



INTERPLAST PNG COUNTRY PROGRAM REVIEW - 2016

PAPUA NEW GUINEA

Interplast's first surgical program in PNG was delivered in 1985.

During the past 31 years, Interplast has delivered training and surgical activities in nine different locations at the request of local hospitals and the PNG Government.

More than 2,400 procedures have been performed.



AKNOWLEDGEMENTS

Thank you to Interplast's many fantastic local partners in Papua New Guinea – in particular to Professor Ikau Kevau and Dr Morath Maire (Port Moresby) and Dr John Maihua (Madang), whose assistance and guidance on this report were invaluable. To all of the doctors, nurses and administrators at the various hospitals in PNG, thank you for your contribution.

To local partners and supporters including; Brian Bell Companies, Moni Plus, Rotary Club of Boroko, CPL Group, your logistical, financial and professional support is much appreciated. To all of the individuals and organisations who refer patients to us from various corners of PNG, to be treated by our teams or local surgeons, thank you for helping us to reach those who are in some of the most remote parts of the country.

To Dr Simon Donahoe and Dr Peter Maloney from Melbourne – thank you for accompanying the Interplast team on the visits associated with this review. Your long history and experience with Interplast in PNG has provided a great asset to this work.

Thank you to the Australian Government, for funding this review project through Interplast's Australian NGO Cooperation Program (ANCP) grant in the 2015/16 financial year, and to the staff at the Australian High Commission in Port Moresby for their support.



PLASTIC AND RECONSTRUCTIVE SURGERIES FOR:

-  Significant numbers of untreated cleft lip and cleft palate cases
-  High incidence of burn scars & contractures
-  Hand injuries
-  Advanced tumors

Demand for services continues to exceed the resources of Interplast teams.

Key features/focus points of Interplast's programs:

- targeted training for surgical trainees
- mentoring support to PNG's only fully qualified plastic surgeon
- burns management
- hand therapy training
- reconstructive surgery that would otherwise not be available

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SUMMARY OF THIS REVIEW

This study reviewed the impact of Interplast's involvement in Papua New Guinea over the last 30 years, on individuals treated, the families of those who benefited from treatment, as well as on the medical personnel whom have received training through Interplast to help build local capacity.

The main objectives of the study were to identify the achievements of the last 30 years, to strengthen future program development and to make recommendations around the scope and focus of Interplast programs for the next 5 years.

To achieve its objectives the study included; an audit of patient records, financials and program reports; interviews with key personnel involved with Interplast's work in Papua New Guinea; and a two part review visit to Papua New Guinea.

FINDINGS:

The study produced the following 4 recommendations:

1. Continue delivering plastic and reconstructive surgery programs
2. Formalise a plastic surgery training program in PNG to meet local surgical needs.
3. Confirm Interplast's commitment to plastic and reconstructive services through a formal agreement with PNG Government and other partners.
4. Build capacity of the support services to plastic and reconstructive surgery such as anaesthetic, nursing and allied health professionals.

FROM THE MOUTHS OF OUR MEDICAL VOLUNTEERS

"It is difficult not to think about how heartbreaking it must be for a parent not to be able to provide essential medical or surgical care for their child and have them live with a physical deformity that is so relatively easily treatable. And what a privilege it is for us to be able to provide this through Interplast's incredible efforts".

- Dr Zac Moaveni, NZ Plastic Surgeon & Interplast volunteer.



BACKGROUND TO INTERPLAST'S PNG PROGRAMS

Since 1983, Interplast has been supporting plastic and reconstructive surgical services and training in the Asia Pacific region, delivering close to 600 programs. In addition to surgery-focused service and training, Interplast has also implemented programs strengthening and supporting the allied health services required for successful plastic and reconstructive surgery – including general and specialist nursing, occupational therapy, hand therapy, anaesthetics and emergency management of severe burns. In this period of time, Interplast has facilitated over 24,000 procedures and 40,500 patient consultations. Over 100 medical professionals, from our partner countries have participated in further training and professional development in Australia or New Zealand and hundreds have received training and mentoring in their own countries. More than 700 Australian & New Zealand medical volunteers have engaged in specialised service delivery and training.

Interplast's mission is to improve lives through the treatment of disabling conditions which inhibit full engagement in society by providing access to surgical, other medical and allied health services in developing countries and by supporting and building capacity within local health services to enable the delivery of surgical and other related health interventions.

PNG is one of Interplast's oldest and most frequently visited partners. Since 1985, Interplast has facilitated and engaged in 105 program activities in PNG. During that time, 2800 operations have been performed and approximately 5700 consultations undertaken. Programs have been delivered in Port Moresby, Mt Hagen, Madang, Lae, Alotau, Rabaul, Wewak, Bougainville and Goroka. A number of training programs have been delivered, including in burns management (Early Management of Severe Burns, EMSB), anaesthetic training, nurse education and hand therapy training. Mentoring programs for trainee plastic surgeons have also been a feature of Interplast's PNG activities – both in Port Moresby and Madang. Where possible, surgical trainees from Port Moresby have joined Interplast surgical visits to provincial locations to facilitate further training opportunities. Interplast has also supported a number of overseas training placements and professional development opportunities for PNG medical professionals.

CONTEXT – PLASTIC AND RECONSTRUCTIVE SURGERY IN PAPUA NEW GUINEA

Provision of specialist medical services in PNG is a challenging and historically difficult undertaking, for a number of reasons which relate more broadly to the geography, population demographic, economic and human resources of the country. Some of these broader issues include:

- Approximately 85% of the 7.3 million people in PNG live in areas classified as rural and remote. Within this rural population, a majority live in areas often inaccessible by road to the capital, Port Moresby, or to 'provincial level' hospitals. Air travel is prohibitively expensive to most of the population, and patient pathways for government-supported referral are very limited. According to the World Health Organisation, general 'health services utilisation' in PNG is significantly lower than the average across all countries in the region.
- Large numbers of trauma cases related to bush knife injuries, burns and motor vehicle accidents, which aren't able to be treated in the acute stage due to geographic isolation or lack of adequate medical facilities, resulting in long-term disability and often irreparable damage.



CASE STUDY - CHASING A SPORTING DREAM

24 year old Laurie is a keen AFL footballer, who has had the opportunity through his sporting skill to play twice in Melbourne at the MCG with the PNG Mosquitoes. Laurie received a scholarship for the 2012 football season which allowed him to train with the Redland Bombers in the Queensland State League. As well as his football, Laurie has aspirations of becoming an accountant.

At Christmas time last year, a Laurie was in an accident and his right arm was badly cut. The injury caused severe tendon and nerve damage, and put his dreams of playing professional football at serious risk. Laurie's wound was initially sutured at a private clinic and Laurie was referred to hospital. During Laurie's prolonged wait to be seen at the hospital and prior to treatment for the tendon and nerve damage, the wound began to heal.

Performing everyday tasks with his injured hand became nearly impossible as Laurie began to experience decreased movement, pins and needles and in some areas loss of sensation. Laurie began to accept that the injury to his right hand would be permanent. He believed his chances of ever completing his studies had vanished and felt hopeless as he continued to search for work with limited functional use of his dominant hand.

Laurie's long awaited hospital appointment happened to coincide with this Interplast surgical mentoring visit. Laurie's injury was assessed by the Interplast team and Laurie was identified to be a suitable candidate for surgery.

The Interplast team worked with local surgeon Dr Maire to repair the majority of Laurie's severed tendons and improve the sensations he was experiencing due to nerve damage. Laurie has been given the best possible chance of regaining functional use of his right hand.

Interplast volunteer nurse Chris recalls the team's interaction with Laurie. "He was a delightful young man. He told us about his dream to play for an AFL club, and how he had been to Australia to play in curtain-raisers at the MCG, with his PNG counterparts, when Hawthorn were playing. When we first saw him, he had had loss of feeling in the medial region of his hand and some limitation of movement. His operation took about 6 hours as he had quite extensive damage. The following day when we went to visit him on the ward, he was already up and dressed. He wanted to know when he could start physio, and when he could get back to his footy. Dr Januszkiewicz explained that he had to wait a while to recover and heal properly! He is very motivated to recover and resume normal life".

Laurie contacted the Interplast team following this visit to let us know that his surgery was a success, and to express his deepest gratitude for the team. He is hopeful for his continued rehabilitation so that he may find employment to help him achieve his dream of completing an accounting qualification, and be able to handle an AFL football with confidence again.

In addition to Laurie's family and community, the surgery performed on Laurie will have benefited many more people in PNG as it provided a vital training opportunity for Interplast's local surgical trainees. Our PNG trainees are taught key skills during various surgical and mentoring visits by Interplast, with the intention that future similar injuries may be appropriately treated by our local surgical trainees to benefit the wider community.



Laurie, centre, with PNG surgeon Dr Maire and Interplast surgeon Dr Januszkiewicz, following his operation.

The need for plastic and reconstructive surgery in PNG is significant. Congenital anomalies, burns, hand trauma and cancers (in particular head and neck cancers) are common. Burns, predominantly from cooking fires for adults and scald burns from hot water in children, are widespread, and scar contractures resulting from inadequate acute treatment are devastating to a person's function as well as appearance. Nerve and tendon injury from bush knives is common, particularly affecting young males in the 20-30 year age bracket. These injuries, if not properly treated (including substantial physiotherapy for rehabilitation) often mean that these people are unable to work or carry out basic functions. Congenital conditions such as cleft lip and palate, if not properly treated, can lead to social stigma and isolation – many children do not go to school, and are unable to speak or eat properly.

As with many areas of medical care in PNG, geographic isolation plays a major role in the health-seeking behaviour of PNG nationals. Often injuries or disease are not treated until they are almost too advanced to treat. While there are hospitals in all provinces of PNG, many are very poorly resourced, and even these are several hours travel for large numbers of the population. This isolation impacts on people seeking initial treatment, and on their follow-up rehabilitation or surgery.

While a number of senior surgeons in PNG have undertaken their training in Australia and New Zealand (and other overseas locations), the majority of PNG surgeons now train through the University of Papua New Guinea's School of Medical Sciences. Once candidates have completed their Masters of Surgery, they graduate as a general surgeon, after which they must undertake 2 to 3 years working in a provincial hospital. After this time, if they wish to specialise, they must be formally accepted into the training program based in Port Moresby for that specialty. Specialist training includes a mandatory 6 to 12 month placement overseas (ideally in Australia/NZ), to provide the trainee with exposure to an international setting.

Currently in PNG, there is only one fully trained plastic surgeon, who is based in Madang. Previously Dr George Gende was also a trained plastic surgeon, but he retired from practice in 2010. There is also one current plastic surgery trainee, based in Port Moresby.

While other surgical specialties, including orthopaedic surgery, paediatric surgery, obstetrics and neurosurgery have improved in terms of local capacity and numbers of trained professionals, it has been identified that plastic and reconstructive surgery in PNG still lags behind what is required for the country. Reasons for this including:

- Only one surgeon in PNG has completed an accredited plastic surgery program to become a fully qualified plastic surgeon since 1999. He is based in Madang, which means there is no one in Port Moresby (training centre) qualified to provide supervision and training to new trainees
- Lack of local curriculum developed for plastic surgery, which has resulted in a lack of clarity around the specialty. Currently, the plastic surgery speciality is referred to as 'head and neck' surgery. However, the current trainee/surgeon is also responsible for broader plastics cases (such as hand surgery, burns etc).
- The current system only allows for one plastic surgery trainee at a time, and the current system for their training is yet to be formalised.

It is well recognised by Interplast and local partners that this issue must be addressed before any substantial gains can be made in building local capacity in the plastic and reconstructive surgery field, and options are now being explored to look for alternatives in training for the current (and potential new) trainee.



STUDY METHODOLOGY

This evaluation and planning exercise utilised a mixed methodology, including:

- a desk review of historical program reports, patient records and financial information;
- Interviews with key Interplast personnel – including volunteers involved in Interplast's PNG programs, as well as local partners; and
- A two-part review visit to PNG, including Port Moresby, Madang, Rabaul and Wewak.



Above: Dr Richard with his young patient in Mt Hagen, and below right, Dr Simon Donahoe with PNG trainee Dr Maire in Mt Hagen.

CASE STUDY - THE LONG TERM OUTCOMES OF SURGICAL TRAINING

Interplast is passionate about supporting local medical professionals to develop the skills and tools necessary to build the sustainable health systems of tomorrow. On a trip to Mt Hagen in 2015, volunteer surgeon and team leader Simon Donahoe, who has been volunteering with Interplast for over 10 years, worked again with local general surgeon Dr Richard who he had previously mentored and trained in 2010. One particularly difficult case, Simon recalled, was where a patient suffered from a contracture on her neck, so severe, that it initially had to be released under local anaesthetic to enable the anaesthetist to intubate the patient and complete the operation.

Five years on, and Dr Richard was confronted with a very similar case. As a result of his experience with Interplast, Dr Richard was confident to perform the initial stage of the operation and following this, brought the patient to Mt Hagen General Hospital to discuss with the Interplast team further scar release. He was then able to finalise the operation with the support of Interplast volunteer surgeon Dr Kirsty Macgill. Dr Richard's work demonstrated the value of Interplast's approach to train general surgeons in the basic plastic surgical skills which benefit patient outcomes across a range of surgical specialities.

Simon said of the operation, "Richard had done a wonderful job, with excellent neck release and a superb full thickness skin graft. It was very heartening for me to see how well Richard had absorbed what he had observed back in 2010."

While providing excellent patient outcomes to those treated by Interplast teams is a substantial part of what Interplast does, it is the long-term impacts of training local medical personnel which drives the many Australian and New Zealand medical professionals who volunteer their time and skills.



FINDINGS OF THIS STUDY - SUCCESSES AND ACHIEVEMENTS

Since 1985, Interplast has delivered 105 program activities in PNG, a breakdown of which can be found in Figure A. These visits have taken place both in Port Moresby as well as 9 provincial hospitals across the highlands, coastal areas, and on the islands provinces (see Figure A).



Through these 105 programs, Interplast teams have delivered 5674 patient consultations and 2743 surgical procedures.

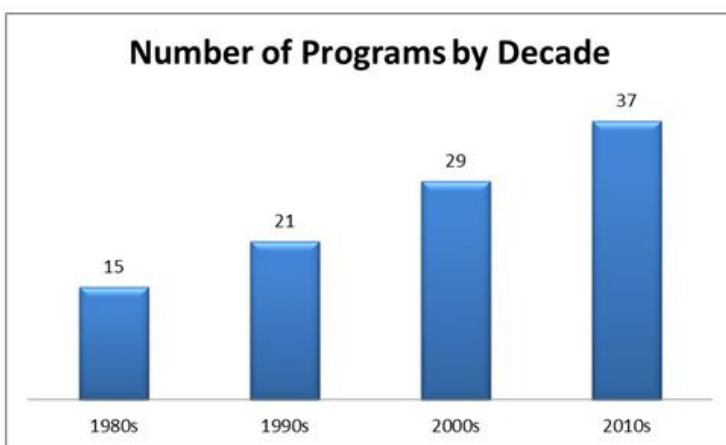
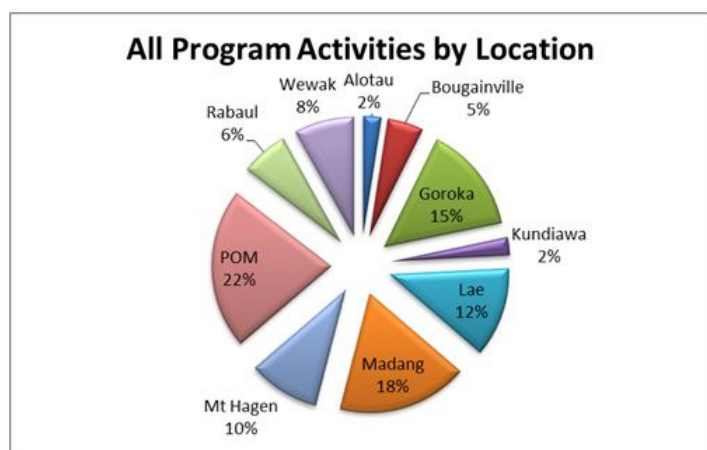
In addition to the general plastic and reconstructive surgical programs, Interplast has delivered a number of successful training visits, focusing on a range of areas including burns management, physiotherapy, nurse training, plastic surgical skills mentoring and anaesthetic training.

Dr John Maihua, based in Madang, is currently PNG's only fully qualified plastic surgeon. He was trained by Interplast teams and undertook his overseas training components through placements which were set up and supported by Interplast volunteers. He is now practicing full time, based in Madang. There he has set up the plastics and hand clinic, and also undertakes regular outreach visits to Lae, Mt Hagen, Wewak, and other provinces. He is a skilled surgeon and teacher and is passionate about building local capacity in PNG. He has been instrumental in developing the physiotherapy department in Madang to ensure that local physiotherapists are included in all hand surgery cases, maximising patient outcomes.

Interplast has strong support throughout PNG, and people throughout the community recognise the name 'Interplast' – many people tell stories about relatives, friends and colleagues, or fellow community members, who have been touched by Interplast programs. Likewise, health officials across PNG are strongly supportive of Interplast programs, with increasing emphasis on training and mentoring of local personnel. Interplast programs are recognised as an ideal opportunity for PNG to access specialist surgical skills, and also specialists from Australia & New Zealand whom are keen to impart their skills and knowledge to local surgical, anaesthetic, nursing and allied health personnel as requested by local partners.

Below left: Figure A (program activities by location)

Below right: Figure B (number of programs by decade)

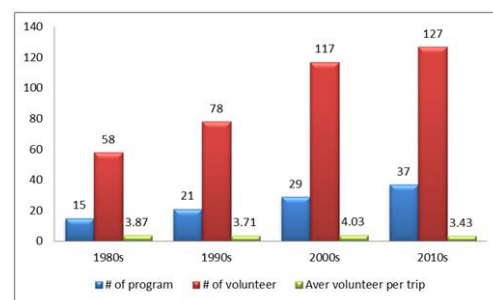
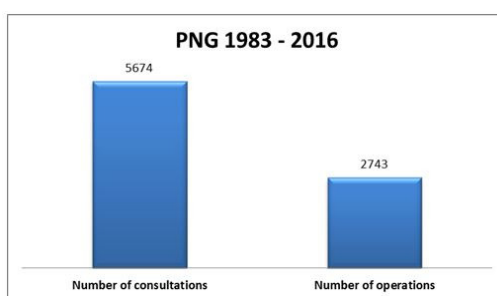
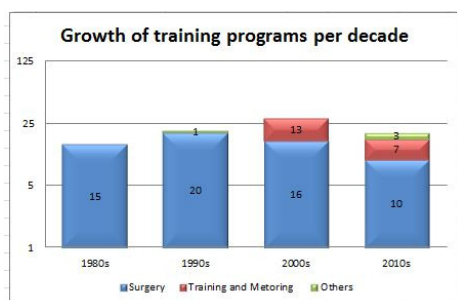


FINDINGS OF THIS STUDY - CHALLENGES

PNG is very decentralized in terms of medical service delivery – there is no cohesive central structure to provide guidance and oversight either for visiting medical and training teams, or indeed to consolidate knowledge about the surgical environment across the country. While Interplast has strong relationships with individuals and hospitals in a number of provinces, there is little overarching governance for this. Research on the burden of surgical disease, prevalence of conditions and causes of trauma are generally limited to cases treated in Port Moresby. There is currently no formal method of identifying need.

Local capacity across all areas of medicine varies considerably between provinces – some provincial hospitals have a resident specialist in neurosurgery, orthopaedics, plastics or ENT, others have no specialist surgeons at all. A few specialist surgeons undertake outreach visits to other provinces to address caseload requirements. This is often undertaken at the initiative of the individual surgeon, rather than being part of a broader national strategy to address need.

Provincial hospitals are generally poorly resourced in terms of the equipment and supplies available to deliver a specialist surgical program – especially those hospitals inaccessible by road from Lae and Port Moresby (where supplies are initially delivered). Boat deliveries to the island provinces are slow and unreliable, and often crucial supplies like oxygen are further delayed as empty cylinders must be collected prior to new ones being delivered. Inadequate resourcing impacts on services being delivered locally by national personnel, and on the ability of Interplast and other visiting specialist organisations to deliver safe, effective surgical programs. No mechanisms to gain feedback from patients, nor local partners.



Above left: Figure C (Increase in training programs vs surgical programs)

Above centre: Figure D (Numbers of surgical consultations and operations 1983-2016)

Above right: Figure E: (Numbers of volunteers against programs per decade)

CASE STUDY - LIFE CHANGING SURGERY FOR LITTLE JOSEPH

Five-month old Joseph had an extensive lymphatic malformation on both sides of his neck. His family had been extremely worried about the swelling, and brought him to see the Interplast team in Lae.

Thankfully, Joseph's condition was benign; news that brought great joy to his family. The Interplast team was able to improve Joseph's condition by operating on one side of his neck.

Joseph will need further surgery to completely resolve his condition.

Below: Interplast volunteer anaesthetist Jo Paver with Joseph and his mother prior to his operation.

Right: Joseph with his mum in recovery following his initial surgery.



RECOMMENDATIONS

Based on discussions with local partners in PNG and in line with Interplast's own strategic direction, 4 key recommendations have been formulated which will guide Interplast's planning in PNG over the next 5 years. Within these recommendations, specific objectives, inputs, outputs and outcomes have been identified to assist in implementing the recommendations and measuring their success. Note that all recommendations will be delivered subject to available funding. Following 2020, Interplast will undertake another review of its PNG country program to identify outcomes in the 2016-2020 period and undertake further planning.

RECOMMENDATION 1

To continue supporting delivery of plastic and reconstructive surgical service programs to the provincial hospitals in PNG

RECOMMENDATION 2

To formalise Interplast's history with and commitment to the development of plastic and reconstructive surgical services in PNG through a formal agreement with PNG Government and other relevant partners

RECOMMENDATION 3

In partnership with UPNG and PMGH, build and formalise the plastic surgical training program in PNG to ensure that future local capacity is more equipped to meet local needs

RECOMMENDATION 4

To continue to build local capacity in PNG related to supporting quality plastic and reconstructive surgical outcomes - including nursing, anaesthetic and allied health services.



CASE STUDY: SUPPORTING A SINGLE MOTHER TO RETURN TO WORK

42 year old Theresa is from Kimbe, in West New Britain Province in PNG. She is a single mother, who has worked for the national airline, Air Niugini, for 20 years. During that time she's had many different roles, including working as a flight attendant, travelling to Malaysia, Australia and other countries. Since having her children and becoming the sole breadwinner for her family, she has been working based in Port Moresby only, so she is close by for her family.

Theresa is a single mother of a 12 year old daughter – her youngest daughter, age 6, passed away following contracting TB in 2015 – a devastating tragedy for Theresa.



4 years ago, Theresa sustained a knife injury to her hand. She went to hospital, but spent two days in the ward before receiving any treatment. She was in a lot of pain, and was very scared about what would happen. She took a few months off work, but couldn't afford more time off, or better treatment. Due to a lack of local surgeons trained in hand surgery, the basic surgery she had to repair her hand was not successful, and she continued to be in pain and unable to use her hand properly. Her current role is working in the catering team, organising the logistics of the food for business class and packing it into the aeroplanes. She has to do a lot of manual work with her hands (packing the trolleys, folding up the cutlery for the business class guests, loading onto the planes), and this has been very difficult with her injury.

Theresa knew people in the community who had information about when the overseas specialists were coming, and she waited and waited until an Interplast team came to Port Moresby. In April 2016 a small mentoring program came, with NZ plastic surgeon Dr Janek, nurse Chris and anaesthetist Moira. The team saw Theresa, and along with local plastics trainee Dr Maire, were able to operate on her repair her damaged tendons. Since her operation, Theresa has been diligent with her rehabilitation and physiotherapy. "I do it every day", she says. "When I am on the bus, or just walking down the street, I am always moving my hand, getting strength back. My daughter helps me with it – she massages cream into my hand and tells me that she wants me to have a good hand again". In early June, Interplast volunteer hand surgeon Dr Peter Maloney was in Port Moresby and reviewed Theresa's case. He was pleased with her surgical outcome and commended her diligence with her physiotherapy. "You still have a lot of healing to do", he said, "it's only two months since your operation and your tendons need to 'learn' how to behave again, but you are doing really well".

Theresa was heartened by this. Already she has noticed such a difference with the function of her hand. In the future, Theresa is planning to take her daughter and move back to Kimbe, where she has more family support. She dreams of starting her own business and opening up a bakery. "Thank you so much to the Interplast team" she says "you guys really help us here – please keep coming back!"



Left: Interplast surgeon Dr Peter Maloney assessing Theresa's hand function following her operation in June 2016

CONCLUSION

PNG is one of 17 countries across the Asia Pacific in which Interplast works, and one of the greatest challenges is identifying funding available to continue to deliver these important programs. Interplast is extremely grateful to its many partners who make these programs possible, and hopes that this support will continue to grow in the future.

Having delivered 106 program activities in PNG since 1985, Interplast is committed to continuing its support for the development of plastic and reconstructive surgery and associated anaesthetic, nursing and allied health support, in PNG. While it can be a challenging location to deliver effective programs, Interplast has achieved substantial successes over three decades – both in terms of repairing bodies and rebuilding lives through the provision of plastic and reconstructive surgery where it would not have otherwise been available, and through training local medical personnel to better be able to manage their own reconstructive surgical caseloads locally in the future.

Interplast has strong support from local partners to continue its programs - they have identified a number of key areas where they would benefit from Interplast's support over the next 5 to 10 years, including training and mentoring for the plastic surgical candidates, supporting clinical delivery until such a time that local capacity can manage itself, delivering training in nursing and allied health. Interplast has also been asked to assist the University of PNG in developing a formal curriculum for the plastic surgery training program, and work to progress this has commenced.

While Interplast recognises that progress in PNG can be slow, due to a range of complex factors relating to geography, politics and local resources, the benefits of the small successes are substantial – in terms of treating congenital and acquired disability, to enable those affected to return to a productive, normal life, and by building the capacity of local personnel to manage their own population health. Given these benefits, Interplast is fully committed to continuing its programs in PNG, in close collaboration with local partners, into the future.

