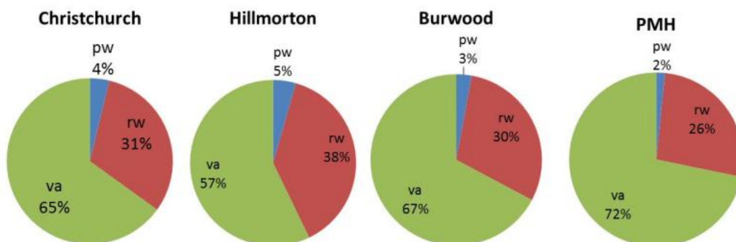
Opus Solutions, LLC
Composing Excellence in Health Care

CASE STUDY
Canterbury District Health Board
Te Poari Hauora ō Waitaha
Clinical Pharmacy

Clinical Pharmacy uses Lean to decrease wait times for patients to see pharmacist by 41% and eliminate No Cover Days

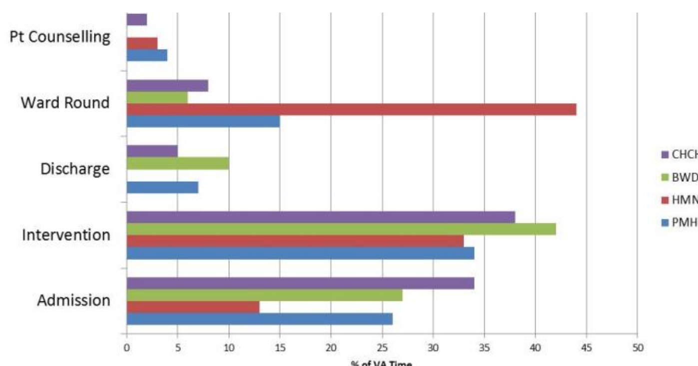
New government requirements to expand service levels were the final straw for an already stressed Pharmacy Services organization at New Zealand's Canterbury District Health Board (CDHB). With no immediate ability to bring in new Pharmacists, the system turned to Lean instead to search for capacity and developed a new approach to clinical pharmacy that resulted in dramatic improvements.

Pharmacist Work Time by Facility
[pw = "pure waste" va = "value added" rw = "required waste"]



"Pure waste" was low across all sites. Redesign of Value Added work would be necessary.

Variation in how pharmacists spent their time, both across pharmacists and across sites.



Resource Investment

"The answer came back at 26 FTE as a ballpark figure," says Paul Barrett, Pharmacy Services Manager, referring to initial calculations for additional Pharmacists required to deal with the new national reporting requirements imposed on clinical pharmacy. "We went to the table and got sent away. They threw up their arms in horror and said no way."

Instead, the CDHB assembled a Process Excellence team, with guidance and training from an Opus Solutions consultant and experienced internal team members that had worked through prior improvement efforts, to identify areas of improvement and ways in which to better manage resources.

Reallocation of work time, team work, and standard work emerge as main areas of improvement

An initial Assessment of pharmacist workflow showed that there was not much "pure waste" at all in terms of what the pharmacists were doing. They were busy and working hard, with no significant delays related to information flow or supplies. This meant that rather than common Lean methods such as 5S and kanban, the focus of the improvement work would need to be redesign of the value-added work and leveling of workloads.

Observations revealed pharmacists working under large amounts of variation and autonomy. "The pharmacists would go out and do whatever they could. They did it all their own way across the different wards, with nothing being standardized," says Megan Harris a member of the team.

Staffing was always a challenge and patient wards regularly had no coverage at all.

Vision Workshop

It was clear that a key question needed to be answered: "What is the role of clinical pharmacists?" Each person had a different answer.

Key stakeholders including pharmacists, doctors, nurses, senior management, and Community Pharmacy representatives were invited to a Vision Workshop to help clarify how clinical pharmacists added value to customers across the value stream. A vision for clinical pharmacy services emerged with a heightened focus on being a proactive and collaborative member of the care team, far from simply chart reviewers policing the paperwork. The Process Excellence team now had a solid foundation to begin improvements.

Implementing a Team-Based Work Approach

With 10% of patient wards regularly running without a Pharmacist each day, there was already a desire to move towards a team-based model. However, this would be different. "We've set teams up before and they have still worked as individuals," says Ruth Tramschek a Pharmacist and member of the improvement team, "not this team approach where they actually prioritize together and work as a team".

They realized that to truly work as a team relied upon standardization of work, consistent communication, and prioritization of patients based on clinical need rather than geographic location. The idea of a single pharmacist being assigned to a particular ward was eliminated. Now, broader team assignments mean that all pharmacists within a team have responsibility to ensure that the patients under their collective care are covered. The possibility to leave a patient ward with "no cover" was eliminated.

Team Huddle Agenda	AM	Noon	PM
Team to identify patients new to the team.	×		
Delegate initial tasks for technician	×		
Team to review and discuss significant patient and follow-up patients from previous day.	×	×	x
Team to review and update action list.	×	x	×
Prioritise patients (new and follow-up) on clinical need using prioritisation score and patient follow-up information	×	x	
Discuss other commitments for team members e.g meetings	x		x
Delegate tasks	×	×	

A New Vision for Clinical Pharmacy

- Proactive (rather than reactive) role
- Shift focus of pharmacist to the front and end of the patient journey
- Remove pharmacists from supply
- Clearly defined roles
- Prioritise by need
- Every patient/ward covered every day
- Clear indicators of chart issues for existing patients
- Clear understanding of meds/changes throughout entire patient journey

While many Pharmacists had a deep belief that they needed to see every patient chart every day, there was neither the time nor the need to do so and they would regularly go home frustrated. Each Pharmacist managed the constraints in their own way – some focused on new admits, some focused on chart reviews, and some just responded to whatever seemed most urgent on any given day. A prioritization tool was developed that allowed the team to prioritize patients in a consistent way, ensuring those with highest risk or greatest need were seen first.

The Pharmacy Technician also plays a new and expanded role in the new team. Previously, they primarily dispensed and compounded medications. Now, within the team they are compiling medication information upon admission and pre-populating the medication information card that patients are sent home with.

A core component of the team-based approach is the use of team huddles. Huddles now happen 3 times a day, with each meeting having a standard agenda. During these huddles, the team addresses priority patients and develops a plan of action. Pharmacists may then work together as a group or split off separately, reconvening for a 2nd and 3rd huddle at the middle and end of the shift.

Task List

Shared View Handover for Wards 23, 26, AMAU

Date	NHI	Patient name	Ward	Action required	Priority	Assigned to	Tech done	Follow up required	Completed
21-May			23	yellow card	Mon	Sandra	Yes	MMS Referral	
22-May			23	yellow card	Tues	Sandra	Yes		
23-May			26	yellow card	Tues	Sandra	Yes		
23-May			23	yellow card	Tues	Sandra	Yes		
28-May			AMAU	yellow card	Tues	Sandra			
28-May			AMAU	MMS Referral on dx	Tues				
28-May			23	?spironolactone rxn, CARM report	Wed				
28-May			26	Yellow card printed to give out	ASAP			prepared already	
28-May			23	Warfarin Education, PE	ASAP			for discharge 29/5	
29-May			23	Pt on Daptomycin stock on order	Wed				
29-May			26	Yellow Card	Wed	Sandra			

Sheet1 Sheet2 Sheet3

Creating Standard Work

"We couldn't have done a team without standard work" states Victoria Kershaw, another Pharmacist on the team. "Lean is not mean. Just because we're not a production line doesn't mean we can't use Lean principles and standard work."

In addition to standardizing how patients are prioritized and how key information is communicated, a Medication Admission form was developed to help standardize medication documentation by pharmacists and technicians. This form drives the admissions standard work process, assists doctors in prescribing upon admission and discharge, and helps reduce errors. It has also helped to reduce time spent in searching through notes and charts. Most importantly, the standard work is easy for the staff to learn and to follow.

The importance of task lists and communication in building trust

Anna Mcgregor, a Pharmacist and member of the improvement team, expressed common reservations about the new team approach, "Continuity and knowing the patients were my big concerns."

An initial fear with the new system was the possibility of issues falling through the cracks because no individual pharmacist covered the same ward with the same patients. As a result, centralized tasks lists were developed by the team to facilitate communication and ensure follow-through.

After implementing the task lists, Anna re-addresses her concerns, "It just hasn't been a problem. As long as you continually provide information to the team, it will get done and you can kind of rest easy and not have to run around and chase information. I might not personally know about the progress of Mrs. Smith each day, but I know that someone is following up on all of the things I was concerned about when I admitted her and I can see her chart again later if I really want to. And if it is really important that I follow up, I can say so at the handover meeting."

Canterbury
District Health Board
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(Attach Label here or Complete Details)
NAME: ______ NHI: ______
GENDER: ___ DOB: ______ AGE: ___ WARD: ______

Pharmacy Service

Medication Admission Form

MEDICATION ADMISSION FORM

Information sources (tick where used)
☐ Patient ☐ Carer ☐ Pts meds
☐ GP phoned / letter / fax
☐ SAP ______
☐ Pharmacy phoned / fax / eSCRV
Pharmacy: ______
Phone ______
☐ Yellow Meds Card Date: ______
☐ Discharge Summary Date: ______
☐ Clinic letter ☐ Other ______
☐ Rest home transfer:

Adverse Drug Reactions/Allergies

Substance	Reaction
1.	1.
2.	2.
3.	3.
4.	4.

☐ No Known Adverse Reactions

Information sourced by : ☐ Pharmacist ☐ Technician
Name: Date:
Signature: Pager:

Medications and Supplements Prior to Admission Regular and PRN (prescribed, over the counter, complementary)

Name - Form	Dose	Frequency	Discrepancy	Complete Reason for Discrepancy

Clinical Notes / Comments

Discrepancy signed by Doctor
Name:
Signature:
Date: Pager:
☐ Team contacted

Blister packs: ☐ Monthly ☐ Weekly

Pharmacist Clinical Review completed	Name: Signature:	Date: Pager:

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Exciting Results

When talking about the benefits she has seen with the team-based model, Victoria says, "It is more efficient, it is more supportive, it gives better patient care, it gives better continuity…should I keep going?" The work load has been leveled and distributed across the team. Also importantly, the new methods ensure knowledge is held by the team and not by the individual, which allows for continuity even with part-time team members.

David Meates, CEO of the Canterbury District Health Board recalls, "It was exciting." We changed the conversation. We knew they needed additional resources, but instead of just adding resources, we had to ask "where is the value-add?"

Improvements were piloted in the General Medicine wards at the CDHB's Christchurch Hospital and have begun to roll out across the rest of the hospital and district. Initial results in the General Medicine wards are dramatic:

100% Reduction in No Cover Days

The pharmacy team completely eliminated "No Cover Days" (days in which any given ward had no designated pharmacist). After implementing the team-based model, the number of "No Cover Days" has decreased to zero from previously having 10% No Cover on average across the hospital and 22% No Cover for the specific General Medicine wards that piloted the new model.

Patients First Seen by Pharmacists

An average reduction of 41% in time it takes for a pharmacist to first see a patient (those patients waiting the longest are seeing an even bigger improvement: 58% reduction in time for patients at the 90th percentile).

Medications Reconciliation

With the development of the prioritization tool to help see high priority patients first, the pharmacy team has seen a 65% increase in medicine reconciliation.

Discharge Reconciliation

A 5% increase in reconciliation of flagged complex discharges is only the beginning. As discharge planning and communication across the organization improve, this will show further impact.

Proactive Interventions increased by 123%

Pharmacists are now documenting significantly more proactive interventions, reflecting both an increase in proactive engagement as well as improved data collection driven by standard work.

Recognition for Ground-Breaking Work

"Doctors can actually tell what Pharmacists do now," say Victoria and Ruth, "the critical work that people have been doing is now more widely understood and acknowledged."

And the recognition extends well beyond the city of Christchurch. Other health boards have already sent representatives to see the new methods first-hand. And even in the early stages of spreading the new methods across their own system, Anna and Victoria were invited to present the team's work at the 2012 New Zealand Hospital Pharmacists Association's national conference. The duo shares, "It is our primary conference, I think they could see that it was something that everyone needed to know about."

The Value of Outside Eyes

A new set of eyes can be refreshing to an organization looking for change. Ruth values the outside eyes and commitment of external team members, "They can ask the hard questions, the constant 'whys?' and help to keep us on track in terms of timelines and managing the challenges. No one in the department would have had those skills or the contacts in the organization."

Change is always difficult, and the greater the change, the greater the challenge. People that have been through it before lend credibility and experience. The team members themselves were not without early doubts, says Anna. "I remember the first week of the project and thought 'I've just made the biggest mistake'… I was hesitant to even put my hand up to be involved… but I wouldn't change that for anything. I'd tell anyone else, you've just got to put your hand up for this sort of thing. I've never been part of a project that actually created change… that actually got enough people to say 'this is a good idea'. Usually you get little changes, but not this big – not the whole way you work."

It's about bringing a new set of tools to the table and new approach to problem-solving. Paul concludes, "If I'd known it was going to be this good, I would have been even more enthusiastic about it from the beginning. I just really didn't understand what we could achieve at that point."

And reflecting on the initial frustration at being told no, he now looks back on the work and notes "if you can do that much more with what you've got, why wouldn't you? It showed us we didn't need what we originally thought. And we'll get better still. There's enough fodder for the next 5 years…"