

Hospital equipped with negative pressure room

Rarotonga Hospital is now equipped with a vital piece of medical infrastructure that can be used to treat critically ill COVID-19 patients as well as a host of other potentially fatal infectious illnesses.

Utilising local medical expertise and construction know-how, the hospital now has a negative pressure room - an isolated area found in hospitals that helps prevent cross-contamination across rooms.

It works by providing ventilation that generates 'negative pressure', which is pressure lower than that of the surrounding area. This allows air to flow into the negative pressure room, but not escape it.

With COVID-19 sweeping the globe, clinicians around the world have been trying to understand better the behaviour of the disease including among front-line healthcare workers, and how the treatment of infected patients could be improved.

Dr Ted Hughes a New Zealand-based specialist anaesthetist familiar with Rarotonga hospital's infrastructure and health systems capability, began to make a series of observations that led him to believe the country could benefit from a negative pressure room to support potential COVID-19 cases.

Dr Hughes observed that staff infection rates in hospitals around the world were high. Up to 30 per cent of staff in some areas with some requiring a ventilator for respiratory support, however those on ventilators in general still had extremely high mortality rates. An alternative would be using lots of inhaled oxygen and keeping the patient breathing normally, but attending staff would be at even greater risk if they did not have the means to prevent cross contamination within the hospital.

"An important solution was to build a negative pres-

sure room for these patients," he said.

However, getting one built at short notice was the challenge. The question was how to obtain one for the hospital. They are usually very expensive and time-consuming to build. Additionally, with the threat of the virus increasing daily, there was no time to access medical expertise from abroad.

"What we needed was an immensely practical man who could get on and do the job. The old normal of getting NZ experts in and all that kind of stuff is out the window with COVID-19. We needed a practical man who could do the job with what we had on Rarotonga,"

he said.

Enter Stuart Henry a local contractor who in just a few days remodelled a 4-bed isolation ward at Rarotonga Hospital into a 4-bed negative pres-

sure room that can now be used immediately for managing critically ill COVID-19 patients. And apart from COVID-19, the room can also be used to treat infectious diseases such as Tuberculosis.

"What a great achievement for the initiative of Cook Islanders and their ability to pull together in an emergency," said Dr Hughes.

As part of TMO's COVID-19 preparedness plans, Dr Hughes was seconded to TMO through Dr Dale Bramley, CEO Waitemata District Health Board. Ted hails from Areora in Atiu and is one of TMO's senior clinical advisors to Executive.

Additional to this, Dr Hughes has overseen plans to purchase another Oxygen plant for Rarotonga hospital to complement existing systems.

Secretary of Health Dr Herman, ends 'I acknowledge the hard work Ted and our TMO team have done to reori-



Biomedical technicians Juan Rafael & Princess Rafael.



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ent our health system in order to respond to the acute respiratory needs of COVID-19 cases". She thanks Dr Bramley and the NZ Ministry of Health for their assistance, as well as our Government who have approved the COVID-19 budget. The purchase of a CT scan is underway. "We are strengthening our health system to prepare for COVID-19 should it cross our borders".

The Cook Islands was declared a COVID-19 free zone on 16 April 2020.

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– Dr Josephine Aumea Herman