae hospital, a great improvement on the situation that existed previously. The department seemed to be better organised as a result. A junior 1<sup>st</sup> year registrar participated in the lists, however, he was a little out of his depth as he was still coming to grips with the basics of anaesthesia.

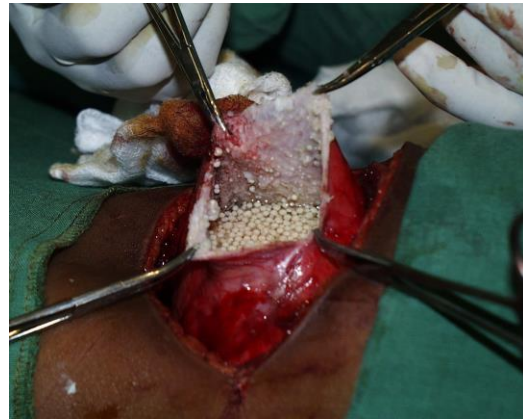
The nursing staff in theatre were not only an important part of the service provision, but were trained to further assist the PNG Paediatric Surgeon after the visit; the staff included Ester Bainor; Beneli Jim; Ude Nombe; Lois Ponowan; Rubenn Sauriem; Elaingor Jessie; Rachael Iga; Sela Omai; Michael Zebade; Yatosoa Tibong; Siara and Theresia.

**Lectures + Tutorials:** No specific lectures were given to the medical staff, but many tutorial presentations were delivered during the operating sessions and ward rounds. A lecture was given to the Paediatric Surgical Foundation at a special evening designed to raise funds for the ongoing work related to Paediatric Surgical cases. As always on these trips, the hands-on surgical skills, and the diagnostic and therapeutic abilities of the Paediatric Surgical trainees and registrars were very much part of surgical teaching. The breadth of Paediatric Anaesthesia was the basis for interaction between Dr Andrew Jefferys and those under his tutelage.



## **Consultations**

Thirty-five patients were seen in the clinic, ward or theatre, most of whom had complex disease, not all of whom had a surgical condition, but were appropriate for review (Appendix 1). The limited number of cases was because of the excellent work of the local surgeons which has resulted in there being very few minor cases to diagnose or treat, which is an indicator of the success of the teaching program. However, once again, complex adult cases were included in those treated, because of the uncertainty of the local surgeon in how to deal with the problem, including a woman who had a 7cm segment of ureter inadvertently divided during the removal of an ovarian cyst. Twenty-one of the 35 patients had an operation.



A disappointing case was a colostomy performed on this 9 yo girl for what was a retroperitoneal teratoma. The child had the colostomy closed and the mass (pictured) resected.



Urology cases included three boys who had the second stage of a hypospadias operation developed in Mongolia on another outreach visit, and named after the Capital of Mongolia, Ulaan Bataar.

## **Operative Surgery**

Appendix 2 shows some of the details of the cases operated on during this visit; all of which involved one or more of Mclee Mathew, Charlie Turharus and Benjamin Yapo. In total 21 operative patients had 28 operations, during 24 visits to theatre.

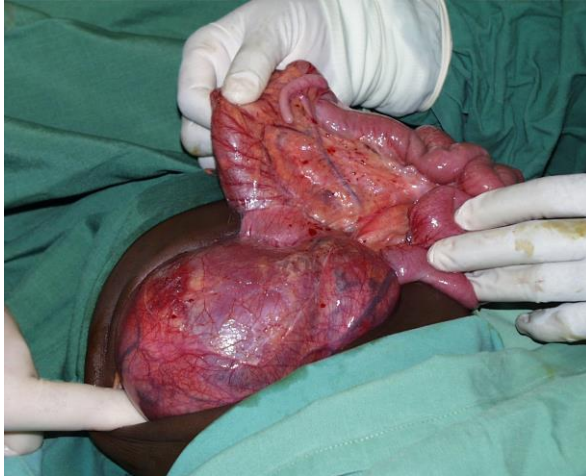
On this occasion there was a diversity of diagnoses, with complex cases from a variety of specialty areas, including adult cases that were thought unlikely to have appropriate and timely care if not added to the list. Once again there were children with either an anorectal anomaly (3) or Hirschsprung's disease (2); and 4 cases with a Paediatric Urology procedure. The profile of patients continues to show the drift away from the inclusion of minor cases, instead included two adult urology cases (one with a urethral stricture requiring a Pena approach and the other having had a 7 cm segment of urethra inadvertently removed. There was again, another major vascular case, but few cases of redo surgery.

Overall there were no major anaesthetic incidents, morbidity or mortality, but there was one post-operative death of a six neonate and an anastomotic breakdown in a patient having redo surgery.

The effects of the dire economic situation in PNG are obvious. Unlike previous visits there appears to be no money for the transportation of elective surgical patients around the country. There were children who could not be transported to Lae and so were not operated on. As always the problems with supplies continues, however, the basic anaesthetic supplies are still provided (gases, halothane, basic drugs etc.).



A thirty-four year old man had developed an aneurysm from a gunshot wound. He required extensive life-saving surgery.



A Wilms' tumour (left), an encephalocele (2<sup>nd</sup> row left) and haemangio-lymphangiomas were some of the unusual pathology the visiting team help the PNG surgeons tackle.





## **Outcome of Previous Paediatric Surgical Visit Recommendations**

**Surgical Technique:** Dr Mclee Mathew is now working in part as a subspecialist Paediatric Surgeon, at a level not achieved previously, and he is transferring his skill to his trainees. Dr Charlie Turharus and Dr Ben Yapo have skill levels that are well above their counterparts at the start of the Paediatric Surgical program. The skill and knowledge of the Paediatric Surgical trainees has continued to improve, in particular the tissue handling, wound closure, colostomy formation, and now the conduct of major cases.

**Diagnosis and Management:** In the common conditions of Hirschsprung's disease and anorectal anomalies, the site and nature of colostomy formation, and the appropriateness of the steps in the early management have resulted in improved outcomes for this group of patients.

**Radiological Support:** No change has occurred with regard to the limited number of cases diagnosed with a renal anomaly. Funding and a research fellow position should be made available to allow a prospective study of children with fever, in which a dipstick test of the urine would lead to a portable ultrasound examination of the kidneys, and would provide an important insight into the profile of renal disease. However, the ability to get studies done in Lae has improved through the assistance of the Radiographer.

**Theatre Equipment:** Donations-in-kind and the Department of Health supplies have improved, in particular, Paediatric instruments have been supplied to Dr Mclee Mathew. Again, in the last few months, over 20 boxes have been delivered to Lae, through the Paediatric Surgery Foundation. Other equipment continues to be in short supply, but as seen from the development of better storage arrangements, there are also some excesses, due to the inability to track donated items.

**Paediatric Surgical Nursing:** Nursing training in the ward has been addressed, further support in theatre and ward training in Paediatric Nursing should be continued, both associated and separate from the Paediatric Surgical visits. The setting up of the Paediatric Surgical section of the ward will enhance the focus on surgical conditions in children.



Services for children with Paediatric Surgical needs have expanded to include dedicating a part of the surgical ward to their care.





## **Recommendations for Further Development**

**Donations in kind:** for Lae and probably for Port Moresby; the following items are considered an important part of the ongoing commitment to the provision of Paediatric Surgical services, many of which can be obtained with a coordinated approach to recycling in Australia. Namely, Betadine, opened gloves, out of date gloves, huck towels, out of date urology catheters, diathermy tips, diathermy pads, feeding tubes, packs and gauze, out of date and single wrap sutures, galley pots and kidney dishes, scissors and forceps, and mastoid retractors. Further attempts will be made by the PNG staff to feed-back to the Melbourne staff, and will occur through the surgeons.

**Paediatric Anaesthesia:** As the paediatric program in PNG has evolved, it has been pleasing that the local surgeons are now practicing more independently. We believe that this should be occurring with anaesthesia as well. The aim should be for local senior registrars (or junior consultants with an interest in paediatric anaesthesia) to be the primary anaesthetist for the visits, with the visiting anaesthetist being present to provide backup when needed. With the graduation of more locally trained registrars, the aim should be that visiting anaesthetists may not be needed after another five years.

**Surgery Manpower planning:** A strategic plan should be developed for Paediatric Surgery, a draft of which is presented below. The template has been developed from previous discussion held with the Chief Surgeon, the Dean of the Medical Faculty, Dr Kaii Dugam and the Acting head of the Department of Surgery. From these discussions, the Centres to be the focus for Paediatric Surgery are to be Port Moresby, Lae, Hagen, and Rabaul. The following is a plan to develop the manpower for those centres, with a coordination of the services between the centres, aided by the establishment of a post of head of Paediatric Surgical Services for the country, supported by a combined database facility managed by the head of the unit. The following is a recommended plan for the staffing in the foreseeable future:

### ***Paediatric Surgical Staffing:***

<b><i>Paddy Dewan</i></b>	- Professor of Paediatric Services, Senior Adviser
<b><i>Albert Shun</i></b>	- Adviser to Paediatric Surgical services
<b><i>Mclee Mathew</i></b>	- Head of Paediatric Service - three year term - no more than two in succession. A formal appointment should be made.
<b><i>Okki Poki</i></b>	- Senior trainee - to be located in POM on his return, and appointed as the local head of service in POM.
<b><i>Charlie Turharus</i></b>	- (Primary 2002; Alice Springs 2004; Fellowship 2005; two service years; PNG senior Paed Reg 2008; Australia 2009)
<b><i>Benjamin Yapo</i></b>	- Service year Mt Hagen 2003; Service year 2004; Training in Australia 2005 (Canberra) + 2006 (Melbourne or Sydney).

***Proposed Staff distribution per year:***

- 2003 - Shun visit - August  
 Okti Poki - Westmead  
 Charlie Turharus - with Mclee in Lae  
 Mclee Mathew - Visits Moresby \*4 per year;  
 Rabaul \*2; Goroka \*1; Hagen \*1
- 2004 - Inclusion of Anaesthetic trainee - similar management plan for  
 Dewan - March  
 Shun - August ???  
 Ben Yapo in Hagen - travel with teams  
 Okti Poki - Moresby - Higher Diploma September  
 Examiners - Mclee Mathew; Paddy Dewan; Albert Shun or David  
 Watters; John Vince  
 Charlie Turharus - Alice Springs  
 Mclee - Rabaul \*2; Goroka \*1; Hagen \*1 visits  
 Visit coordination by Mclee
- 2005 - Dewan - March  
 Shun - August ????  
 Ben Yapo - Canberra  
 Okti Poki - Moresby  
 Charlie Turharus - Moresby - travel c visitors  
 Mclee - Rabaul \*2; Goroka \*1; Hagen \*1 visits  
 Visit coordination by Mclee

There should be a coordination of surgical postings and, a culture of cooperation between each of those who are given advanced Paediatric Surgical training. The PNG in-country Unit Head should develop a system to coordinate the visits from Australia and to other centres in PNG by the local Paediatric Surgical staff. He should also facilitate the development of the subspecialty interests within the group involved in Paediatric Surgery. Also, there should be development of Paediatric Surgical wards to match other progress, plus

theatre staff and nursing should have access to appropriate additional training.



Mclee, Ben and Charlie with 2 residents and a recruit

