



## INTERPLAST BANGLADESH COUNTRY PROGRAM REVIEW - 2004-2016

In 2015 and 2016, Interplast undertook a review of its Bangladesh Country Program, covering the years 2004-2016. The review helped Interplast understand the achievements and outcomes of its programs in Bangladesh, to plan for future programs and to ensure that its activities in Bangladesh are sustainable. This document is a summary of that review and its findings. The information in this summary was current at the time of the review. For further information, please contact the Interplast office ([contactus@interplast.org.au](mailto:contactus@interplast.org.au))

### BACKGROUND

Bangladesh has a population of over 164 million people. While its population has declined, life expectancy at birth has increased. Infant and under-five mortality rates and the maternity mortality ratio have decreased. Bangladesh has achieved significant improvement in other health indicators, but many challenges remain. The high incidence of injury and death through burns is more than twice that of developed countries. The Centre for Injury Prevention and Research, Bangladesh found that burns are the second highest cause of disability in children. Nine children are disabled every day from burn injuries. Every year over 300,000 Bangladeshis experience moderate to severe burns; resulting in over 3,000 deaths and 3,500 people disabled by preventable burn injuries. In 2010, it was reported that there were 14 qualified plastic surgeons in Bangladesh, well short of the 400 required to provide basic service to the population. In 2018, this number has grown substantially to 99 fully trained plastic surgeons. 75 of these work in government hospitals, 24 in the private system. There are currently a further 90 in various stages of training, with approximately 5-7 completing their training each year.

### ACKNOWLEDGEMENTS

Interplast would like to thank its Bangladesh country partners and supporters for their collaboration on this review activity. The opportunity to discuss impacts, outcomes, challenges and future direction of Interplast programs in Bangladesh is beneficial for all. Local partners include the Dhaka Medical College Hospital (DMCH), Centre for Rehabilitation of the Paralysed (CRP), Centre for Injury Prevention and research, Bangladesh (CIPR,B), Acid Survivors Foundation (ASF), Bangladesh Society of Study of Pain (BSSP), Dhaka Community Hospital (DCH), the Bangladesh College of Physicians and Surgeons, the Bangladesh Ministry of Health and the Australian High Commission. This activity would not have been possible without the support of our volunteers who participated in this review, including Dr Russell Corlett, Dr Ross Sutton, Ms Karen Fitt and Mr Atom Rahman.

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## HISTORY OF INTERPLAST PROGRAMS IN BANGLADESH

Interplast commenced its programs in Bangladesh in 2004. Since then it has:

- Provided advanced plastic and reconstructive surgery, and conducted training and mentoring programs to improve the skills of plastic and reconstructive surgeons;
- Worked with the Centre for Rehabilitation of the Paralysed providing training to improve outcomes for hand therapy patients;
- With the Australia and New Zealand Burns Association, partnered with the Centre for Injury Prevention and Research, Bangladesh, providing training in the emergency management of severe burns; and
- Worked in partnership with the Bangladesh Society for the Study of Pain and the Australian and New Zealand College of Anaesthetists delivering essential pain management workshops throughout Bangladesh.

Other projects supported by Interplast include its work with the Acid Survivor's Foundation which assists the Foundation's pressure garment manufacturing enterprise.

With its local partners, Interplast develops annual country plans. A summary of Interplast's annual focus for Bangladesh can be found on the Interplast website (<https://www.interplast.org.au/learn-more/where-we-work/asia/bangladesh/>).

**INTERPLAST'S CURRENT PROGRAM GOAL FOR BANGLADESH IS:  
TO IMPROVE ACCESS TO SUSTAINABLE, QUALITY BURNS SERVICES IN BANGLADESH THROUGH COLLABORATIVE LOCAL PARTNERSHIPS IN SURGICAL, NURSING AND THERAPY CARE, RESEARCH AND ADVOCACY.**

## THE REVIEW

This is the first comprehensive review of Interplast's 12 year history in providing programs in Bangladesh. Its purpose is to review and develop relevant, effective and sustainable programs and document achievements, challenges and lessons learned.

## HOW DID INTERPLAST UNDERTAKE THE REVIEW?

The review included a number of key components:

- A desktop review of 12 years of annual reports, program data and activity reports;
- A survey of selected in-country partners;
- A series of interviews with current in-country partners, a prospective in-country partner, and with non-medical partners, conducted in Bangladesh by the review team, and
- A focus group conducted in Melbourne to assist with finalising the review's recommendations.

To protect the privacy of individuals, identifying patient data has not been included in the review documentation. Appropriate consent was sought to use images and patient/trainee stories.



## WHAT HAS INTERPLAST ACHIEVED SINCE 2004?

Between 2004 and 2016 Interplast implemented 53 programs in Bangladesh, undertaking over 744 consultations and performing over 307 surgeries. The majority of Interplast programs are training programs; of all activity between 2004–16, 82% were training programs, and 18% were surgical programs. Over time, Interplast has shifted its focus from surgical service delivery to training programs, with all of its current programs focused on training and mentoring.

## REVIEW FINDINGS

### **FINDING 1: INTERPLAST TRAINING PROGRAMS STRENGTHEN LOCAL MEDICAL CAPACITY TO REPAIR BODIES AND REBUILD LIVES IN BANGLADESH**

Through its provision of surgical services and education, Interplast has trained and built the capacity of local health personnel to undertake surgical procedures, provide nursing care, allied health assessments and treatment. These local personnel are able to apply their knowledge and skills, and share these skills with colleagues.

In partnership with the Dhaka Medical College Hospital, Interplast delivered 13 training activities, performed over 300 operations and 750 consultations. At the request of the Dhaka Medical College Hospital, in 2011 Interplast commenced a microsurgical mentoring program. Microsurgery is the use of operating microscopes and precision instruments to perform very intricate surgery on tiny structures, such as nerves and vessels. Mentoring and training has built local capacity, with the training of over 80 local surgeons in microsurgery, including in:

- The use of microsurgical instruments;
- Sutures, and the use of magnification aids for connecting blood vessels and nerves; and
- Dissecting flaps and performing perforator flap microsurgery.

This has led to considerable advances in local hospitals in training and surgical skills. Surgeons have also had access to professional development through overseas training and attendance at international conferences. Through Interplast's training and the leadership of the Dhaka Medical College Hospital, over 10 hospitals in Bangladesh are performing microsurgical flap surgeries, with over 221 perforator flap procedures undertaken. More information on these surgical procedures, and how the training has contributed to success rates, is available on request.

Allied health mentoring has helped build capacity for staff at the Centre for Rehabilitation of the Paralysed. This is discussed in detail under Finding 6.

Interplast and the Dhaka Medical College Hospital have worked together to mentor and support nurse education, thus improving post surgical nursing care and infection control. This has the potential to vastly improve success rates in perforator flap surgery, and is an area that Interplast and the Dhaka Medical College Hospital have identified for future programs.

With assistance from Interplast, the education, advocacy and advisory role of the Centre for Injury Prevention and Research, Bangladesh has been enhanced; and, in partnership with the Australia and New Zealand Burns Association, since 2008, 26 courses in the emergency management of burns have reached over 500 nurses and physicians. The 'train the trainer' model has been effective in spreading knowledge and skills in this area. The model has also been applied to training in essential pain management and conducted by the Bangladesh Society for the Study of Pain, helped to increase skills for physicians. A case study on how surgical mentoring has assisted one scholarship recipient can be found on page 22 of the full report.

## FINDING 2- LOCAL OWNERSHIP HAS BEEN ESTABLISHED AND IS PROMOTED BY INTERPLAST PROGRAMS WHICH INTEGRATE SUSTAINABLE DEVELOPMENT PRACTICES

Building local capacity is at the centre of Interplast's programs. Following a number of years of intensive Interplast support, the Dhaka Medical College Hospital now delivers its own microsurgery training program, and its Plastic Surgery and Burns Unit has developed educational materials on burns prevention.

Microsurgical training courses- financed through the Bangladesh Ministry of Health and Family Welfare- train specialist surgeons in a wide range of disciplines. At the time of the review, the Dhaka Medical College Hospital had delivered:

- 20 basic microsurgical courses to 140 participants;
- Eight advanced microsurgical courses to 105 participants; and
- One cadaveric dissection course to 21 participants.

Microsurgical training has enhanced the ability and confidence of participants, with numbers of procedures performed steadily increasing since 2010. Interplast continues to support this training through sending specialized faculty to contribute, where requested by local partners. Case studies outlining the benefits to participants are available on request.



The microsurgical training lab at the Dhaka Medical College Hospital which was set up with Interplast support

Local ownership is illustrated by the activities of the Acid Survivors Foundation. Interplast has supported training for survivors in the manufacture of specialised pressure garments, providing income support and garments for survivors. The Acid Survivors Foundation is making specialised and high quality garments for the Dhaka Medical College Hospital and the Centre for Rehabilitation of the Paralysed, and these partnerships are now managed locally. Following on from the success of its enterprises, the Acid Survivors Foundation's would benefit from mentoring in marketing and business development to broaden and diversify its business model.



Interplast volunteer Marie Doolan demonstrates correct use of pressure garment fabrics on a burns survivor, as part of training with the Acid Survivor's Foundation.



With Interplast support, survivors of acid burns are taught, and then employed to produce pressure garments to help treat other burns victims



### FINDING 3- INTERPLAST PROGRAMS ARE A STRATEGIC AND COST EFFECTIVE WAY TO BUILD CAPACITY BOTH WITHIN BANGLADESH AND ACROSS THE ASIAN REGION

Interplast's evolving model- from providing medical services to a 'train the trainer' approach- has been a cost effective strategy to share knowledge and build capacity. In addition clinical training, Interplast employs a range of methods to build capacity; workshops and lectures, group and individual mentoring, networking, scholarships, overseas placements, conference attendance and participation in specialised training.

Interplast and the Australian Volunteers for International Development program have supported three long-term Australian volunteer placements in nursing, speech and hand therapy. The Dhaka Medical College Hospital has invested in capacity building, exploring the use volunteers to assist medical staff, and- following on from Interplast's microsurgery training- is establishing its own training courses to build the network of professionals trained in microsurgery.

In 2016, Interplast suspended its programs due to terrorist attacks targeting foreigners in Dhaka. Since mid 2016, Interplast has been slowly reintroducing activities in Dhaka in line with recommendations from its security partners, and continues to review the security situation. It continues to support Bangladeshi trainees, assisting them to undertake various training opportunities both in Bangladesh, within the region and in Australia.

Interplast supports a regional approach to capacity building, with medical staff from neighbouring countries invited to join Interplast's programs. With the Australia and New Zealand Burns Association, the Centre for Injury Prevention and Research, Bangladesh has, since 2008, conducted six courses annually in the emergency management of severe burns. The training has also been conducted in Nepal. Interplast has assisted with funding for the program and for Nepalese partners to attend training in Dhaka. A 'train the trainer' approach has enhanced the sustainability of the courses, and some course participants are invited to train as instructors in this discipline.

Local capacity in the emergency management of severe burns was tested following the Nimtoli chemical explosion in Dhaka in 2010, which caused 120 deaths and injured many. Casualties of the accident were admitted to the burns unit in the Dhaka Medical College Hospital, and treated by doctors who had trained in the emergency management of severe burns, thus saving the lives of many patients.



Animated discussion during EPM workshops in Dhaka



Bangladeshi medical personnel participating in the EMSB training in Dhaka, which is now delivered by local faculty.

Interplast is also working with the Centre for Injury Prevention and Research, Bangladesh to support local organisations in raising awareness of burn prevention and burn injuries.

Interplast has supported the Bangladesh Society for the Study of Pain, which has partnered with the Australian and New Zealand College of Anaesthetists to run essential pain management training in rural Bangladesh. Since the first course in 2013, an additional 12 have been completed, with 245 participants (172 doctors and 72 nurses) and 10 doctors qualifying as essential pain management instructors. Courses are now run by a local faculty.

## FINDING 4- INTERPLAST ADOPTS A HOLISTIC APPROACH TO BUILDING CAPACITY AND SUPPORTS ITS PARTNERS TO ADOPT A SIMILAR HOLISTIC APPROACH TO PATIENT CARE IN BANGLADESH



Interplast Country Coordinator for Bangladesh, and longstanding surgical volunteer Dr Russell Corlett, presenting at the Bangladeshi Society of Plastic Surgery conference.

Interplast has focussed on three interlinked areas of capacity- the individual, the institution and the policy framework- all with a view to sustainability. Interplast does this by identifying:

- Champions from local medical staff who are supported to participate in professional development;
- Key institutions as partners, including the major government hospital; and
- Other organisations providing health care.

It has also supported projects under the Australian Government aid program's Partner Harmonisation Project, which brings together local partners to address local needs. These institutions have since maintained strong networks and collaborate on projects, improving service delivery to Bangladesh's population and influencing policy, all of which has improved outcomes in burns injury and burn prevention.

The role education and advocacy is demonstrated by the work of the Acid Survivors Foundation, which has influenced legislation and resulted in a dramatic reduction in acid attacks over a 16 year period.

Nursing and allied health has had a low profile in Bangladesh, with minimal referrals for allied health therapies hindering surgical outcomes. Interplast recognises the role of nurse education in wound management and infection control, and in improving outcomes of surgical procedures. In addition to training surgeons, Interplast also focus on supporting local partners in nurse education and allied health staff.

## FINDING 5- THE FOUR KEY CURRENT CHALLENGES IN BANGLADESH WHICH IMPACT ON INTERPLAST'S PROGRAMS

Despite improvements in plastic and reconstructive surgery, microsurgery, allied health and nurse education challenges remain. While some are outside of Interplast's influence they do affect Interplast programs.

1. Caseload- Burns are a major public health problem in Bangladesh resulting in death or serious injury, and disability. Given the number of cases each year there remains a need for more trained plastic and reconstructive burns surgeons. Of the 70,000 doctors across Bangladesh, fewer than 1,000 (and even fewer nurses) have received early management of severe burns training from the Centre for Injury Prevention and Research, Bangladesh. Added to this, the Dhaka Medical College Hospital typically exceeds its 100 bed capacity, with 300-400 patients in the ward at any one time. Better patient outcomes would result from greater resources for facilities, supplies and training. A new hospital is being built and due for completion in 2018, which will go some way to addressing this issue.
2. Lack of preventative measures against burn injuries and death- The experience of high income countries shows that positive measures can reduce the likelihood of fire and the severity and impact of burn injuries. While some measures can be applied to low and middle income countries, risk factors and consequently burn injuries differ, and therefore different strategies are needed. Interplast is hopeful that strong advocacy such as that previously adopted by the Acid Survivors Foundation, and currently by the Centre for Injury Prevention and Research, Bangladesh will reduce death and injury from burns.



3. Accessing patients in regional areas- Interplast has learned that many patients in regional areas miss out on its services. Rather providing direct service provision, Interplast will continue to build capacity for local institutions (such as the Dhaka Medical College Hospital and Dhaka Community Hospital, which has over 30 rural centres) to train medical professionals and provide services to patients from within and outside of the capital.

4. The Bangladesh political landscape can impact on Interplast programs- Security concerns in 2015 and the attacks in Dhaka in 2016 have limited Interplast's ability to safely deliver some of its programs. As mentioned under Finding 3, Interplast has been slowly reintroducing activities in Dhaka.



Volunteer Interplast hand therapist providing training to Bangladeshi therapists at the CRP



Volunteer Interplast surgical mentor working alongside local Bangladeshi surgeon

## **FINDING 6- PARTNER ORGANISATIONS HAVE DIFFERENT LEVELS OF EXPERTISE REQUIRING SPECIFICALLY DESIGNED INTERPLAST PROGRAMS TO RESPOND TO THEIR SELF-IDENTIFIED TRAINING NEEDS.**

Interplast's partner organisations differ in their level of skills, expertise and knowledge. Some require very little ongoing support, and to ensure sustainability, transition planning is important. Significant gains have been made in microsurgery and nurse education.

While continuing to support partners in these areas, a focus of future activities will include nurse education to foster holistic patient care, providing wound management and intensive care training.

Interplast will continue supporting both the Centre for Injury Prevention and Research, Bangladesh through burn management and early management of severe burns training, and the training in pain management run by the Bangladesh Society for the Study of Pain. The Acid Survivors Foundation has developed considerable skill in manufacturing pressure garments, and Interplast aims to facilitate access to business mentoring to assist it in developing its business.

Hand therapy is an area of great skills disparity, and Interplast has supported hand therapy programs with a number of partner organisations, including conducting training and supporting the professional development of staff at the Centre for Rehabilitation of the Paralysed. The establishment of a Hand Therapy Interest Group has enhanced the capacity of the Centre's clinicians. The Centre also aims to establish a Bangladesh Hand Therapy Association, along the lines of one established in Nepal, thereby raise the professional standing of work in this area.



## FINDING 7- NEW PARTNERS AND SUPPORTING PARTNERSHIPS HAVE BEEN IDENTIFIED AND IF FURTHER ESTABLISHED WOULD STRENGTHEN INTERPLAST'S BANGLADESH PROGRAM

Strong partnerships are essential to Interplast's work, and key stakeholders have been instrumental in building capacity in Bangladesh's medical system. New and emerging partnerships are contributing to training, mentoring, surgical outcomes and the ongoing expertise of Bangladesh's health professionals. Partners such as the Dhaka Community Hospital Trust, the Ministry of Health and the Bangladesh College of Physicians and Surgeons are working to improve capacity at the individual, institutional and policy level.

### CONCLUSION

The review found that Interplast programs have made a significant contribution to the training and capacity of Bangladesh's medical personnel, notably surgeons and allied health therapists. It made a number of recommendations, which are outlined in the full report (available on request).

Following Interplast's programs, there have been observable improvements in health care in Bangladesh. Developments in microsurgery training has led to a new generation of surgeons trained in this area. Interplast's programs are meeting the evolving needs of research and advocacy, and surgical support roles of nursing and allied health services. While Interplast's partnership with Bangladesh has come a long way in meeting its current goal, it will need to continue its support to the Bangladesh health sector through training and mentoring,



For Interplast volunteer surgeon Russell Corlett, who has been on 22 Interplast programs since 1985, including 9 to Bangladesh, the most inspiring aspect of his long involvement with Interplast's programs in Bangladesh is seeing the local surgeons taking over the training which Interplast has previously delivered, and his role evolving to provide support for more advanced training.

"The local surgeons run courses every month or so, they have conducted 20 basic microsurgery courses and trained 140 doctors, 8 advanced courses and trained 105 surgeons with the aim to teach an organised step by step approach to success in microsurgery. There has been a steady increase in the number of microsurgical transfers over the last 4 years, demonstrating a significant improvement in their ability and confidence with these procedures. In 2010 they performed 6 free flaps and 1 replant, in 2011 - 8 free flaps and 3 replants, in 2012 - 13 free flaps, 2013 - 18 free flaps, 2014 - 29 free flaps, and in 2015 - 42 free flaps".

Bangladeshi plastic surgeon Dr Tanveer Ahmed has been involved with Interplast for a number of years. Of our programs in his country, he says "they are really helpful to further development of burns and plastic surgery in Bangladesh. They have already had some impact on our health services. The footsteps of Interplast in Bangladesh has boosted the spirit of young plastic surgeons".