

Improving quality of care while reducing costs

***The Middlemore Hospital Very High Intensity
User project - the role of community pharmacy
in integrated care to intensively manage the
highly dependent patient.***



Purpose

“A medical model of health care is being systematically dismantled, and a new social model based on individual responsibility for change with community and state support created.”

***The Pharmaceutical Journal, 11 Sept 2010;
www.pjonline.com***

Globally, healthcare expenditure is overwhelming our ability to pay for it. Demand is increasing exponentially as the population ages, with rising levels of chronic conditions a key area of concern.

In New Zealand, demand is far outstripping our ability to pay for it with Treasury figures showing that health spending grew by more than twice the GDP growth rate from 1995–2005 and is projected to double by 2050.

The need to contain costs is driving change in the way we deliver health services – worldwide. The solution is seen to lie in primary-secondary care integration with social and community support. Helping patients and families change health behaviour is, increasingly, a more important focus than prescribing new medications.

In New Zealand, policy frameworks encourage an integration of services. District Health Boards have a major role to play and a responsibility to realign funding models to develop community pharmacy as part of an effective integrated approach.

Various different integrated care models are being piloted around the country. One of these is Middlemore Hospital's Very High Intensity User (VHIU) programme, an integrated care model designed to improve care of frequent presenters at the Emergency Department and establish/re-establish effective care in the community and general practice.¹

Repeated episodes of hospital care may make it hard to achieve continuity and clarity of community care. The VHIU programme is a unique model of care that is considered to be at the forefront of progress in this area. Previous pilots from the Counties Group are regularly cited² in systematic medical reviews and literature.

The VHIU model of care identifies and addresses underlying inadequacies in management of frequent presenters:

- Poor continuity of care and information sharing .
- Focus on psycho-social problems .
- Lack of knowledge about all issues impacting patient health.
- Lack of behavioral change support at community level.

It has evolved over the past decade through the work of Professor Harry Rea, Professor of Integrated Care and Medicine at the South Auckland Clinical School, and Gray Maingay, Chronic Care Pharmacist at Middlemore Hospital's ED along with a team of committed health and community practitioners.

In 2009, the DHB approved a business case for funding a pilot VHIU programme. Early evaluations indicate it may be reducing VHIU ED hospital admissions by up to 50% while also improving patient and health outcomes.

A key to its success is the multi-disciplinary team working at a community level to identify and resolve all issues that may be impacting the patient's health – ranging from living conditions, cultural beliefs and emotional health to income and educational status.

“Continuing to treat a frequent presenter's biochemistry without considering what else is going on in their life is futile. We need to be making behavioral changes and it's essential to have a holistic view, an understanding of what else is driving them to achieve this.”

Professor Harry Rea

Indeed, medications adherence is a major problem for the VHIU patient due to the volume and complexity of medication regimes. The community pharmacy is a

key resource in this respect - being utilised to provide intensive support for the patient in their homes. Community pharmacists encourage, persuade and support patients to take their medications effectively.

The purpose of this paper is to provide a summary of the VHIU model, some key findings and implications. The Pharmacy Guild sees it as a leadership model demonstrating the value of a working partnership with community pharmacy as part of an integrated health care system.

“I have no doubts at all that the VHIU programme can provide a significant long-term return on investment.”

Professor Harry Rea

The philosophy of care is accepted, the issue is how best to implement it. The study is undergoing evaluation around its effectiveness, including a randomised controlled trial to assess the effect of the programme on acute hospital demand; a process evaluation to evaluate programme delivery; measures of patient outcomes; and measures of costs.

Executive Summary

“Often our ability to treat is greater than their ability to fully understand. The patient isn't to blame. We need to be persuading, encouraging and supporting them to manage their health.”

Gray Maingay

Our current medical model of care focuses on delivering a prescription to treat a condition.

This works remarkably well when the patient understands their illness, the medications and how to take them – very often they don't.

There are multiple determinants that impact people's health and medical adherence, from literacy and numeracy through to living conditions, income, access to housing, culture, religious beliefs and health beliefs.

Medicines are implicated in the vast majority of patients enrolled in the VHIU programme. The model of care needs to take into account the patient's whole world – otherwise continuing to prescribe and titrate is futile, if not dangerous (see case study one) and extremely costly.

The basic model of care is comprised of four fundamental elements:

1. Identify the VHIU patient.
2. Pre-assess the patient for possible unaddressed risk factors such as demographics, social issues,
3. mental health etc.
4. A multi-disciplinary team visits the patient to glean a full understanding of the problem.
5. Refer appropriately for management (very often the community pharmacy).
6. Develop a care plan and discuss with the GP and practice nurse.

A structured risk assessment system identifies potential issues that may have been missed many times in a clinical setting, ranging from living conditions and mental health to cultural beliefs and education. A multi-disciplinary team of nurses and allied health workers, including pharmacists, then visit the patient's home to gain a more complete picture of the patient's underlying problems.

Various studies have shown the benefits of this multi-disciplinary case management approach. Phillips et al³ demonstrates that it has a positive effect on psychosocial factors for frequent presenters. Similarly, individual care plans for specific patient groups have been shown to reduce hospital admissions and decrease the number of investigations carried out in selected patients.²

The VHIU programme demonstrates that it is possible to improve coordination and continuity between primary and secondary care. Better co-ordination results in fewer mistakes, less confusion and empowered patients who are better able to self-manage their health.

Some of the key findings from the study¹ are:

- The VHIU programme may reduce return visits to the ED by as much as 50%.
- Medicines adherence is most often implicated in the VHIU patient.
- Many are unable to manage their medicines.
- VHIU patients are frequently referred to the community pharmacy for ongoing medicines compliance support.
- Long term conditions are common in the VHIU patient – only long term strategies are effective in managing them.

Improved information sharing between medicines providers is also important to this project, enabling community support services to help educate patients on the use of their medications.

The crucial link between the health system and patient self-management is the community pharmacist who has already established a personal relationship and built trust with the patient.

Pacific Island male patient with a malignant tumour in the gastrointestinal tract.

The patient was in complete denial about his health and did not understand his diagnosis or prognosis which had not been explained in a way that he could understand.

Background - He told the VHIU team he was not in pain (taking morphine once a week at most) and attributed this to daily walking, his spiritual faith and desire to believe that he did not have cancer.

He had been receiving cancer medication by courier but not taking it – telling the VHIU team that his friends had advised that “it cannot possibly be cancer because cancer kills you and you are not dead”. He did not understand the relationship between a tumour and cancer and pinned hope on the two being quite different.

His financial circumstances were a concern and a recent burglary had left him and his family with little resource.

A referral to advanced care planning or a hospice was considered to be a long way off in his journey of understanding his health status.

Action – Various problems and realities around his condition and prognosis had to be explained. The team organised careful follow ups with a GP and interpreter or Samoan-speaking GP in his practice. This discussion needed to cover the problems identified, and probably others that the VHIU team is still unaware of.

Key Findings

(see Appendix for full analysis of figures)

The Problem

In the year ending February 2010:

- 64,409 patients presented to the Middlemore ED 88,565 times
- 1711 were VHIU patients and had 8756 presentations
- 61 % VHIU patients stayed overnight
- the total bed days for VHIU patients for the year were 25,768
- the median was 10 bed days per VHIU patient
- the total cost of VHIU patients was \$31.5 million.

The Solution

- Integrated care programme.
- Coordinated primary and secondary care.
- Multidisciplinary team approach.
- Holistic approach
 - medical
 - psychosocial.
- Emphasis is on self-management
 - good links with primary care
 - community based organisations
 - appropriate access to secondary care

Background

The Counties Manukau District Health Board services the fastest growing population of any district health board in New Zealand, currently at 498,480 and with a growth rate of 2% per year expected to reach 631,320 by 2026.⁴

It is also the most socially deprived community in New Zealand with the poorest health status - of which chronic conditions such as diabetes, cardiac disease and chronic obstructive pulmonary disease (COPD) are major contributors.

The demand for bed space now means that patient length of stay is under considerable pressure, to the point that Middlemore Hospital has shorter stay times than many hospitals worldwide.

The ED is “swamped” by an inexorably increasing workload with a high level of patients who are returning repeatedly. A priority focus has been on finding a different way of managing them that will reduce the frequency of visits, improve quality of care and health outcomes and free up resources for other patients.

In a parallel trend, there is an ever growing number of people with long term conditions⁵ – for which comorbidities are the norm.⁶ This is a worldwide phenomena due to treatments being developed and made available that turn many illnesses that were acute and fatal into long term conditions. Yet current primary care and secondary care systems are better designed to care for single, “acute” medical conditions^{7,8}.

Attempts to adapt to the distinctly different and more complex demands of long term conditions continue to challenge health systems internationally.^{9,10} While the literature outlines emerging best practice models of care in the United Kingdom and Canada, these are not necessarily applicable to New Zealand due to the vastly different funding scenarios. Local solutions are required.

The VHIU is a pioneering programme to coordinate care between ED, secondary care and primary care that has evolved at the front line over several years. Elements of this approach have already been tested with promising results.¹¹

As a structured programme, it is now demonstrating clear benefits in achieving a better understanding of the patient, a better handover between the hospital, GP and the community and better preventative management at a community level. The result is better health outcomes for patients and a potential freeing up of hospital resources.

A Pacific Island male patient who had ceased taking medications for the treatment of diabetes, cardiac and gout conditions.

The medical non-compliance was possibly due to the patient fears around the risks associated with modern medicine. He was instead taking Chinese herbal medicines.

Background - The patient had not told his doctors (GP and hospital consultants) that he was not taking his medications. His doses, possibly as a consequence, had been considerably increased and each time he took them, he felt seriously ill.

The patient, unemployed and living at home with his wife, had a low mood and was not leaving the house unless it was with his wife. When the VHIU team visited, he had taken one day's medication over the previous three weeks. His blood pressure at the time was high and he had retired to bed, initially reluctant to engage with the team. He also had pitting oedema below the knee.

The VHIU team - including a cultural worker - spent time talking with his wife who eventually brought out the old medication packs that had not been used. They contained nine different medications that have since been able to be significantly reduced due to current compliance.

Action - The team discussed in depth the medication benefits, the need to continue taking them, the benefits of keeping clinic appointments and the need to always tell doctors the truth about medication regimes. He was also advised to stay active, get outside to improve mood, restrict fluid intake and avoid his regular fizzy drinks.

Follow ups were booked with the GP and cardiac clinic along with a diabetes review with the team advising the patient to always bring his blister pack for sighting before re-prescribing.

The cultural worker followed up to reinforce the messages in Samoan and support the family to engage better with his health providers. He was encouraged to continue with his medications and return to the GP if he was feeling low.

The VHIU Model of Care

“Helping very high intensity users take their medicines effectively is crucial - pharmacists are a key resource in this respect”¹²

The VHIU model of care focuses on integrating primary and secondary care with the use of community resources to provide patient centred support such as medicines compliance counseling, proactive monitoring and information feedback links to other health professionals.

The model includes a medical and social review, a multi-disciplinary planning approach with a designated “navigator” and assertive follow up, self and family management, and involvement of community based organisations.

However, the main focus is preventative – optimising ongoing care and reducing subsequent admissions through linking primary and secondary care systems. With GPs no longer always intimately in touch with their patients and becoming increasingly advanced in biomedical treatment, this linkage is important to ensure all patient issues are being addressed. The essential components involve members of the team connecting patients with their GP and with community care.

- Home visiting by an appropriate team including a practice nurse, pharmacist, social and/or cultural workers plus others as appropriate.
- Inter-professional approach.
- Culturally appropriate case conference with social and cultural workers.
- Care planning.

This also helps identify problems that can arise from disruptions in continuity of care, common with VHIU patients who tend to be referred to multiple specialists - increasing the risk of error.

As a preventative model of care utilising community support, it is envisaged that the whole process could eventually be driven by the primary care sector - relieving hospitals of a major burden.

1. Identification

The current definition of frequent presenter (VHIU) used at Middlemore includes any adult (age 15 or over) presenting to the ED on five or more occasions in the preceding twelve months. Those under the active care of the renal or haematology service are automatically excluded; surgical, orthopaedic, obstetric and gynaecological patients may be excluded after triage.

While the choice of five visits as an indicator of risk was largely intuitive, according to Gray Maingay, and based on their experience and observations, it has since proven to be a most effective determinant of patient risk. According to an Australian study¹³ into the characteristics of frequent users of EDs, previous studies have varyingly defined frequent ED presenters as those with between 4 and 10 admissions per year.

The Middlemore ED computer system flags those attending for the fifth or subsequent time in a year. The software behind this flag provides a first and partial filter to match the intended definition of frequent presenter.

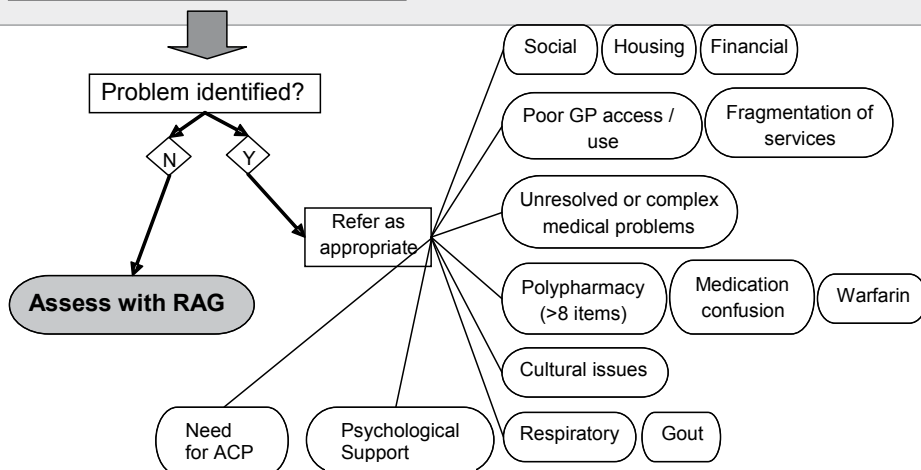
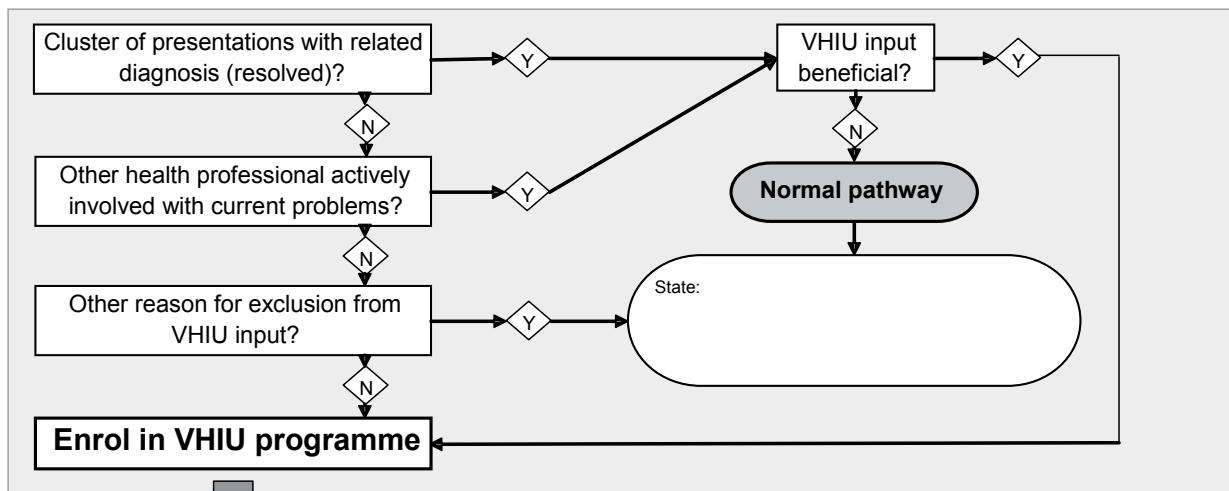
2. Assessment

For each patient who is flagged, the VHIU staff use a short initial checklist to review the electronic patient records for current and previously identified problems such as whether or not the cluster of presentations with related diagnosis have been resolved and whether or not other health professionals are actively engaged with the current problems. See Figure 1 for a flow diagram of the “filtering” process. Patients who are still included have an interview structured around a risk assessment guide (RAG), a screening tool modified from Degeling’s observations in the United Kingdom.⁹

The RAG tool is ideally used before the patient has left hospital but is otherwise done in the patient’s home. The current RAG tool consists of 31 prompt items and a checklist for actions or referrals. It involves a 15 to 20 minute conversation and assesses issues not covered in a clinical setting, such as demographic, social (including cultural and linguistic), health service related, mental health, pharmacy and clinical.

The complexities of their healthcare needs may have been overlooked and repeated referral to the GP or specialists is unlikely to address the social problems that may have not yet been investigated. Thus, the purpose of the RAG is to help identify the important patient issues that may have been missed on repeated occasions, by a focused clinical approach.

VHIU Triage Guide



***Exclusion reasons:**
 Haematology
 Palliative
 Pregnancy
 Dialysis
 Psych
 Rest Home
 Other

****Risky Medicines:**
 Including number of medications
 Medicines of particular interest include:
 1 Medicines with narrow therapeutic window e.g.
 • Digoxin
 • Carbamazepine
 • Lithium
 • Phenytoin
 • Warfarin
 2 Long term opioid therapy
 • morphine
 • oxycodone
 • fentanyl
 • sevredol

“When you visit a patient's home with a multi-disciplinary support team, including a community pharmacist, a nurse and a social worker with cultural and linguistic understanding, you can talk to the whole family in a way that reveals a complete picture of what is happening,”

Maree Jensen, Researcher and Academic Director, School of Pharmacy, Auckland University

The RAG has so far proven to be the most effective structured approach for identifying other underlying issues with a patient whose disease state has already been well looked into in a clinical setting.

Specialist nurses and/or the pharmacist will visit the patient either in the ward or at home and hear the patient's concerns, understandings and expectations about their health issues. Navigation of the health system, literacy, cultural beliefs, coping mechanisms at home and various other barriers will become better understood as a consequence.

3. The care plan

After the RAG assessment, each patient is considered by a wider multi-disciplinary group and one team member is delegated as the “navigator” who then arranges any, or all, of:

- a more extensive review of secondary care or primary care medical records
- a home visit to assess needs and living circumstances in more detail
- a multi-disciplinary meeting with primary care
- referral to secondary or primary service or social service agencies
- sharing of the comprehensive clinical record and care plan amongst the multi-disciplinary healthcare team.

The “navigator” then follows the patient frequently and assertively if needed, and will advocate for them with other health or social agencies - either in person or by phone or other communication.

Male patient with depression; admitted to Middlemore after attempted overdose.

The patient was unkempt, agitated and swearing about his health and emotional state saying he “couldn't care less about his life at present”.

He had been mentally unwell for some time, having become more depressed due to an upsetting conversation with his son that stimulated the attempted overdose.

Background - He had been seeing a health psychologist but had failed to turn up to his last appointment. After following up with him, the psychologist referred him to the Cottage Community Mental Health team because of his severe depression.

The VHIU team visited the patient in January, who was living in a boarding situation and insisted on meeting them outside, stating the house was a mess.

He showed the team his blister packed medications (dated October 2011) stating they were his latest medicines. These medications did not match his latest discharge letter.

Action - With the patient's permission, the medications were taken away and his case discussed with the GP and pharmacist. The pharmacist advised that the patient had not collected his latest blister packed medications.

A discussion about the medication regime revealed one antidepressant was supposed to be discontinued in April and a new one started.

The patient was visited three times by the VHIU team over the day. At one stage he said that, without his medication he felt unable to do anything and “...if I had a gun I would put it to my head now”.

After further liaison with the GP and psychiatrist, the VHIU team confirmed the medication change and organised for the pharmacy to alter the blister packs and deliver them immediately to the patient.

Ongoing monitoring by the pharmacist, combined with the appropriate medications, made a dramatic difference in the patient's condition.

As the case studies demonstrate, this may involve a patient being visited multiple times alongside intensive liaison with other health providers to identify and resolve problems. Ongoing support may entail intensive follow up to ensure the patient is being monitored and supported.

Patients remain enrolled in the VHIU programme until a decision is made collaboratively that they are receiving effective care and support from community services and have been integrated back into community care.

In practice this process lasts from a few days to a few weeks.

Examples of the range of services and outcomes credited to the VHIU team include:

- effective advocacy for better housing
- acceleration of outpatient review or medical investigations
- medical case note review revealing clinically important disconnections of knowledge between medical services
- better coordination of healthcare
- shifting a Pacific man from a rest home where no Pacific languages were spoken into one where staff spoke his language
- sorting medication confusion, bringing patient understanding to medication regimes and, if necessary, arranging for close ongoing support from community pharmacists.

Any time a patient is flagged, the same process is repeated so that a patient not enrolled in the VHIU programme on the first occasion may be on another, or a patient who has been discharged from the programme may be re-enrolled.

Anecdotes within the VHIU programme to date and from the evaluation of the earlier pilot which tested the underlying concepts,¹¹ suggest that this programme may reduce the return visits to ED by VHIU patients by as much as half.

It is important to note that the VHIU focus is on preventing the next admission rather than early discharge at the index admission.

[See appendix for analysis of figures as at February 2010]

A Pacific Island male patient on multiple medications, confused and struggling with compliance following dispensing changes.

Patient was also suffering weight gain and ankle swelling/inflammation.

Background – The patient's blister pack had remained unchanged from February 2011. However, on his last dispensing from early December 2011, an extra medication was added and dosages of two others changed – these were dispensed separately to the old blister pack.

The patient had since been taking both his old blister pack medications and the new medications. The problem was compounded by some non-compliance and a misinterpretation of the dosage changes in one medication.

Action: The VHIU team visited his home, noting his concern about his current ankle swelling and a weight increase of around 3kg.

The team liaised with the hospital team who confirmed the new medication regime and rearranged his current blister packs to reflect new prescribing. The patient was advised to renew his prescription in the next few days. The VHIU team advised pharmacy about concerns regarding dispensing new medicines in packets on top of old blister packed medication - resulting in confusion and risk for patients.

A follow up included a return to the GP for new medication and daily weights, with a return to the GP if his weight changes by more than 2kg in two days.

The patient was enrolled with the community pharmacy to assist with medication monitoring and to provide compliance support.

Business Case

“A VHIU patient costs Middlemore Hospital at least \$18,000 a year. A community pharmacist monitoring and supporting that patient for a period of time will keep them out of hospital. Get that wrong and they're back in hospital at great cost.”

Gray Maingay

The VHIU project was initially allocated \$800,000 for one year by the DHB. Ongoing funding will depend on the results of current evaluations.

The business case states that the VHIU project aims to improve patient care co-ordination and to establish or re-establish, effective care in the community and general practice.

The VHIU project has identified that DHBs can save money by reducing ED admissions through multi-disciplinary management of patients on medication. Therefore, in terms of funding, it is necessary to consider the total cost of a patient and the potential savings - rather than a single cost unit. Figures from the VHIU project¹ available to date demonstrate this:

- In 2008, 1711 patients age 15 or over, in 8756 presentations were flagged.
- 61% of these presentations resulted in an overnight stay.
- A median of 10 bed days per patient per year.
- A total cost to Middlemore Hospital of \$31,500.

The project is under continuous evaluation to ascertain admission reductions and cost savings and it is expected that projected savings forecasts will be available within the next 12 to 18 months.

While the project focuses solely on the VHIU patient, there are many other risk areas to which the model could be applied.

Currently, the programme is relying on community pharmacists to participate without being explicitly funded. They are generally the VHIU's local pharmacist and choose

to participate to help their patients and assist in proving the value of community pharmacists in integrated care.

The only funding available is from the fixed dispensing fee per dispensing of each medicine and limited MUR funding, if appropriate and available.

While most community pharmacists are willing to go the extra mile for the sake of the patient and for the sake of change, it is not sustainable. Traditional funding models mean that most community pharmacists cannot support the necessary investment (time, extra staff, training etc) to extend their call of duty and reach out to intensively manage their clients in the home.

The programme shows that DHBs benefit from funding not only the critical role of the pharmacist in identifying and referring the VHIU patient onto a multi-disciplinary team for management, but also investing in the community pharmacy - where most often the solution sits.

Policy Drivers

“Pharmacists can play a greater role supporting doctors and nurses in delivering services under specific care plans for targeted patients, such as those with chronic conditions.”

National Party 'Better Sooner More Convenient' discussion document

The Government's drive is for a public health system that achieves **better, sooner, more convenient** care for all New Zealanders.

To achieve this, health providers are being encouraged to move toward more integrated care systems utilising roles within the health system along with organisations and services within the community.

There is an increased responsibility on DHBs to devolve services to the primary care sector including GPs, nurses and other community based services.

As such, DHBs across the country are currently piloting a range of programmes integrating primary and secondary healthcare systems.

The Ministry of Health New Zealand Primary Healthcare Strategy calls for delivery of high quality care through improved access and equity, facilitated by integration between service providers and development of culturally competent multi-disciplinary primary healthcare. It outlines roles for community pharmacy as a provider of education in addition to medicine supply and distribution.

The Medicines New Zealand Strategy (MedsNZ) [ref Ministry of Health, Medicines NZ] calls for increased roles for pharmacy and highlights the central position of community pharmacy in assisting patients to understand their medicines appropriately, monitor side-effects/adverse reactions and optimise therapeutic outcomes through medicines use and adherence.

Clearly, the policy frameworks strongly encourage investment in integrated models of care, such as the VHIU project, that are:

- improving continuity between primary and secondary caregivers
- utilising community resources to provide long term home based patient care
- reducing hospital admissions through empowering patients at home
- ultimately, improving patient care and health outcomes.

Implications for Community Pharmacy

“The problem of medical non-compliance is exceptionally complex and to understand it fully requires a multi-disciplinary team working together and respecting each other's skills. Until community pharmacy is in a position to gain that respect - then barriers will remain in place.”

Gray Maingay

- **Inter-professional relationships** - The need to improve relationships between community pharmacy

and GPs, DHBS and PHOs has been identified as a key barrier to successful integration.¹⁴ The VHIU project is breaking down barriers through mutual respect for the value of different skill sets, information sharing and collaboration that is enhancing the services of all health providers.

- **Adverse medicines events/adherence** – The VHIU programme relies heavily on the community pharmacist to provide intensive medications management for a number of VHIU patients. During one weekend alone (12-14 January 2012), 12 patients were enrolled in the VHIU programme, 11 of which involved medicine issues.

It's widely acknowledged that medicines events and non-adherence are a significant burden on health systems worldwide. German researchers¹⁵ have estimated that nearly 6% of hospital admissions are directly related to adverse medicine reactions and that approximately 30% of these events were preventable.

“What I do is futile unless I can refer the VHIU patient to the community pharmacy for ongoing management and support,”

Gray Maingay

New Zealand research¹⁶ has found similar results with a 1996 study of 6579 medical records finding the proportion of hospital admissions associated with an adverse event was 12.9%

Other studies show that medical non-adherence may be responsible for almost 10% of hospital admissions.¹⁷

Solving the complex problems of adverse medical events and non-adherence requires a holistic understanding and long term strategies to support long term solutions.

As the WHO¹⁸ states, effective intervention may have more impact on population health than advances in biomedical treatments. The VHIU programme demonstrates the essential role of the community pharmacist in effective intervention.

“The GP passes the ball to the pharmacist in the form of a prescription. That is the starting point from where the community pharmacist should take responsibility for the outcomes of those medicines.”

Ian Johnson, Community Pharmacist, Immediate Past-President of the Pharmacy Guild of New Zealand

Empowering the Community Pharmacy

"As things are, community pharmacists are stymied by the lack of a business case that enables them to invest in the provision of long term holistic support services."

Ian Johnson, Community Pharmacist, Immediate Past-President of the Pharmacy Guild of New Zealand

Current funding models have effectively commoditised and corporatised our model of care. The community pharmacy is forced to focus on a volume based approach subsidised by their private business activities, rather than the provision of quality service, measured by better client outcomes.

Concurrently, as highly qualified medicines experts, the community pharmacist has long been providing services for which there has been no reimbursement - outside of the sale of a product or pharmaceutical. There is no mandate for them to take initiatives to do more.

Yet, when they do take the initiative, it is effective as demonstrated by another leadership model, the Pharmacy Guild Gout Project [see appendix]. This involved volunteer community pharmacists participating in a three month pilot project managing patients with gout and also identifying patients presenting with pain who should be referred to their GP for investigation of possible gout. Complete with training seminars, guide books and comprehensive patient information, the study revealed significant benefits for the patient and an engaging and rewarding experience for the community pharmacy.

To achieve a fully integrated model of care in the healthcare sector, pharmacists need to be empowered through provision of an adequate level of remuneration for services that have historically been provided for free, or subsidised by retail sales.

The VHIU project demonstrates evidence that community pharmacists are willing and capable of committing to provide additional quality primary healthcare services.

Hospitals can significantly free up their resources for more patients through investing in community pharmacy as intensive managers of the VHIU patient.

The Auckland School of Pharmacy Study - Factors Affecting VHIU Adherence

The VHIU programme is providing valuable information for potential tools that can forecast patient risk of non-adherence.

The University of Auckland School of Pharmacy is currently carrying out a research project:

1. to measure the extent of medication adherence
2. to investigate the predictors of medication adherence in the VHIU population.

This may help fill gaps in research that, while suggesting that medication non-adherence accounts for a substantial percentage of ED visits, provide little insight into the factors relating to medication adherence in the frequent users (VHIUs) of EDs.

The study is of 100 randomly selected VHIU patients who presented to the ED at Middlemore Hospital between 1 March and 31 May 2011, are taking at least one chronic medication and have available records on the Testsafe electronic database of dispensing records covering most pharmacies across Auckland.

Final results are yet to be released, pending publication later in the year. However, initial findings provide some key learnings:

1. Patients need to be supported, not blamed.
2. The consequences of poor adherence to long term therapies are poor health outcomes and increased healthcare costs.
3. Improving adherence also enhances patient safety.
4. Adherence is an important modifier of health system effectiveness.
5. Improving adherence might be the best investment for tackling chronic conditions effectively.
6. Health systems must evolve to meet new challenges.
7. A multi-disciplinary approach towards adherence is needed.

The research project is also likely to result in the development of modelling to predict medication adherence in all hospital presenters, allowing early intervention to support their compliance and prevent future repeat admissions.

“Hospitals have to respond to frequent presenter pressure on the emergency department. Not only do they need to change outcomes but change the expectations of the frequent presenter by showing them that they can get reliable and trusted assistance in their community, with their community pharmacist,”

Maree Jensen, Researcher and Academic Director, School of Pharmacy, The University of Auckland

The researchers look forward to the day when:

- long term condition management will be centred on family and patient self monitoring and will be organised from community owned, locally based organisations that will hold budgets for long term condition managements
- continuous quality improvement will be the hallmark of care provision
- information technology will provide the backbone for an integrated care system that supports a single shared patient record.

This vision can be achieved, but requires local pilots that are carefully evaluated and infrastructure developed around successful pilots, both requiring funding and vision at a level that does not doom the pilots to failure. The VHIU project may be the first such pilot.

Where to Next

An evaluation of the VHIU is currently underway, including a randomised controlled trial to assess the effect of the programme on acute hospital demand; a process evaluation into programme delivery; measures of patient outcomes; and measures of costs.

Alongside the VHIU programme, Counties Manukau DHB is running other programmes, including an APAC (Acute and Post Acute Care) programme that addresses the problems of ED workloads and management of long term conditions. The pharmacy findings are identically reflected in this programme.

It is in line with the continuing experience at Counties Manukau that confirms the need for primary-secondary care integration and integration with social support for long-term care management. 11,2,19

A consortium of the three Auckland regional DHBs and eleven PHOs including the Greater Auckland Integrated Health Network (GAIHN) is also currently developing a detailed project along the same lines in response to the “Better, Sooner, More Convenient” Request For Proposal.

Appendix

1. Numbers at Middlemore

An analysis of the February 2010 results show that of the 1711 patients identified as VHUs, the median was 56 years; 653 (38%) were age 65 or older (so eligible for Aged Care Services); 900 (53%) were women; 659 (39%) were European, 558 (33%) were Pacific, 323 (19%) were Maori, 102 (6%) were Indian, 35 (2%) were Asian, 22 (1%) were Other and 12 (1%) were or unknown ethnicity.

Fewest patients presented on Saturday (13%) and Sunday (12%), and most on Monday (16%). A total of 74% presented between 8am and 10pm (when most doctors are rostered at the hospital); and 56% presented between 8am and 6pm (when most doctors might be available in primary care).

In all, 56% of presentations were on Monday to Friday between 8am and 10pm. A total of 69% of all presentations were self referrals, suggesting a disconnection from primary care which has been noted in other studies of frequent presenters.

One hundred and sixty six patients (10%) were, or had been, on the Counties Manukau DHB Chronic Care Management Programme. Principal diagnoses on discharge ICD10 codes included diseases classified as: respiratory (18%), circulatory (14%), digestive system (10%), injury (8%), genitourinary (5%), endocrine (4%) and musculoskeletal (4%). These numbers do not account for co-morbidities. A record audit of 30 frequently presenting patients in 2009 found them to have an average of three chronic medical conditions, most commonly respiratory, cardiovascular disease or diabetes, and taking nine regular medications. Many had psycho-social problems.

2. The Gout Project – Evidence of a ROI

Between March and April 2011, the Pharmacy Guild of New Zealand and its members piloted a new initiative – the Pharmacy Guild gout project, that demonstrates the effectiveness of community pharmacists in managing patients with chronic conditions.

It was developed in conjunction with the Counties Manukau District Health Board (CMDHB) due to the extreme incidence of gout in the CMDHB area. A very comprehensive project, it included a full range of pharmacy and patient resources including training seminars, pharmacy handbooks, posters, shelf talkers, patient leaflets and medication cards.

Evaluations demonstrate that such a programme can work and that community pharmacists are willing to fully engage with a slightly higher level of service.

- 75 pharmacists attended the initial training seminar and 30 opted in to participate.
- All reported greatly enjoying delivering the project and found great satisfaction in empowering patients to take greater ownership of their condition.
- Patients were generally highly appreciative, reporting that while they had been given information about their condition during the original diagnosis, it was difficult to absorb.
- Patients were very receptive to advice about compliance and lifestyle issues and enjoyed learning about their health and doing something about it.
- The project reinforced the importance of patient counseling as it gave patients the opportunity to raise concerns or misconceptions they had about their condition.

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