



Pictured from Left to Right: Jacques Loubser, Chris Florkowski, Martin Than, John Pickering, Sally Aldous



UNIVANTS of Healthcare Excellence Global Winner
Canterbury District Health Board, New Zealand

Reducing Patient Risk and Enhancing Care through the Development and Implementation of a New Chest Pain Pathway, Expedited by and for the COVID-19

The novel Corona Virus or COVID-19 has changed the world from what we once knew. It has required all industries to pivot, and in some cases, shutdown. Healthcare, like so many of our vital services, has been forced to become even more agile, reshaping itself to not only fight the virus, but to ensure high standards of patient care.

Of critical importance is the continued availability of emergency services, with safe and effective triage. The ability to continuously provide excellent emergency care to patients, while reducing and mitigating risk of transmission has been a key focus at Canterbury District Health Board, New Zealand.

Patients presenting with symptoms of a heart attack need immediate care. They represent common presentations to the Emergency Department (ED) and are also the most common cause of hospital admissions (~15%). Thus, the burden is substantial.

Recognizing that there would be added and significant resource pressure on the ED, including marked risk of potential cross-infection to patients when the COVID-19 virus arrived in New Zealand, an integrated care team involving the ED, Cardiology, Laboratory Medicine, and Management and Clinical Data Sciences sought to safely reduce time spent

in the ED by maximizing early ED discharge and reducing the number of patients who are admitted to the hospital. Collectively, this approach sought to reduce transmission risk, while also ensuring safe and effective triage and treatment for patients with chest pain.

This was achieved through evaluation of laboratory data in conjunction with patient diagnosis, thus enabling strategic redesign of patient care pathways according to predicted risk of major adverse cardiac events (MACE) within 30 days.

Strategic and expedited implementation of this accelerated diagnostic protocol resulted in a 55% increase in the number of patients safely ruled-out for a heart attack using a single troponin result. Consequently, fewer patients require multiple troponin results for ruling-in heart attacks, leading to 45% and 35% increase in the total number of patients safely sent home within 2 hours and 3 hours of presentation respectively, and without the need for prolonged further workup. On average, patients spend approximately 30 minutes less time in the ED since implementation of their novel protocol, elevating care while also reducing exposure to COVID-19 and potential transmission.

More remarkable is that despite a 25.2% increase in patients presenting to the ED with chest pain during COVID-19, the ratio of ‘cardiac admissions ultimately not diagnosed as a MACE’ to ‘patients presenting with chest pain’ has decreased by an impressive 8%. This substantiates impressive and cohesive implementation while further reducing the risk of exposure and transmission of COVID-19.

These impressive outcomes are the collective result of the agility, forethought and teamwork of the integrated care team at Canterbury District Health Board. Although many interdisciplinary team members have played an integral part in the implementation of this strategic protocol, special congratulations are due to the innovators and recipients of the 2020 UNIVANTS of Healthcare Excellence Award for Outstanding Health Outcomes at Canterbury District Health Board: Martin Than, *MD, Emergency Medicine*, Sally Aldous, *MD, Cardiologist*, Chris Florkowski, *PhD, Consultant Biochemist*, Jacques Loubser, *MD, Emergency Medicine* and John Pickering, *PhD, Data Scientist*.

THREE KEY TAKEAWAYS

1. Leveraging the analytical sensitivity of high-sensitivity troponin assays can enable early rule-out strategies in the ED
2. Implementation of evidence-based acute coronary syndrome protocols can substantially reduce patient risk, especially during the COVID-19 era, reduce admissions, and reduce costs, while safely providing emergency care to those with suspected heart attacks
3. Cross-disciplinary involvement is essential for ensuring safe, rapid and cohesive activation of strategic diagnostic protocols