

Faster diagnosis of heart attacks at NMDHB

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Jenny Watson, left, with cardiologists Nick Fisher and Tammy Pegg, Averil West heart health advocate for the Heart Foundation, Kris Gagliardi XX St John and Daryl O'Reilly general manager Jennian Homes in one of the Cardiac Intervention suits at Nelson Hospital. Jenny Watson had her life saved after suffering a heart attack, by the quick work of St John and the world class cardiac unit at Nelson Hospital.

A new process at Nelson Hospital allows paramedics, emergency doctors and cardiologists to diagnose and treat heart attacks faster. The pathway has been set up to ensure those suffering from a heart attack are diagnosed in the field and make it to a cath lab as soon as possible where they have the best chance of survival. Nelson Marlborough District Health Board cardiologist Tammy Pegg said the development of a pre-hospital procedure streamlined the treatment process for heart attack patients. It is unique to NMDHB, which is working closely with St John in the hope of developing it into a national heart attack policy.

"It is the first comprehensive pilot with St John taking all heart attack patients and transferring them for definitive care," said Pegg. The project covers the 150,000 people in the top of the south region and the new policy went live on April 1. "Treating a heart attack is critical, you have two hours where you can open up the artery and do a lot of good, between two and four hours there is probably some marginal benefit but after four hours there is no point." In developing the new pathway, Pegg audited a year of heart attack care in the Nelson Marlborough region and found that on average, an ambulance would arrive on the scene in about 15 minutes and get to hospital in around 55 minutes.

The new policy enabled St John ambulance officers to deliver treatment on the scene in the first hour that would assist the process once the patient arrived in hospital. St John Nelson shift manager Kris Gagliardi said it was

now possible to conduct an electrocardiogram (ECG) in the field to check for problems with the electrical activity of the heart.

Once a patient had been identified as having a heart attack, their ECG would be transmitted to the emergency department and a cardiologist at the hospital, who could make an initial assessment and activate the appropriate services. Paramedics also had the ability to call the emergency department and talk to a specialist about the patient's care. "We receive advice on the pre-hospital treatment depending on the patient's pathway, whether they are going to be treated at the cath lab or whether they are going to be treated with clot-busting drugs."

If required, the rescue helicopter would be utilised, said Gagliardi. "If the hospital the patient is nearest to doesn't have an available cath lab patients will then be transferred by helicopter to a hospital that does have an available cath lab." "Re-opening the blood vessels after a heart attack was crucial, said Gagliardi.

The "gold standard" was for that treatment to happen in a cath lab, but could be done with clot-busting drugs if the first option wasn't available within the initial two hour period. However if the blood vessels weren't re-opened in a reasonable timeframe, the outcome was not good. "There is a high level of morbidity or disability for the rest of that person's life, heart failure, ongoing chest pain, breathlessness, further heart attacks, premature death, the list goes on," said Gagliardi. At the centre of the new pathway was a document, which was used by paramedics, emergency department staff and cardiologists throughout the patient journey. Gagliardi said it allowed paramedics to identify the most appropriate treatment for the patient which dependent on whether they would be treated in the cath lab or with medication. Making this identification in the field was a huge step forward, said Gagliardi. "It is a real mind-set shift, we are not introducing any new resources for this pathway we are just reshuffling them." Pegg said: "[The paramedics] are asking the same questions that [the hospital] would be asking, the idea is that if they have filled in half the document by the time they get here then it is a smoother process out." There had also been a change to the inter-hospital transfer of heart attack patients who need treatment in a cath lab.

Previously, a hospital retrieval team from the intensive care unit would be sent to collect the patient, which could take on average between four to five hours, said Pegg. The transfers are now managed by St John, who are experienced at transporting patients in the field and can now deliver them to the first available cath lab, at either Nelson or Wellington hospital. Around 100 heart attacks occur in the region each year, with half of those happening in the Nelson urban centre and the other half across rural areas. "We treat and discharge heart attack patients before anyone else in the country, we are national leaders in that sense," said Pegg. Part of the project was about delivering the care to other patients in Murchison, Golden Bay and Wairau, said Pegg.

The Nelson Marlborough cardiology education trust trained 100 staff across Nelson and Wairau hospitals in the management of the new pathway process and were looking to support St John long term with the training of paramedics and heart attack treatment. "It is about delivering care that is equitable to our rural division." The development of the new pathway was an example of providing definitive care for heart attack patients in the region and there was hope it would be adopted by other district health boards around the country, said Pegg.