Solomon Islands Endoscopy Training Program Report Two
Submitted by the Solomon Islands Living Memorial Project
Part two, July 30-August 3, 2012

The goal of this program is to create an educational partnership with Solomon Islands doctors in order to foster the development of an endoscopy unit, services and expand surgical care treatments at the National Referral Hospital (NRH) on Guadalcanal. This program is not a service delivery program. It is a teaching program with a goal of local physician ownership. NRH is the tertiary care hospital for all of Solomon Island's 600,000 residents. Solomon Island surgeons and medical doctors established a video endoscopy unit in December 2011 through a generous donation from Olympus America. This current endoscopy training program is a committed partnership between Australian, American and Solomon Island healthcare professionals in order to create a sustainable early detection and treatment program for gastrointestinal, pulmonary disease and cancer at NRH.

Justification for development of an endoscopy program in Solomon Islands:

The Pacific Region has the highest incidence of gastric, liver and lung cancers in the world. The incidence of gastric and colon cancer in Solomon Islands is not known. Many of these cancers present in advanced and inoperable stages. The prevalence of *Helicobacter pylori,* a cause of gastric cancer, in the Pacific is estimated to be between 80-90%. In Solomon Islands early detection and treatment protocols for gastric and colonic diseases are being established through this program.

Program coordinated by:
Solomon Island Living Memorial Project

Sponsors of the Program:
American Society for Gastrointestinal Endoscopy's (ASGE) Ambassador Program
Gastroenterological Society of Australia (GESA) and WGO GeFITT
Olympus Corporation
US Navy Cruiser Sailors Association
William Moore Stack Foundation
Scanlan International
Cook Medical
MediCapture
Boston Scientific
Covidien
Scripps Health

Participating faculty:
Dr Vance Rodgers, GI specialist San Luis Obispo
Dr Virginia R. Litle, Associate Professor Thoracic Surgery, University of Rochester, School of Medicine
Dr Chris Hair, GI specialist, GAA, GESA Ambassador, Geelong, Australia
Dr Douglas Pikacha, Surgery, National Referral Hospital, Solomon Islands
Dr Rooney Jagilly, Surgery, National Referral Hospital, Solomon Islands
Dr Elizabeth Wore, Medicine, National Referral Hospital, Solomon Islands
Dr Eileen S. Natuzzi, Public Health Surgeon, SDSU and UCSD
Pam Grassetti-endoscopy technician University of Rochester, School of Medicine
Amanda Moore RN-endoscopy nurse, Carlsbad Surgery Center
Erik Van Houten-endoscopy technician
David Knoblock-Biomedical technician, Scripps Clinic

Pamela Grassetti and Mandy Moore providing bronchoscopy training to the OR nurses at NRH

Dr Virginia Litle demonstrating the use of an esophageal stent.

Dr Doug Pickacha presenting current endoscopy experience in Solomon Islands

Dr Litle and Dr Hair review chest cases with Dr Elizabeth Wore and Dr Jerry Kena

Program progress since December 2011:

Since the endoscopy program was established in December 2011, over 75 endoscopies have been performed by the doctors at NRH. This includes over 60 EGDs and 15 colonoscopies. The doctors reported no complications. They did report inability to reach the cecum on all colonoscopies. 7 surgeries have been performed based upon endoscopic findings and initiation of H. pylori treatment was instituted in over 20 patients. Initial difficulty with the rapid manual urease test was the result of distilled rainwater being too acidic and yielding false positive results. This has been addressed and quality controls are being performed by comparing the rapid manual urease tests results with CLO-test results. All endoscopy equipment has been well cared for and fully functional. Drs Douglas Pikacha and Rooney Jagilly have assumed oversight of the endoscopy program at NRH and are training and supervising other physicians in performing endoscopy. They also oversee nursing and equipment.

Course design:

This is the second in a series of endoscopy courses held at NRH on Guadalcanal on July 30- August 3, 2012. During this training session two flexible bronchoscopes, donated by Olympus America, were delivered to the program along with an introduction on their use.

The course continued the endoscopy curriculum introduced in December 2011 and began integration with the curriculum and training of the Gastroenterological Society of Australia (GESA) WGO Fiji endoscopy training program (GeFITT). Solomon Island physician participation in the GeFITT program has been encouraged, as our local training supplements the GeFITT program. Didactic lectures covered advanced endoscopic techniques including percutaneous endoscopic gastrostomy tube (PEG) placement, and colonoscopy. Updates on the endoscopy program progress as well as talks on GI diseases in the Solomon Islands were provided by local physicians. Bronchoscopy was introduced along with lectures on lung cancer and esophageal cancer.

Skills taught included an introduction to flexible bronchoscopy, advanced upper endoscopy, and a focused emphasis on colonoscopy. This was as per the request of the Solomon Island surgeons. There was also an introduction to thorocoscopy (VATS) with lectures on technique and indications as well as a demonstration of VATS instruments.

Skills assessment:

Prior to beginning skills training a skills assessment evaluation of the senior surgeons and medical doctors at NRH who are consistently performing endoscopy was conducted. The WGO GeFITT evaluation criteria were employed and skills were ranked on a scale of 1-5, with 5 being very good, and 1 being consistently poor. Grading included awareness of equipment function, intubation of the esophagus and pylorus, retroflexion in stomach, GE junction assessment, assessment for Barrett's, biopsy techniques and endoscopy reporting. Dr Jagilly and Pikacha were evaluated scoring on averages 4 out of 5 on endoscopy skills and 2 to 3 on colonoscopy skills.

Pre- and post-tests were administered. The knowledge tested included endoscopy, colonoscopy, bronchoscopy, esophageal and lung disease as well as public health issues. All participants evaluated the program using the ASGE evaluation form. At the conclusion of the program the goals for the next training session were discussed.

Dr Vance Rodgers performing an EGD with Dr Dudley Baerodo

Dr Chris Hair (GESA) and Dr Rodgers demonstrating endoscopic PEG placement

Results of the 2nd training session:

There remains a high level of local enthusiasm for this program. Twenty doctors and nurses, including medical and surgical trainees on staff at NRH attended the program. During this training session 11 gastroscopies and 6 colonoscopies were performed by the Solomon Island physicians and surgeons who have varying levels of competency of skills. Cases were selected from outpatients and the wards, and reflected the local diseases and presentations. The skills sessions were well attended by all of the course attendees.

Upper endoscopy findings included: one pharyngeal cancer, 2 gastric cancers, one case of esophagitis, 5 cases of gastritis, 3 ulcers (one pre-pyloric and 2 duodenal).
Colonoscopy findings include: hemorrhoids and colitis.
Bronchoscopy findings included: pulmonary fibrosis, apical lung lesion and chronic empyema likely secondary to bronchopleural fistula.

There is a need to learn diagnostic and therapeutic VATS for management of empyemas with decortication, pleural effusions of unknown origin and persistent pneumothoraces. There may be a need for stapling and wedge resections of simple lung nodules or lymph nodes although without a CT scanner, adequate preoperative information

is currently lacking. Diagnostic and therapeutic VATS for pleural disease should be the focus for now.

The endoscopy nurses in Solomon Islands are well trained and competent. They have been well supported in the education program and are included in every educational session offered. Mandy Moore (USA nurse) has been instrumental to developing a safe and practical endoscopy service, including time out procedure and demonstrating safety. The nurses perform leak testing of the scopes routinely and they identified a distal tip leak in one of the bronchoscopes.

Pre and Post-test score results:

	Pre-test scores	**Post-test scores**
Physicians	57%	78%
Nurses	52%	58%

The program was evaluated highly (4.75 out of 5) as very good to excellent. Comments were consistent: requesting more skills training and reflected recognition of their own skills limits and means to improve.

"I am reasonably happy with my EGD skills, just need to fine tune movements and tip control. I am disappointed with my colonoscopy skills but hope to do more to practice. I have heard and learned great tips from fine expert gastroendoscopists."

"We need more practical experience time."

"I feel now my skills on upper endoscopy is excellent. I need to do more colonoscopies and bronchoscopies to improve these skills."

"This is a very useful course/training that will definitely improve early diagnosis and treatment of many GI and respiratory problems. "

"I wish there were more patients and more time to do cases."

"I would like more bronchoscopy training."

"Trainees need more hands on experience. We can only learn so much watching others."

Conclusions:

This second in a series of endoscopy training sessions was well received and well attended by the doctors and nurses in Solomon Islands. Their evaluations were all favorable and their suggestions for modifications are justified. This session built on the basic skills introduced in December 2011, and was an effective introduction to flexible bronchoscopy and discussion of management of pleural disease potentially with thorocoscopy (VATS). The doctors and nurses have maintained and furthered the program between teaching sessions and continue to perform endoscopies as well as mentor each other.

Skills assessment and results document a level of safety and competence on the part of the Solomon Islands doctors and surgeons. Decision-making and treatment based upon findings has been well demonstrated by surgical interventions and medical treatments predicated by endoscopy findings.

Limitations and issues with the program to address:

1. **Timely pathology results for biopsies:** At present pathology report turn around takes up to 6 weeks as they are processed in Brisbane, Australia. This has been discussed with the local Solomon Island pathologist, Dr Roy Rodger Maraka, and support for local processing is being investigated.

2. **Supply chain and equipment purchases:** Currently the program is built upon donations. Current gastroscopes are 160 and colonoscopies are 140 Olympus models. They are in excellent condition. While variable-stiffness colonoscopies (160 and 180 Olympus systems) are more widely used in colonoscopy in the US and Australia introduction of these more expensive models will be reserved until the program is more developed. In order to make the program sustainable transition to local ownership, supply chain purchasing and maintenance will need to take place. This requires cost scaling based upon Solomon Islands and the Pacific Region economies. These discussions are beginning to be held with the manufacturers of needed supplies and equipment including Olympus and Cook.

3. **Repairs and maintenance of equipment:** During this training session one colonoscope required repair of a broken tip control cable and light fibers. The new XP160 bronchoscope suffered a bite injury to the tip. This was found during routine leak testing performed post procedure and loss of its use truncated planned bronchoscopy training. Both have been repaired by ZMED Services, Inc. in San Diego, California and are being returned to service in Solomon Islands in late September 2012. Additional funds for repairs are needed. And a second XP160 bronchoscope is being procured.

4. **Focused skills training and contact:** As per discussion with the doctors at NRH more skills training on colonoscopy and advanced EGD procedures is needed. This includes encouraging senior surgeons and doctors to teach trainees. Identifying patients who need evaluation prior to the course and arranging for their availability will assist with numbers of endoscopies performed during skills training. Adequate time for bowel prep is needed. Continued email contact between the doctors in Solomon Islands and training physicians is crucial to sustainability. Once infrastructure is available establishment of Internet teleconferencing connections will be beneficial.

5. **Need to integrate curriculum, training and goals with the WGO GeFITT program:** The WGO GeFITT endoscopy training program is given once a year in Suva, Fiji at Fiji School of Medicine. The program is a comprehensive GI disease and endoscopy training program that is open to doctors and surgeons from Pacific Island Nations. The Solomon Island training program is an adjunct to this type of program and is demonstrating the strength of supplementing WHO GeFITT with focused in-country training. The curriculum needs to be harmonized in order to prevent delivery of conflicting information. Evaluation of skills and knowledge also needs to be consistent and reproducible in order to provide trainees with valuable and productive feedback.

Future directions of the program:

The Solomon Islands Living Memorial Project will sponsor the third endoscopy training session in January 2013. A grant from the Olympus America Corporation's Education Program will support this trip. Participation by a member of GESA as well as ASGE on this next training session will establish an integrated program. Bronchoscopy skills will be included in the next session along with advanced EGD and colonoscopy skills. The course will take place over three to five days.

Report submitted by,
Dr Eileen Natuzzi
Surgical Education Coordinator
Solomon Islands Living Memorial Project
351 Santa Fe Dr, Suite 220
Encinitas, CA 92024
760 634-2411
esnmd@mac.com