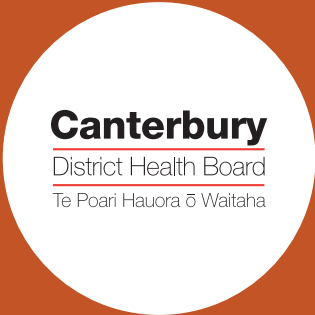# QUAL IT SUCCESS STORY

Canterbury District Health Board

Need

Assurance that the delivered project was 100% accurate and the testing process was completed quickly.

Solution

A test automation process, conducted by Qual IT, that ensured 100% accuracy of the information integration.

Outcome

Substantial savings in valuable clinician resources, equating to 4 months of man hours saved, achieved through just 4 days of automated testing.

Qual IT ®

CDHB: Driven by service quality

The Canterbury District Health Board is the second largest DHB in New Zealand, in terms of both geography and populace, serving over half a million Kiwis. Employing a workforce of over 9,000 staff across all services, CDHB is the main planner and funder of health services for communities in Canterbury.

In their continued dedication to the pursuit of exceptional quality of service, the CDHB executive management team recognise the value of reliable and robust IT systems, capable of delivering accurate and timely information to staff across multiple disciplines to provide better patient outcomes as part of an integrated health system.

A clear emphasis is placed upon ensuring that IT solutions present data to clinicians in a clear and useful format, especially in applications used to help decide which drugs are to be administered to a patient. Accuracy is understandably vital, with data integrity of fundamental importance.

IMPROVING PATIENT SAFETY, SAFELY

The introduction of new technology is important to improving the way medicines are managed so that DHBs can better deliver a superior quality of care and improve patient safety. CDHB is leading this initiative in alignment with Health Quality & Safety Commission NZ and the National Health IT Board.

"We are the leading DHB in New Zealand and the IT systems we develop and test here, are often rolled out in the rest of the country. So we were the first ones to be working on this database system", says Martin Frauenstein, Solutions Architect for the Information Services Group of the CDHB.

CDHB wished to implement a new software solution which facilitates the electronic recording of all medications prescribed and administered. The software would aid hospitals by quickly referencing the New Zealand Universal List of Medicines (NZULM), a drug database developed by and for Kiwi clinicians.

Initially, the client took the approach of manually checking that each drug represented in the software matched the records catalogued on the NZULM. Whilst not without merit, this approach was ultimately flawed due to the high volume of mismatches between the two systems.

A SERIOUS CHALLENGE, NOT WITHOUT RISK

This initial testing phase placed a huge burden on clinicians' time, requiring 8 full-time equivalent weeks to check less than 20% of the database. Clinicians were required to thoroughly compare the data in NZULM with that already in the new system, and ensure that the title, constitution, dosage and all other technical descriptions of each drug matched, all whilst ensuring a zero error rate.

Any inconsistency in data could have significant health implications for a patient's treatment, hence no room for error. Of the drugs checked at this stage, there was a compatibility failure between the two data sources of approximately 50%, due to one or more inconsistencies per entry, as well as the distinct possibility of human error resulting in oversights.

At this stage, the CDHB team made the decision to explore more efficient methods to verifying data accuracy within their new system. CDHB approached Qual IT to investigate if there could be a way to automate this testing process and utilise technology to aid the clinicians.

"One of our other IT vendors have used Qual IT's services. Their recommendation, and the fact that Qual IT were associated with the Health Informatics New Zealand (HINZ) organisation, convinced us to approach them for help with this project".

Ed Barton, Lead Test Analyst at Qual IT, was assigned to work with the DHB team:

"We decided to break down the test automation process into two parts, so they didn't run the risk of engaging us for a huge block of work and then realise that the process can't actually be automated. So we did a short piece of work to prove that it is possible and we can get the right testing outcomes. Will it give us the right information? Will it run fast enough? And will it be able to perform all the checks just like a human?"

Qual IT wrote some initial automation scripts using the Selenium Webdriver test tool. Using a small selection of the full dataset, the team was able to demonstrate with a 'proof-of-concept' that automation was a viable solution and that it could cover the whole database.

FREEING VALUABLE CLINICIAN TIME

The test automation process by Qual IT completely transformed the project and saved the CDHB clinicians potentially thousands of man hours in tedious, demoralising and labour intensive manual work. Furthermore, there was a significant reduction in risk and complexity by removing the complication of possible human error.

CDHB could also share the feedback of this testing process with the vendors of the application, and demonstrate that there were a number of areas where it could be improved and enhanced to ensure accuracy of the system.

This bespoke test-automation solution provided by Qual IT, saved a staggering 4 months of senior clinicians' time over just 4 days of automated testing. The solution continues to be expanded in scope and ongoing support provided to the client.

"The automation framework Qual IT developed for us has been implemented and is working well for us now.

Our test manager has taken the application and continues to manage and enhance it. The Qual IT team are still supporting it and they've come in a couple of times since it went live, for some fairly significant enhancements."

With this experience under its belt, the CDHB team is now setting up testing for the national program on behalf of the New Zealand Ministry of Health after which the new application will be rolled out across the rest of the country.

ACCURACY, SAFETY & SPEED

Martin Frauenstein says that aside from the technical expertise that Qual IT brought to the table, it was the relationship with them that made the project a success.

"The important part about it was that it was an honest, open relationship. They told us 'this is what you need, and this is why you need it'. Calling a spade a spade. No fluff. That's what I appreciated. Yes, the project works between two organisations, but it still comes down to the working relationship between two teams, and they [Qual IT] have built that relationship. The success of this project is a testament to them.

"What they developed for us took three to four days. If we'd continued with the manual approach of performing the testing, it would have easily taken us four to five months! And that is not using cheap labour. These are highly qualified, professional clinicians whose time we'd have used."

Ultimately, Martin says, it's not about saving money so much as delivering a high quality of healthcare and establishing CDHB as pioneers in leading the rest of the healthcare community in New Zealand.

"I am not in a position to say that they could've done anything better. They delivered in a time frame that allowed us to take significant project decisions.

We needed accuracy, safety and a fast turnaround in our project and Qual IT delivered."

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About Qual IT

Qual IT is New Zealand's largest provider of quality assurance services for information technology, working with some of the country's largest and most successful organisations including Transpower, NZ Police, IAG and New Zealand Transport Agency through offices in Auckland, Wellington, Hamilton and Christchurch. Formed in 2004 we have in excess of 230 permanent and contract quality assurance and test professionals.