

Pacific Island Project - Papua New Guinea

Paediatric Surgery Training



A Report for 24th February to 9th March 2002

Professor Paddy Dewan, Dr Andrew Jeffreys, RN Darren Pickering

Overview

Again, the visit of the Paediatric Surgical team to Papua New Guinea has been highly successful, providing both education and service related to surgical disease in children. The program has taken further steps toward in-country sustainability, with the Paediatric Surgical trainee, Dr Mclee Mathew, now in Lae, providing a higher standard of local care and easier access for subspecialty consultations and surgery in Papua New Guinea. Dr Okti Poki is the second such candidate, and is currently in Canberra undertaking further surgical training as follow-up to his previous participation in Paediatric Surgical visits to Papua New Guinea.

During the recent two week visit, the status of the Paediatric Surgery was highlighted by the large number of patients referred to the clinics, the community support, the knowledge and participation of the medical students, and the participation of a coordinating Surgical Registrar in Lae (Dr Charlie Turharus) and Port Moresby (Dr Ben Yapo).

The training in Paediatric Anaesthesia appears to also be progressing, and was helped on this occasion by the assignment of a registrar to the visit to Lae, and frequent participation of registrars and students to the cases in Port Moresby.

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 available.

Unfortunately, problems that have been common in the past are still occurring. These relate to the late presentation of cases, the inappropriate siting of colostomies, the limited use of pro-active management of a number of conditions, including colostomy prolapse, and the involvement of a range of surgeons in complex Paediatric Surgery who have not been involved in the training program. A greater involvement of the surgical and anaesthetic registrars in the visits would help alleviate this situation, and would ensure a higher standard of treatments such as colostomy formation. Undoubtedly, the increased participation of the medical students in the clinics and operative sessions will go a long way to help the difficulties in the care of children with surgical disease in the future.

Two further visits are planned for 2002, one a visit by Albert Shun and his team from Sydney and the other by Professor Dewan, the latter for the purpose of examining Mclee Mathew for the Diploma of Paediatric Surgery. 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 undertaking a teaching visit to the Solomons for the PIP project.

Also, to further his contact with Australasian Surgeons, Mclee has been awarded a grant to attend the Annual Scientific Meeting in Adelaide in May.

The Paediatric Surgical training program has now been underway since 1993, and has involved three Australian Paediatric Surgeons, supported by the AUSaid funded IDP/MONAHP 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 22 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.

During the recent trip, the team treated more patients than ever seen during one visit, and operated on a greater number of complex cases that previously dealt with. The ability to delegate other cases to Dr Mclee Mathew assisted the through-put of the visit, as did the assistance of Dr Mathew, Dr Yapo and Dr Turharus. The welcome received by the Paediatric Surgical, Anaesthetic and Nursing team was as expected; the staff in Lae/Angau and Port Moresby Hospitals provided the usual amazing level of support, encouragement and effort that has come to be expected, but not taken for granted. The Australian contingent on this visit consisted of Dr Andrew Jeffreys (Anaesthetist), Paddy Dewan (Paediatric Urologist/Surgeon) and Mr Darren Pickering (Paediatric Nurse). As for previous visits the nursing staff in Lae and Port Moresby were of great assistance.

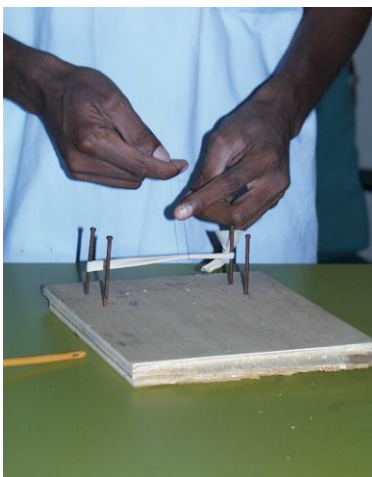


Some of both the local nurses in Lae, and the visiting team of nursing and medical staff

Surgical trainees and medical students in Port Moresby were involved even more-so than during the last visit, to the advantage of both the trainees and the patients. Paediatric Surgery training of nursing staff and students in theatres and the ward, on aspects of Paediatric Surgery, was also achieved, particularly related to post-operative care. In addition to the teaching, clinic work and surgery, this visit involved participation in discussions about the development of Paediatric Urology and Paediatric Surgery, particularly planning for equipment requirements in theatre and the wards. The most notable new achievement was the skill transfer related to ward nursing management, through Darren Pickering working with the PNG ward staff.

The project continues to flourish: Dr Andrew Jeffreys added further to the knowledge of Paediatric Anaesthesia, and on this occasion it was evident that the face of Paediatric Surgery is changing; the student and trainees have a greater level of core knowledge, the patients are no longer most likely to have complications of treatment or complex pathology. Care of minor Paediatric Surgical cases now rests firmly in the hands of Papua New Guinea surgeons.

One of the fun aspects of the visit was the inaugural surgical knot tying competition, held in Lae. Interestingly, despite the tough competition and the K50 prize, the winner was the scout master who works as the theatre receptionist in Lae!



Competitors participating in the inaugural knot-tying competition in Lae

Teaching

Ward Rounds: The conduct of the ward rounds differed during this visit, due to the presence of a visiting ward trained nurse, and the ability to delegate to Dr Mclee Mathew. Consequently, the ward rounds were conducted during the day, rather than at the end of the operating session. The education related to the care of patients in the ward were particularly directed to the two registrars who were assigned to the visit, namely Charlie Turharus in Lae and Benjamin Yapo in Port Moresby. Ward rounds were conducted on most mornings, as well as evenings, in both Port Moresby and Lae. Ongoing nurse and parent education was conducted by Darren Pickering, ensuring that potential adverse events were flagged to the nursing staff and the surgical team. Consequently intermittent catheterisation was able to be commenced in three patients.

Theatre Sessions/Operations: Even more so than for previous Paediatric Surgical visits, the service and teaching commitment was exemplified by the range of surgery and teaching in the operating theatre. The 44 operative patients, having 46 visits to theatre for 52 operations, during 113 hours of theatre time. Once again the teaching in theatre was mainly focused on the honing of the technical and diagnostic skills of Dr Mclee Mathew, Charlie Turharus in Lae and Benjamin Yapo in Port Moresby. A number of other registrars were involved in the theatre cases, plus the team worked with the general surgeons and obstetricians in Port Moresby, combining with difficult cases on five occasions. In addition, medical students were present during most of the operations in Port Moresby, facilitating the training of Dr Mclee Mathew as a teacher. Anaesthetic resident, student and registrar staff were also tutored during the long hours of surgery.

Lectures + Tutorials: Two lectures were given to medical students, residents and surgical trainees in Port Moresby, a third was presented to the Paediatric Surgical Foundation at the Huon Gulf Rotary meeting, and a fourth to the Rotary Club on Port Moresby. Tutorials were conducted during the operative and outpatient sessions. Topics included in these lectures, and the tutorials given to students, trainees and surgeons were:

1. *Urological catheter management*
2. *Post operative care in Paediatric Surgery/Urology*
3. *Hirschsprung's disease - protocol*
4. *Bowel obstruction in neonates*
5. *Training in intermittent catheterisation of incontinence*
6. *Anorectal anomalies + colostomy surgery*
7. *Phimosis + Inguinoscrotal Herniae, and Surgery*
8. *Tissue handling in Paediatric Surgery*

The hands-on surgical skills, and the diagnostic and therapeutic abilities of the Paediatric Surgical trainee and the registrars were also part of the surgical teaching. The breadth of Paediatric Anaesthesia was the basis for interaction between Dr Andrew Jefferys and those under his tutelage, and Darren Pickering facilitated skill transfer in relation to surgical nursing in the wards.

More than twenty nurses were involved in the theatre session, and similar number in the teaching in the wards. More than 120 people were present for the grand round in Moresby and several students were present in theatre and others came to the outpatient sessions

Consultations

Appendix 1 shows the consultations conducted in both Lae and Port Moresby. Most of the patients were seen in an outpatient session on the Monday 25th February, involving the review of 28 patients. In Port Moresby, 68 cases were seen in an outpatient session on the first day, which included the participation of the visiting Team, the PNG Paediatric Surgeon, two registrars, a resident and three 4th year medical students. Patients were also seen in the ward, or between cases in the theatre corridors, in both Lae and Port Moresby. The total number of patient consultations exceeded, by far, that seen during any other single visit, and included a diversity of cases related to the development of the subspecialty of Paediatric Urology.

Twenty-one of 38 patients had a total of 24 operations in Lae, the high proportion because of the effective screening process, the ability of the Paediatric Surgical service to complete the follow-up on previous cases, and screened referrals from outlying centres, plus the number of minor cases completed by Dr Mclee Mathew prior to the visit. The effectiveness of the screening process was assisted by Dr Charlie Turharus, a surgical registrar. Sr Joseph also provided great support to the teaching program by her referrals from Wewak.

Of the 77 consultations in Port Moresby, 23 came to surgery for 28 operations, but there were a greater number of post-operative follow-up cases than seen in Lae, probably because of the service provided by Mclee Mathew in Lae. The non-operative cases facilitated a wide range of teaching that would not have otherwise been covered, and enabled review of the outcome of previous interventions. The reduced number of operative cases in Port Moresby, than for previous visits, was because of a few cases, that were able to be left for Mclee Mathew to do in the week after the Australian contingent had returned to Melbourne.



Two different children seen with the anomaly of a sacrococcygeal teratoma, for which surgical excision is required.

Operative Surgery

Appendix 2 shows some of the details of the cases operated on during this visit; virtually all of which involved Dr Mclee Mathew.

Dr Charlie Turharus, in Lae, and Dr Benjamin Yap, in Port Moresby, and the residents working with them, took particular interest in the management of the Paediatric Surgical patients, and were involved, with Mclee Mathew, with many of the operations.

There were a total of 46 theatre visits of 44 patients for a total of 52 operations, during 113 hours of operating time. Unlike previous visits, virtually none of the cases had minor surgery, as all the cases requiring such surgery were deferred to Dr Mclee Mathew, or other local surgeons in Port Moresby. Once again the majority of children seen had either an anorectal anomaly (12) or Hirschsprung's disease (8); during this visit, 16 cases had a Paediatric Urology procedure. Interestingly the profile of patients has changed away from the inclusion of minor cases, and included four adult urology cases, one vascular surgical adult case, and only minimal redo surgery.



This 11 year old boy had a colostomy in the newborn period, which closed spontaneously. The hugely dilated colon was secondary to Hirschsprung's disease (right), this case highlights the need for colostomies to be a two staged procedure, and the problem of late presentation.



A 3 year old boy with an anorectal anomaly who had chronic prolapse of his colostomy, with subsequent failure to thrive and anaemia. Colostomy revision was performed.



Paediatric Urology cases included a child with a Wilms tumour of the kidney (left) and the third patients seen by the Paediatric Surgical team with diphallus and caudal duplication (right)



A girl with urinary incontinence due to a duplex kidney had a ureteric reimplant with the state-of-the-art approach, which avoids the use of a bladder catheter and allows for early discharge



Adult cases included the above two women, one required surgery for a blocked ureter after a caesarean section (left): the retained pack after her first operation can be seen on the x-ray (left). Anna (right) had a ureter stoma formed to allow bladder emptying.

Outcome of Previous Paediatric Surgical Visit Recommendations

Surgical Technique: The skill and knowledge of the Paediatric Surgical trainee has continued to improve, in particular the tissue handling, wound closure, colostomy formation, and now the conduct of major cases. Students and registrars participated to a greater degree than in previous visits, both in the surgery and anaesthetic teaching.

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.

Further education in the subtleties has seen better at interpretation of the radiology involved in the investigation of Paediatric Surgical conditions than in previous years. Further training sessions for Surgical and Paediatric trainees and medical students have been implemented, but sessions with Radiographers, Radiologists would also be useful, and is likely to advance now that Port Moresby has a recently returned Australian trained Radiologist.

Theatre Equipment: Donations-in-kind and the Department of Health supplies have improved, in particular, Paediatric instruments have been supplied to Dr Mclee Mathew. Over 20 boxes were delivered to Lae during the visit, 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 continue, both associated and separate from the Paediatric Surgical visits.

Recommendations for Further Development

Paediatric Surgical Appointments: Dr Mclee Mathew is currently working in Lae, where I think he should stay and from where he should provide education and service to the regional centres, teaching and service in Port Moresby, and form part of the PIP team in teaching in the Solomons. If teaching blocks were established he could be a productive member of the University of PNG surgical teaching. Funding for his work is able to be augmented through the Paediatric Surgical Foundation, in Lae.

Following the return of Okti Poki, one of the two Paediatric Surgeons should have an appointment in Port Moresby, and the next two trainees should be identified to give a total of four appointments by the year 2010. Two strong candidates for Paediatric Surgical training would be Benjamin Yap and Charlie Turharus. Mt Hagen and Rabaul would seem appropriate locations for the 3rd and 4th appointment. The four should then form a network, or PNG Paediatric Surgical Unit, with a common audit and with an appointed head who also carries a University title.

Communications: Internet contact should be made available for the newly appointed surgeons to keep in contact with Australian and other International counterparts.

Paediatric Urological Disease: As for my last report - Despite repeated recommendations from the Paediatric Surgical visits, lives continue to be lost or adversely affected because of the delay in diagnosis of urological diseases, which would be improved by funding a project to look at the prevalence of urinary tract infections and associated renal anomalies.

Paediatric Surgical Wards: The development of a Paediatric Surgical ward in Lae in the first instance would be appropriate, and Ward 6B at the Port Moresby General Hospital would appear to be the appropriate location. As other surgeons are appointed to other locations, similar facilities should be put in place. Locating the patients in the one ward gives a focus of nursing care, and ease of surgical team management. The development of ward facilities would help focus the developing the appropriate skills nursing personal and skills.

Donations in kind and Operating theatre Inventory: Donations in kind form an important part of the resources of operating theatres in Papua New Guinea. However, due to a lack of time for the staff to organise the donations, and a lack of training, the maximum benefit-for-effort is not achieved. A review of the equipment needed from donations in kind should be developed, then resources established to ensure that the quantity of such items is optimised. Donations of large equipment should generally be discouraged until a good supply of the appropriate suture material and other disposable materials is in place.

Donations to Taken or Delivered to PNG

<i>Donated Item</i>	<i>Number</i>	<i>Donor</i>
Aiway tube	150	Wang Private
Bandages	80	Mercy
Bandages - 3 inch	45	Mercy/St John
Bandages - 5 inch	30	Mercy
Betadine, 100 mL bottles	68	Sunshine
Calcium alginate dressing	5	Alfred
Catheter bags	8	Wang Private
Catheters – foley	50	Wang Private
Catheters – Nelaton	24	Many
Catheters, urethral	11	Geelong
Chest tubes	17	Wang Private
Colostomy bag adhesives - boxes	2	Mercy
Colostomy bags - boxes	4	Wangaratta
Diathermy Handles	69	Mercy/Geelong
Diathermy Pads - large	412	Sunshine
Diathermy plates, large used	250	St John of God
Diathermy plates, small used	43	Sunshine
Diathermy tips - used	221	Mercy/Geelong
Dilator Sheath sets	66	Wang Private
Drains – abdominal sump	5	Mixed
Drapes – sterile	13	Mercy
Drapes – sterile	25	Wang Private
Dressing packs	20	Wang Private
Elastoplast, boxes - 2.5 cm	1	Ausaid
Elastoplast, boxes - 5.0 cm	2	Ausaid
Elastoplast, boxes - 7.5 cm	1	Ausaid
Endotracheal tubes	23	Wang Private
Endotracheal tubes	52	Wang Private
ET tubes	47	Sunshine
Feeding tubes - 6 FG	11	Ausaid
Feeding tubes - 8 FG	12	Ausaid
Feeding tubes - 10 FG	25	Ausaid
Gauze – raytec	105	Mercy
Gauze – ribbon	325	Wang Private
Gauze – unsterile	300	Mixed
Gauze swabs – plain	10	Mercy
Gauze swabs – x-ray 10cm 10cm	126	Mercy
Gloves - out of date sterile *40 boxes	200	St John of God
Gloves - out of date sterile *40 boxes	120	St John of God
Gloves - sterile: pairs	240	Ansell
Gloves – unsterile: pairs	45	Ansell
Gloves – unsterile: pairs	225	Mercy
Gloves – unsterile: pairs	140	St John of God
Gloves – unsterile: pairs	200	Many

Donations to Taken or Delivered to PNG (Cont'd)

<i>Donated Item</i>	<i>Number</i>	<i>Donor</i>
Gowns	30	Mixed
Guide-wires - used	12	Sunshine
Huck Towels	270	St John of God
Hypafix dressing - sterile	20	Ausaid
Hypafix dressing, roll	1	Sunshine
IV connector tubing	25	Wang Private
Mayo stand covers	46	Mixed
Nasogastric tubes	9	Wang Private
Nephrostomy tubes	2	St John of God
Nephrostomy tubes	8	RCH
Oxygen masks - Paediatric	40	Sunshine
Packs	140	Mercy/St John
Packs – large	356	Mercy
Packs – medium	102	Mercy
Packs – small	170	Mercy
Penrose drains	6	Wang Private
Redivac Bottles	3	Mercy
Scapel blades - 10	1	Ausaid
Scapel blades - 15	1	Ausaid
Sheath Dilators - large	22	RCH
Sheath Dilators - small	25	RCH
Shoe covers - box	1	Mixed
Shunts – VP	7	Unk
Sigmoidoscopes - disposable	4	Wang Private
Stent tubing - Double J	6	RCH
Stent tubing - hypospadias	10	RCH
Suckers – Yanker	14	Wang Private
Suction bottles	18	Mercy
Suction drains	7	Wang Private
Suction tubing	11	Wang Private
Sutures - boxes	27	Tyco
Sutures, Boxes	20	Ausaid
Torniquets	7	Mercy
Ureteric Balloon Dilator	2	RCH
Ureteric catheters, OOD	8	Sunshine
Ureteric catheters, OOD	11	Sunshine
Ureteric Stents	3	St John of God
Urethral catheters - 8 FG	10	Ausaid
Urethral catheters - 10 FG	10	Ausaid
Urethral catheters - 12 FG	10	Ausaid
Urethral catheters - 18 FG	9	Ausaid
Urinary Drainage Bags	12	Sunshine
Urine drainage bags	4	Geelong
Urine drainage bags	6	St John of God

Appendix 1: Consultations

<i>Pathology</i>	<i>Hosp No#</i>	<i>Date</i>	<i>DOB</i>	<i>Gender</i>	<i>Village</i>	<i>Province</i>
Anorectal - anterior ectopic	185972	4/03/2002	4/07/1990	Female	Popondeta	Oro
Anorectal - anterior ectopic	Unknown	4/03/2002	22/11/2001	Female	Mt Hagen	WHP
Anorectal - anterior ectopic	Unknown	25/02/2002	13/09/1996	Male	Unknown	Unknown
Anorectal anomaly	054553	4/03/2002	29/07/1994	Female	Malalaua	Gulf
Anorectal anomaly	065285	4/03/2002	7/03/1995	Male	Buine	NSP
Anorectal anomaly	129219	4/03/2002	26/11/1997	Male	Kariku	Central
Anorectal anomaly	140334	3/03/2002	6/07/1999	Male	Koiari	Central
Anorectal anomaly	147990	4/03/2002	9/10/1999	Female	Malalaua	Gulf
Anorectal anomaly	153296	4/03/2002	9/04/2000	Female	Hula	Central
Anorectal anomaly	156902	4/03/2002	26/06/2000	Male	Goroka	EHP
Anorectal anomaly	163075	3/03/2002	4/07/1999	Male	Baua	Gulf
Anorectal anomaly	173609	4/03/2002	6/12/2000	Female	Mumeng	Morobe
Anorectal anomaly	185291	3/03/2002	18/02/2002	Male	Malalaua	Gulf
Anorectal anomaly	415718	25/02/2002	6/04/2000	Male	Laukanu	Morobe
Anorectal anomaly	425129	25/02/2002	15/05/2000	Male	Kainantu	EHP
Anorectal anomaly	425207	25/02/2002	30/06/1986	Male	Malaguna	ENB
Anorectal anomaly	425397	28/02/2002	12/07/2001	Female	Karavia	ENB
Anorectal anomaly	Unknown	4/03/2002	24/11/1993	Male	Malalaua	Gulf
Anorectal anomaly	Unknown	4/03/2002	2/12/2001	Female	Kaintiva	Gulf
Anorectal anomaly - Cloaca	103446	4/03/2002	11/03/1997	Female	Hula	Central
Anorectal anomaly - Cloaca	107146	4/03/2002	26/06/1997	Female	Baimuru	Gulf
Anorectal anomaly - high	162051	6/03/2002	3/02/1998	Female	Tari	SHP
AV malformation - small R leg	Unknown	4/03/2002	5/07/1996	Female	Rigo	Central
Axillary tumour + thoracic	Unknown	25/02/2002	1/01/1990	Female	Guzuap	Morobe
Bowel dysfunction	Unknown	4/03/2002	25/09/2001	Female	Rigo	Central
Bowel obstruction - adhesive	185241	3/03/2002	15/02/2002	Male	Ihu	Gulf
Branchial arch sinus	425307	25/02/2002	7/01/2002	Male	Kamkumu	Morobe
Caudal duplication/diphallus	183782	3/03/2002	21/01/2002	Male	Garaina	Morobe
Cloaca/ Spina Bifida	425260	25/02/2002	29/01/2002	Female	Goroka	EHP
COPUM	090173	4/03/2002	27/01/1996	Male	Ihu	Gulf
Cystic hygroma - thoracic	Unknown	4/03/2002	25/11/2001	Female	Kairaku	Central
Cystic hygroma -right neck	Unknown	26/02/2002	12/03/2000	Female	Portaput	Huon
Duchen's Muscular Dystrophy	Unknown	25/02/2002	10/06/1994	Male	Unknown	Morobe
Duplex with incontinence	175344	4/03/2002	9/06/1992	Female	Lorengau	Manus
Duplex with incontinence	425297	25/02/2002	4/07/1998	Female	Buna	Oro
Haemangioma - facial	Unknown	4/03/2002	20/08/1994	Female	Boltia	Madang
Heart disease - cleft palate	Unknown	4/03/2002	10/12/2001	Female	Sinasina	Chimbu
Hernia - Inguinal	425453	25/02/2002	9/08/2001	Male	Malai	Morobe
Hernia - inguinal	Unknown	4/03/2002	19/06/1992	Female	Bereina	Central

Appendix 1: Consultations (Cont'd)

<i>Pathology</i>	<i>Hosp No#</i>	<i>Date</i>	<i>DOB</i>	<i>Gender</i>	<i>Village</i>	<i>Province</i>
Hernia - inguinal	Unknown	4/03/2002	23/05/1997	Male	Waima	Central
Hernia - inguinal	Unknown	4/03/2002	19/11/1996	Male	Toma	ENB
Hernia - umbilical	Unknown	4/03/2002	22/12/2001	Male	Wanigela	Central
Hernia - umbilical	Unknown	4/03/2002	24/09/2001	Male	Goroka	EHP
Hernia post Gastroschisis	418143	25/02/2002	24/07/2001	Female	Wampar	Morobe
Hirschsprung's	135347	6/03/2002	29/03/1999	Male	Jongi Nofi	EHP
Hirschsprung's	140535	4/03/2002	2/07/1999	Female	Malalaua	Gulf
Hirschsprung's	153642	4/03/2002	9/05/2000	Female	Bereina	Central
Hirschsprung's	153898	4/03/2002	7/01/2001	Male	Bereina	Central
Hirschsprung's	163797	4/03/2002	19/03/2001	Male	Rigo	Central
Hirschsprung's	388186	2/03/2002	4/09/1997	Male	Dei	WHP
Hirschsprung's	411485	25/02/2002	3/11/1992	Male	Wewak	ESP
Hirschsprung's	425139	25/02/2002	17/09/1994	Female	Namatani	NIP
Hirschsprung's	425188	25/02/2002	16/09/2000	Male	Kilig	WHP
Hirschsprung's	425206	26/02/2002	1/12/1995	Male	Vunairoto	ENB
Hirschsprung's	425398	28/02/2002	15/02/2000	Male	Kasmata	WNB
Hirschsprung's	Unknown	26/02/2002	23/07/1995	Male	Unknown	Unknown
Hirschsprung's	Unknown	4/03/2002	9/07/2001	Female	Rigo	Central
Hirschsprung's	Unknown	4/03/2002	15/09/2001	Male	Rigo	Central
Hydrocephalus	181567	3/03/2002	11/01/2001	Female	Wabag	Enga
Hydrocephalus	425296	25/02/2002	8/07/2001	Male	Honpatu	Morobe
Hydrocephalus	Unknown	4/03/2002	22/06/2000	Male	Daru	Western
Hydrocephalus/SB	424983	25/02/2002	6/06/2001	Male	Wagara	ESP
Hydrocoele	Unknown	4/03/2002	9/11/2001	Male	Hanuabada	NCD
Hydrocoele	Unknown	4/03/2002	20/10/1995	Male	Alotau	Milnebay
Hypospadias	080480	4/03/2002	5/01/1996	Male	Mt Hagen	WHP
Hypospadias	124254	4/03/2002	29/03/1998	Male	Daru	Western
Hypospadias	144963	4/03/2002	23/05/1999	Male	Hula	Central
Hypospadias	165950	4/03/2002	13/08/1997	Male	Tari	SHP
Hypospadias	425130	26/02/2002	1/01/1986	Male	Ibusamoke	EHP
Hypospadias	425349	25/02/2002	15/11/1996	Male	Hangan	NSP
Hypospadias	425361	25/02/2002	28/10/1997	Male	Mussau	NIP
Hypospadias	Unknown	4/03/2002	17/03/2000	Male	Hanuabada	NCD
Hypospadias	Unknown	4/03/2002	20/06/1996	Male	Kulangit	NIP
Hypospadias - 2nd stage	425350	25/02/2002	14/08/1996	Male	Goroka	EHP
Hypospadias - distal	Unknown	4/03/2002	1/11/1991	Male	Hula	Central
Hypospadias - distal	Unknown	4/03/2002	22/08/2000	Male	Hanuabada	NCD
Hypospadias - distal	Unknown	4/03/2002	19/06/1998	Male	Rigo	Central
Hypospadias - distal	Unknown	8/03/2002	27/10/1993	Male	Lorengau	Manus

