

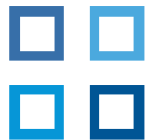
New Zealand MedTech In Action



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Innovation and partnership key
to triple emergency response

From a murderous **act of terrorism** to a **natural disaster** and now a **global pandemic**



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This publication has attempted to capture some of the rapid response stories from the New Zealand health sector and medical technology supply companies, who faced the disruption and challenges of these medical emergencies.



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How MedTech sector faced a triple medical threat



Faye Sumner, CNZM
Chief Executive Officer
Medical Technology Association of NZ (MTANZ)

In the past two years, New Zealand has experienced the Whakaari/White Island eruption, Christchurch Mosques attack and the ongoing global COVID-19 pandemic. In each of these emergencies, the New Zealand medical technology companies swung into action to ensure critical medical supplies arrived at the right place, at right time, for the right patient.

Given New Zealand's distant geographical position and 95 percent imported medical supplies for domestic use, there are considerable challenges to ensure an uninterrupted supply of vital medical devices in New Zealand.

There is a need to recognize and acknowledge the passion and commitment our MTANZ members displayed during these unprecedented medical emergencies. The challenges were compounded by New Zealand's closed borders during the COVID-19 response. Supply of medical products via airfreight is crucial in our global supply chain along with securing critical medical supplies when the world was panic-buying. The situation resulted in our member

companies being under enormous pressure to deliver. The New Zealand medical technology industry has become very agile with "just-in-time" delivery in response to cost pressures from the procurement agencies over the years. However, what we have learnt from these past couple of years is the need to rethink our global supply chains and respond with "just-in-case" to ensure New Zealand can meet any further medical emergencies. No doubt there will be another disaster (natural or medical) for New Zealand to manage at some time and New Zealand medical supply companies will be expected to respond instantly to the needs of healthcare system.

Thank you to all those who have contributed to this publication. It is now time for us to reflect on what we have learnt and how can we plan better for any future shocks. As a vital stakeholder in the New Zealand healthcare system, our medical technology sector must be part of the forward planning to ensure we are prepared to face future medical challenges.

Well done MTANZ member companies.

christchurch terror attacks



Unprecedented horror in Christchurch sends
New Zealand health sector into overdrive



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The events of March 15, 2019 will remain etched in the minds of all New Zealanders.

That day in Christchurch, a lone gunman carried out two consecutive attacks on two mosques in the city, killing 51 people and injuring 40 others who were at prayer. The gunman, a far-right extremist, was arrested shortly afterwards.

He later stood trial, was convicted, and is serving a life sentence without parole for the atrocity. The death and injuries were on an unprecedented scale and called for a massive and urgent effort by the health sector in the city and in other parts of New Zealand to save as many lives as possible under huge pressures. While the health professionals worked

tirelessly to save the injured, the medtech sector went into overdrive to provide essential support and medical supplies.

Below are just some of their stories of how everyone played their part and overcame obstacles to get the right supplies to the right place at the right time.

Local supplier able to help immediately

Jackson Allison was able to quickly respond to the call from Christchurch Hospital following the terrorist shooting because it had a number of products required for ICU at Christchurch which were couriered down urgently.

“We also had to courier in extra supplies from the overseas manufacturer. At no time were we unable to supply what was required,” recalls John Bell, Jackson Allison’s general manager.

“We had several patients using tailor-made pressure garments to control oedema and sold numerous products for those in ICU and other departments in DHBs. The courier system in New Zealand worked very well. On several occasions we sent parcels by both overnight and our normal three-day delivery service and all packages were received at Canterbury DHB on time and to the correct address - even to ICU or operating theatre.

“Our warehouse, logistics and sales teams all worked closely with Canterbury DHB to provide what was required and when they required it. Those of our overseas suppliers who were involved also helped by obtaining stock for us urgently, on several occasions taking stock from other suppliers / customers to provide us with what was needed.”





All hands on deck in terror emergency

Medtronic's Cardiac Rhythm and Heart Failure (CRHF) clinical support person, Rose Harrison, was in theatre at Christchurch Hospital at the time of the terror attack. She witnessed the Critical Care Unit (CCU) being turned into an emergency care ward and equipment and patients being moved. At the same time, Medtronic's surgical territory manager was due to start a Hemostat trial at Southern Cross Christchurch, but once realising the scale of the incident offered the trial stock to be used on patients who needed it in surgery to stop bleeding.

"This was all hands on deck," says Liz Carnabuci, managing director of Medtronic ANZ. "Our field teams supported clinical duties on the ground and worked seamlessly to assist hospital staff during the emergency. We continued to support their efforts with ongoing supply of implants in the months following the attack."

Liz notes that the emergency raised challenges including passing through security processes entering the hospital with kit bags and doubling the amount of consignment to hospitals at Medtronic's cost.

Yet despite the challenges, the critical support of field teams assisted the rapid response and emergency management of the incident.

Photo inset - Liz Carnabuci

Terumo team ensured smooth running

Terumo supplied Interventional Radiology and Cardiology products to meet the ongoing needs of those injured in the Christchurch Terror Attack, reports Terumo's NZ Corporate Accounts manager, Dianna Van Daatselaar.

"Clinical support was provided by our product specialist team. While Healthcare Logistics managed the distribution without any interruptions and supply chain was effective in its delivery."



USL Medical gets hands on with deliveries

Normal services were severely disrupted in the days following the Christchurch Terror Attacks, so USL Medical teams in the city loaded up their vehicles to deliver product themselves to keep Aged Care facilities, DHBs and medical centres operating, reports USL managing director Karen Longdill.

As for getting hold of product, USL says it didn't have so much of a delay in getting product into the city.

"We have a warehouse in Christchurch which was accessible which assisted greatly. We also used our normal courier system. Our product was prioritised so that delivery was not delayed.

"Our team have great relationships with their customers and supporting those involved in the treatment of patients from the attack became their priority."

Everyone pitched in to help

In keeping with its company ethos of 'Always from the Heart', the Pharmaco team all pitched in to help following the Christchurch terror attack, says managing director Chandra Selvadurai.

"From our warehouse to our representatives, product managers and senior staff – everyone stepped up. Getting products to Christchurch was time critical and it took the whole team to make this happen."

Selvadurai says the company supplied trauma injury-related products, tourniquets for bleeding control and penetration wound management products to support patients.

Pharmaco used its normal distribution and courier channels to deliver vital equipment. However, Selvadurai says, they did flag that the products were medical and related to the support of people involved in the attack. The help from everyone along the supply chain was exceptional.



InterMed staff going above and beyond

The InterMed Medical team in Christchurch went above and beyond the call of duty to support the clinicians at the front line - this involved being available over the entire weekend after the Christchurch Terror Attack, recalls InterMed chief executive, Andrew Hickey.

“We sell a range of products that were used in the aftermath of the attack. One was a V.A.C. Negative Pressure Wound Therapy (NPWT) which was used to treat patients with traumatic wounds post-surgery. We provided both products and support to CDHB including making available additional products at short notice,” he says.

Hickey says access to the hospital site was difficult over that first weekend which made delivery of products more problematic. Overnight and urgent shipments were used to ship products from Auckland to Christchurch in the short term.

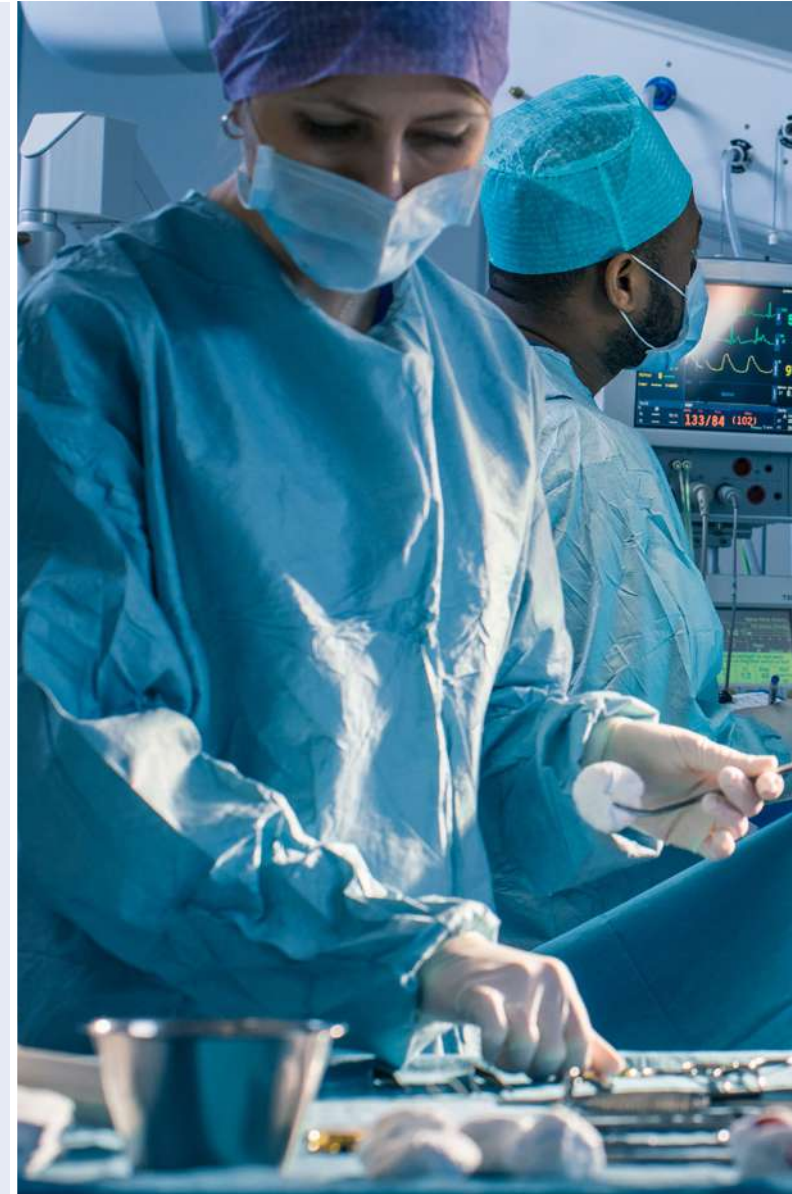
“Products were sent to our local product specialist’s home who then delivered them to the hospital as required to ensure they got to the right place at the right time.”

Baxter deploys Trans-Tasman network to help in Christchurch emergency

Baxter Healthcare delivered an emergency air freight supply of haemostats and sealants to Christchurch from its main Australia/New Zealand warehouse in Sydney on March 15. The products were used in operating theatres to help the victims of the attack.

Baxter also worked closely with Canterbury DHB to make sure there was sufficient stock of critical intravenous medicines. The company prepared stock levels to respond if needed in the event of short supplies in hospitals. Baxter was in direct contact with Procurement at Canterbury DHB to support with advanced surgery products (haemostats and sealants) and with IV Fluid therapy.

The Baxter Supply Chain team and analysts worked closely with Canterbury DHB to prepare sufficient stock to respond. Baxter air freighted additional stock of haemostats and sealants to its two warehouses in New Zealand. This provided built-in contingency and allows for movement of stock between warehouses to meet demand.





Rapid response from J&J in aftermath of attack

Rapid response from J&J in aftermath of attack
J&J rushed trauma kits and sutures to Christchurch Hospital in the aftermath of the Terror Attack. The company also ensured a constant supply of surgical products to keep the hospital restocked.

The company initially sourced product from other hospitals in New Zealand and airfreighted in.

Further equipment was sent to home addresses and transported in through the barriers. J&J had its supply chain working overtime. Its clinical support team were on hand all night supporting surgeons.



S&N team respond fast

The Christchurch Terror Attack, while a dreadful tragedy, brought out the best in those who responded, including the medical teams and the team at Smith & Nephew NZ.

Jamie Maloney, S&N New Zealand national sales manager for the Advanced Wound Management division says the division was involved in the supply of additional Renasys negative pressure pumps and disposable items for impacted victims of the attack being treated at Christchurch Hospital.

“This equipment assisted with clinically improving wound closure and the wound healing process. Also, additional surgical dressings were supplied to treat these patients and victims of the attack.”

He says the two S&N representatives who were actively involved at ground level were at the time both reasonably new in their roles and so needed to quickly learn the procurement processes within Canterbury DHB, as well as learn internal company processes to request additional product.

“Urgent freight was supplied to our Christchurch warehouse and additional stock backfilled and supplied out of our Auckland warehouse with additional costs not passed on to the customer or healthcare system. Multiple couriers were used to ship freight alongside S&N team members who also delivered equipment and disposable items to the hospital during evenings and weekends,” he explains.

whakaari white island eruption



Tourist trip to volcanic island
turned into nightmare



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Devastating eruption creates mass emergency and tests the NZ MedTech sector's response.

A group of 47 tourists were visiting the volcanic island of Whakaari/White Island in the Bay of Plenty on the afternoon of December 9, 2019 when it explosively erupted sending ash, steam, gas and rocks into the air and raining down on the visitors.

Twenty-one people were killed, including two who are missing and declared dead, and a further twenty-six people suffered injuries, many of whom suffered severe burns. Survivors were initially taken to Whakatane Hospital where they were triaged and stabilised. Whakatane, Tauranga and Waikato Hospitals all activated their mass casualty plans.

Later, patients were treated at the country's four burns units and it was reported that New Zealand had ordered 1,200,000 square centimetres (190,000 sq in) of skin from the United States and Australia to treat the patients.

Again, this emergency tested the limits of the New Zealand health sector and saw the medtech sector go above and beyond to source and deliver vital supplies, saving lives and minimising long-term injury and disability. The stories from some of those who were involved in this response are below.

Medtech in rapid response to Whakaari event

In the wake of the December 9 Whakaari/ White Island tragedy, a key challenge for National Burn Centre staff was ensuring there was sufficient medical supplies to run concurrent theatres. The demand for burns-specific sterilised equipment was urgent and unprecedented. Among the items required were skin grafting knives, Bioquell units for more rapid sterilising of theatres and a new surgical table.

A blood testing device to enable clinicians to make timely decisions about blood and fluid requirements for vulnerable burns patients who had lost so much skin and fluid was also required as was an airway visualisation system to help secure the airway of the many Whakaari patients who had suffered extensive airway injuries because of the gases and steam present during the eruption.

Burn patients lose the ability to regulate their temperature when large volumes of skin are lost so an additional whole-body heating system called a Norm-O-Temp for the patient on the operating table was needed. Specially designed 'big' buttons for patients without fingers or with bandaged hands to push to administer pain relief were also required. General manager of Surgery, Anaesthesia and Perioperative Services at Counties Manukau Health, host of the National Burn Centre, Pauline McGrath says suppliers within the medical technology industry responded quickly to ensure the life-saving theatres functioned as required.

"Due to the number of patients, the complexity of their injuries, and infection control requirements, our normal stock of equipment was inadequate, so we needed the swift response of the industry," Ms McGrath says.





Bamford managing huge volumes to aid the injured

Kiwi medical supplier, Bamford, provided dressings to the DHB treating the victims of the Whakaari/White Island emergency.

“This also involved making emergency weekend deliveries to hospitals and increasing our stock levels,” says Bamford general manager, Alex Bamford.

He adds the dressings we provided were used throughout the patients’ treatment until discharge.

“The demand was so high they used six-months-worth of stock within the first week. Luckily, we always keep high stock levels, in case there is a big demand we’re ready. Plus, we were able to bring extra stock forward and dispatched earlier from our suppliers.”

J&J played part in burns treatment

J&J also supplied product and solutions to hospitals for treating burns. The company representatives went above and beyond providing solutions to treat the number of burn patients the hospital was seeing and gaining the extra supply of skin staplers required.



Sydney connections aided Medtronic response

Medtronic obtained large quantities of skin staplers airfreighted from its Sydney warehouse to meet the enormous surge of requirements for acute skin grafting.

The company provided two FT10 electro-surgical generators and RapidVac surgical smoke evacuators within 24 hours.

Downs delivers - even on Christmas Eve

Delivering four complete burns sets of instruments to Middlemore Hospital on Christmas Eve was just one of the extra miles taken by Downs Distributors staff to support patients and staff in the aftermath of the Whakaari/White Island disaster.

“Instruments were delivered personally by our staff after working hours on Christmas Eve. We also continued to supply surgical instruments to the operating theatres so they could cope with the extra demand of running 24/7,” says Downs managing director Ann Watkin.

“We were involved in getting supplies of skin graft knives and blades into Middlemore Hospital in particular.

“We had manufacturers in Europe who pulled from supplies destined for other countries to meet our urgent orders. Everybody from manufacturers to delivery people made every effort to get the equipment required into the hospitals with urgency.”

InterMed back in action for eruption event

InterMed Medical staff were in action again to support the staff and patients after the Whakaari/ White Island emergency.

“Products we supplied were used not only in the immediate response but also in the days and weeks following. Areas such as critical care and wound care products were used in this phase,” explains chief executive Andrew Hickey.

“The biggest issue we faced with this emergency was the rapid response required, other than that things seemed to go smoothly.

“Our support and equipment were primarily used at the subsequent centres, in particular the major Burn Units around the country.

“In one example, a partner of ours who sells products used on burns, but not yet available in NZ, flew people out from Europe with product to try and support the effort. It is our belief some of this product was used on patients.”



Prompt action saw PPE arrive in burns units

Jackson Allison provided a lot of the personal protection equipment (PPE) used in the burns, A&E and ICU units.

“We were called to supply goods as soon as the emergency was notified to the DHBs but more so once patients were sent to ICUs and, in particular, to the burns units in Auckland and Christchurch. We supplied a large range of PPE products to the burns units in the immediate aftermath of the emergency and this continued for several months,” says John Bell, Jackson Allison’s general manager.

“We got the stock to the required destinations by courier. The courier companies were very responsive in helping to get product to the destinations very quickly.

“We sold a lot of large sizes of gowns to the burns unit in Auckland. As we normally sell few of these, we ran out of stock fairly quickly and then had difficulty obtaining more supplies. This was further exacerbated by the shortage of polypropylene.

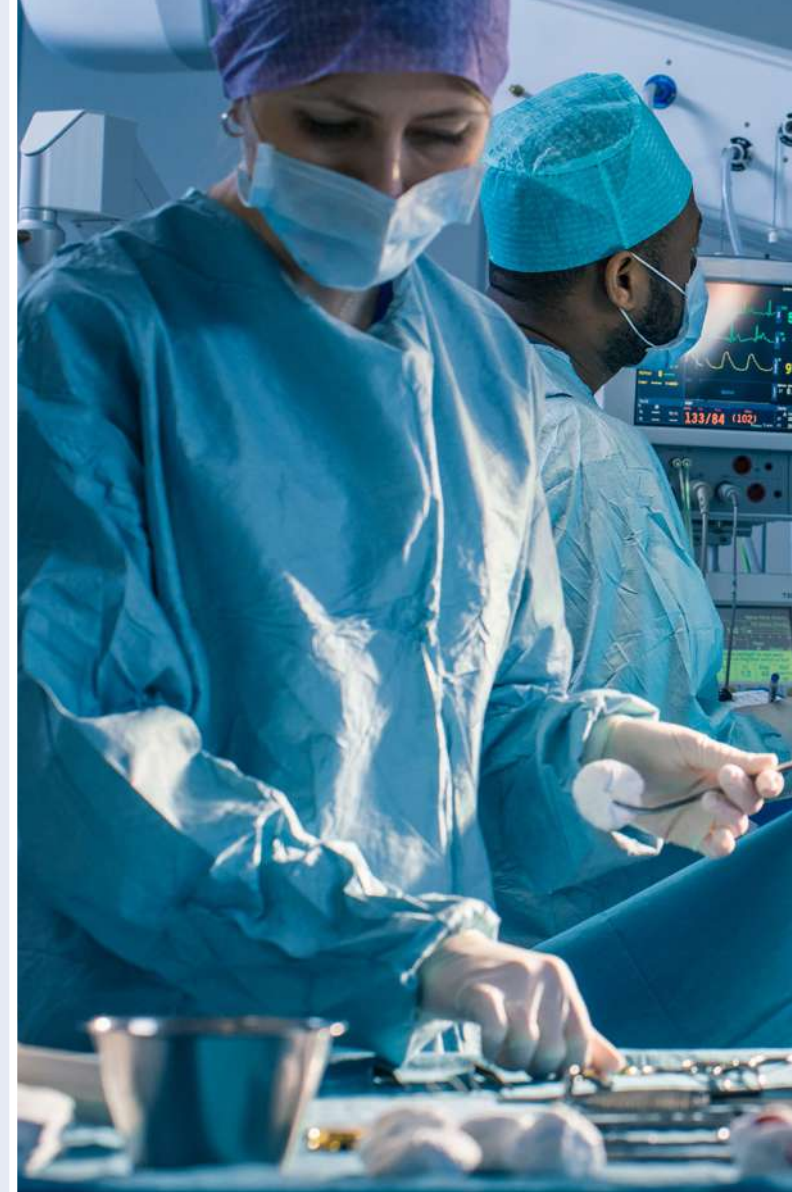
“Our warehouse and logistics teams worked to ensure supplies were provided on time to the correct destination. Our staff worked longer hours and delivered goods to Middlemore Hospital direct and dropped off supplies to courier companies after hours. Our warehouse staff also worked longer hours to ensure that orders for the disaster were despatched on time.”

Overcoming barriers through cooperation

Baxter Healthcare supplied emergency stock of chlorhexidine irrigation fluids to treat burns patients from the Whakaari/White Island eruption.

Baxter chlorhexidine products are currently not listed by PHARMAC on the Hospital Medicines List (HML). To meet the needs of hospitals treating patients from the Whakaari / White Island eruption, Baxter worked closely with New Zealand hospitals to air-freight additional stock from Australia.

Baxter Healthcare was also in contact with the Plastic Surgery Units in NZ to offer stock of additional IV medical fluids. Baxter also air freighted additional stock of Haemostats and Sealants from Australia and the US to meet initial demand to ensure operating rooms were adequately stocked.





S&N uses global reach to source woundcare products

Through close and frequent contact and coordination with all major Burns Departments and operating theatres across the country, Smith & Nephew NZ assisted at a global level, comments Jamie Maloney, S&N New Zealand national sales manager for the Advanced Wound Management division.

The company brought in additional woundcare products and equipment and supported the ongoing treatment needs of the impacted patients.

“There was a significant increase in product volumes needed to treat these patients which fully depleted stock held at NZ warehouses, and in some instances across Australia.

“We had a strong global response to the additional needs and were able to source stock not only out of the UK but also across multiple global warehouses. Airfreight was used to be able to meet the needs of the burns theatres.

“Certain key products used to treat these patients have a very tight and defined timeframe for use,

and logistics proved challenging at times to get product through to these theatres in time.”

Maloney says customs clearances, warehousing and local logistics were already strained leading up to the Christmas rush with multiple courier company vehicles and depots stretched beyond capacity to meet the additional needs of this response.

“Goods at times were received and accepted after hours at multiple locations in response to this, and multiple S&N representatives actively worked to deliver stock where possible to fast-track this process.

“We supplied more product than usual to the burns operating theatres around the country from day one and into the new year, as many patients required multiple and ongoing surgical treatment.”

covid-19 pandemic



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The pandemic that
shook the world



Life hasn't been the same since the COVID-19 virus struck the world.

On January 12, 2020, the World Health Organization (WHO) confirmed that a novel coronavirus (COVID-19) was responsible for respiratory illness found in a cluster of people in Wuhan, China. WHO urged Governments to prepare to activate their pandemic plans.

The first case of the disease in New Zealand was reported on February 28, 2020. New Zealand's borders were closed to non-NZ residents on March 19 and by March 26, the country had gone into nationwide lockdown under Alert Level 4. Since then Kiwis have become familiar with the terms "stay in your bubble", "test, track and trace" and "work from home".

Fortunately, New Zealand's policy of "go hard and go early" has seen the country eliminate the virus twice and return to Alert Level 1. However, it has been at the expense of its economy, tourism and normal life.

While not an emergency in the same sense as the Christchurch terror attacks or Whakaari/White Island eruption, the COVID-19 virus has caused severe disruption to normal business and supply lines, and high demand for some medical supplies. The following stories illustrate some of the challenges faced by the health and medtech sector during recent months as we unite in battling this pandemic and maintaining an efficient health system.



Working in partnership produced the goods under COVID-19



Covid-19 has been the first real test of New Zealand's pandemic preparedness, says Shayne Hunter, deputy director-general Data and Digital for the Ministry of Health.

He says the magnitude and dynamic nature of the pandemic meant there was a need for strong and decisive leadership in what is a largely devolved system where individual players in the health and disability sector have responsibility and autonomy for their own decisions around purchasing and maintaining medical devices and equipment.

“There have been other epidemics and pandemics before, but Covid-19 has been unprecedented and resulted in substantially higher domestic and international demand for Personal Protective

Equipment (PPE) and other medical devices.

“The priority was to understand the critical medical devices and consumables needed that were not manufactured or able to be sourced within New Zealand. These included PPE, sanitisers, swabs, test kits, reagents, ventilators, oxygen and devices to assist breathing.

“The next priority was to support the supply chains of those companies servicing New Zealand, which meant providing assistance to ensure they could access the raw materials they needed and so on. We also needed to understand the tipping points for hospital capacity and make sure the health system wasn't overloaded.



“There is no doubt that we were building a plane while flying it. Globally, no one knew what the best ways were to prevent or treat this virus, how to protect against it and how this virus would affect people who contracted it. A coordinated effort across government and the private sector meant we could rapidly secure devices and equipment in a highly competitive and constrained global supply chain. There were many people and organisations involved in this effort, including DHBs, PHARMAC, suppliers etc and we met regularly (at least twice a week) to work through any issues.

“Sourcing the supplies the country needed was done in partnership and I want to thank everyone who worked tirelessly over that period to ensure we could get critical supplies into New Zealand and then distributed to those who needed them.”

Hunter says, from memory, the Ministry has just hit 1 billion items of PPE.

“The Ministry started off with simple categories of PPE which included level 2 medical grade disposable masks, air particulate respirators, nitrile gloves, hand sanitiser, antiseptic wipes, isolation gowns, visors, goggles, glasses and aprons. We’ve recently added level 3 surgical masks due to their short supply globally. We have secured over 130 ICU ventilators and distributed 113 to DHBs. We have secured pumps, monitors, humidifiers and high volumes of tests and swabs.

“The Ministry and DHBs had planned for a national health emergency. They maintain a strategic national supply of critical clinical items, including PPE, body bags and sanitiser, to ensure health services have continued access to them during large or prolonged emergencies that generate unusual demands on normal stocks or supply chains. However, there were gaps in the planning about how PPE would be procured, distributed and maintained to mitigate the risk of shortages.

“The devolved system of managing and distributing PPE stock for operational use was not able to manage the increased flow of stock needed during the Covid-19 response, and DHBs identified that some of the national reserve stock they held had expired. This made it difficult to predict how long supplies of some devices



and equipment would last. We also needed to supply PPE to parts of the health and disability system that we wouldn't normally supply to, and we were working with a wide range of non-DHB organisations as well as DHBs. At the same time, our own understanding of COVID-19 was rapidly evolving along with our infection control policies. In that environment, it was initially difficult to know how much stock we would need.”

Hunter says the Ministry centralised the sourcing and distribution of PPE on April 1 to ensure that supply of PPE was distributed quickly and equitably across the country and to ensure effective stock rotation and replenishment and to establish national inventory management processes. This centralised system is still in place and maintains a minimum of one-month supply for a high pandemic use event.

“On centralising the procurement and supply of medical devices and equipment specific to our COVID-19 response, we sought an urgent injection of funding. We leveraged all supply relationships domestically and we were fortunate enough to have some of our businesses in New Zealand help us access their networks. Bringing the commercial and public sector worlds together to work for the greater good of the country was a humbling experience and we wouldn't be in the position we are today without some of our newly founded relationships.

“Managing the logistics of this task was difficult in the lockdown period. There was also the issue of where to store all of the essential supplies that were being made or brought into the country. We needed to be able to verify the quality of supplies coming into New Zealand and work out how we could bring, say, a specialist into the country if a piece of essential equipment broke down and there was no one here able to fix it.

“We leveraged the regional relationships through DHBs and primary health organisations (PHOs) to make sure stocks could be distributed quickly and efficiently. We were fortuitous enough to have the Ministry of Business, Innovation and Employment (MBIE) cement a contract with Mainfreight and work alongside our Customs colleagues to move large containers quickly from ports and into warehousing facilities.



“Hard work and New Zealand’s team of five million meant we could reduce the time spent in lockdown and could get back on track through the changing alert levels. In the early stages of the response, business, communities and other agencies all pulled together to make things work smoothly and efficiently.

“I can’t speak highly enough of the partnerships we had with DHBs, the private sector and the all-of-government response. We worked closely with DHB procurement teams, shared services procurement, and with a range of companies experienced in sourcing and distribution.

“Medical supply firms in New Zealand only carry small quantities of medical equipment and devices but we needed large quantities and we needed them quickly. The domestic supply market was able to tide things over, but we needed to get forward orders in place and booked on freight to ensure we had national coverage. We had firms outside of our medical equipment suppliers working around the clock with their international contacts to book production, have people on the ground to load and unload cargo between aircrafts, on the ground in the middle of the night in China to make sure we could drop a plane in and pack it in 80 minutes. But as I have said, we all pulled together to make things happen.”

Hunter says relationships with suppliers continue to be very important.

“They have been our partners throughout, along with the many other parts of the health and disability system. Suppliers have helped the sector source items like Nitrile gloves and air particulate respirators particularly. These items are in significant global shortage. Together we have worked closely to ensure that what we have sourced met international quality standards. We have had to upskill in a number of areas such as the review of testing certificates, ISO standard measures, currency of batch products, international laboratory accreditation, and so on. Test reports and documentation are now critical to ensure we get the best quality equipment and devices to support New Zealand’s public health response.

He says it was very important that suppliers had representatives in New Zealand.



“Now we can leverage relationships at the DHBs with suppliers and the PPE and logistics relationships we have formed for direct contact with the Ministry COVID-response hub. Having individual and centralised approaches across the supply chain provides for greater monitoring and provides New Zealand with greater levers and negotiation capacity that can be used.”

Hunter says the important lesson has been the need for a wide range of effective working relationships and partnerships. Other lessons are that verifying the quality of products (through citing samples and checking test certifications and document) has also been critical.

“Each time we purchase medical devices and progress them to DHBs we are taking responsibility for reducing and preventing COVID-19. We literally have the health of the country at risk and we can’t afford to make any mistakes or cut any corners.

“Having points of contact in Customs, Worksafe, MBIE and across the DHB procurement teams has been vital. I think one of the most important lessons that we have learnt is to touch, feel and clinically check everything thoroughly and to keep checking and reviewing products. We have learnt a lot and we continue to learn more.

“From our perspective, I think the suppliers responded extremely well to the needs of the domestic market, but COVID-19 has made all of us realise that we need to factor in the diversity of our country and our workforce profiles.

“We adjusted well to the COVID-19 environment. There was no change to business and indeed Zoom, Microsoft teams and our mobile devices were running hot throughout the lockdown. Online ordering and distribution made life a lot easier.

“Globally, governments, states and jurisdictions were all competing for the same product, and demand far exceeded supply. At the same time, we could not skimp on quality.

“Our normal suppliers couldn’t meet all of our demand so we were forced to look elsewhere overseas, and it was surprising how much counterfeit and poor-quality product was being manufactured internationally and entering the supply chain. Some areas across the globe experienced cargo getting hijacked, which is why we had our own security on the ground.

“But there were pleasant surprises along the way, too. I was really surprised by the number of innovative, willing people and organisations who came forward with offers of assistance to help us access what we needed either here or overseas.

“We have learnt and continue to learn a lot about the global supply of PPE and medical equipment. The teams pride themselves on their ability in a small country to be looked on as leading the way in securing and quality assuring medical devices and equipment.”

Supplier relationships so important

When COVID-19 hit New Zealand, examination gloves and ventilators were an initial focus along with masks, gowns, face shields, hand sanitisers and wipes, beds and monitors, says USL managing director Karen Longdill.

USL also worked with the Ministry of Health to have COVID test kits brought into the country and, initially, when oropharyngeal swabs were in short supply USL brought some in.

“We have supplied a number of ventilators and patient monitors, some ICU beds and infrared thermometers too,” says Longdill.

Delays in shipping and space on airlines for freight was a problem along with the delays the company has experienced in some production of product. This remains the case at the time of writing.

“The extra costs associated with the lack of space via sea and air and the shortage of raw materials has seen high increases in the cost of some product.”

Longdill says the company’s staff have coped with COVID events remarkably well.

“We adhered to strict hygiene guidelines and made sure we were familiar with the requirements of each facility we visited. We held meetings with customers via Zoom, Skype and Teams. The office has been closed to all but those who must be there.

“We divided our warehouse in to four teams - two inwards and two dispatch and have made sure they are not in the building at the same time. An additional cleaning regimen was implemented in our warehouse also.

“We have provided extra cleaning and sanitising stations around our buildings

“We have also developed online training programs for customers, so even though we were unable to visit we could continue to provide training.”

Longdill says the whole team have been amazing – a number switching from being office based to working remotely and working longer hours to ensure continuity of supply to the customers.

Two people have particularly been a real asset to USL throughout the pandemic and ongoing. Anthony Lane our general manager





of Operations who continues to work tirelessly to ensure we get the best possible service from our suppliers and also in relaying that information to the customers and Bridget Rood, our business development manager, who has spent countless hours sourcing product and ensuring it conforms to NZ standards.

“We have sourced product new to USL from new suppliers and have worked with NZHP, PHARMAC and the MOH to make sure we are doing all we can to assist. We also have a business outside of DHBs who we have assisted in sourcing PPE product.

“We have learned how important supplier relationships are and have managed to ensure USL receives good support from suppliers because of this.

“Communication with the likes of PHARMAC and NZ Health Partnerships is important - keeping them up to date with any changes so there can be no surprises for anyone. It’s vital to keep in contact with our team even though we are all working remotely - people need people and the pandemic has been very isolating for many.

“Of course, there are many others challenges like having enough of the right product in the country at the right time - and we are continually working on the plan for this.”

Distancing no barrier to Downs staff

The Downs team coped well with office staff working from home during COVID-19 lockdowns, comments managing director Ann Watkin.

“Likewise, our warehouse staff coped well working in the warehouse by themselves receiving and despatching equipment to the hospitals while working under social distancing requirements,” she adds.

She says for business as usual Downs had to manage increased air freight costs and some international delivery delays.

“Product normally air freighted by economy meant it was unable to be collected in Germany and we had to pay for Federal Express priority service to be able to deliver to our hospitals. Our receipt of goods, despatch to hospitals and general service to all hospitals in NZ went without a hitch despite the different working conditions.

“Our sales personnel made sure all their customers were well looked after despite not being able to physically visit the hospital unless in dire emergency.”

The company learned to be flexible in its work practices so that it could move at short notice from an office-based operation to one where most staff work from home. They also learned that technology must be able to cope with sudden change – they saw the advantages of a VOIP phone system and cloud-based technology.

“We learned how to communicate differently with our hospital customers as we were by and large not able to be present in the hospitals - to ensure they had the equipment and support they required and to assure them we were there to assist in whatever capacity they required,” concludes Watkin.





Large orders call for major effort

Early in the COVID-19 pandemic Becton Dickinson (BD), a large supplier of medical consumables and diagnostic instrumentation, began receiving multiple large orders for products considered to be key to healthcare delivery.

There was a lot of additional work to ensure stock could be provided in a timely manner. This was made more challenging by the supply chain disruptions and the new processes implemented to ensure abnormally large orders from individual customers would not impact on supply to other customers.

HealthSource placed a large stocking order for key consumable products for the Northern region DHBs to ensure back up product was available in case of supply disruption. Due to the constraints posed by global demand BD was able to propose a fulfilment plan whereby product was delivered in a staged fashion over several months.

Many BD manufacturing sites were impacted by capacity constraints. As a contingency against existing products being impacted by supply

disruption, we leveraged the extensive BD global manufacturing network. Alternative SKU's from other manufacturing sites were identified and sourced to ensure ongoing supply was available to meet the needs of the NZ market.

BD was also asked to support Pathology Laboratories to assist with the COVID-19 testing capabilities. To do this the BD Engineer based in Auckland flew to Christchurch during Level 4 lockdown to install the BD MAX™ System in the DHB Laboratory room where COVID-19 testing was being undertaken. This was achieved in one day rather than over multi days which would normally be anticipated.

Given the critical nature of many BD products in supporting the diagnosis of COVID-19 and treatment of hospitalised patients, BD is proud of the efforts made by our associates in New Zealand and around the world to ensure New Zealand patients had continuous supply of products throughout this challenging time.



Team spirit sees Adept through COVID challenge

When the COVID-19 lockdown came Auckland manufacturer, Adept, was requested to remain open and manufacture as much product for F&P Healthcare breathing circuit and devices as possible, says the company's founder and managing director, Murray Fenton.

"We are a major supplier of these components to F&P Healthcare including tooling," he explains.

"We managed to increase our staff to use our productive capacity to a continuous full 24/7 operation concentrating of their products. As a result, our sales to F&P increased.

"We had no issues with imported raw materials. Local agents or suppliers responded to increased demand very well.

"Our existing staff were completely co-operative

(several changing shifts or areas of work). Most design, tooling, and marketing people were able to work remotely. We have good cooperation from all our people. We have a high degree of team spirit throughout our plant.

"Our experience in manufacturing medical devices and conforming to regulatory requirements meant we discouraged (with advice) several individuals or companies who thought they could manufacture complex devices rapidly or cheaply.

"We were fortunate in our mix of products and long-term manufacturing that we did not have to do anything differently."

Mr Fenton says, "Our people are nearly all long-term employees and we look after them well. Our focus forward is to keep everyone in the loop as things change."

Kiwi ingenuity comes to the fore in COVID times



When COVID-19 hit New Zealand emergency dentistry services had to gear up to provide personal protective equipment for staff and to protect patients. Oraltec NZ stepped up to the challenge of supplying both private practice dentists and public hospitals with essential equipment, reports Oraltec director, Christine Bell.

“We sourced supplies of masks and face shields - both of which were a challenge. Our usual supplier of face shields was unable to supply because the EU banned the export of all PPE. We sourced both KN95 masks and level 2 surgical masks through trusted contacts in New Zealand who had strong connections in China, however, the cost was triple what it had been pre-Covid.”

Bell explains that the company designed and sourced some all-in-one face shields from Dannevirke (photo shown above) and imported frames for detachable face shields. The washable shields were made in Auckland as they were in short supply worldwide. She says Oraltec will continue to make these in NZ.

“Gowns too were a huge issue and we couldn’t find any suitable gowns due to issues with high minimum order quantities and high pricing.” Freight import costs were high due to there being less flights and airfreight space for cargo. Local courier deliveries were slow and parcels got lost.

“Our staff were amazing, many working from home, and did whatever they could to help the business. We did not have to physically go into hospitals or dentist clinics at all. We did a few urgent deliveries in person but it was touchless with physical distancing.

“All our team did whatever they could to help under difficult and challenging circumstances without complaining.

“We had to be flexible and adaptable as we didn’t know what would happen from one day to the next.

“Being open to new ideas and thinking outside the square is how we developed our detachable face shields. And taking calculated risks by purchasing in bulk to manage shortages better to help our customers. Many of the initiatives have been permanently adopted for the benefit of our customers and the efficiency of Oraltec,” Bell concludes.

Valuing the virtual opportunities

Terumo’s NZ Corporate Accounts manager, Dianna Van Daatselaar says Terumo’s NZ team were supported through COVID-19 pandemic remotely by regular virtual coffee catch ups and meetings.

“Flexibility and support are the drivers to maintain continued service to the hospitals via phone and virtual case management. The strength of this partnership came through during this time.

“We learned that virtual case management support is possible; face to face communication is valued by clinicians and suppliers are part of the team that supports the patient recovery.”



3M responds to COVID call

The arrival of the COVID-19 virus in New Zealand triggered an urgent demand from health authorities for quality Personal Protective Equipment (PPE). 3M's Health Care Business Group and Personal Safety Division teams answered the call. 3M is a leading provider of PPE and medical solutions worldwide for medical professionals, workers and the public.

During the pandemic, 3M remained committed to delivering the majority of PPE production to healthcare and frontline workers. Additionally, the team in New Zealand kept customers up to date on product availability and centralised product enquiries.

3M Australia and New Zealand sourced and provided additional stock of hand hygiene product. While difficult circumstances generated by the Level 4 lockdown produced lengthy lead times and challenging logistics nationwide as well as increased transportation times to the South Island, 3M New Zealand staff were resilient and committed.

They developed a high level of engagement with customers by holding regular, scheduled meetings. Customer requests were actioned by continuing to provide a sales support service throughout the mandated work-from-home period.

Strong partnerships key in COVID times

Pharmaco managing director Chandra Selvadurai says they were given full support by their international partners to ensure urgent deliveries arrived in New Zealand. Pharmaco supplies a range of resuscitation equipment, defibrillators and non-contact thermometers to support patients and healthcare staff.

“We were fortunate that our staff were set up home and able to work efficiently. We made sure that everyone was connected from senior management, line management and within teams. Our staff only went out to see customers if this was a direct request from the customer and all adequate precautions such as PPE were taken.

“Looking to the future, we intend to continue to build on our already strong relationships with suppliers - maintaining clear lines of communication and respect for the part we all play in supplying vital products.”

COVID challenge sparks MedTech innovations

Immediately following the lockdown, the Med Tech CoRE investigators began to network to determine how we could best respond to the pandemic and how technology might be able to mitigate the emergency, says Marcus King, principal investigator, Med Tech CoRE, engineer Callaghan Innovation.

He adds many technological opportunities appeared in those early days and a key thing that the research strategy leaders undertook was to triage those and connect to the most appropriate teams.

“A very early opportunity that I was managing in the first days was a proposal from a Canterbury GP, Dr Arthur Collins for a device to warn people, particularly first responders, when they were about to touch their face.

“I delegated this concept to one of our Callaghan Innovation electronics team which prototypes the idea and then provided this system to Elbaware for further development (alongside the concept which they already had come up with).”

King says a second opportunity was the need for a fever-screening system based on thermal imaging cameras which Cacophony and 2040 were using for predator detection.

“I arranged for and carried out the first human testing of their cameras with a group at Burnham military camp and Christchurch Police central station, reporting back the results while maintaining the strict health and safety protocols required during the lockdown period.

“After these promising results I arranged a group from the Auckland Med Tech CoRE contacts to undertake further testing with groups in





Auckland. As part of that wider testing my team filmed and produced a video training manual to rapidly train non-technical users, such as supermarket managers, how to use this early stage prototype device.

Furthermore, it became clear that a thermal reference point was needed to calibrate the cameras against during live use. I engaged a team from University of Canterbury Engineering to develop prototypes of the reference point.”

King says that in the early days of the lockdown it was recognised that PPE was in short supply for New Zealand health workers, as well as the general population and quantities of PPE were imported rapidly.

“Unfortunately, it transpired that the certification of that PPE was not as expected and we needed to develop a testing procedure. With Uni Auckland (UoA) I attempted to locate test labs capable of standards testing, only to find that there are only a small number of such labs globally.

Together with UoA we created a test procedure that would ensure that the acquired PPE was not hazardous to the health of our frontline staff.”

Several NZ clothing manufacturers pivoted their production to PPE, especially for facemasks that could be worn by people other than frontline health workers,

comments King. This preceded the later understanding that even homemade masks were beneficial.

“I became a point of reference for the testing / cleaning advice for these companies, particularly Untouched World and Cactus. This required significant literature searching for requirements of such masks including cleaning protocols and what domestic cleaning can achieve.”

As King’s personal core science area is stroke rehabilitation, he says it became clear that stroke rehabilitation had practically ceased worldwide due to the risks of health workers interacting with stroke survivors who are very vulnerable to respiratory infection.

He says that with Prof Denise Taylor and Dr Diana Siew he developed a stroke telerehabilitation development project including SHI Global and clinical partners Counties-Manukau DHB, Southern DHB, Waitemata DHB and ABI Rehab. This was submitted to the COVID-19 Innovation Accelerator Fund and although it was unsuccessful, is now the basis of an HRC proposal and the Tasman Biobridge opportunity.

In addition, as for the CoRE, Dr Siew became connection point to industry, government groups and others for technology, advice on regulatory and links to experts.



Navigating quarantine for staff one of the challenges of COVID

The main challenges in the COVID pandemic emergency have been getting staff to sites to support products. For example, service engineers to service equipment and specialist staff to install equipment like Linear Accelerators, comments Varian Medical Systems' senior managing director, Rebecca Cortiula.

"Our teams need to come in from Australia, so our teams must quarantine for 14 days in New Zealand and another 14 days on their return to Australia," she explains.

"Our staff have been very flexible, willing to support outside their normal roles and responsibilities and willing deal with 28 days of quarantine to travel to and from Australia to support customers and patients in New Zealand.

"All staff have done whatever it takes to support customers and cancer patients during this period, the willingness to go through quarantine lock downs for significant periods is an example of this.

"We have created remote solutions to allow customers to plan radiation therapy treatments remotely to help manage staff resources during the pandemic. Cortiula says it's been essential for the company to have clear policies and processes to manage border controls.

"It's also important to have consistency in Government bodies applying policies around border controls and the paperwork required for travel approvals."

And she stresses the need to work closely with customers to minimise the impact of pandemic controls on cancer patients.



Spikes in demand need careful management

As a distributor, InterMed Medical supplied a number of products used in the treatment phase of COVID - these include PPE, thermometry, ventilation, respiratory consumables among others, says chief executive Andrew Hickey.

“All these areas saw massive spikes in demand during the early phases of the pandemic response planning in March and April 2020.

“In the early stages of the pandemic, there were significant issues surrounding inbound freight to NZ. Once the borders closed, there was a dramatic reduction in air freight capacity which drove prices up significantly, and also made planning and visibility incredibly difficult.

“Added to this, there was a massive spike in global demand with all countries trying to source the same types of products with NZ being a small volume on a global scale.

Local distribution was also affected with huge uncertainty and delivery delays from couriers. This added to the pressure on customers and had the potential to reflect poorly on us even though it was largely beyond our control. We had instances where urgently required product that we had dispatched on time were not delivered for many days during the height of the pandemic.”

Hickey says these problems have since stabilized but are still present.

“Like most things during this pandemic, it has been a challenge but mostly people have adapted well and just got on with the job. There was a significant increase in remote communication (phone, email and Zoom) and when required to attend hospitals, there was strict adherence to company guidance and local hospital protocols. Everyone was focused on supporting clinicians to continue delivering good patient outcomes.”

Hickey says from what he has seen the whole industry has really stepped up during this process. Much more of a collective effort than that of a single person.

Although InterMed has always sold some PPE, the company did source some new ranges during the height of the pandemic which have been received well by NZ customers.

“In managing a business, it is important to stay calm and collected despite the disruption going on around you. As far as key learnings, Hickey says global supply chain and just-in-time inventory management has been under pressure during the pandemic. Separately, it is vital to have a plan – it will need to be constantly amended but it’s important to keep everyone grounded and give a sense of calm and control.

“People are resilient and adaptable. Be open, honest and keep communicating.”



Four months stock sold in a month

As the incumbent on the New Zealand Healthcare Partnerships Personal Protection Equipment (PPE) provider list, Jackson Allison's business in the period immediately after the Covid-19 notification meant what should have been 16 weeks' stock was sold in approximately four weeks.

"We were then given large orders from the Ministry of Health to fly in stock. Subsequently, a lot of this stock was eventually sent by seafreight," comments John Bell, general manager at Jackson Allison.

"We provided large quantities of respiratory masks, isolation gowns, cover gowns, overshoes, caps and aprons to DHBs and MoH. As mentioned above we sold our initial stock holding (which was BAU 14 - 16 weeks) in a matter of 4 - 6 weeks then placed large orders with our suppliers via official orders from MoH.

"We had problems getting stock to New Zealand as we sold out of stock held in New Zealand very quickly. MoH was helpful with airfreight in the early stages. Initially

the problems were getting stock from the supplier and the massive price increases, then getting stock from the supplier to the airport / port then to New Zealand. In a time of worldwide short supply we were only able to obtain orders for New Zealand. Because of 30 years of relationships in China our suppliers knew us, we knew them and consequently New Zealand effectively was able to jump the queue. Once stock was in New Zealand distribution was as normal.

"All our staff had worked remotely before so this was not new to them. The major difference was separating the warehouse and logistics teams so they could work in their own bubbles. We split the team into two then operated split shifts to accommodate, allowing time between shifts for cleaning.

"The whole staff took on the roles required of them. In particular, the senior management team, logistics and warehouse went out of their way to provide ongoing service."



Device reduces face-touching

Face touching is an important way that SARS-CoV-19 infection occurs. So, in response to the pandemic, Elbaware has developed a comfortable, low-cost, smart elbow sleeve to warn of imminent face-touching using a vibration alert.

This haptic feedback is triggered from the elbow to increase awareness and promote a change in behaviour. Reducing the frequency of face touching is expected to decrease the risk of hand-to-face viral transmission.

The innovation uses proximity and accelerator sensing with programmable software to define the 'non-touch' zone. The product addresses the only public health measure for which a solution is not currently available. Because it contributes to prevention and control of transmission it is best considered an addition to personal protective equipment (PPE) for those at risk.

This includes all those in public service roles including workers in shops, public transportation, health care facilities, and border control as well as those at increased risk, the elderly, Māori and Pasifika. User testing demonstrates acceptability and efficacy. The provisional patent has been filed.

Further technical development will use Bluetooth for user feedback, messaging, and centralised anonymous data collection. Planning for scaled manufacturing, sales and distribution are well advanced. The product will be useful for other infectious diseases and compulsive disorders.



Staff in action at all hours to meet needs

Medtronic's Cardiac Rhythm and Heart Failure (CHRF) team had to rapidly shift to remote care when COVID-19 lockdown started. The following months saw staff putting in long hours and mileage to support hospitals and patients.

"We expedited the supply of non-contract monitors for patients not previously monitored from home. Patient care shifted to exception care-based model and the CRHF team remotely supported clinical care," explains Liz Carnabuci, managing director of Medtronic ANZ.

"(The) Final version was simply facetime in theatre; phone connected to a drip stand so that the theatre was in full view. Changed operating protocol to pre-program devices based on clinical indication to focus only on acute care during implants."

Liz said the CHRF team in the Lower South Island had little provision to expedite acute cases early in lockdown-anticipated CCU beds being required for ITU and preadmitted patients for procedures that would have been spread over three months. The result was that Medtronic supported all cases in person; the onsite support was approved by Canterbury DHB management and greatly appreciated. Rose Harrison covered all actual cases at CDHB over the lockdown period.

The Structural Heart team had to drive from Auckland to Wellington (leaving Hamilton at 9:30pm arriving in Wellington at 3:30am) for a transcatheter aortic valve implantation (TAVI) list. The drive was essential because of a lack of internal flights and acute bookings from the operators.

The Structural Heart team's Jo Hall was outstanding. Driving the length of the North Island (during the night) to support her operators and their patients.

Jo supported customers in Wellington, Hamilton and Auckland and their TAVI program during lock down – flying, driving and staying in hotels. One example is supporting a TAVI in Hamilton starting at 6pm then driving from Hamilton to Wellington (through the night – a 6-hour drive leaving Hamilton at 9.30pm) to support a TAVI list in Wellington starting at 7.30am the following morning.

Medtronic's Minimally Invasive Therapies Group (MITG) also had to contend with the lack of commercial flights meaning many products had to come by sea freight taking three weeks instead of a few days, in particular there was a surge in requirements for its Video Laryngoscope products. These contain batteries - could only send two batteries in one cargo flight which did not even cover five percent of the handles sold.

As all electives stopped during lockdown, Medtronic's surgical territory managers had minimal work to do and needed to figure out how to support and stay in touch with customers remotely.

Respiratory monitoring territory managers were inundated with product orders, dealing with back orders, logistics, allocations and substitutions on a daily basis to ensure product reached customers.

"Karen Butler, respiratory and monitoring territory manager in Christchurch went above and beyond by working closely with the Operations and Logistics team in Auckland and Australia to get our Video Laryngoscope products faster into NZ. She was also responsible for doing all respiratory and monitoring allocations for NZ to ensure fair distribution among all accounts," says Liz.



Cloud-based systems came to the fore with COVID-19

Bamford provided PPE, thermometers and infection control products directly to hospitals. These are products we normally stock, but they supplied in significantly larger volumes.

“Our staff did really well to cope with the situation. We have technology systems in place, a cloud-based ERP and VOIP phones, to make working from home easy. Within an afternoon we were working as per normal,” says Bamford general manager Alex Bamford.

“Being a medical supply company over COVID was very black and white, relationships was upfront and honest. Because we’re a small family-owned company, we were very agile and able to act quickly. We could leverage suppliers to make a lot happen, and trust instincts and common sense to work out the right thing to do and just do it.”

J&J responds well in pandemic

J&J reports its staff have responded very well to the COVID-19 pandemic. The company says it made sure they were safe, and customers were supported either virtually or in person. Staff devised innovations to ensure service to customers.

The company says some of the challenges it faced included the cost and frequency of freight into New Zealand. It initiated split shifts and staffing requirements to maintain safety of staff and customers. Local courier capacity was challenging also. Plus, there were global distribution network challenges.

In some instances, staff went on site following request to manage inventory or support surgeons during COVID. J&J introduced more innovation around online training for staff and clinicians to overcome the communication challenges.

Team effort in response to COVID ensured continuity of supply



When Lisa Williams, PHARMAC's director of operations, was asked who was instrumental in minimising the impact of Covid-19 on the supply of medical devices and medicines, she says it was an ongoing team effort.

"Minimising the impact of Covid-19 was a key priority for PHARMAC, whether that be by ensuring continuity of supply, not overwhelming DHBs and suppliers with requests for information or mitigating the cost impacts being passed onto DHBs," she says.

"There were a large number of stakeholders and partners involved in the health sector response for Covid-19. PHARMAC's priority was, and remains, ensuring all New Zealanders have access to funded medicines and medical devices.

"There has been an increase in the number of supply issues that suppliers are faced with this year, and in most cases, COVID-19 has been the cause of this impact on medical device and medicine supply chains. We know that COVID-19

is likely to have global impacts on manufacturing and supply chains for the remainder of 2020 and beyond.

Williams says communications were sent to suppliers early reminding them to get

in touch if there was any chance of a potential supply disruption issue as, when early notification is provided, PHARMAC is in a better position to support suppliers and DHBs on a potential issue.

Current stock levels and forecast demand for several devices and medicines was sought from DHBs but, in doing so, PHARMAC was conscious of overwhelming the sector with requests for information and tried to coordinate with other agencies to minimise the burden of requests.

"We also engaged with contracted suppliers of hand sanitiser to secure additional supplies in March and April when it was clear demand was increasing significantly."

One of the key issues that suppliers highlighted to PHARMAC early on was the challenges associated with getting stock into New Zealand. This was due to the high cost of freight and, given the significant reduction in flights to New Zealand, lack of clarity whether stock would be on a flight or not. To support the medical device sector PHARMAC considered proposals for freight

support to assist with mitigating the risk that costs incurred by suppliers would be passed onto DHBs.

"We established a mechanism for suppliers to demonstrate genuine need for cost support, primarily as a result of increased costs of freight. This mechanism saw support provided to a small number of suppliers, to ensure that particularly onerous costs did not affect the ongoing supply of products. We were pleased to see many suppliers were able to manage without significant support, indicating good resilience.

"Feedback we've received from the sector is that suppliers that had signed national agreements with PHARMAC tended to have clearer contingency plans in place, which made it easier for all parties to know what the expectations were."

PHARMAC really appreciated the open and engaged communication with all our suppliers, and we are happy to have the opportunity to express our thanks, says Williams.

"Their responsiveness and commitment to ensuring New Zealand had access to the medical devices and medicines we required was unambiguous. Everyone involved in supply chain management was doing their very best, in what can only be described as extraordinary circumstances."

Sector partnerships the key to support customers in COVID-19 climate



New Zealand Health Partnerships (NZHP) main priority in the initial stages of the COVID-19 pandemic was to support our customers, the District Health Boards (DHBs), to look after their patients and local communities through meeting their continuity of supply needs, says Hayley Greatwood, COVID-19 Procurement Lead, National Procurement, NZ Health Partnerships.

“In a significantly disrupted global supply market our COVID-19 Taskforce worked early and quickly to secure essential ICU and non-invasive respiratory equipment, consumables and accessories, as well as COVID-19 diagnostic test consumables for DHBs.

“We worked closely with DHBs and the Ministry of Health to identify emergency equipment, consumables, device requirements, as well as sourced new supply goods and suppliers at significantly increased demand levels; and, we worked with existing national contracted suppliers. We responded to the surge demand requirements, changes to product specification

conformance and performance standards, and coordinated clinical evaluation with DHBs, where necessary.

“For ICU, respiratory, we facilitated national sourcing, purchasing, logistics management, order coordination, as well as set up a centralised warehouse and assembly facility for distribution readiness into DHBs,” she recalls.

For COVID-19 diagnostic reagent test and swab supplies, NZHP managed all sourcing, logistics and inventory management for COVID-19 reagent test kits, nasopharyngeal swabs and bio-hazard bags.

They liaised with major suppliers for COVID-19 testing consumables and platforms to risk-assess and to escalate supply issues.

NZHP coordinated and continues to monitor insurance cover for logistics and warehousing of the COVID-19 supplies.

NZHP needed a huge range of devices and equipment in large quantities:

- Nearly 300 ventilators by end of 2020, plus non-invasive ventilators, pumps and monitors.
- Test kit assays, reagents and consumables

for 500,000 COVID-19 test swab kits, to DHB and private laboratories across New Zealand.

- 1 million bio-hazard bags to transport COVID-19 test samples.
- Extraction platforms, plasticware and kits (isolate viral NA) and PCR platforms and kits (amplify RNA by putting it into DNA to allow detection).

NZHP had to move quickly to get stocks to the DHBs and GPs quickly and efficiently. The organisation collaborated with government agencies, private sector business consultants, logistics partners and suppliers at pace to get critical supplies into the country. It also encouraged DHBs to consider substitute products where appropriate.

NZHP says it collaborated with its suppliers and partners to get critical supplies into the country, as everyone pulled together in extraordinary circumstances to support the health system.

“Our logistics partners were also critical – they were key to the entire delivery to DHBs,” says Ms Greatwood.

She adds that all supply relationships are important, while on-going supply visibility



Hayley Greatwood
COVID-19 Procurement Lead

and regular communication continues to be essential.

“For laboratories, the local account representatives of global organisations played a key role in liaising around New Zealand’s allocation of their product(s).

“For ICU/respiratory equipment, local representatives played an important part in technical assistance and guidance for different requirements. They also liaised with their overseas offices to prioritise New Zealand orders.

“All suppliers continue to play a key role in ensuring their supply chain is visible and that we get early updates of any changes to plans and potential supply chain disruptions, and that we are continually informed of order lead time changes.

Ms Greatwood says there were lessons learned around supplier communication management, as well as supply chain resilience for on-going supply chain monitoring, as well as supplier’s own stock coordination and management.

“One aspect was the importance and need for a coordinated national approach across

the health system – a central coordinated approach for sourcing, ordering, storing and managing stock (for example, PPE).

“NZHP’s work on the Health System Catalogue, which has just received signoff from the Minister of Health and Minister of Finance, will support DHBs in this.”

NZHP moved quickly to enable our people to work remotely, to ensure business continuity. A special Taskforce was established by our National Procurement team; members of this were classed as essential workers so they worked from the office.

“Some suppliers were available 24/7 to answer questions or provide updates, as soon as information was known. The suppliers that were relied on during the early months operated with flexibility and urgency.

“Suppliers also worked as our advisory where we were not able to secure stock of approved products. Some partnerships grew stronger due to supplier’s problem-solving capability and commitment around on-going global supply problems.”

Baxter never misses a beat for patients at home and in hospital

In March 2020, Baxter contacted PHARMAC with an offer of support with contingency supply of 1Lt IV Saline. Baxter also increased production at its Oceania manufacturing plant in Australia shifting to 24/7 operation.

PHARMAC requested a supply of an additional 250,000 units of 1L Saline IV medicines from Baxter's global manufacturing operations. Baxter secured and delivered the contingency stock for New Zealand. The company has also worked closely with New Zealand hospitals to supply other medicines to support the national COVID response where requested.

Baxter has worked with New Zealand Health Partnership to supply large volumetric intravenous pumps to hospitals. The company has assisted with information on supply of Baxter Evo IQ syringe pump and consumables for both the volumetric and syringe pump. The company has also worked with local hospitals to supply PrisMax devices to the ICU for Continuous Renal Replacement Therapy (CRRT). This has required trainings to ICU DHB staff to be completed virtually in some cases.

Baxter Pharmaceutical Compounding facilities in Auckland and Christchurch has also worked with hospitals to meet increased demand for compounded medicines for the hospital and home.

The demand and planning team worked closely to manage increased demand and forecast while closely monitoring transport routes and Baxter's suppliers to ensure our customers received their required products and services in full and on time.





All Baxter non-essential staff started working from home on March 16, including, commercial, support and customer service staff. This was implemented to limit close contact and the risk of outbreak in its critical operational areas. All essential, pharmacy and warehouse staff remained at work with managed segregated shifts to minimise exposure risk, temperature checks on arrival and the use of masks on site.

All staff working from home have been supported with the required office supplies, and EHS training. Meetings, which were usually in person with internal colleagues and external customers, have been maintained using several virtual platforms. Training in some instances has taken place virtually.

Baxter organised virtual training across all business divisions especially with CRRT training for intensive care units and implementing its IV infusion platform in one DHB virtually.

Baxter says special mention is due to Andi Kohler, product specialist for CRRT, Continuous Renal Replacement Therapy. She has supported several DHBs in installing CRRT machines for intensive care and providing intensive virtual training which has been ongoing and received as very successful by her customers. The entire Baxter commercial team, across

Compounding Pharmacy, Nutrition, Medication Delivery, Renal and Advanced Surgery worked with individual customers to deliver life-saving medicines and medical devices, and to provide product support and virtual training.

Baxter Compounding Pharmacy staff have come to work every day during COVID - 19 for their designated shift, to provide life-saving medicines to all DHBs to support patients with chemotherapy, antibiotics and nutrition preparations.

The company's Warehouse team have also come to work every day throughout COVID - 19 and have worked in segregated shifts for additional safety to ensure products reach customers 'in full and on time', allowing customers to provide patient care.

Baxter also credits Roz Muirhead, HR & EH&S manager, who kept staff safe and support with safety procedures and protocols.

Janice Tylden, senior corporate business manager and Donna Johansson, corporate business manager, were noted for providing regular updates to hospital and department executives and supply chain managers across all DHBs and private hospitals on Baxter's management of supply and assessing the needs of each DHB.



COVID sees Olympus seize opportunities

Olympus New Zealand managing director, James Bowe, says the company experienced early supply issues for business as usual products which had components sourced from China, even though the product was manufactured in Japan.

“This took many months to resolve as stock holdings in Australia and NZ were quickly depleted,” he says.

“We moved quickly to secure importing of products via sea freight but the forecasting processes and systems were all based on airfreight models so this was a particular challenge to model what products and volumes may be required. Sea freight models have been more effective from some locations, for example, Asia-Pacific, and hard to adapt from other manufacturing sites, for example, Germany and USA.

“We have also seen increased demand in last three months for some consumable product lines as hospitals increase procedure numbers to address the backlog of patients and the resumption of screening procedures. Staff have responded and adapted well where possible.

“Our Service Centre was required to work on site throughout as an essential service to continue to maintain and repair hospital equipment. This became quite isolating for the small team.

“Our sales and field educators are used to working from home or remotely. But restricted access to hospitals required they switch to communicating over phone or video call primarily. There were inconsistent security requirements for hospital access and the team ensured the local hospital department could confirm their protocols for visiting supplier staff to follow.”

James adds the Olympus education team transitioned to video-based in-service and training sessions quickly and have developed multiple recorded in-service sessions and are offering regular webinar education sessions, which will continue for the long term.

He says one of the bigger challenges was for the Field Service Engineers for installations and troubleshooting of hospital-based equipment remotely. They put a lot of effort into working with the DHB Biomedical staff to achieve some great results via call and video call.

“When travel was required during level 3 or 4 the flight options were limited and not always possible logistically to get to some regional centres.

“The most recent lockdown created complexity for supporting customers outside of Auckland as most of our sales and technical staff are based in



Auckland. There was differing responses from hospitals in the South Island regarding accepting Auckland-based staff on site. Our premise was to be guided by the customer on their protocols, but the differences created quite a lot of uncertainty.

“There are also examples of sales specialists who supported their customers when hospitals significantly reorganized their services to designate a specific location for COVID-19 patients and separating out equipment that they required, for example, Waitemata DHB Elective Surgery Centre.

“In Endoscopy, where Olympus supplies a large amount of capital equipment, our team fielded numerous requests for technical information and support for relocation of equipment, for example, re-cabling and install, cleaning protocols for invasive respiratory scopes, infection control for cleaning of hard surfaces pre and post procedures using new chemicals and wipes for ensuring COVID-19 transmission prevention.”

James says the biggest and sustained operational changes are in the education area where the shift to expanding its online library of recorded in-services and running regular webinars has occurred.

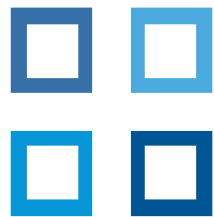
“Our confidence in this area has grown and we have also used remote support for new installations in several Pacific Islands, which New Zealand companies commonly support. It is clear, that travel to these countries will be limited for some time.”

Olympus initiated a new Urgent Medical Technical Support hotline service for equipment troubleshooting directly to contact a field service engineer, given they were restricted on travelling to sites.

“We used NZ-based engineers right through Australia to Western Australia-based engineers to offer this service from 8am 9pm NZT. We will continue to offer this streamlined method or technical assistance.

“Managing supply, logistics and accurate forecasting long term requirements to our manufacturing is paramount to delivering our service. Looking after our team members and supporting them enables them to be empathetic and supportive of our customers.

“Prudent financial management of shocks such as lockdowns and elective surgery restrictions is critical to stabilise the organisation. This will continue to create challenges as we restrict spend in some areas, for example, conference sponsorship which is a challenge that flows through to medical societies.”



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