

# Cook Islands Rotary / Voluntary Work and Donated Equipment Installation

## 2019 – 2022 : Radiology Resilience Project – Aitutaki and Rarotonga, Cook Islands

March 2022

### Identified Needs:

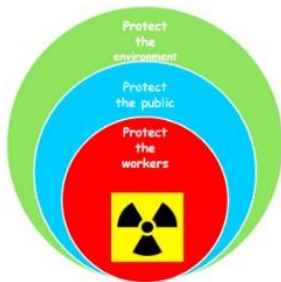
#### Background X-Ray

Having Volunteered with fellow Philips Engineers Howard Carmen and Peter Koens in 2018 to digitize the X-Ray departments using donated X-Ray Cassette Readers and a MiniPACS (Patient image review and storage systems), it was identified that an existing mobile X-Ray system was aging in Aitutaki and becoming less reliable. Also noted that whilst the donated Cassette Readers were working well, with the added risk reduction in travel due to Covid19, there was not an installed backup reader to provide resilience and continuity of X-Ray service, in particular for the people of the outer island of Aitutaki .



If the X-Ray service became unavailable in Aitutaki, this could mean that families may be split up while a flight is arranged for the injured or sick patient to head to the main Island of Rarotonga. Maintaining this resilience of service in Aitutaki helps keep families together.

#### Background Staff Radiation safety



During the 2018 visit I noted that Lead Vests for staff radiation safety were worn and replacements would be useful. The Lead Glass window in the main Rarotonga X-Ray room was also broken, reducing its effectiveness.

#### Background Existing Equipment Servicing

The existing donated mobile X-Ray system installed in 2018 (Donated by Blenheim Wairau Hospital) and CR Readers (Donated by Bega Hospital NSW) were due for planned servicing along with the MiniPACS image storage systems (Donated by Peter Koens), this was delayed due to Covid19 travel restrictions.



## The Cook Islands



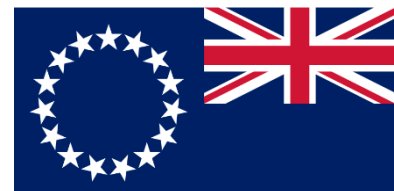
The Cook Islands is a group of 15 Islands approximately 3800km from New Zealand in the Pacific Ocean. The total population is around 18,000 people, with 80% of the population Cooks islands Maori.

Rarotonga has the largest population, followed by Aitutaki with around 2000 and Mangaia with around 500 residents.

### Aitutaki Hospital



### Cook Islands Flag:



### Rarotonga Hospital



## Preparation for the Project

### The Rotary Club of Belfast / Kaiapoi Ref #18655

The Rotary Club of Belfast Kaiapoi kindly invited myself to speak at a dinner outlining the benefits of the project to the people of the Cook Islands. The donation in kind from Belfast Kaiapoi Rotary Club covered the purchase of wooden timber and export approved plyboard and packaging to enable shipping of the donated equipment.

A special thankyou to John McCaul and Rotary Belfast Kaiapoi for their time, hospitality and funding for the materials to enable the donated machines to be shipped to the Cook Islands.



### Kaiapoi Menz Shed

The donated Rotary Belfast-Kaiapoi funds purchased timber which was used to manufacture packing crates by the Kaiapoi Menz Shed. These packing crates were not just made, but crafted to perfection by John Forster and the Team of experienced retired carpenters and craftsmen. The Menz shed volunteers donated all of their time, labour and skills at no cost for the project and transported the crates back to my home address in Christchurch, where the machines and donated equipment were loaded to await collection.

The contribution from Kaiapoi Mens shed volunteers ensured the equipment arrived in perfect condition, and encountered no customs issues or delays!



Pictured ; Left: Mr John Forster, Right: Mr William Titulaer of Kaiapoi Menz Shed



### Bascik Transport - Christchurch

The full cost of the transport of the Convenio Mobile X-Ray machine, readers and accessories from Nelson to my home address in Christchurch for crating was donated by Mr Tony Bascik of Bascik Transport LTD in Christchurch, in addition to this Tony arranged transport of all three crates to Yusen Logistics in Auckland, ready for export to the Cook islands.

Tony's support was vital to this project and very much appreciated.



### Yusen Logistics - Auckland



Once delivered to Auckland from Christchurch by Bascik Transport, the 3 crates containing the X-Ray machine, CR readers and donated equipment were received by Yusen Logistics ready for shipping to Aitutaki.



Yusen covered most of the shipping and export compliance costs to Aitutaki Port, with Philips Healthcare New Zealand covering a shortfall which also covered the import fees and duty.

I would like to extend a big thankyou to Kenjon Kraus at Yusen Logistics PTY for the work involved in arranging the export and required documentation and Philips ANZ Customer Service Delivery Leader Hefin Evans for approving funding for the additional shipping costs and taxes.



## Equipment Donations Aitutaki – A big thankyou to:

**Helen Evans & Jenny Taylor - Nelson Marlborough DHB** – Nelson Hospital for the donation of a Practix Convenio Mobile X-Ray Machine.



- **Raylene Wood - Taumaranui Hospital** - Waikato DHB for the storage and donation of a Compact Philips ElevaS Plus X-Ray Cassette Reader, Cassettes and Accessories.

- **Thames and Te-Kuiti Hospitals** – Waikato DHB for the donation of additional ElevaS Plus X-Ray Cassette Readers, Monitors, Barcode Readers and Computers.

- **Sacha Milne - Christchurch Hospital CDHB** –Interventional Radiology for the donation of Lead Vests and Gowns for Radiation Safety.







Pictured – Staff of Aitutaki Hospital wearing donated Theatre Lead Vests Tupou, Au, Sam, Ben and Moe

- **Philips Engineer Howard Carmen** (Canberra) – Donation of additional computer Workspot units for Cassette readers, accessories, monitor, barcode readers and software licences from Qscan Parkes Diagnostic imaging.
- **Mr Peter Koens** – Retired Philips Engineer and National Support Specialist – Donation of updated MiniPACS stand alone image review computer system for Aitutaki Hospital.



Howard Carmen



Peter Koens



## Aitutaki Hospital Installation Work

Upon arrival at Aitutaki Hospital, I received a warm welcome from Mereta the hospital manager and Mereaumate the Pharmacist and X-Ray Operator. I was promptly assisted by Nina ( Mr Vahua) to uncrate the systems. After uncrating the systems and accessories we were pleased to see that all of the equipment had arrived in good condition with no damage to the wooden crates.



The Mobile Convenio X-Ray Machine was installed and the backup readers tested and programmed to send images to the MiniPACS Patient Image Review Computer so that images can be reviewed.



Whilst on site, I decommissioned the older X-Ray mobile machine, retaining useful parts, updated the MiniPACS system donated by Peter Koen, replaced an LCD screen to improve image quality and completed the voluntary planned service work on all the donated equipment, ensuring all was working well.

The donated mobile system and readers in Aitutaki will enable patient X-Ray diagnosis of both medical conditions and accident cases, improving patient outcomes for the local population of Aitutaki, as well as visiting tourists.



## Starfruit

Starfruit (Carambola) was in season in Aitutaki and became my lunchtime staple food, the kind staff at the hospital made me very welcome at lunchtimes, providing much more food that I can eat !



I would like to thank Mareta, Mereumate and Nina for their assistance and kind Island hospitality while in Aitutaki.

## Aitutaki Weather

In 2018 when Peter, Lesley, Howard and myself, worked on the original Rotary RAWCS project, the weather was very wet in Aitutaki.

This time around the weather was very hot, sunny and humid revealing the true tropical beauty of this island, its lagoon and sandy coral welcoming beaches with crystal clear water.





## Rarotonga Hospital Installation Work

### Equipment Donations – Rarotonga

- **Greymouth Hospital** – WCDHB Radiology Department for the donation of a CX-50 Cardiac Ultrasound system including portable carry case, probes, ECG cables and accessories.



In February 2022, just prior to travelling to Rarotonga, I was contacted by Auckland based cardiologist Dr Miriam Wheeler who was taking leave to do voluntary work in the Cook Islands completing vital Echo Cardiology Heart scans.

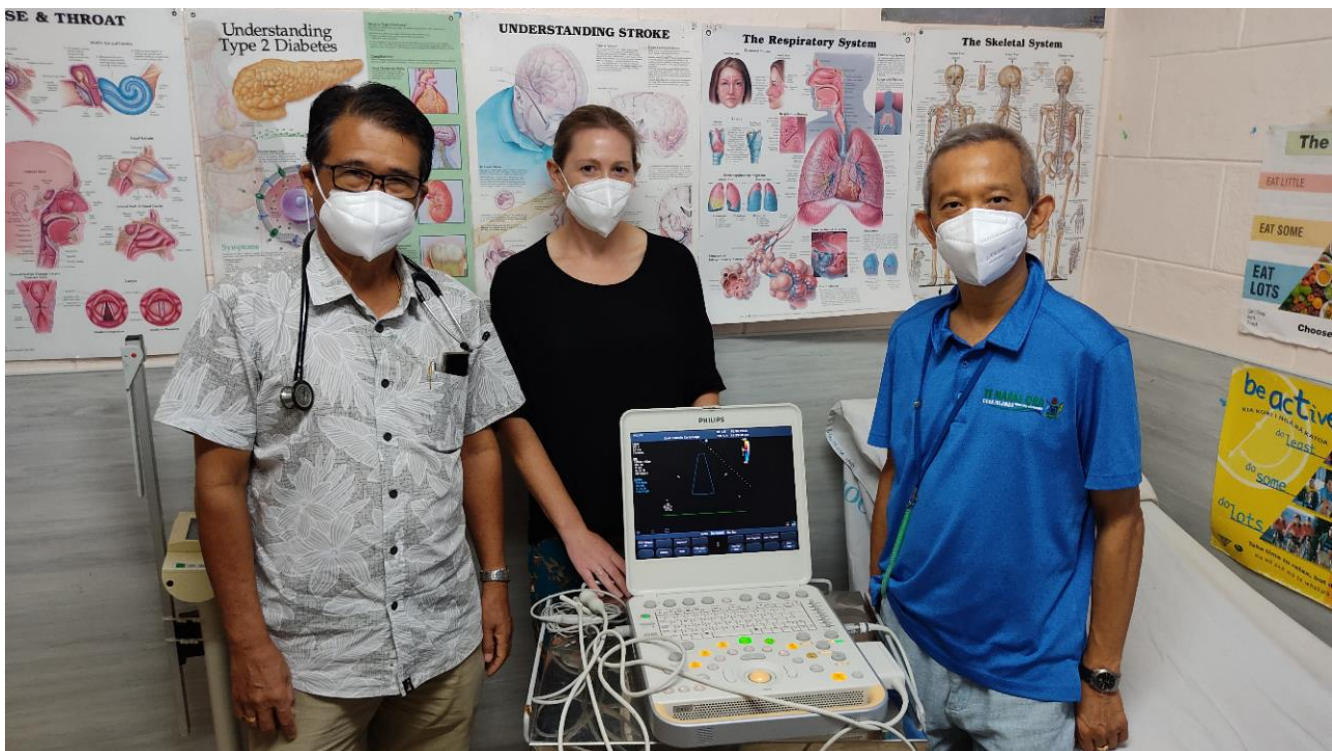
I was aware that a fully functional portable Ultrasound system was due to be retired in Greymouth, Hospital and asked if the machine was available for donation. The Radiology department at Greymouth Hospital kindly donated the portable Cardiac CX-50 machine, its carry case, probes and accessories.

I serviced and tested the machine at home and the machine travelled with me to Rarotonga and was delivered in time for patient scanning to begin on the 6<sup>th</sup> of March 2022.

As the machine is a high spec portable system, in the second week, Miriam and the Team were able to take it to Aitutaki to complete scans, meaning patients didn't need to make the trip to Rarotonga and back to Aitutaki for their scans, keeping families together and reducing costs. Furthermore the system will remain available to Dr Aung and Dr Lwin after Dr Wheeler has returned to New Zealand for patient care.

Images can be saved to USB or a hard drive on this machine, making image review or image sharing with other specialists and staff easy.

This donated machine and the skills of the Cardiology Sonographer and doctors will improve diagnosis and improve patient lives in the Cook Islands and I'm proud to be involved with facilitating this project.



Pictured: Dr. Zaw Aung, Dr Miriam Wheeler, Dr. Koko Lwin (With CX-50 Cardiac Ultrasound System donated by Greymouth Hospital Radiology Department).

## World Health Organisation Donated Mobile X-Ray Machine – Rarotonga

During my visit to Rarotonga Hospital, I was advised that The World Health Organisation (WHO) had donated an X-Ray mobile digital machine to Rarotonga and many of the other Pacific Islands in the region, as part of the Covid-19 initiative.

The machine had been in storage for around a year, as install Engineers from Micro-X Fujifilm were unable to travel to the Islands due to travel restrictions and there was no method of transferring the patient images from the machine.

Taking the initiative and working with Biomedical Engineers Juan Rafael and Princess Rafael, I contacted the Australian Service agent in Adelaide working remotely with Mr Andrew Murphy, Engineer from Fujifilm to and not only got the machine setup to send images to Peter Koen's donated MiniPACS, but run through its basic operation and features so that the Radiographers could use it with confidence.

Although not a Philips system which I'm familiar with, this Micro-X Rover Mobile Machine is not a basic machine, but a high spec Australian designed and made system, highly maneuverable with the very latest lightweight Nanotube (solid state) X-ray tube system, a donation from WHO which will be very useful to the Hospital for patient diagnostics moving forward.



Pictured: Cook Islands Biomedical Engineers Princess Rafael and Juan Rafael after setup and programming of the Micro-X Rover Mobile X-Ray Machine.

## Lead Glass Window

A good Lead Glass Window for Radiation safety was transported with the shipping crates and transported from Aitutaki to Rarotonga for the General X-Ray Room, sizing looked ideal and it is ready for installation.



## Service Aspects

The hospital's already have a service contract with Philips healthcare for their existing equipment, and any Field Service Engineer visiting the sites annually will be happy to perform a brief planned maintenance and electrical safety on any of the donated Readers, MiniPACS, Ultrasound CX-50 and Mobile Machines.

**PHILIPS**

In Aitutaki, there are spare Convenio Mobile X-Ray and Reader parts available and with assistance from Juan or Princess, the Biomedical Engineer's, so local replacement of parts can be completed wherever possible.

Working with Juan and Princess on this visit, we worked on 1<sup>st</sup> line fault finding, basic replacement procedures and service support. We aim to support the donated equipment moving forward, on an ongoing basis.

In regard to the Micro-X (Non Philips) Mobile X-Ray, I will enquire as to how the machine can be best supported and serviced moving forward.

## Te-Are Manu Vet Clinic Rarotonga

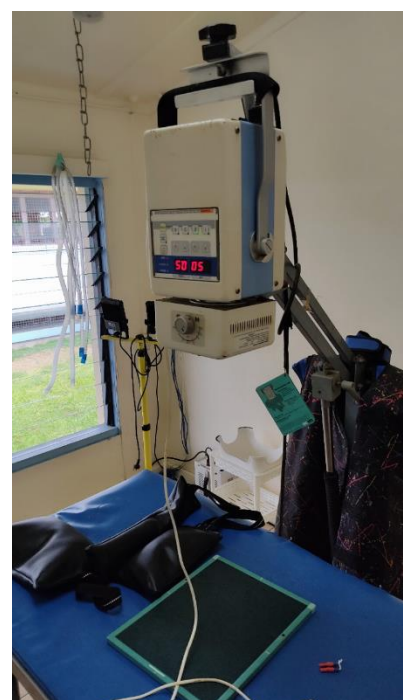
Hospital Radiology manager Mr Waisiki Lomalagi advised me that the Vet practice was having difficulty with their X-Ray machine and the positioning lamp wasn't working.

Prior to work one morning I visited and replaced some broken wiring the X-Ray Collimator, bring the Collimator Lamp back to life. The staff thanked me and I made a small donation to the practice as they are a charitable organisation.

To replace worn Image Cassettes, I will also ship the practice some newer donated Cassettes soon.



(File Photo from 2018 above).



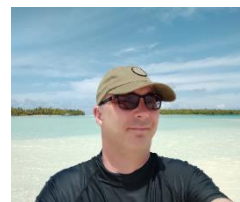
### And Finally...

A Heartfelt thankyou to all above who have contributed to this project, supplying equipment, labour, design, materials, transport, finance and their skills to make it all happen.

I'm proud of what we have all achieved to make a difference in enhancing patient outcomes for the Cook Islands on this 2022 Resilience project, as well as the original 2018 Rotary RAWCS project.

Meitaki – Thankyou,

Jason Walker – Philips Field Service Engineer / Volunteer, Christchurch NZ



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20<sup>th</sup> March 2022



2018 Rotary RAWCS Project (Cook Islands News- File Photo).