Endoscopy in Fiji:

Dr Chris Hair
Gastroenterologist and Endoscopist
**Background and Introduction**

Fiji, together with several other island nations (e.g. Vanuatu, Solomon Islands etc), forms part of the larger Pacific subregion of Melanesia.

These nations are isolated from each other by distance and ocean.
Gastrointestinal diseases in Melanesia are managed by primary care physicians, general physicians and general surgeons.

There are no specialist gastroenterologists in any of these island nations. In fact, there is a massive shortage region wide.
• Fiji has a population of approximately 875,000, with nearly 90% of people located on its two largest islands, Viti Levu and Vanua Levu.
• The main ethnic groups are Fijian (51%) and Indian (44%). The major burden of gut diseases seen Fiji is predictable for such a setting.
• For example, gastrointestinal infections including amoebic colitis and *Helicobacter pylori* appear prevalent, although there is limited knowledge as to the true prevalence of disease.

• Western gastrointestinal diseases such as inflammatory bowel disease and colonic polyps are seen, but uncommon.

• Viral hepatitis, in particular chronic hepatitis B, is present although the prevalence is also not clear.
• FSM is one of only three institutions in Fiji and the Pacific Island nations to offer local medical training in the region.

• With such limited training available and a regional population totalling approximately 1.7 million people, the ratio of doctors per 1000 population is at a mere 0.1 – 0.4.

• The shortage of doctors in nearby countries, such as Australia and New Zealand, has contributed to this “brain drain”, as local doctors seek employment abroad.

• From 1987 to 2002, 510 doctors left the government health service in Fiji, while during the same period, only 284 graduated from the Fiji School of Medicine.
Until recently, specialist training in the South Pacific was unavailable and has often been undertaken abroad, making it difficult for doctors who have become accustomed to life in their new environment to return home again once their training has been completed.

Thus, the lack of local specialist training has been conducive to the “brain drain” being witnessed in the region.

However, local postgraduate programs have been shown to help combat this trend in that doctors-in-training work for most of the time in their home country while learning to diagnose and treat disease with the resources available, thereby making them less likely to leave their home country once specialist qualification has been achieved.
Welcome

The Fiji School of Medicine is a Tertiary Education Institution striving towards Excellence in Training and Education of Health Professionals in the South Pacific. It is located on the main island of Viti Levu in the Fiji Islands.

As the premier medical institute in the South Pacific, FSM has been educating Health Care Professionals since its establishment in 1885 as Suva Medical School to train vaccinators. The School has produced many motivated and skilled health care professionals who are now serving in key positions in the Pacific and overseas.

The school now provides training in most health science disciplines including medicine, dentistry, pharmacy, physiotherapy, radiography, laboratory technology, public health, dietetics and environmental health.
• The Fiji School of Medicine is integral in training medical practitioners from across the Pacific, and has a postgraduate training scheme that confers diplomas and masters in medicine.

• These courses include a gastroenterology module.

• Endoscopy is provided in two hospitals in Fiji, namely the Colonial War Memorial Hospital (CWMH) in Suva, and the smaller, regional hospital of Lautoka on the Western Coast of Viti Levu. The level of endoscopy is basic, and largely, diagnostic only.
The World Gastroenterology Organisation assists in GI development worldwide.

Located in 14 developing countries throughout the world, each WGO Training Centre serves as a universal catalyst for trainees who are interested in enhancing their specialization in gastroenterology.

Each Centre offers comprehensive training, the overall goal being to improve the standards of training and patient care within and surrounding their regions.
GeFiTT

• Members of the Gastroenterological Society of Australia partnered with the World Gastroenterology Organisation (WGO) to develop the WGO Training Centre at the Fiji School of Medicine (FSM).

In close consultation with FSM, a gastroenterology program has been developed for integration into the School's postgraduate training.

• Since 2008, formal endoscopy training has been provided at CWMH by visiting Australian gastroenterologists during a month long visit. This has extended to include a strong educational focus in gastroenterology and hepatology alongside the diploma and masters of medicine teaching.
• The current program has been created to address the need for local specialist training in Gastroenterology in the South Pacific, which had previously been absent in the region.

• The official inauguration of the WGO Training Center in Suva, Fiji took place on October 26, 2008.
Main Objectives / Goals:

To promote the highest standards of endoscopy service and training in gastroenterology, hepatology, endoscopy and digestive surgery. Achieved through the following:

- Provision of a well designed facility that streamlines patient movement and care and allows safe and efficient endoscopic investigation and therapy.
- Establishment of a proper Endoscopy Unit with its Administrative organisation
- To promulgate best practice guidelines in the prevention, detection and management of digestive disorders.
• The Gastroenterology program consists of clinical activities (conducted in the Endoscopy Unit and wards at the Colonial War Memorial Hospital).

• The Academic component is taught through the Diploma and Master of Medicine module at the Fiji School of Medicine. It also is taught through ward rounds and bedside teachings conducted through daily ward rounds.
### Postgraduate Curriculum in Gastroenterology 2010

#### Diploma of Medicine

<table>
<thead>
<tr>
<th>Curriculum</th>
<th>Diploma of Medicine</th>
<th>MMED I</th>
<th>MMED II</th>
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<tbody>
<tr>
<td></td>
<td>• Approach to the patient with liver disease, including investigations</td>
<td>• Hepatobiliary diseases</td>
<td>• Physiology of GIT Disorders</td>
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<tr>
<td></td>
<td>• Pathology of liver disease</td>
<td>• Pancreatic disorders</td>
<td>• Esophageal disorders</td>
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<td></td>
<td>• Viral hepatitis</td>
<td>• Malabsorption syndromes</td>
<td>• Motility disorders</td>
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<td></td>
<td>• Management of liver failure</td>
<td>• Celiac Disease</td>
<td>• Inflammatory bowel disease</td>
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<td></td>
<td>• Peptic Ulcer Disease (PUD) and <em>Helicobacter pylori</em></td>
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<td></td>
<td>• Upper GI bleeding</td>
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#### Diploma

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<thead>
<tr>
<th>Week</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tbody>
<tr>
<td>Friday 2.00-3.15pm</td>
<td>Approach to the patient with liver disease</td>
<td>Viral hepatitis 1</td>
<td>Management of liver failure</td>
<td>PUD, <em>H. pylori</em> and upper GIT bleeding</td>
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<tr>
<td>Friday 3.30-4.30pm</td>
<td>Pathology of liver disease</td>
<td>Viral hepatitis 2</td>
<td>Case 1</td>
<td>Case 2</td>
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#### Masters I

<table>
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<tr>
<td>Thursday 2.00-3.15pm</td>
<td>Hepatobiliary diseases 1</td>
<td>Pancreatic Disorders</td>
<td>Malabsorption syndromes 1</td>
<td>Case 2</td>
</tr>
<tr>
<td>Thursday 3.30-4.30pm</td>
<td>Hepatobiliary diseases 2</td>
<td>Case 1</td>
<td>Malabsorption syndromes 2</td>
<td>MKSAP</td>
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<tr>
<td>Time</td>
<td>Monday</td>
<td>Tuesday</td>
<td>Wednesday</td>
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<tr>
<td>8-11am</td>
<td><strong>Ward Round</strong> (Start at CCU CWMH)</td>
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<td><strong>Ward Rounds</strong> (Start at CCU CWMH)</td>
<td><strong>8-9am Pathology Session</strong></td>
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<td><strong>Endoscopy Session</strong> (9am – 12 MD)</td>
<td><strong>Endoscopy Session</strong> (9am – 12 MD)</td>
<td><strong>Endoscopy Session</strong> (9am – 12 MD)</td>
<td><strong>9-11am ward round:</strong> (Start at CCU CWMH)</td>
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<tr>
<td>11-12MD</td>
<td><strong>Bedside teaching with MMED (Mers Medical Ward)</strong></td>
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<td></td>
<td><strong>Clinical rounds with the MMED candidates</strong></td>
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<tr>
<td>1-2PM</td>
<td><strong>Lunch Hour CME Lecture (CWMH Auditorium)</strong></td>
<td><strong>Lunch Hour CME Lecture (CWMH Auditorium)</strong></td>
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<tr>
<td>2-4.30PM</td>
<td><strong>CWMH Medicine Department Meeting (Medical Registrar Room)</strong></td>
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<td></td>
<td><strong>MMED Teaching Module</strong></td>
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</table>
• **Teaching Facilities:**

• The Suva Training Centre is located at the Endoscopy Unit, located in the Colonial War Memorial Hospital (CWMH), the main hospital for the Fiji islands.

• The Colonial War Memorial Hospital is the teaching Hospital for the Fiji School of Medicine but administered by the Ministry of Health of the Government of Fiji.

• The WGO centre is located within the theatre premise and has 3 rooms which include a preparation and cleaning room, an endoscopy suite and a recovery room.

• The rooms are large enough to accommodate all its functions and is well constructed and updated. The first room is used for preparing instruments for use in the endoscopy room. It also stores all the gastroscopes, colonoscopies, consumables and accessories.

• The second room is for the endoscopy suite which has the endoscopy setup including a full set of Fujinon and also Olympus machine. In addition, it has all the backup equipments including oxymeters, sphygmomanometers, cardiac monitor and defibrillators. It has a full set of emergency tray which includes all emergency drugs and ETT.
• Equipment and Procedures
  – Fujinon equipments. These were donated by the Fujinon through the WGO in 2008-9. This consists of 4 complete units of processors and light source, 5 gastroscopes, 3 colonoscopes, 3 flexible sigmoidoscopes and one Sony screen.
  – Older Olympus machine setup includes one processor, one light source, one screen, one gastroscope and one colonoscope.

• Accessories: Boxloads of donated accessories were shipped in with the Australian team, including limited supplies of banding devices, sclerotherapy needles, forceps (disposable and re-useable), polyp snares, endoloops, clips, and PEG tubes. There is a need to develop a sustainable method of maintaining the stock numbers.

• Consumables and medications, including donated proton pump inhibitors and bowel preparations.

• Suction machine
• Automatic Washing machine for the Olympus. An additional part will also allow Fujinon scopes to be cleaned through this machine.
• Computer and Printer, reporting and auditing software

• Oxymeters, basic anaesthetics, no propofol.
• History of the Program

– 2008, 10 doctors participated in the program and this included a candidate from Tonga and Solomon Island each. These 2 doctors are back in their own countries practising and continuing practise endoscopy.

– 2009, 8 candidates participated from the doctors and 8 nurses from the 3 major hospitals in FIJI attended the program. Although all nurses are local nurses, the physician group contained candidates from Micronesia, India and China. Based on the recommendation from 2008, it was decided that we limit the numbers of candidates to 2 physicians per year in order to improve on their learning curve.

– 2010, 9 doctors (all physician and one surgeon) participated, as well as 5 nurses (all Fijian). The candidates were again mainly local, but 2 nurses and 2 doctors were from Lautoka. Due to shortage in numbers of medical staff in other island countries (Vanuatu, Solomon Islands, Tonga and Kiribati), no-one was available to attend the 2010 program.
“It is a remarkable experience to practice medicine in such a different environment where one does not have ease of access to equipment, investigations and anaesthetic support”
Endoscopy

• Sessions:
  – 0830-late afternoon,
  – 6-8 patients undergo either gastroscopy or colonoscopy.
  – Approximately 180 endoscopies were performed (60% gastroscopy and 40% colonoscopy)

• Cases:
  – investigation of dyspepsia or abdominal pain, gastrointestinal bleeding, suspected inflammatory bowel disease or chronic diarrhoea for investigation, past colonic polyps (relatively rare as compared to Australia) and cirrhosis/variceal surveillance.
• A wide range of pathology:
  – upper GI cases of interest included an elderly patient with portal hypertension and a massive, bleeding gastric fundus GIST, a young woman with severe malnutrition and a dysphagia with a complex extensive benign oesophageal stricture after accidental caustic ingestion.
  – Interesting colonic cases involved a patient with an amoebic proctitis and a young man with severe perianal and colonic crohns disease.
  – Functional GI complaints were seen more commonly in the Indian population.
• Capsule endoscopy was performed in two patients with suspected gastrointestinal bleeding.
“it is not merely sufficient to know endoscopy but also one must be able to pass on that knowledge.”
• Impression of training:
  - several candidates, mixed level of prior exposure and training
  - several candidates performing complete and minimally assisted colonoscopy with ileal intubation.
  - Challenging colons (fijian) especially with minimal sedation
  - Those with past experience demonstrated good gastroscopy skills, including some high level ability with EVBL.
Endoscopy

• Peri-procedural and handover protocols:
  – including specific post-operative instructions and patients vital signs

• System for endoscope tracking was developed and implemented:

• Additional developments:
  – Hand hygiene, endoscope and instrument sterilisation, a working trolley for endoscopy nursing staff, and a daily and weekly checklist for environmental and equipment cleaning were implemented.

• A specialised box for GI bleeding emergencies:
  – established and containing items such as sclerotherapy needles, banding devices, adrenaline and resolution clips.

• A checklist for inventory of this box, as well as basic inventory was established.
ENDOSCOPY UNIT CWMH
ASSESSMENT FORM

Name: Asian Kumar
NI#: 82684 - 8256

Procedure: Gastroscopy
Medical/Surgical/Elective/Emergency

Date: 11.03.10
Surgeon:

PRE-OP OBSERVATION
B/P: 
Pulse: 90/62
SpO2:

Comments:

· History of cancer from upper respiratory system
· 60 kgs, 170 cm
· No remarkable
· General: ASA 2

R/N Signature:

INTRA-OP
Comments:

R/N Signature:

POST-OP OBSERVATION
B/P: 
Pulse: 

Comments:

R/N Signature:
EMERGENCY BOX CONTENTS

All contents of the box should be check and replaced when missing each time the box has been used for an emergency procedure and the seal had been broken.

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
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</thead>
<tbody>
<tr>
<td>Six shooter banding</td>
<td>X2</td>
</tr>
<tr>
<td>Clips</td>
<td>X4</td>
</tr>
<tr>
<td>Injectors</td>
<td>X4</td>
</tr>
<tr>
<td>Normal Saline ampoules</td>
<td>X10</td>
</tr>
<tr>
<td>Adrenaline</td>
<td>X10</td>
</tr>
<tr>
<td></td>
<td>to dilute with n/saline for 1:10,000 dilution</td>
</tr>
<tr>
<td>10 ml syringes</td>
<td>X5</td>
</tr>
<tr>
<td></td>
<td>for the 1:10,000 solution to be injected</td>
</tr>
<tr>
<td>Biopsy forceps</td>
<td>X2</td>
</tr>
<tr>
<td>Heater / gold probes</td>
<td>X2</td>
</tr>
<tr>
<td>Kidney dish</td>
<td>X1</td>
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<tr>
<td></td>
<td>to hold water for flushing</td>
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<tr>
<td>20 ml syringes</td>
<td>X5</td>
</tr>
<tr>
<td></td>
<td>for flushing scope</td>
</tr>
<tr>
<td>Infacol</td>
<td>X1 bottle</td>
</tr>
<tr>
<td>Lubrifax</td>
<td>X1 bottle</td>
</tr>
<tr>
<td>Gauze swabs</td>
<td>X20</td>
</tr>
<tr>
<td>Mouth Guards</td>
<td>X2</td>
</tr>
<tr>
<td>O2 Tubing</td>
<td>X2 lengths</td>
</tr>
<tr>
<td>Drawing up Needles</td>
<td>X1 box 19fg</td>
</tr>
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Date: ______________________ Restocked by (name and sign): ______________________
Endoscopy

- **Therapy:**
  - a number of therapeutic cases were performed
  - EVBL, clips, sclerotherapy, polypectomy, giant polyps, endoloop, CRE and celestin and balloon dilation of strictures (peptic, caustic, scleroderma), PEGs, coaptive coagulation

- **Endoscopies are recorded using software:**
  - Audit uring the visit.

- **Helicobacter Pylori testing with batch preparation of test kits**
  - Attention was directed at proper preparation and discarding of poorly prepared or thawed test kits for more accurate results

- **A wide range of endoscopy supplies is currently available**
  - including re-useable biopsy forceps, snares, clips and capsule endoscopy.
  - need for supplies in variceal ligation devices, foreign body removal devices, sclerotherapy needles and dilation devices.
  - An inventory was established to account for these devices.

- **There is a definite need for a re-useable heater probe set for the service**
• Helicobacter Pylori highly prevalent

• A cheap test is well underway in the unit, with batch preparation of test kits as described by Katelaris (1992)

• Kits are kept a near zero degree temperatures after preparation and thawed on the day of use.

• For quality control purposes, kits were compared to donated CLO-tests and slide based rapid urease test. Attention was directed at proper preparation and discarding of poorly prepared or thawed test kits for more accurate results.
ALIMENTARY TRACT AND PANCREAS

Field evaluation of a rapid, simple and inexpensive urease test for the detection of *Helicobacter pylori*

P. H. KATELARIS*, D. G. LOWE,† P. NORBU‡ AND M. J. G. FARTHING*

Departments of *Gastroenterology and †Pathology St Bartholomew’s Hospital, London, UK and ‡Doeguling Tibetan Hospital Mundgod, Karnataka India
• Treatment options limited due to high cost of PPI and Ab combinations.
• Rely on donated goods (limited) and looking to source cheap Indian generics.
## Education programme

<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
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<tbody>
<tr>
<td>8-11am</td>
<td>Ward Round</td>
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<td>Ward Rounds</td>
<td>Pathology Session</td>
<td>Xray Session</td>
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<td></td>
<td>(Start at CCU CWMH)</td>
<td>(Start at CCU CWMH)</td>
<td>(Start at CCU CWMH)</td>
<td>9-11am</td>
<td>(Xray Department: CWMH)</td>
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<td></td>
<td>Endoscopy Session</td>
<td>Endoscopy Session</td>
<td>Endoscopy Session (9am – 12 MD)</td>
<td>ward round:</td>
<td>9-12MD</td>
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<td>Bedside teaching with MMED</td>
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<td>(Mens Medical Ward)</td>
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<tr>
<td>1-2PM</td>
<td>Lunch Hour CME Lecture</td>
<td>Lunch Hour CME Lecture</td>
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<td>(CWMH Auditorium)*</td>
<td>(CWMH Auditorium)</td>
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<tr>
<td>2-4.30PM</td>
<td>CWMH Medicine Department Meeting</td>
<td>MMED Teaching Module</td>
<td>Diploma of Medicine Teaching Module</td>
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<td></td>
<td>(Medical Registrar Room)</td>
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Education

• grand round lectures
  – update on chronic hepatitis B, inflammatory bowel disease, gastrointestinal bleeding and noteworthy GI and liver cases. Dr Leung attended the Fiji Health Symposium and presented a plenary lecture on fatty liver disease and upper GI cancers.

• teaching modules
  – approaches to liver disease, viral hepatitis, chronic liver disease, physiology of GI tract, motility and oesophageal disorders including gastro-oesophageal reflux disease, inflammatory bowel disease, clinical management of and approach to acute GI bleeding. Some of these sessions included multi-choice questions from the relevant DDSEP5 modules

• informal teaching to staff
  – H.pylori, Proton Pump Inhibitors, capsule endoscopy, and GIST tumors

• endoscopy nursing
  – enteral feeding (supplemented with a visit to a patient with PEG tube) and non-surgical management of GI bleeding, hand hygiene and peri-operative patient management including recovery and handover, intra-procedural training including sclerotherapy, dilation, polypectomy, oesophageal banding and associated issues in infection control and occupational health and safety

• clinical teaching rounds with the MMED candidates.
  – mock clinical examinations were conducted in the fashion of RACP style short cases
Added clinical

- Daily ward rounds with different (highly skilled) consultants.

- Excellent array of general medicine including infectious diseases (typhoid fever, rheumatic fever, TB, viral hepatitis, hookworm), cardiac failure and coronary artery disease (particularly common in young adult male Indians), haematological malignancies, chronic liver disease and cerebrovascular disease.

- A pathology meeting was conducted 8-9am each Thursday
- Radiology meeting was held each Friday. Cases pertinent to gastroenterology and general medicine were presented.

- Specialist consultations were provided in the areas of gastroenterology whilst on ward rounds, during endoscopy sessions, and during breaks where required.
Future

• Specialist endoscopist development:
  – Extra sessions during the year
  – Host senior Fijian specialist and a nurse manager to train in a high volume centre within Australia or New Zealand to develop ‘expert’ level competence.

• Unit nurse co-ordination:
  – Ongoing nurse support is valuable
  – Options include increased regular visits from GENCA nurses and perhaps their corresponding New Zealand counterparts, or sponsorship to provide an extended length of training time spent in a high volume Australian centre.

• Equipment use and supply:
  – Ongoing need for equipment donations.
  – Due to the limitation of supplies, some guidance is needed to facilitate best use of the available stock. This may also extend to encompass the best outcome use of available PPI donations.

• A need to develop basic therapy
  – Many cases of UGI bleeding that can avoid surgery
  – Establish coaptive coagulation with re-useable heater probe, PPI therapy

• H.pylori testing and treatment:
  – Develop Quality Control, Audit and hospital based eradication strategy
  – Support for hospital based PPI provisions to patients
The personal benefit

“(as a physician) incredibly difficult to walk away from young patients who face imminent mortality from disease, knowing well that the same patient (in one’s own practice) would have access to medical therapy, survival and hope”
The solution

Return
Assist
Donate and Develop
Involve
The Future
Five things to do in Fiji

5: Eat Well
4: Go kayaking
3: take a walk
2: swing from the trees
1: have a sing-a-long