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CONTENTS

This Issue in the Journal

- 3 A summary of the original articles featured in this issue

Editorials

- 5 Invisible care: do we need a Code of Rights to protect family and informal carers?
Harry Rea, Tim Kenealy, Nicolette Sheridan, Des Gorman
- 7 Geriatric medicine is becoming the core of hospital business
Matthew Croucher

Original Articles

- 9 The New Zealand informal caregivers and their unmet needs
Diane Jorgensen, Matthew Parsons, Stephen Jacobs, Hilary Arksey
- 17 How well is cognitive function documented by medical staff in the over-65 age group at the time of acute medical admission?
Joanne Rodwell, Valerie Fletcher, Ruth Hughes
- 24 Professional development perceptions and activities of psychiatrists and mental health nurses in New Zealand
Nikolaos Kazantzis, Sarah J Calvert, David E Orlinsky, Sally Rooke, Kevin Ronan, Paul Merrick
- 35 Smoking cessation education increases interventions in a New Zealand hospital: World No Tobacco Day revisited
Stephen Vega, Iwona Stolarek

Viewpoints

- 41 Health care policy and community pharmacy: implications for the New Zealand primary health care sector
Shane Scahill, Jeff Harrison, Peter Carswell, John Shaw
- 52 New Zealand's drug development industry—strengths and opportunities
Michelle M Lockhart, Zaheer U-D Babar, Sanjay Garg

Clinical Correspondence

- 59 Misuse of over-the-counter codeine-containing analgesics: dependence and other adverse effects
Geoffrey M Robinson, Sophie Robinson, Patrick McCarthy, Christina Cameron

- 65 Group A streptococcal toxic shock syndrome from a traumatic myositis
Sum Sum Lo, Anubhav Mittal, Ian Stewart
- 68 Medical image. Stuck in the stoma: an unusual cause of small bowel obstruction seen on abdominal computed tomography
Giovanni Losco, Brett Lyons

100 Years Ago in the NZMJ

- 73 Cancer research

Methuselah

- 75 Selected excerpts from Methuselah

Letters

- 77 Living with motor neurone disease
David Yates
- 79 We don't need a pilot bowel cancer screening programme: please just get on with it!
Guy Hingston
- 81 Queen Mary Hospital at Hanmer Springs
Roger M Ridley-Smith
- 83 Growth-promoting hormones are not used in the New Zealand poultry industry
Michael Brooks; for the Poultry Industry Association of New Zealand
- 84 High and increased support by Māori and non-Māori smokers for a ban on point-of-sale tobacco displays: national survey data
Nick Wilson, Richard Edwards, George Thomson, Deepa Weerasekera, Heather Gifford, Janet Hoek

Obituary

- 87 Barrie Russell Jones

Notice

- 90 University of Otago Faculty of Medicine Freemasons Postgraduate Fellowships in Paediatrics and Child Health for 2011



This Issue in the Journal

The New Zealand informal caregivers and their unmet needs

Diane Jorgensen, Matthew Parsons, Stephen Jacobs, Hilary Arksey

This study aimed to identify who the caregivers of people with disabilities were and if they needed any more support (such as, home help, assistance with bathing, financial, respite care) than they were presently receiving. Caregivers (300) were interviewed throughout New Zealand and asked questions about their present situation as a caregiver, and if they felt they needed more assistance. The results showed the majority (96%) of caregivers were not satisfied with the assistance they were receiving and most (85%) were stressed. Depression was evident in all age groups but was highest in caregivers aged 30 to 39. There seems to be a contradiction between the value we place on caregivers and what we provide to support them, both materially and psychosocially.

How well is cognitive function documented by medical staff in the over-65 age group at the time of acute medical admission?

Joanne Rodwell, Valerie Fletcher, Ruth Hughes

Changes in cognitive function in the elderly has a significant impact on prognosis and functional ability during an acute illness requiring hospital admission. Part of the examination process on admission should involve an assessment of cognitive function and this should be formally documented. This study found similar results to other NZ and international studies, showing that documentation of cognitive function is inadequate (approximately 60% in this study). The lack of documentation does not mean an assessment was not completed or cognitive changes were not noted by the team of doctors caring for the patient. Formal documentation is required for that admission to be coded, and therefore funded, appropriately. Acute illness resulting in changes in cognitive function, i.e. delirium, requires other treatment considerations and can affect both prognosis and functional ability on discharge.

Professional development perceptions and activities of psychiatrists and mental health nurses in New Zealand

Nikolaos Kazantzis, Sarah J Calvert, David E Orlinsky, Sally Rooke, Kevin Ronan, Paul Merrick

In New Zealand, 26 psychiatrists and 18 mental health nurses were surveyed to find out their perceptions and engagement in professional development activities and then results were compared to their Canadian and US counterparts. New Zealand mental health professionals reported attainment of therapeutic mastery and skill acquisition. New Zealand psychiatrists reported less involvement in case supervision, but rated supervision as having the greatest influence to their development. The results highlight areas of need for continuing professional development for these professions.

**Smoking cessation education increases interventions in a New Zealand hospital:
World No Tobacco Day revisited**

Stephen Vega, Iwona Stolarek

The aim of this paper was to examine whether or not training junior doctors, and other clinical staff, in the use of nicotine replacement therapy (NRT) and brief interventions for smokers to quit, had made some measurable difference to admitted patients who smoke. We found that following the implementation of the training our use of NRT in the hospital had significantly increased. The training was probably the strongest factor this increase, but other variables, such as changing our smokefree policy, are likely to have initially contributed to this change. The training provided centres more on clinical practice and steers away from the traditional counselling for smoking cessation



Invisible care: do we need a Code of Rights to protect family and informal carers?

Harry Rea, Tim Kenealy, Nicolette Sheridan, Des Gorman

‘Informal carers’ are the people who provide unpaid care and support for those who need it. Care can be personal, such as bathing and dressing; physical, such as housework, cooking and transport; social, such as companionship; and it might meet financial, spiritual or cultural needs, amongst others.

They are generally family or friends who provide this care because of a personal bond or obligation to the person needing care. They are the front-line and the foundation of our health and social service, providing perhaps 80% of all such care in the community. The New Zealand Carers’ Alliance estimates the value of the informal care at NZ\$7 billion per year:

<http://www.carers.net.nz/files/pdf/charitiestellgovtnottoappealhrtribunaldecision1.pdf>

In this issue of the *Journal*, Jorgensen et al provide evidence of stress and distress amongst informal carers in New Zealand.¹ Their respondents are a self-selected sample so it is not possible to use this data to estimate the size of the problem across the country. Nevertheless their findings are consistent with what we know from other sources nationally² and internationally.³

Many carers believe that caring is ‘just what you do’, and derive joy and purpose in their own lives. However, many carers become physically and emotionally exhausted, especially when there is no respite and little financial support.

Carers often feel driven by their personal relationships to continue working in a situation they could not otherwise tolerate. The burden they carry is largely invisible, is unevenly and unfairly distributed, and can have a huge effect on carers’ opportunities in life.

The unfair burden of care cannot be addressed in isolation—it is one part of a whole-of-system problem. Health Workforce New Zealand is currently engaged in critical service reviews that include exploring new roles, such as physician assistants; re-invigorating old roles such as enrolled nurses; codifying practice for unregistered workers such as personal care providers (who, for example, shower patients at home) and home support workers (who, for example, undertake housework for patients at home); and defining a scope of practice and likely regulation of community health workers.

The work of informal carers is strongly impacted by roles that others in the health and social system either claim or have thrust upon them, and therefore these reviews must consider the impact on informal carers of changes in the formal workforce.

The New Zealand Carer’s Strategy,² published in 2008, formally acknowledges the challenges faced by informal carers. Their list of intended actions is a good start, but no more. Some of the complaints of informal carers, identified by Jorgensen et al, could be addressed quickly.

We consider it simply unfair, for example, that support payments are dated from when a person applies, rather than from when entitlement starts. Many informal carers are not aware of what they are entitled to, and no passive information system will ever meet their information needs.

These problems are longstanding. However, they are becoming ever more urgent due to our aging population and the associated increasing burden of long-term conditions and multiple comorbidities, in the context of a burgeoning industry of high-technology and often low-utility end-of-life care.

The absence of informal carers from the arena of the healthcare professionals means that, to advocate for their interests, may require strong action outside of the systems of professional training and regulation.

We have a Code of Health and Disability Services Consumers' Rights, often referred to as a Code of Patients' Rights. Perhaps it is time we had a Code of Rights for Family and Informal Carers.

Competing interests: None known.

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Geriatric medicine is becoming the core of hospital business

Matthew Croucher

The medical care of the elderly is becoming the core activity of general hospital-based medicine and surgery in New Zealand and this will become increasingly evident over the next 50 years. In my view, younger adult surgery and medicine will become the exception and not the rule, and hospital doctors may consider the care of younger adults with standard single-diagnosis problems to be “practice” for the real job of caring for older people in all their complex, challenging glory.

Is this just a polemic statement? The main drivers for this trend are unarguable and simple: increasing longevity is the main current reason behind this massive population trend, and shows no signs of slowing down; and the slow ageing of the “Baby Boomers” will be the main force behind this dynamic in the near future.¹

An audit of admissions to Christchurch Public Hospital, not counting the Canterbury District Health Board’s (CDHB’s) rehab or geriatric wards in other hospitals, revealed that (in 1 week) 62% of general medical admissions were for people over 65 (in fact, 32% were 80 and over) as were 32% of general surgical admissions. Over the whole hospital, including paed and gynae units, 41% of acute admissions in Christchurch were over the age of 65; 38% of the general hospital outpatient visits that week were also for people over the age of 65.²

These statistics are especially challenging when it is recognised that the portion of the CDHB catchment area made up of over 65s from which these admissions and clinical reviews were generated was only around 13.6%.³ Since it is this ageing segment of the total population that is set to expand significantly, and since the fastest growing age demographic will probably be the over 85s, this is sobering news for health services indeed.¹

One response to this is to recognise that it is time for general and sub-specialist medics and surgeons, the nursing and allied health teams with which they work, primary care health services and the health system as a whole to wake up, smell the roses and learn as much as possible from geriatrics and its related disciplines. One of many lessons will be to accord “brain failure” the same level of respect with which heart failure, kidney failure and liver failure are currently imbued. Rodwell and colleagues demonstrate in this issue one of the features of this peculiar neglect.⁴

Delirium and dementia are very common among hospitalised elders.^{5,6} These manifestations of acute and chronic brain failure are predictors of mortality.^{6,7} Patients and their families tell me they are very concerned about the effects of malfunctioning brains, sometimes more so than they are about the other-organ disease that may have been the presenting complaint to hospital.

Standard inpatient care may be compromised if cognitive impairment is not taken into account as may standard outpatient follow-up. Lengths of stay increase, as do costs,

THE NEW ZEALAND MEDICAL JOURNAL



Journal of the New Zealand Medical Association
something hospital administrators are concerned about, for example, in
respect of high ‘hospital sitter’ / special nursing budgets.⁸

The first step is to improve diagnosis, something that Rodwell and colleague’s paper shows is not currently done well at Christchurch Public Hospital⁴—and there is no reason to think that other New Zealand hospitals do any better. The days of “STML”, “confusion”, “cognitive impairment” or worse, no entry at all appearing in discharge letters for people with dementia or delirium must surely be over. This is the equivalent of writing “acute abdomen” or “shortness of breath” as a final diagnosis after a surgical or medical admission and reflects an inability or an unwillingness to make a diagnosis of these common manifestations of brain failure.

Perhaps the main reason that this occurs is because there is little sense within our general hospitals of surgical and medical teams being confident that they can manage dementia and delirium themselves, certainly not as confidently as they can manage congestive heart failure. Why diagnose if you cannot recommend an effective treatment plan? Discovering the elements that constitute effective management plans for dementia and delirium are lessons to be learned from psychiatry of old age and related geriatric disciplines.

The challenge for geriatric services will be to become sufficiently integrated into general hospital teams so that this transfer of hard-won lessons and skills can occur smoothly, to the benefit of all.

Competing interests: None known.

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The New Zealand informal caregivers and their unmet needs

Diane Jorgensen, Matthew Parsons, Stephen Jacobs, Hilary Arksey

Abstract

Aim To identify the characteristics and demographics of the New Zealand caregiver and their unmet support needs.

Method During December 2007–August 2008, 300 caregivers were recruited to participate throughout New Zealand. Mixed methods data were collected by telephone, using two well validated scales: Centre for Epidemiology Studies Depression and Caregivers Reaction Assessment. Caregivers were also asked open-ended questions regarding their support and additional help needed. Analysis was by descriptive statistics and General Inductive approach

Results Caregivers aged 30–39 had the highest depression, while a larger group shared the highest stress (ages 30–59). Caregivers commonly discussed adverse effects of caregiving on lifestyle, health and financial situations. Lack of information and assistance were concerns, and respite was inadequate. Overall, less than 1% of caregivers of people under the age of 65 and 4% of caregivers of older people were happy with the support received. Caregivers wanted more financial assistance, information, reliable support workers, flexible respite, and recognition for their caregiving role.

Conclusion If the government wishes to have more people with disabilities or chronic illness living at home, greater resources are needed to adequately support caregivers. At present this important sector of the population is undervalued and under provided for.

It is well recognised that New Zealand, like other countries, has concerns about its long-term care of people who are chronically sick or who have disabilities, and the likely supply of informal caregivers. Many factors are encouraging and promoting people to stay in their own homes, such as deinstitutionalisation of younger people and ageing-in-place for older people. This undoubtedly increases the demand for more informal caregivers.

Informal caregivers are unpaid and are usually family or friends who support and care for people with disabilities or illness for anything up to 24 hours, 7 days a week. We have already seen a dramatic increase of about 50,000 informal caregivers since 2001, with the total number now estimated to be 10% of the population at 420,000.^{1,2} This need will continue to increase in the coming decades with the ageing population.

Caregiving is known to be extremely stressful, have adverse impacts on health, loss of free time and long-term financial disadvantages, such as loss of income and/or savings.³⁻⁶ The Government has responded recently by introducing the *Carers' Strategy* and *Five-year Action Plan*² which has five objectives; to provide information, protect the health and wellbeing of caregivers, enable caregivers to take a break, provide financial support for caregivers and provide training and pathways to

employment for caregivers. The Flexible Working Arrangements Amendment⁷ has also relatively recently been introduced and allows caregivers in paid employment to seek time off for emergencies or appointments.

New Zealand in comparison to other countries has a very small evidence base on caregivers' support needs. One small New Zealand study found caregivers experienced negative impacts on family relationships, as well as 32% of caregivers of people with Alzheimer's disease giving up paid employment.⁸

When examining studies from other countries it was found that caregivers in England and Europe were more likely than non-caregivers to report health problems, social isolation and family relationship difficulties,^{9,10} and over half of a large sample in Australia reported depression.¹¹

The main aim of this study was to identify the characteristics and demographics of the New Zealand caregiver and their unmet support needs. This study could also be used as the basis for an evaluation of the caregiving policy implementation.

Methods

Both qualitative and quantitative data were collected to fully explore, strengthen and describe the complex and divergent aspects of caregiving situations and relationships. Caregivers were invited to participate through an advertisement in support organisations' newsletters, such as Carers New Zealand. The potential participants were provided with a toll-free telephone number or an email address by which to respond. After contact they were sent an information sheet and consent form to return in a prepaid envelope. This method of recruiting was used to gain widespread geographical coverage of New Zealand, however it is recognised there may be a bias in the final study sample due to the self selection of participants.

People who identified themselves as unpaid caregivers were invited to participate, with no criteria given for the amount of time spent caregiving. Exclusion criteria were paid caregivers (support workers). A total of 300 caregivers participated in the study between December 2007 and August 2008.

The participants were interviewed by telephone (lasting from 1–1.5 hours) using two well validated scales and open-ended questions about their caregiving roles and support. The scales were: Center for Epidemiologic Studies Short Depression Scale [CES-D 10]¹² was 10 questions ranked from 0 (rarely or none of the time) to 3 (all the time) with a maximum score of 30. People with scores of 10 or more were judged to be showing signs of depression.¹² The Caregivers Reaction Assessment (CRA)¹³ was 24 items with a total score of 120. Scoring from 1 (strongly disagree) to 5 (strongly agree), with higher scores relating to higher degrees of stress or burden.¹³

Quantitative data were entered into the statistical programme SPSS for Windows 14 and divided into variables according to demographics and scales from which descriptive statistics, such as means and frequencies were calculated. Qualitative data were entered verbatim into NVivo analytical programme and analysed using a General Inductive approach.¹⁴ The raw data were read many times to form codes line by line and then condensed into themes. Themes formed were based on frequently reported patterns found during the analytic process. These themes formed the basis for the qualitative results. Five transcripts were given to two senior researchers to recode and compare for consistency of interpretation and reliability.¹⁵

The study was given ethical approval by the Multi-regions Ethics Committee.

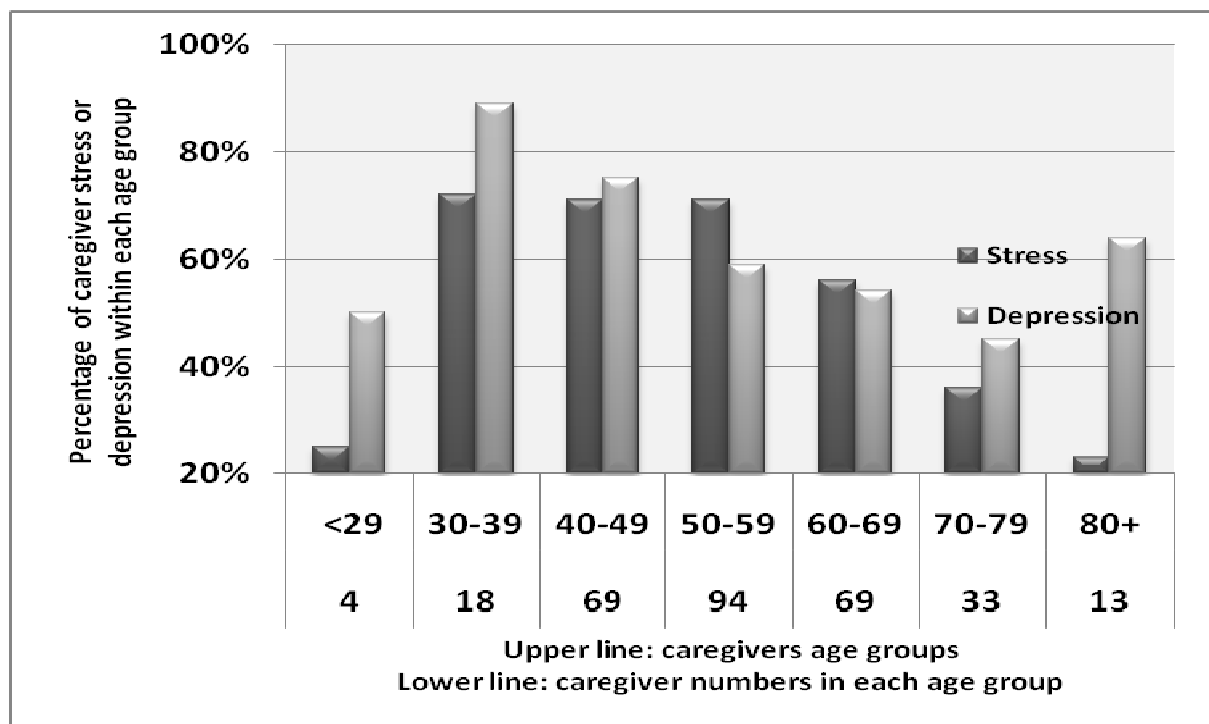
Results

Out of the 300 participants, 242 were female (81%) and 180 were aged 30 to 59 (60%). In relation to the care recipients caregivers were; mothers 111 (37%), daughters 63 (21%) female partners 60 (20%), male partners 42 (14%), son 9 (3%) father 3(1%) and others 12(4%). The greatest number of care recipients were in the 70–89 age group 87(29%) and the 0-19 age group 75(25%). For care recipients over

the age of 20, dementia 57(19%) and other neurological conditions 57(19%) were most prominent, and next stroke 39(13%). For younger care recipients behavioural disorders 27(9%) were most common, followed by other neurological disorders 15(5%) and developmental disorders 12(4%).

By taking the score of 60/120 as signs of stress, 70/120 as moderate stress and 90/120 as severe stress the results showed 255(85%) had signs of stress, 183(61%) had moderate stress and 30(10%) were severely stressed. The mean total CRA score was 73.04/120, (SD 13.6) and mean depression was 12.13/30, (SD 6.05) Figure 1 shows the percentage of caregivers with stress and depression within each age group.

Figure 1. Caregivers' stress and depression within each age group



The highest levels of stress were in caregivers aged 30 to 59. Out of a total CRA score caregivers 50 to 59 had a mean stress level of 78.16/120 (SD 15.2), while caregivers in the 40 to 49 and 30 to 39 age groups had mean stress levels of 75.53 (SD 11.56) and 73.40 (SD 11.8) respectively. Depression was highest (out of a total score for the CES-D 10 of 30) in caregivers aged 30 to 39 with 89% (mean 14.2 [SD 5.57]). The next two highest groups were caregivers aged 40 to 49 where 75% of caregivers showed signs of depression (mean 13.3 [SD 4.9]) and caregivers aged 80 to 89 where 62% showed signs of depression (mean 11.40 [SD 6.4]).

Out of all the caregivers the father and son groups had the highest mean stress score 87/120(SD 0) and 79.6/120 (SD 15.9) respectively, but showed no signs of depression. The groups showing the highest signs of depression were mothers and daughters (means 13.3 [SD 5.8] and 12.6 [SD 7.1] respectively).

The mothers and daughters also had high stress mean scores at 75.1 [SD 10.3] and 74.1 [SD 14.1] respectively. The care recipients' conditions where the caregivers showed the most signs of stress and depression were: attention deficit hyperactive disorder, autism, brain injury, developmental problems, dementia, schizophrenia and cardiac conditions in that order.

When caregivers were asked how they were supported and what they thought would improve their lives and those of the care recipients their responses could be grouped into two main themes; comments about the support they were or were not receiving; and the impact of caregiving on their lives.

The support caregivers were receiving depended largely upon the information they were given. Accessible, up-to-date timely information is essential if caregivers are to access services and support to assist them in their caregiving role. However, striking similarities between caregivers taking part in the study were lack of information they received when first becoming a caregiver, and inappropriate financial support (two-thirds stated they experienced moderate to severe financial difficulties). A total of 81% of caregivers felt they could not find information to help them obtain support or funding. A mother of two children with disabilities said:

People should know about the carer's benefit which I didn't know about for the first 16 years of caring for my children. When I found out and applied for some back pay they only let me have 6 months.

People found information was fragmented. One agency, such as WINZ would assist with benefits, while the health professionals dealt with their segment of expertise and other people, such as voluntary agencies would fill in pieces of knowledge as it came to hand.

Caregivers supporting children and young people found if they did not have a definite diagnosis they were not eligible to access funding or information, particularly from the Education services. Language difficulties were mentioned in relation to health professionals, particularly when the care recipient was first diagnosed. One Pacific caregiver of an older person said:

We find it difficult to ask for help because of the language and not understanding properly, so we would usually just persevere rather than rely on a stranger.

It was reported there were extra costs associated with caregiving, such as special foods, medications, incontinence products (not always funded), extra heating, petrol and hot water. However, the difficulty with bureaucracy and paperwork to get financial help was illustrated by this comment from one caregiving daughter:

Dealing with WINZ you have to go to them, no one will come to us. It is very difficult dragging mum in there for their very frequent assessments. We moved a while ago and they didn't have the correct address in their computer so we had to revisit them several times before they got it all sorted out. They try hard, but need to be more adaptive.

Many caregivers claimed that due to poor services and inflexible working arrangements, they were unable to continue to work at the same level, or even work at all in paid employment. No caregivers thought they had been assessed for the support they felt they needed, arguing that the focus of assessments for service provision was on the needs of the care-recipient.

Some families chose to home-school their children with disabilities because of the lack of appropriate supervision and support within the schools. Respite care is

designed to give caregivers time away from their caring duties, however there were problems particularly with respite for younger people. There were difficulties in finding appropriate age-related facilities, as well as the small amount of money paid to respite support workers to look after their children, either in the child's home or elsewhere. Several parents were doubling the amount paid to respite support workers by using half the allowable days.

Overall, 0.7% of caregivers of people under the age of 65 and four percent of caregivers of older people were happy with the support they received.

Generally, caregivers felt there was no other choice but to take on a caregiving role and "*accept the cards dealt.*" Caregivers discussed their responsibilities as large, with little free time for their own life, such as going out, isolation from work, lost social contacts, and loss of a partner to talk with (in the case of care recipients with dementia). There was an acute lack of awareness from others of the roles of caregivers, particularly by friends and those not intimately involved with the family. For example, at the diagnosis stage, caregivers tended to report a good deal of support from family and friends, but over time this dissipated. Many people did not, or could not, have family support.

Other siblings were seen as suffering due to the increased requirements of care-recipients. In these situations, there were lots of responsibilities placed on other siblings, or children of parents with support needs. Having disabled children was reported as being isolating for the caregiver, because they could not go out together as a family, not even to church or community groups. Some male caregivers believed it was particularly hard for them looking after a female; they felt people judged them incapable of those duties.

To summarise, the predominant wishes of caregivers were; more financial assistance; flexible and reliable respite provision; the opportunity and ability to be in paid employment; one national place for information; and recognition for their caregiving roles.

Discussion

This study examined the profile of caregivers and what they regarded as their unmet support needs in an effort to bring to light issues which must be addressed to reduce what the findings illustrate to be a significant problem, their stress and depression. These findings are consistent with literature from Europe, Australia and North America.^{3, 9, 10} Caregivers, similar to support workers¹⁵ look after vulnerable people, have financial difficulties and feel unsupported, however differences are that many caregivers provide 24 hours, 7 days a week care and are unpaid.

The study data were collected prior to the launch of the Carers' Strategy and Five-year Action Plan,² hence the five objectives have been used as a basis for the discussion. The Strategy suggested a generic caregivers' information pack, which has since been launched (September 2009) however, the information is still difficult for new caregivers to know about or access.

While the Domestic Purposes Benefit office provided some information caregivers, as other studies have reported, found it was not consistent, nor easy to access.^{8, 16} Many caregivers here suggested one point of contact for information, similar to Carpinter et

al's (2000) study that found caregivers wished for a liaison person who was personally knowledgeable. A toll-free telephone number for caregivers to access manned during working hours and in all telephone directories would seem a practical, cost effective future solution.

To protect the health and wellbeing of caregivers is the second and most important over-riding objective. It has been well documented in literature and demonstrated in this study that caregivers have high rates of depression and stress.^{3,17} These symptoms have multiple causes, including inadequate respite, lack of time for themselves and financial pressures. The Strategy's solution is to provide learning and training however, time for themselves was consistently reported both in this and other studies.⁵

To enable the caregivers to take a break, another of the Strategy's objectives suggested assessing the financial support for respite and seeking additional beds in some areas (particularly for younger people). This may improve some financial problems associated with attracting suitable caregivers for younger people, however the inappropriate timing and inadequate facilities found by this study and others^{4,18} for both the older and younger care-recipients warrants attention also.

Enabling caregivers' choice is specifically stated in the Strategy, however in reality this could be a tension because, as reported in this study it is the care recipients who are assessed for the services and support, not the caregivers.

Financial difficulties found by this study is a well documented phenomenon^{19, 20} and addressed in the Strategy by examining access options for income support. It also discussed assessing the eligibility of caregivers and the affect means testing had on work incentives. The same situation of lack of money for basic essentials like food, extra heating and medication causing stress was noted in a New Zealand article.²¹ This article written from 'experts' perspectives showed more than half considered home-based support services and financial assistance to be insufficient.

Caregivers in this study said the financial assistance received if taken over a 24-hour period amounted to approximately \$1.87 per hour, whereas support workers (at the time) were receiving approximately \$12 per hour, a situation similar to the USA.²² Caregivers wanted a "normal" life-style, but similar to Ireland the implementation gap between Government rhetoric and interaction on the ground is large.²³ One author suggested itemising caregiving duties (such as showering, dressing etc) to gain more attention and value from funders and policymakers.²⁴

The Flexible Working Arrangements amendment, while this is a good start, caregivers did not feel it really addressed the issues of pathways to employment. It may assist caregivers who are fortunate enough to be able to leave the care recipient for longer periods, but not those with substantial responsibilities.

The fish-hooks are caregivers need to have been working for 6 months and employers can take 3 months to consider the request. No caregiver mentioned they had the luxury of deciding to be a caregiver beforehand, so therefore would not be able to wait up to three months for their employer's response.

While having to be working with that employer for six months may be reasonable, the allowable response time is not. The caregiver could, in the worst situation be waiting for nine months to use the advantages noted in this amendment. The Strategy does say

it will look at recognising caregivers' skills and explore removing financial barriers for employers.

There are limitations to the conclusions that can be drawn from our study firstly, the small number of male caregivers and secondly, caregivers were self-selected, which may have provided a bias to those with 'tales to tell.' Even though caregiving is the mainstay of our long-term care, New Zealand, similar to other countries has not adequately addressed the glaring needs of this important sector.

There does seem to be a contradiction between the value we place on caregivers and what we provide to support them, both materially and psychosocially. Caregivers need to be assessed, supported and respected within our communities.

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How well is cognitive function documented by medical staff in the over-65 age group at the time of acute medical admission?

Joanne Rodwell, Valerie Fletcher, Ruth Hughes

Abstract

Aims Cognitive function in the elderly has a significant impact on prognosis and functional ability during an acute illness requiring hospital admission.

Methods This prospective review was designed to measure how well cognitive function in the elderly was documented by medical staff at admission to hospital. Over a 2-week period, 257 patient admissions were reviewed.

Results Of these, only 153 (59%) had their cognitive function documented on admission and only 14% had their premorbid cognitive function documented. Delirium was only diagnosed in 8 patients (3%) with at least 10 others having descriptions of delirious states without the formal diagnosis.

Conclusion In keeping with other studies, this audit shows that the documentation of cognitive function by medical staff is poor.

Cognitive function has a significant effect on the older person and their admission to hospital. Assessment of cognition is relevant at the time of admission because impairment can lead to an inaccurate history (if the patient is solely relied upon for the history), and because there may be a change to patients' mental status associated with the acute illness.

Assessment of cognitive function can also provide prognostic information about risk of delirium, an under-recognised and therefore under-treated condition with significant associated mortality.^{1,2,6,7,9} Delirium affects both recovery of function, which can lead to threatened independence and need for residential care,^{3,4} and funding of the episode of patient care.

Delirium is a common problem estimated at affecting 10–40% of elderly inpatients. A New Zealand study measured rates between 25–28%.² Often the acute changes in cognitive function associated with the acute illness are of major concern to a patient's family and friends, sometimes more so than the acute illness itself. Assessment and explanations about this assist them to understand the complications of the illness.

Routine assessment of cognitive function, on hospital admission, may lead to earlier diagnosis of cognitive impairment, early dementia or other psychiatric conditions like depression. This may provide the opportunity to discuss this diagnosis with the patient and family or, refer them on to the appropriate out patient or community service for assessment (which may be the more appropriate response). These are important conditions to diagnose as there are treatment options and supports available.

It is important for medical staff to not only be aware of cognitive function at admission, but to document it. Previous studies have demonstrated that delirium and cognitive impairment documentation is variable and these conditions are often diagnosed but not documented.^{1,5} An acute confusional state may be the only symptom of an illness or deterioration.⁴

During a hospital admission, a number of medical staff are involved in a patient's care. While the admitting team will be familiar with the patient, on call and out of hours medical staff may not. It is important that observations about cognitive function, including pre-morbid cognitive function, and associated syndromes, like delirium, are documented. This is especially relevant as the signs and symptoms and behaviours of a delirium may only occur late in the day or overnight, when the patient's medical team have finished for the day.

The objective of this study was to measure the documentation of cognitive function and factors that affect cognitive function and delirium risk, within the first 24 hours of admission to an acute general medical service.

Methods

This was a prospective review of medical records of all patients admitted under acute medical teams over a 2-week period from 26 July 2008 until 8 August 2008 inclusive. Inclusion criteria were any patient aged 65 years and older admitted to an acute medical team. Patients were excluded if they were admitted for elective procedures under the acute medical team or if they transferred to another speciality prior to the post-acute consultant ward round. If a patient was admitted more than once during the audit period, only the first admission was counted. All patient records were reviewed by one medical registrar.

Aspects of the admission reviewed included the medical notes made by doctors within the first 24 hours (including the admission note and post-acute consultant ward round), general demographics (taken from the clerical admission sheet) and the formal discharge summary. Information in nursing notes or allied health workers notes or from residential care units was not included.

Information gathered included age, sex and living circumstances. Previous history of dementia and previous measurements of this were recorded as well as pre-morbid mental status and whether or not this had changed with the acute illness. The process used to evaluate mental status was also recorded. These measures included general observation and general comment or specific measures (10-point Mental State Examination or 30-point Mini-Mental State Examination or 100-point Modified Mini-Mental State Examination). Functional ability with regards to mobility and sensory disturbance (i.e. visual or hearing impairment) were also recorded. The working diagnosis was recorded as that documented on the consultant ward round.

Results

In the 2-week period, there were 266 acute medical admissions. Of these, there were 2 patients who were readmitted during the audit period and 7 patients whose notes were not available for screening either during or after the specified timeframe. Therefore there were 257 admissions in total that were audited. Of these, all but one had formal discharge summaries in electronic form.

Results were summarised by simple tabulation and as a proportion of the audited notes.

Table 1. Demographics

Variables	N (%)
Age	
65-69	26 (10.1%)
70-79	78 (30.4%)
80-89	127 (49.4%)
90+	26 (10.1%)
Sex	
Male	126 (49%)
Female	131 (51%)
Location of residence	
Christchurch + suburbs	224 (87%)
Rural/greater Christchurch area	26 (10%)
Other	7 (3%)
Place of residence	
Home/independent living alone	88 (34.2%)
Home/independent living with spouse/partner/carer/family	101 (39.3%)
Home/independent living but not stated if alone or with family	6 (2.3%)
Rest Home resident	42 (16.3%)
Private Hospital resident	5 (2%)
Place of residence not noted	15 (5.8%)
Primary working diagnosis on admission	
Respiratory disease	77 (30%)
Cardiac disease	38 (14.8%)
Neurological condition	36 (14%)
Falls/collapse	29 (11.3%)
Confusion/Delirium	11 (4.3%)
Cellulitis	6 (2.3%)
Renal condition/urinary infection	4 (1.6%)
Malignancy	2 (0.8%)
Other	54 (21%)

The primary working diagnoses are summarised as seen in Table 1. “Other” included medication side effects, gastroenteritis, anaemia, arthritis with associated pain, postural hypotension, hypoglycaemia, vertigo, gastrointestinal bleed and musculoskeletal problems.

The majority of patients were over the age of 80 years (153, 59.5%) and there was an even number of males and females. Most patients lived within Christchurch (224, 87%) and were in independent living situations (195, 75.8%), either alone (88, 34.2%) or with at least one other (101, 39.3%). The most common working diagnosis on admission was respiratory disorders (77, 30%).

Prior functional status in terms of mobility and sensory disturbance (i.e. vision and hearing disturbance) was poorly documented, with only 128 (50%) patients’ mobility status recorded and only 63 (24.5%) patients with a comment about presence or absence of sensory disturbance. Past medical history of dementia/cognitive impairment was recorded in 28 (11.3%), see Table 2.

Table 2. Premorbid function

Mobility	
Independent	52 (20%)
Walking frame/stick/mobility scooter	74 (29%)
Immobile	2 (0.8%)
No comment made about mobility	129 (50%)
Hearing	
Hearing impairment	13 (5%)
No comment made	237 (92.2%)
Visual	
Visual impairment	31 (12%)
No comment made	214 (83.3%)
Dementia	
Past medical history of dementia/impaired cognition documented in admission note	29 (11%)

Table 3. Cognitive state

Mental state	
Previous mental state noted on admission	36 (14%)
Present mental state	
Usual	15 (6%)
Worse	35 (14%)
Improved	Nil
No comment	207 (81%)
Measure of previous mental state noted on admission	
3MS*/MMSE**	Nil
10-point Mental State Exam	Nil
General comment	34 (14%)
Nil	223 (87%)
Measure of present mental state noted on admission	
3MS*/MMSE**	Nil
10 point Mental State Exam	15 (6%)
General Comment	138 (53%)
Nil	104 (41%)
Delirium	
Delirium included in diagnosis at discharge	8 (3%)

* Modified Mini Mental State Examination; **Mini Mental State Examination.

Previous mental status and whether the present mental status has changed from baseline was poorly documented, with 207 (81%) patients not having a comment made about this at all. While lack of collateral history may have contributed to this, in some cases there were comments made by other health professionals within the notes that documented premorbid functioning.

It is not known whether or not these were noted by the documenting doctor. Present mental state was measured and documented in 153 (59%) patients. The most commonly used measure of mental status was a general comment (e.g. alert and orientated).

Only 8 patients had delirium noted within the discharge diagnosis list. However there were another 10 patients whereby a description of delirium was made in the body of the discharge summary but the diagnosis was not listed.

Of the admissions reviewed, there were nine inpatient deaths. None of these patients were noted to have altered mental state or confusion on their discharge diagnosis (although discharge summaries for deceased patients are often brief and only include cause of death rather than an extensive problem list for the admission).

Discussion

In keeping with other observational studies, the documentation by medical staff of cognitive state and impairment or acute delirium is inadequate.⁵ This was despite other healthcare workers involved in patient care documenting information suggestive of acute or long-standing cognitive decline. It is already acknowledged in the literature that acute delirium on acute medical wards is under-recognised.⁹

As mentioned previously, delirium is a treatable condition with an associated mortality, hence the importance of detection and intervention. It is also considered to be preventable.⁶

Delirium, when documented within the body of the clinical notes by a doctor, leads to additional funding for that acute episode of care. Patients suffering from delirium often require increased resources and nursing care, sometimes even one to one supervision, which comes at an added cost in both staffing numbers and time. Non-specific observations like “confusion” or “cognitive impairment” are not sufficient for coding purposes to be classified as delirium.

For some patients, there was adequate information in the notes to suggest that they had an acute delirium but such a diagnosis was not specifically documented and therefore could not be coded as such. For the remaining patients, the presence or absence of delirium was poorly documented.

There are many reasons for under-recognition and under-reporting of delirium. Acute delirious states can be either hyper or hypoactive and it is the former that is more widely recognised, partly because of the difficult behaviours associated with it.

Hypoactive delirium is more likely to be overlooked and has a higher mortality rate associated with it.⁹ The fluctuating nature of a delirium can also make it difficult to diagnose. While delirium is recognised by medical staff, the documentation of it may be poor as the medical team focus more on the underlying acute illness.

Despite the known increased mortality with delirium, it is not treated as a life-threatening illness.⁹

There are beneficial interventions for both the patient with early dementia and their caregivers.⁶ While an acute medical admission is may not be an appropriate forum to address previously undiagnosed cognitive impairment, suggestive of a diagnosis of dementia, it is an opportunity to refer the patient and their family for geriatric review as an out patient. Symptom progression can, in some patients, be delayed with cholinesterase inhibitors and both patient and care-givers can benefit from supports and interventions to help deal with behavioural problems associated with dementia.⁵ Cognitive impairment may be because of other treatable conditions like depression.

Under-reporting of dementia and cognitive impairment in an acute medical admission is also multifactorial. Often, due to the busy nature of the acute medical wards, the primary medical problem is the main focus rather than chronic underlying problems. Cognitive function is not routinely tested on or during a medical admission and, as shown in this study, the admitting doctor's preferred tool is general observation.

Weaknesses in this study include reliance on the patient for a full history as often a collateral history is not available at the time of admission, thus making it difficult to know if information is reliable and whether present mental state is usual for the patient. Even with full access to patients' hospital records, previous relevant medical history is not readily available. An example of this is the variable filing of formal cognitive testing on previous admissions.

Included as part of the initial assessment of the patient was the consultant ward round note. This is written by another member of the team (which can vary from a fourth-year student to a senior registrar) and therefore may not include all the observations or comments made by the consultant.

The prospective review was performed over a 2-week period in an attempt to give an overview of medical admissions and a reasonable sample size. However there will be a documentation bias as the night medical teams will be over-represented as they work a 7-night roster. The results of this study do not provide new information but helps to highlight the issue at a local level.

This study was designed to measure how well cognitive function is measured and documented in the elderly at the time of admission. The results show that this is poorly done. There needs to be increasing awareness of the importance of such documentation, both for treatment and intervention reasons as well as funding purposes.

Preferred tools would include the CAM (Confusion Assessment Method) and MMSE, along with collateral history, for acute delirium⁶ and collateral history and Modified Mini-Mental State Exam for dementia. Admittedly the 3MS can be quite time consuming during the acute admission process for the admitting doctor and more appropriately performed either later in the admission or when the patient is recovered from the acute illness in an outpatient setting. A targeted history and CAM assessment would be achievable during the first 24 hours of admission.

Presenting this information locally may improve awareness and documentation at the Christchurch Hospitals. Further studies would be needed to measure both improvements in documentation and to consider if this leads to improvements in patient outcome.

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Professional development perceptions and activities of psychiatrists and mental health nurses in New Zealand

Nikolaos Kazantzis, Sarah J Calvert, David E Orlinsky, Sally Rooke, Kevin Ronan, Paul Merrick

Abstract

Aims Psychiatrists (n=26) and mental health nurses (n=18) engaged in the practice of psychotherapy were surveyed regarding their perceptions and engagement in professional development activities.

Methods Collaborative Research Network's (CRN) methodology was followed, and comparisons with CRN samples from Canada and the United States of America (USA) were undertaken.

Results New Zealand psychiatrists reported perceived development across their careers, but their ratings were lower than those of nurses. Both professional groups rated their overall development lower than their Canadian counterparts. However, New Zealand nurses reported more involvement in supervision than psychiatrists, and both groups reported rates that exceeded those reported in Canadian and USA samples. New Zealand subgroups reported low involvement in personal therapy in comparison to overseas samples. Supervision and personal therapy were highly regarded by New Zealand practitioners, but didactic training was rated as less important.

Conclusions New Zealand mental health professionals reported attainment of therapeutic mastery and skill acquisition. New Zealand psychiatrists reported less involvement in case supervision, but rated supervision as having the greatest influence to their development. The results highlight areas of need for continuing professional development for these professions.

Professional development in mental health extends beyond continuing medical education or maintenance of competence; it is a career-long journey encompassing growth in confidence, self-awareness, knowledge, skill, and professional identity. Professional development may also provide an important source of satisfaction and sustenance to counteract the emotionally draining experiences considered inevitable when providing psychotherapy.¹

Research on professional development among psychiatrists and mental health nurses has increased recently, but little New Zealand data exists. Differences in requirements for training and certification/ registration,² different work settings,³ and higher caseloads are known to characterise the context for psychiatrists,⁴ and therefore data gathered elsewhere do not necessarily generalize to New Zealand practitioners.

These differences have been implicated in the current shortage of psychiatrists in New Zealand, with one study noting trainee dissatisfaction with caseloads and resources.⁵ A general survey of 239 New Zealand psychiatrists (56% response rate) found that 75% experienced moderate or high levels of emotional exhaustion.⁶

To the best of our knowledge, there has been only one prior survey of professional development among New Zealand psychiatrists.⁷ The study included 18 psychiatrists working at public health hospitals and aimed to explore a range of development issues including training in psychotherapy.

The majority of those surveyed had been trained in individual or groups psychotherapy format (n=13 and n=18, respectively), whereas some had received training in drug abreaction (n=9), behaviour therapy (n=6), and hypnosis (n=4). The changes that have occurred in training and programmes in the three decades following the publication of this study limit the extent to which the data can be taken as indicative of current practice.

There is also lack of published research for mental health nurses in New Zealand. Limited opportunities for advanced training in psychotherapy for nurses are well known.⁸

As nurses constitute the largest single professional group in the New Zealand mental health workforce, and training models exist for teaching evidence-based therapies (e.g. Cognitive Behaviour Therapy,^{9,10} there is a potential for nurses to make substantial contributions to the population of psychotherapy practitioners.¹¹

The Collaborative Research Network Study (CRN)—Members of the Society for Psychotherapy Research organized a CRN in 1989 to initiate research on the development of mental health professionals. 5000 practitioners of all training backgrounds, career levels, orientations, and countries have now participated in the survey asking for perceptions over the course of the career.¹² The questionnaire was designed to examine practitioner perspectives on development, and dimensions of practitioner development over the entire career span using a cross-sectional approach.¹³

The present study represents the New Zealand portion of this research program, designed to collect data for contribution to the cross-national CRN database. The New Zealand sample of psychiatrists and nurses are compared to samples from Canada and the United States using the same research methodology.

Perceptions of development across the career—The benefits of accumulated experience, such as increased competence and greater complexity of clinical reasoning, are known to be important for psychiatrists.¹⁴ However, fatigue, loss of motivation and enthusiasm, and difficulty remaining up to date with current research also increase with experience.¹⁵

Nurses report a shift to more complex and efficient clinical perception and decision making with experience.¹⁶ However, few studies have examined development as a multifaceted, complex process among nurses, instead favouring evaluation of specific technical skills.¹⁷ Therefore, professional development patterns over the career span are unclear.

The present study is the first to have quantitatively examined New Zealand psychiatrists' and mental health nurses' general perceptions of their development or compare these with Canadian and United States samples.

Use of professional development activities—Sigmund Freud proposed a 'tripartite model' of psychoanalytic training advocating for the use of supervision, formal

training, and personal therapy. The model has formed the basis of training in psychological therapies internationally.¹⁸

Supervision is typically considered a training cornerstone promoting the development of clinicians' skills, knowledge and professional identity while simultaneously protecting patients and ensuring good practice. Supervision has demonstrated positive effects, such as reducing stress and improving patient care and clinician cooperation.¹⁹

Formal training also plays an important role in professional development by providing the knowledge base needed to equip graduates for practice in multiple mental health settings.²⁰

Personal therapy has been proposed to improve therapeutic skill, emotional functioning, self-awareness and empathy, and to enhance one's understanding of therapeutic techniques and personal dynamics.²¹ There is evidence to suggest that psychiatrists in other countries view personal therapy as essential to their professional development,²² even though the actual use of personal therapy differs (i.e. 32% in South Korea and 99% in France).²³

The CRN study is the first to collect data on the use of supervision, training and personal therapy by psychiatrists or mental health nurses among a large international sample. The present study explored New Zealand psychiatrists' and mental health nurses' use of didactic teaching, supervision of case-work and personal therapy. The survey included practitioners' evaluations the usefulness of supervision, training, and personal therapy.

Method

Questionnaire instrument—The CRN's Development of Psychotherapists Common Core Questionnaire (DPCCQ) is a composite measure that explores perceptions of professional development, personal and practice characteristics, and has been used widely in research.²⁴ Two DPCCQ scales were used for the first study aim (exploring development perceptions): Current Development (assessing current professional growth), and Overall Development (assessing development from first case to most).²⁵

Overall Development is comprised of three subscales: Retrospected Career Development (perceptions since the career outset), Felt Therapeutic Mastery (perceptions of current therapeutic proficiency, assumed to reflect accumulated development) and Skill Change (perceived skill change since career outset).²⁵

Several questions were utilised to assess use of supervision, training, and personal therapy (e.g., "How much formal case supervision have you received for your therapeutic work?") Perceptions of the usefulness of supervision, training, and personal therapy were surveyed through ratings of influence, and 14 professional activities and work-related variables were assessed for their influence [−3 (*very negative influence*) to +3 (*very positive influence*)] on overall development. Seven other relevant activities were also surveyed for comparison purposes.

Procedure—New Zealand and international data were collected as part of the CRN study of mental health professionals' professional development. CRN methodology has been described in detail elsewhere,⁽²⁶⁾ but was essentially aimed at gathering a diverse, heterogeneous database which could then be disaggregated into meaningful subgroups. New Zealand data was collected by the senior author between 1998 and 2000, through the distribution of 350 flyers inserted into newsletters of the New Zealand College of Psychiatrists, New Zealand Nurses Organisation and other professional organizations where psychiatrists and nurses might be members. Those who returned flyers were sent a copy of the questionnaire and a prepaid return envelope. Participation was entirely voluntary and anonymous.

Forty-six psychiatrists and 38 nurses returned flyers, and of these, 26 psychiatrists and 18 nurses returned completed questionnaires. These represent 57% and 47% response rates, respectively.

Data analysis—To enable comparisons between New Zealand, Canadian, and USA samples with different sample sizes, the standardised effect size index (*d*) was calculated. Effect sizes were calculated by using the New Zealand sample as the comparison group. The New Zealand mean was entered as the first group, so that a positive *d* always indicates a higher score for New Zealand, and a negative *d* indicates a higher score for the comparison country (Canada or the United States).

Conventions are used to guide interpretation of effect sizes, where an effect size of 0.2 is considered small, 0.5 is considered medium, and 0.8 is considered large⁽²⁷⁾. Influence of supervision, training and personal therapy were converted to ranks, where the highest mean rating was assigned a ranking of ‘1’ and so forth.

Results

Sample—The present study analyses data for 26 New Zealand psychiatrists and 18 mental health nurses. The New Zealand psychiatrist sample is compared with CRN samples of psychiatrists from Canada (N=24) and the United States (N=53). The New Zealand nurses sample is compared with nurses from Canada (N=4) and the United States (N=20).

Table 1 displays basic demographic characteristics for the three samples.

Table 1. Demographic details

Characteristic	Psychiatrists			Nurses		
	NZ (n=26)	Canada (n=24)	USA (n=53)	NZ (n=18)	Canada (n=4)	USA (n=20)
Age (mean)	51.0	56.1	42.5	45.6	46.6	46.1
Years in practice (mean)	18.5	24.8	12.5	10.6	11.2	9.9
Gender (% female)	54%	26%	40%	78%	100%	95%
Theoretical orientation^a						
Analytic/psychodynamic	3.5	4.0	3.3	2.47	2.8	3.7
Behavioural	2.2	1.1	2.3	2.75	1.5	2.8
Cognitive	3.1	2.0	2.1	2.63	2.8	3.5
Humanistic	3.0	1.4	1.9	1.63	4.0	2.7
Systemic	3.0	1.8	1.8	2.06	2.3	2.6

Note: NS vary slightly due to missing data; ^aMean ratings, on a scale of influence on therapeutic practice (scale ranges 0–5). Multiple ratings allowed.

Psychiatrists—The proportion of male psychiatrists was far higher in the Canadian and USA samples (74% and 60% respectively, versus 46% in the New Zealand sample). The New Zealand sample had a mean age of 51.0 (range = 37 to 77 years), had spent between 2 and 42 years in practice, and had a mean practice duration of 18.5 years.

Theoretical orientation was assessed by asking “How much is your current therapeutic practice guided by each of the following theoretical frameworks?” Respondents rated analytic/psychodynamic, behavioural, cognitive, humanistic and systems theory from 0 (*not at all*) to 5 (*very greatly*). New Zealand samples rated the cognitive, humanistic and systemic orientations as having greater influence on their therapeutic work.

The New Zealand psychiatrist sample reported an average of 35.4 hours per week in various mental health settings (SD = 16.1; range 10–70), including an average of 11 hours providing therapy (SD = 12.5, range 0–46 hours). The most common work-

setting was public outpatient practice (42% of the sample). Independent private practice (39%) and public inpatient settings (12%) were also popular settings for therapeutic work. The average caseload reported was 9.6 patients (SD = 9.9; range 0–35).

Nurses—The New Zealand nurse sample reported working an average of 32.9 hours in various mental health settings per week (SD = 12.1; range = 8 to 48 hours), with an average of 16.3 hours conducting therapy (SD = 10.3, range = 0 to 36 hours). The most common work settings were public outpatient and independent private practices, with 44% of the sample engaging in some therapeutic work in each of these settings. The average caseload reported was 30 patients (SD = 22.5; range = 3 to 100 patients).

Perceptions of development across the career—Table 2 presents perceptions of development. Mean ratings of development were above the mid-point (2.5) for all samples, indicating that practitioners perceived themselves both to have developed considerably since the beginning of their career, and to be experiencing development currently. However, ratings were higher among nurses than psychiatrists.

Table 2 Means for current and overall development

Measure	Psychiatrists			Nurses		
	NZ (n=26)	Canada (n=24)	USA (n=50)	NZ (n=18)	Canada (n=4)	USA (n=21)
Current Development	2.86	3.36	3.20	3.50	3.75	3.81
Overall Development	2.85	3.12	2.72	3.10	3.28	2.97
RCD	3.78	3.93	3.63	4.06	4.42	4.03
FTM	3.58	3.90	3.27	3.76	4.19	3.79
SC	1.23	1.53	1.20	1.47	1.25	1.09

Note: Bold type represents ‘small’ effect sizes ($d \geq 0.2$). Bold, underlined type indicates medium effects ($d \geq 0.5$). Bold, double underline type indicates large effects ($d \geq 0.8$). Effect sizes represent comparisons with New Zealand, within that particular profession. All scales except Skill Change range 0-5; Skill Change potentially ranges -5 to +5. RCD = Retrospected Career Development; FTM = Felt Therapeutic Mastery; SC = Skill Change.

Comparing New Zealand psychiatrists’ perceptions of Current Development with the Canadian and USA samples produced negative effect sizes greater than the criterion for a small effect ($d = -0.49$ for the comparison with USA and $d = -0.30$ for the comparison with Canada). New Zealand psychiatrists’ perceptions of Overall Development were also low compared with the Canadian sample, with effect sizes ranging from -0.22 (Retrospected Career Development) to -0.45 (Overall Development). However, New Zealand psychiatrists’ perceptions of Overall Development exceeded those of the USA sample.

New Zealand nurses’ ratings were lower than those of Canadian nurses. New Zealand nurses’ ratings were similar to the USA sample. However, New Zealand nurses rated their changes in specific skills (Skill Change) higher than the USA sample ($d = 0.51$).

Use of supervision, training and personal therapy—Table 3 shows data for use of supervision, training and personal therapy.

Table 3. Use of supervision, training and personal therapy

Professional Development Activity	Psychiatrists			Nurses		
	NZ (n=25)	Canada (n=23)	USA (n=53)	NZ (n=16)	Canada (n=4)	USA (n=20)
Supervision						
Years in supervision (Mean)	10.70	7.50	3.60	8.72	7.29	4.68
Currently in supervision (%)	44	17	52	83	100	67
Training						
Years of formal training (Mean)	3.66	7.62	3.18	5.48	5.63	5.03
Previously in specialised training (%)	81	58	56	71	100	71
Currently in specialised training (%)	4	8	22	13	25	19
Personal therapy						
Years in personal therapy (Mean)	4.83	7.42	5.33	2.74	7.79	6.32
Previously in personal therapy ^a (%)	83	75	59	94	100	86
Currently in personal therapy (%)	16	17	23	22	25	29

Note: NS vary slightly for different analyses due to missing data; ^aComputed for those reporting having had therapy.

Psychiatrists—New Zealand psychiatrists reported having been in regular supervision for an average of 10.7 years. Canadian and USA psychiatrists reported spending less time in supervision than New Zealand psychiatrists (7.5 years), despite having a much higher mean practice duration. Approximately half of the New Zealand and USA samples were currently involved in regular supervision, compared with just 17% of the Canadian sample.

The Canadian sample reported spending almost twice the time in formal training (7.6 years, compared with 3.7 years for the New Zealand sample). The low reported time in training is likely to reflect the focus of this question, which specified training in therapeutic theory and technique. Of the three samples, New Zealand psychiatrists were the most likely to have undergone specialist training in a specific psychotherapy, with 81% of the sample having done so, compared with 58% of the Canadian sample and 56% of the USA sample.

The majority of all three samples had experienced personal therapy: 89% of the New Zealand sample, 75% of the Canadian sample and 59% of the USA sample. However, the New Zealand sample had spent the least time in therapy (Mean= 4.8 years), and represented the group with the lowest proportion of current engagement in personal therapy (16%).

Nurses—A high proportion of nurses in all three countries reported undergoing supervision and personal therapy. Eighty-three percent of New Zealand nurses were currently receiving supervision, and they had been in regular supervision for an average of 8.7 years, compared with 7.3 years for the Canadian sample and 4.7 years for the USA sample. Nurses in all samples reported similar levels of training.

Virtually all of the New Zealand sample reported having undergone personal therapy (94%). As with the psychiatrist sample, New Zealand nurses had spent less total time in therapy (Mean = 2.7 years) and had the lowest proportion currently engaged in personal therapy (22%).

Perceived influences of supervision, training and personal therapy—Table 4 presents ratings of the influence of supervision, training and personal therapy on development.

Table 4. Perceived influence of sources of professional development

Source of influence on professional development	Psychiatrists			Nurses		
	NZ (n=25)	Canada (n=24)	USA (n=50)	NZ (n=17)	Canada (n=4)	USA (n=21)
Getting supervision	2.28 [3]	2.38 [3]	2.16 [3]	2.47 [1.5]	<u>2.00</u> [3.5]	2.57 [1]
Taking courses or seminars	1.70 [8]	1.83 [6]	1.44 [6]	2.00 [5.5]	2.00 [3.5]	2.05 [6.5]
Getting personal therapy ^a	2.37 [2]	2.44 [2]	2.45 [1]	2.47 [1.5]	2.50 [1]	2.44 [2]
Working with patients	2.46 [1]	2.71 [1]	2.30 [2]	2.39 [3]	2.25 [2]	2.43 [3]
Informal case discussion	2.16 [4]	<u>1.58</u> [7]	1.80 [4]	1.94 [8]	<u>1.25</u> [7]	2.33 [4]
Reading books or journals	1.83 [6]	2.00 [4]	1.42 [7]	2.00 [5.5]	1.75 [5]	1.85 [9]
Working with co-therapists	1.77 [7]	--	<u>1.08</u> [8]	1.94 [8]	--	2.14 [5]
Giving supervision ^b	1.90 [5]	1.94 [5]	1.73 [5]	2.10 [4]	<u>1.33</u> [6]	1.86 [8]
Observing other therapists	1.39 [9]	1.17 [8]	1.06 [9]	1.94 [8]	<u>0.75</u> [8]	2.05 [6.5]
Doing research	1.07 [10]	--	<u>0.46</u> [10]	1.12 [10]	--	1.00 [10]

Note: Table shows mean ratings, which range from 0 (no influence) to 3 (very positive influence). Rankings are presented in square brackets. Bold type represents 'small' effect sizes ($d \geq 0.2$). Bold, underlined type indicates medium effects ($d \geq 0.5$). Bold, double underline type indicates large effects ($d \geq 0.8$). Effect sizes represent comparisons with New Zealand. Ratings of two items are missing for the Canadian sample due to slight differences in the Canadian version of the DPCCQ; ^aComputed for those reporting having had personal therapy. ^bComputed for those reporting having given supervision.

Psychiatrists—New Zealand psychiatrists rated experience with patients as having the greatest influence on their professional development, followed by personal therapy. Personal therapy also received the second highest mean rating among the

Canadian sample, and the highest mean rating among the USA sample. Supervision received the third highest rating by all three samples.

Formal didactic training (taking courses and seminars) was rated lower, ranking sixth among Canadian and USA samples, and eighth among the New Zealand sample. Among the New Zealand sample, activities such as informal case discussions with colleagues, reading books and journals and working with co-therapists were perceived to contribute more to professional development than formal training. Cross-national differences representing a medium effect size were found on ratings of informal case discussion ($d = 0.65$ compared with Canada), working with co-therapists ($d = 0.68$ compared with US), and conducting research ($d = 0.66$ compared with US).

Nurses—New Zealand nurses perceived their experience with patients as having less influence on their work with patients. Work with patients was rated the third most influential development source, following supervision and personal therapy (first equal). The USA sample gave similar ratings to these sources, with supervision receiving the highest mean rating, followed by personal therapy, then experience with patients.

Nurses assigned lower ratings to the influence of formal training, which was ranked fifth (equal with reading books and journals) for the New Zealand sample, and sixth for the USA sample. The New Zealand sample rated *giving* supervision much more highly than the Canadian ($d = 0.94$) or USA ($d = 0.32$) samples.

Discussion

New Zealand psychiatrists reported a sense of positive change, attainment of therapeutic mastery and increase in skill across their careers, but their scores were lower than the Canadian sample and psychiatrists in other CRN samples.²⁸ It is also noteworthy that perceptions of “Current Development” were lower among New Zealand psychiatrists, particularly as current development is unrelated to extent of experience.²⁹ The current shortage of psychiatrists in New Zealand, limited resources for professional development, and high caseloads are likely explanatory factors.⁶ New Zealand psychiatrists reported high rates of specialist psychotherapy training and supervision, but only half were currently engaged in supervision at the time of the survey. This may be due to the lack of available supervisors.⁵

New Zealand nurses reported positive perceptions of cumulative and current professional development. Nurses also reported higher ratings of their growth in skill across the career compared with their USA counterparts. Interestingly, nurses reported involvement in all three activities specified in the tripartite model, and their use of these activities was proportionately higher than Canadian and USA samples. All nurses reported having received specialized training in psychotherapy and personal therapy.

The proportion of New Zealand nurses and psychiatrists who had undergone personal therapy was high compared with previous surveys of medical mental health practitioners.³⁰ However, the proportion actually undergoing therapy at the time of study participation, and their mean length of time spent in therapy, was low in relation to the Canadian and USA samples. These cross-national differences are likely to

reflect the higher endorsement of analytic/ psychodynamic orientations, which place greater emphasis on personal therapy.

New Zealand psychiatrists and nurses' perceptions of the influence of supervision, training and personal therapy were similar to their Canadian and USA counterparts, but different from Australian trainees⁽²²⁾. Personal therapy was rated as highly influential, whereas formal training was rated as less influential. Future research should conduct a more thorough evaluation of past, present, and intended professional development training.

Work with patients was rated less influential by nurses than by psychiatrists. It is possible that this relates to the nature of division of responsibilities involved in the two professions within the public health system. Replication of this finding would be useful.

Future research—It would be desirable for future research to examine the influence of activities such as supervision, training and personal therapy on both current and overall professional development more objectively. Very little research has been conducted on the continuation of advanced psychotherapy training in mental health practitioners' clinical practice. It would be useful to know more about the reasons practitioners elect to be involved in professional development activities such as those covered in the present study. Similarly, it would be useful to know how those activities are maintained, applied and supported within a work context, and integrated with other learning in the psychological therapies.

Limitations—The size of the present sample was not as large as we would have preferred. However, it should be noted that sampling busy mental health professionals' with lengthy self-report questionnaires is known to yield low response rates. There is also an absence of information on the entire population of psychotherapy practitioners. It is likely that the present sample included an over-representation of practitioners who were interested in professional development or research (i.e. self-selection bias).

Although an anonymous survey has the potential to reduce social desirability in responses, the reliance on therapist self-report introduces potential inaccuracies due to memory and judgment errors. Nevertheless, psychiatrists and mental health nurses' personal, subjective experiences of development are both interesting and important. The age of the present data are also acknowledged, and readers are advised to consider the findings in the context of changes to the New Zealand healthcare context.

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Smoking cessation education increases interventions in a New Zealand hospital: World No Tobacco Day revisited

Stephen Vega, Iwona Stolarek

Abstract

Aim To review the impact of educational and other measures on smoking cessation interventions delivered in a New Zealand hospital setting.

Methods The usage of nicotine replacement therapy (NRT) for inpatients was assessed by data gathered from the hospital pharmacy for a period before and after these educational measures.

Results Quarterly teaching sessions for house surgeons, monthly Effective Brief Intervention sessions for clinical staff and quarterly respiratory nurse training were delivered based on The New Zealand Guidelines for Smoking Cessation. In addition the Hutt Valley District Health Board (HVDHB) Smokefree Policy was revised from a business model to a treatment model. Over the 18 months after the educational initiatives were commenced the numbers of NRT units used in Hutt Hospital rose from a baseline of 768 to 3712—a fourfold increase.

Conclusion The increase in NRT usage could be attributed to educative measures put in place. There is an opportunity for similar smoking cessation interventions to exist New Zealand wide; this could have a significant impact on reducing chronic disease.

Following ‘World No Tobacco Day 2007’, the *New Zealand Medical Journal* published an editorial by two Christchurch respiratory physicians, Lutz Beckert and Roland Meyer.¹ They drew attention to a marked lack of spending on smoking cessation aids (particularly nicotine patches) in Christchurch Hospital. For the year 2006, only \$759.60c was spent on nicotine replacement therapy (NRT) by the surgical services and \$5075.68c by the medical services, perhaps reflecting a lack of attention given to smoking cessation by clinical staff.

The problem of smoking is such a significant one in health terms that Beckert and Meyer compared failing to provide attention to a patient’s smoking to that of failing to provide attention to a patient’s elevated blood pressure. Beckert and Meyer advocated doctors to address smoking cessation as a part of their clinical practice and went on to ask that “health professionals to show a commitment to the issue of smoking cessation initiatives and tobacco control by acquiring the relevant knowledge and skills; and by influencing hospital managers, district health board chief executive officers (CEOs), and policymakers to continue to make further gains across the entire health sector.”

Tobacco smoking is a leading cause of preventable death and disease. Indeed, New Zealand’s Ministry of Health estimates 5000 people die from exposure to tobacco in New Zealand every year.² The cigarette is now a chemical cocktail filled with additives to enhance the rapid delivery of nicotine to the bloodstream and modify the

taste of burnt tobacco.^{3,4} By the time they reach the age of 17, teenage smokers in New Zealand already express regret at having taken up smoking.⁵

Despite declining smoking rates, healthcare professionals need to be aware that there is still a large population of smokers who are heavily addicted, and that there are new recruits being added everyday.

Māori, in particular, are affected by very high rates of smoking, with 43% of adult Māori currently smoking.² If smokers do not quit early enough, many will add themselves to the health burden of long-term conditions—defined as the chronic conditions—such as chronic obstructive pulmonary disease (COPD) and cardiovascular disease (CVD), “that have a significant impact on the lives of a person and/or their family, whānau (extended family), or other carers.”⁶

In 2007 a Health and Disability Commissioner’s (HDC) report recommended that district health boards (DHBs) review their smokefree policies and become more assertive in their treatment of smokers by providing nicotine patches on admission.⁷

Hutt Valley District Health Board (HVDHB) is resolute in its commitment to smoking cessation and tobacco control initiatives. Our health professionals and managers have responded to the HDC report and the Ministry of Health initiatives, to make attention to smoking a part of regular clinical practice. In 2007, HVDHB agreed to put smoking cessation training in place and to review its existing Smokefree Policy.

The aim of this paper is to review the usage of nicotine replacement therapy (NRT) at HVDHB as a reflection of the success of these measures.

Methods

Hutt Valley Hospital is a 290-bed district general hospital 15 km from Wellington. Junior doctor staffing includes 25 house surgeons, 17 first years and 8 second years. In June 2007, as part of a programme of educational and training initiatives, quarterly training sessions on smoking cessation commenced for all house surgeons.

In July 2007, monthly effective brief intervention (EBI) training for smoking cessation, open to all staff, commenced. Smoking cessation training was also provided on an ad-hoc basis as the need arose—e.g. when the HVDHB mental health unit went smokefree in March 2008. All smoking cessation education sessions are based on the *New Zealand Guidelines for Smoking Cessation*.⁸

In addition, the review process for the HVDHB Smokefree Policy began July 2007. During a year of consultation the Smokefree Policy went through a rigorous process of comment and critique from the clinical board, clinical heads of department, the nursing development unit and the executive management team. The original Smokefree Policy instructed the human resources personnel to inform staff and contractors that the hospital and its grounds were smokefree and suggested disciplinary action against staff who were found in breach of the policy.

The revised Smokefree Policy has become a treatment model, rather than a business model, targeting clinical staff interventions and suggesting best practice for smokers based on the New Zealand Guidelines. The new revised Smokefree Policy ensures that appropriate levels of care and support are in place for patients, staff and visitors who smoke and recommends treating the patient for acute nicotine withdrawal with NRT. In addition it provides clinical staff with the steps to be taken to keep a patient safe when they insist on smoking.

Many of the changes in the policy were a direct result of input from senior clinical staff and the management team, demonstrating a high standard of commitment to the treatment and care of people who smoke.

The new policy was approved in May 2008. The active engagement of staff appears to have contributed to a significant culture shift; one where staff became open to training and discussions about smoking, and are now routinely asking about and freely providing NRT to their patients.

Other contributing variables that were likely to have increased the delivery of smoking cessation were: the support of the senior medical staff responsible for adult teaching, the introduction of Quit Cards in February 2008 and the introduction of the subsidised NRT lozenge on 1 September 2008.

Quit Cards, which had been used by Quitline as a substitute prescription for NRT, were initially restricted for use by health professionals who had undertaken specific two-day training. From February 2008 Quit Cards were approved for use by anyone who had prescribing rights, including hospital doctors and midwives.

To assess the impact of these initiatives a review of the usage of NRT was made for a period prior to and following the above educative initiatives to see if any measurable change had occurred. Data was gathered from Hutt Hospital pharmacy showing the use of inpatient NRT. Rather than look at cost, we looked at the total number of NRT units used in each year. All forms of NRT, whether a patch or a lozenge, were counted as a single unit. The total numbers dispensed in the hospital were counted and as Hutt Hospital Pharmacy supplies NRT only for inpatients, the numbers dispensed were assumed to reflect inpatient use.

Results

In 2006, prior to the introduction of educational and training initiatives, 768 NRT units were provided to inpatients. After the training started in mid 2007, the volume of NRT units used rose by 85% for that year compared to 2006, as shown in Table 1. In 2008, patches, gum, lozenges and inhalers were provided, however the inhaler was not subsidised and was only offered to patients in the mental health unit. The volume of NRT used in 2008 rose by another 161% compared to 2007; a fourfold increase in NRT use over 2 years (Table 1).

Table 1. Combined annual inpatient units of NRT used by Hutt Valley Hospital

Year	Patches	Gum	Lozenge	Inhaler	Total (%)
2006	732	0	0	36	768
2007	1058	360	0	0	1418 (85%)
2008	1658	1466	480	108	3712 (161%)

Discussion

Teaching around smoking cessation started in mid-2007. Since that time each quarter's intake of new house surgeons has had the opportunity to attend a teaching session, and in total approximately 70 house surgeons have attended, this comprises more than 80% of all new house surgeon staff. Smoking cessation training for house surgeons is on their general roster of adult teaching and although not compulsory it is recommended that they attend. House surgeons received a 45-minute training session, which was a shortened version of the EBI training, with an emphasis on the delivery of NRT.

The aim of this training is to clarify that smoking is a significant health issue, that smokers are addicted to nicotine, and most will need treatment for abrupt withdrawal when admitted to hospital. For the same period 96 staff attended EBI sessions, 31 of these were clinical hospital staff and the remainder in allied health. Of the clinical staff one was a doctor, two were physiotherapists and the others nurses. Trainees are

recruited through a staff intranet bulletin, a circulated hard copy human resources bulletin and by word-of-mouth.

Our results show that NRT usage has increased from 768 units in 2006 to 3712 units since education and training structures have been put in place. It is interesting to note that the combined use of nicotine gums and lozenges is greater than the patch for 2008. This is somewhat against the data from Quitline and might be due to the emphasis provided in training that the oral nicotine preparations provide much more immediate relief from withdrawal than the patches.⁹

These data suggest that smoking cessation awareness has grown and that more staff are undertaking more smoking interventions with their patients. Further, as interventions only started midway in 2007, the increase for that year shows that rapid improvements can be achieved. As the main interventions in 2007 were educational, prior to changes in smokefree policy, we can see that a smoking cessation programme for house surgeons can significantly impact on NRT usage. However, the total spend on NRT for 2008 was only \$3676.63, out of a pharmacy budget close to 3 million, a very small cost for a large gain, and clearly there is potential for further gains to be made.

We have not used Quit Cards as a measure of smoking cessation activity, though they may have contributed to staff awareness of this issue. Quit Card activity has been difficult to measure because Quit Cards have been directly distributed to health professionals and therefore given to both outpatients as well as discharged inpatients.

We attribute the overall increase in use of NRT to the delivery of smoking cessation education, the success we have had with changing the emphasis of our Smokefree Policy to a treatment model, our mental health unit becoming smokefree and also to a positive work environment where the staff have actively engaged with these measures. Although it may be difficult to demonstrate, one aspect of our success might have been the removal of barriers to smoking cessation, by suggesting smoking cessation as a treatment option, rather than a counselling session.

An earlier in-house pilot study had shown that perceived barriers did exist, e.g. a lack of time to do cessation counselling. Previously brief interventions for smoking cessation had been modelled on the Stages of Change and smokers readiness to quit.

This model appeared too detailed, we therefore took view that the smoking cessation approach to patients should be made from a clinical treatment model—i.e. providing treatment for abrupt nicotine withdrawal, rather than providing smoking cessation counselling. We were also of the view that the responsibility for treating patients for nicotine withdrawal was the duty of all clinical staff rather than a specific smoking cessation person or team.

Evidence suggests that advice from a health professional will help a smoker to quit; that NRT is an effective aid to quitting, and that spontaneous quit attempts are often more likely to succeed than planned quit attempts and it is this evidence and the New Zealand Guidelines that has guided our approach.^{10,11,12}

On a national scale, if all health providers were to apply the New Zealand Guidelines approach to smoking cessation and increase the use of NRT, this could have a significant impact on reducing chronic disease in New Zealand. The Ministry of

Health supports this approach and has developed the ABC Framework for Tobacco. ¹³ The aim of the **ABC** framework is to assist all health professionals to **A**sk about smoking, offer **B**rief advice to quit and provide **C**essation options including NRT and referrals to cessation services such as Aukati Kai Paipa and Quitline.

At a local level ABC training that includes the “relevant knowledge and skills” for smoking cessation, will be made widely available this year to all health professionals, both online and through the Smokefree DHB Coordinators.

More recently the Ministry of Health published the first results of the Health Target report and HVDHB came bottom of the table for target 5; “Better help for Smokers to Quit”. The measure for the Health Target is the number of admitted patients who are documented, and then identified and coded, as smokers who have received advice to quit.

The HVDHB Health Target result appears to reflect a lack of documenting and coding of smoking status rather than a lack of will to engage with the process of helping smokers, as evidenced by our increasing NRT usage. For the year 2009 our NRT usage has continued to increase (by another 47%), suggesting the issue with our Health Target is the capture of information regarding smokers receiving advice to quit.

As a result HVDHB has revised its electronic discharge summary to better capture patient smoking information and advice to quit, although this still cannot ensure the complete accuracy of documented and coded data.

At HVDHB we plan to continue to monitor NRT usage not only to assess the ongoing impact of educational and policy changes, but to help interpret our Health Target. This year we will broaden the delivery of our work to include our primary care services.

It is important not only to acknowledge World No Tobacco Day 31 May, but also to address smoking cessation throughout the year by providing a strong level of care and support to patients who smoke and provide the resource that enables them to quit.

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Health care policy and community pharmacy: implications for the New Zealand primary health care sector

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Abstract

The aim of our paper is to expose the challenges primary health care reform is exerting on community pharmacy and other groups. Our paper is underpinned by the notion that a broad understanding of the issues facing pharmacy will help facilitate engagement by pharmacy and stakeholders in primary care. New models of remuneration are required to deliver policy expectations. Equally important is redefining the place of community pharmacy, outlining the roles that are mooted and contributions that can be made by community pharmacy.

Consistent with international policy shifts, New Zealand primary health care policy outlines broad directives which community pharmacy must respond to. Policymakers are calling for greater integration and collaboration, a shift from product to patient-centred care; a greater population health focus and the provision of enhanced cognitive services. To successfully implement policy, community pharmacists must change the way they think and act.

Community pharmacy must improve relationships with other primary care providers, District Health Boards (DHBs) and Primary Health Organisations (PHOs). There is a requirement for DHBs to realign funding models which increase integration and remove the requirement to sell products in pharmacy in order to deliver services. There needs to be a willingness for pharmacy to adopt a user pays policy. General practitioners (GPs) and practice nurses (PNs) need to be aware of the training and skills that pharmacists have, and to understand what pharmacists can offer that benefits their patients and ultimately general practice. There is also a need for GPs and PNs to realise the fiscal and professional challenges community pharmacy is facing in its attempt to improve pharmacy services and in working more collaboratively within primary care.

Meanwhile, community pharmacists need to embrace new approaches to practice and drive a clearly defined agenda of renewal in order to meet the needs of health funders, patients and other primary care providers. There are significant barriers to change. Some of these are financial but many are professional and organisational and require a genuine commitment from the whole primary health care sector.

The past decade has seen policy reform result in significant challenges for community pharmacy. Internationally, policy is driving change in community pharmacy, although 'reprofessionalisation' from within pharmacy is a contributor.¹ Policymakers and professional pharmacy bodies are advocating significant change to ensure community pharmacy contributes to primary health care.²⁻⁵

In New Zealand community pharmacy is an integral part of primary health care but has been an underachiever in terms of the expectations of current policy. Pharmacists

are highly trained however in many instances community pharmacists spend their time counting tablets in a dispensary. Pharmacists and their support staff undertake bureaucratic roles on behalf of other agencies often with minimal access to prescribers.⁶ This is in direct contrast to where energies need to be directed to facilitate health gains.

New Zealand policymakers request integration and collaboration between community pharmacy and other providers including general practice.⁷ In part, these policies are underpinned by increased demand for primary care services in the face of declining numbers of general practitioners. This is an international trend and professional bodies of pharmacy see opportunity through role extension. One example of this role extension (or reprofessionalisation) is Medicines Use Review and Adherence Support (MUR).

MUR is an enhanced service which involves assessment of patients' medication regimens, their understanding and concordance, and recommendations being made to the patient and general practice team.⁸ Tension characterises this position, particularly with regard to the relationship between community pharmacy and general practice based on the overlap of current and future roles and professional boundaries.

The thrust of our paper is outlining the implications of policy change for both community pharmacy and key stakeholders. General practitioners, primary care nurses, health funding and planning groups including DHBs and PHOs are all expected to collaborate with the community pharmacy sector.⁷ In this context, we describe the changes community pharmacy must make to deliver the expectations of primary health care policy and reform.

We highlight the implications, challenges and opportunities for both community pharmacy and external stakeholders. To this end, we aim to create awareness and debate amongst the primary care sector.

Policy drivers

The Governments of New Zealand and the United Kingdom have implemented major reforms since the mid 1990s that impact on community pharmacy.^{2,4,7} The UK Government has been prolific in its commissioning of consultation reports³, literature reviews,^{9,10} and health policy^{2,11,12} outlining current and future roles for community pharmacy.

The NHS White Paper for Pharmacy released in April 2008² draws on what Galbraith describes as the attributes of a good pharmaceutical service³, and outlines the potential contribution of pharmacy at various levels. Galbraith describes the distinguishing features of a world class pharmacy (Panel 1) which provides a benchmark for New Zealand.

Panel 1. Distinguishing features of a world class pharmacy

- Primary source of health information and advice
- Helping people to stay healthy and to improve health where needed
- Routinely promoting self-care and being associated with key public health initiatives
- Providing new services to help people with acute conditions and long-term conditions
- Skilled, knowledgeable, competent and considerate staff
- Part of a strong local network of health improvement services and local leaders for health in the community
- A wider information retailer of medicines but also broader health, wellbeing and social matters—i.e. sustainable development

Galbraith suggests that the fundamental principles underpinning a contractual model for community pharmacy practice include models of practice which enhance patient experience, support wellbeing and promote the safe use of medicines. Additionally, community pharmacy needs to develop an integrated ‘pharmaceutical care management’ service. This approach should include a greater clinical focus, be integrated with other providers, have a quality focus and be underpinned by adequate incentives to drive best practice.

In New Zealand, primary health care reform has followed much the same model as in the UK. The main difference is that the community pharmacy sector has been central to these reforms from the beginning in the UK by representation through a Chief Pharmaceutical Officer. Since the 1990s, pharmacy has gained the attention and respect of high level health policymakers and advisors from other health professions. Despite the importance of medicines and medicines provision in the modern health care system this post does not exist in New Zealand, whilst medicine and nursing do have such representation.

The New Zealand Primary Health care Strategy (NZPHCS) is much more subtle in outlining roles for community pharmacists, simply as a provider of education in addition to medication supply and distribution activities.⁷ The NZHPCS calls for the delivery of high quality care through improved access and equity. This is expected to be facilitated by integration between service providers and development of culturally competent multi-disciplinary primary health care teams.⁷ The NZPHCS does not provide detail of what community pharmacy needs to deliver in order to improve health outcomes.

Medicines New Zealand (MedNZ) is a strategy⁴ which provides more direction, citing three objectives:

- To ensure the quality, safety and efficacy of available medicines.
- To improve access to medicines that New Zealanders need regardless of an individual’s ability to pay.
- To optimise the quality use of medicines.

The MedNZ strategy dictates increased roles for pharmacy and highlights the central position of community pharmacy in assisting patients to understand their medicines better, to use their medicines appropriately, to monitor side effects and adverse reactions and to optimise therapeutic outcomes through medicines use and adherence.

New Zealand and the UK do not stand alone, with governments and professional pharmacy bodies in Australia¹³, Canada¹⁴ and the United States¹⁵ generating policy and vision documents. Along with the New Zealand and UK policies and vision, these documents highlight themes of change (Panel 2) which need to be addressed by community pharmacy and the rest of the primary care sector in order to deliver expected health outcomes.

Themes of change

If value is to be gained from community pharmacy, the wider primary health care sector needs to understand the current model of care and therefore the change that is required including professional, structural and remuneration models.

Panel 2. Health care policy and challenges for community pharmacy and stakeholders

- Policy setting for pharmacy has been dominated by funding stakeholder bodies with varying levels of consultation with key stakeholders
- Vision setting by national pharmacy bodies has been formulated predominantly through input from within the sector
- There is a call for integration and collaboration of pharmacy services within primary health care systems
- There is a focus on the provision of quality evidence-based health care
- There is a change from a product to a service orientation and from individual patient to population focus
- The provision of enhanced pharmaceutical services or cognitive services is an important way for the pharmacy profession to improve population-based health outcomes whilst contributing to their own professional development.
- There is development with respect to new models of pharmacy practice
- There is an expectation of support for academic pharmacy practice and research in line with national pharmacy body and funding stakeholder requests
- Sustainability will be gained through an adequate level of publicly funded remuneration
- Planning and implementing a defined agenda of change for pharmacy will be a significant determinant of pharmacies future

A greater emphasis on integration and collaboration—Community pharmacy will need to work towards complete integration within the primary health care system. This will require integration in terms of technology and patient flow to ensure population-based health care delivery. There is a need for engagement between community pharmacy and DHBs which undertake health funding and planning activities and ultimately dictate the use of funding streams involving community pharmacy.¹⁶ The same applies to PHOs which implement coordinated health initiatives for general practice teams.¹⁷

For some proprietors and managers this will require a significant refocus on relationship management, and being aware of the environmental situation outside of the 'four walls' of their pharmacies. For DHBs and PHOs this may require an equal level of self-reflection and pro-activity.

Collaboration with the wider primary health care team including general practitioners and nurses is expected.⁷ Pharmacists will need to demonstrate that they are medicines experts who can effectively communicate not only with their patients, but also with other health professionals and representatives from health funding and planning organisations.

A focus on the provision of quality primary health care—As with general practice, demonstrated evidence of the delivery of quality primary health care by community pharmacy will be mandatory. Clinical and process audits will become commonplace within community pharmacy. There is a greater expectation that community pharmacies contribute to both patient and population health outcomes as a result of increased multidisciplinary teamwork and integration at both practitioner and organisational levels.^{4,7}

The requirement for standardisation and benchmarking across pharmacies will impact on those delivering the services through increased compliance costs. The need to integrate and collaborate in order to improve the quality and seamless nature of primary health care delivery will require up-skilling at all levels within community pharmacy.

A focus on 'service provision' versus 'selling a product'—Like general practices, community pharmacies are small to medium sized businesses in New Zealand and two key issues prevail for proprietors. First, the delivery of value to key stakeholders is important for sustainability.¹⁸ Second, a level of financial viability is required when making changes to the way services are delivered.

Shifting from the need to make a companion sale to the delivery of a range of quality assured patient oriented services will require two significant changes. First, workflows will need to be re-engineered and staff trained accordingly. Second, adequate remuneration needs to be provided.

Pharmacists in New Zealand are generally positive about adopting new enhanced services which require collaboration¹⁹ which is in agreement with findings from the UK.^{20,21} However, the difference between New Zealand and the UK is that for too long community pharmacy in New Zealand has been providing services to the public for which there has been no reimbursement outside of the sale of a product. Enhanced and collaborative roles require an adequate level of remuneration in New Zealand so that this focus can be reversed.

Activities such as minor ailments programmes are a good example. Historically these activities have involved assessment of and response to patient symptoms with the sale of a product or direct referral to a general practitioner as appropriate. Despite fears to the contrary, pharmacists do not see this as diagnosis.

Pharmacists recognise that diagnosis is not a core part of their underlying training, whilst many have a good understanding of diagnostic processes they are very well aware that this is not their primary role. In line with the UK model, minor ailments

programmes will be more formalised, have restricted protocols for funded medications that can be dispensed, have associated funding streams for pharmacists' time, will require training and accreditation and have standard deliverables.

The model of shop assistants providing triage and much of the advice about minor ailment management may come under scrutiny and may precipitate a reassessment of the roles and levels of work within community pharmacy.

Looking after your patient...looking after your population—The expected health gains through implementation of the NZPHCS are underpinned by a population-based focus on health care provision. Ten years ago this was a new phenomenon for general practice which now applies to community pharmacy. Brief screening and intervention for alcohol consumption is one example whereby integration and coordination with other health professionals and with PHOs will be required.

It is not a matter of simply putting a poster on the wall or having a product-based shop front display. Training, taking a wider view of activities and the environment outside of the pharmacy and relationship management of key collaborators will be important drivers of success.

The provision of enhanced pharmaceutical services—Days are numbered for the handing out of 'the brown paper bag' which contains a pile of medications for which little or no advice is given and for which concordance is not supported or monitored. The provision of value-added patient oriented services will become the norm. Coordinated MUR, minor ailments programmes and public health screening will be targeted at high risk patients for whom the most benefit will be gained.

Structural changes will be required to ensure private consultation areas are available for assessment and counselling. Systems and processes will need to be in place to ensure that general practitioners, primary care nurses, nurse practitioners and receptionists are kept informed of the actions which community pharmacy has taken or the recommendations that are made.

Changes in human activity will also be required to implement enhanced services. Pharmacist confidence,^{21,22} an unwillingness to leave the comfort zone of the dispensary,²³ uni-professional cultures²⁴ and pharmacy's inexperience of the commissioning process²³ have been cited as barriers to change in the UK. Similarly in New Zealand the way pharmacists think and act and their relationships with stakeholders has been cited as a barrier to moving forward.²⁵

Developing new models of pharmacy practice—The old adage of 'location, location, location' - or being near to a general practitioner, thereby ensuring high prescription turnover will not be enough to deliver the wide range of services that pharmacy is expected to undertake. Just as general practice has had to change over the last thirty years, community pharmacies will need to develop and implement new workflows and models of practice as well. Activities such as the management of minor ailments that have been routine clinical practice will become more formalised and require re-engineering in order to deliver services.

New services will require different models of practice and the strengthening of relationships.⁸ MUR is a service that will require substantial re-engineering. Many pharmacies now have consulting rooms or private areas and there are a growing

number of examples of these services. To develop this widely, more pharmacists will need to be trained, support staff will need to be aware of the process, private space allocated, documentation systems put in place and there will need to be increased liaison with general practitioners and nurses.

A defined agenda and processes for change—The ability to think, develop vision, cement key stakeholder relationships and adapt through strategic change are prerequisites for the survival of community pharmacy. Tsuyuki and Schindel²⁶ have started thinking about this process in a systematic way. Applying the well established model of change by Kotter highlights the need for developing a sense of urgency, forming a guiding coalition, achieving short-term gains toward longer-term goals and embedding a focus on the future within the culture of community pharmacy.²⁶ To some extent policy is helping to develop a sense of urgency. The rest must come from within the pharmacy sector.

A challenge to community pharmacy

We have argued that the reform of New Zealand primary health care is having, and will continue to have, significant implications for community pharmacy and key stakeholders. All too often, Government policies are seen by those working at the coal face as didactic, idealistic, unachievable and non-sustainable and this appears to be the case with community pharmacy.²⁵

In moving forward, seven barriers need to be addressed by community pharmacy including: the way pharmacists think and act, improved systems of care and teamwork, improved funder relationships and remuneration, appreciation of pharmacists knowledge and skills, support for research, up-skilling current expertise and having a unified pharmacy voice.²⁵

Pharmacists themselves may have to make attitudinal changes in order to take on new roles and integrate within the primary care team. Our previous work reports pharmacists' apathy, narrow and inward focus, negativity of the current health care environment, silo thinking and taking a subservient approach. This thought and behaviour needs to be replaced with a level of outgoing confidence, underpinned by pharmacy placing 'value' on itself as a profession.²⁵

Lack of adequate remuneration has been cited as a significant barrier to the adoption of enhanced services.²⁵ Whilst general practice has been subject to the challenges and pressures of primary care reform, historically it has developed a stronger negotiating position, is better supported by government funded organisations such as PHOs and has had substantially more funding reserves and remuneration policies such as Capitation and Services to Improve Access (SIA).

These funding streams have provided sustainable revenue outside of fee for service payment arrangements. To remain viable as a respected health care professional, the community pharmacy sector as a whole needs to demonstrate a willingness to adopt a "user pays" policy for services that have historically been provided for free or subsidized by retail sales.

Tied in with the lack of adequate remuneration to provide education, enhanced pharmaceutical services and public health initiatives, is the historic relationship between community pharmacy, DHBs and the Ministry of Health (MOH). New

Zealand pharmacists perceive their relationship with DHBs and the MOH and their bureaucratic processes to be a significant barrier to community pharmacy moving forward.²⁵

As a profession, community pharmacy has to become indispensable, deliver value, and attempt to improve relationships with funder stakeholders to assist in securing a funding model which enables the provision of enhanced services to be sustainable. There is a need to decrease the reliance on selling product to fund consultations. Pharmacists complete a four year degree and a one year structured internship. Pharmacists need to utilise their skills and demonstrate that a high level of clinical pharmacy is actually practiced in their pharmacies.

Overseas experience suggests that pharmacists are generally positive about the uptake of new roles²⁷, however this enthusiasm has not always occurred at the pace expected by stakeholders⁸. In part this is due to the barriers outlined by us previously. The New Zealand pharmacy sector will need to take heed of these barriers and address them in a systematic fashion to enable the change required to deliver these services. In order to demonstrate the value expected by policymakers and other key stakeholders, the academic community needs to implement a research agenda in conjunction with professional pharmacy bodies.

Community pharmacy must fully commit to service evaluation and actively participate in practice-based and organisational research. In this manner pharmacists will demonstrate what they do achieve, rather than what they could achieve.

Although significant, the above mentioned challenges are not insurmountable and the pharmacy sector needs to rise to the challenge and embrace opportunity.

Challenges and opportunities for the rest of primary health care

There will be significant value for general practice, DHBs and PHOs when community pharmacy is more integrated with primary care and gains traction in delivering enhanced pharmaceutical services. It is expected that general practice will have patients who are better informed about their medications, more likely to be concordant and who achieve the health targets expected by the DHBs.

By engaging community pharmacy, PHOs will be seen not only to contribute to population health outcomes, but also to the development of a robust multi-disciplinary workforce and primary care infrastructure which is an expectation of primary care policy.¹⁷ Community pharmacy has been shown to contribute to positive health outcomes through involvement in disease management programmes similar to those operating through general practice in the United States.²⁸

Disease management is a comprehensive approach to preventing and treating disease that:

- Targets patients with specific diseases;
- Provides integrated services across organizational and professional boundaries;
- Utilises services based on the best scientific evidence available; and
- Focuses on outcomes.

Disease management differs from pharmaceutical care services in that pharmaceutical care targets not only patients with specific diseases but also those with risk factors for drug-related problems, a history of non-adherence, and frequent changes in medication regimens.²⁸ Smoking cessation is an example of a successful disease management program implemented in community pharmacy.

Gaining traction and developing effective working relationships between community pharmacy and general practice relies on both parties being amenable to working together, respecting and valuing each other and having a common goal of improved health outcomes. As such, responsibility lies as much with general practitioners and nurses as it does with staff in community pharmacies to ensure that this happens for the benefit of the patient.

Ongoing debate in The New Zealand Herald regarding pharmacist involvement in the swine influenza pandemic highlights ignorance about the training and skill-set of pharmacists at the time of graduation and the services that pharmacists can offer. As it is, community pharmacists spend significant amounts of time policing for other agencies such as The Pharmaceutical Management Agency (PHARMAC), with poor access to prescribers.⁶ The ill-informed comment in the lay press does little to create a harmonious working environment where collaboration prevails over ignorance, fear and patch protection.

Community pharmacy cannot be solely responsible for integration within the primary health care infrastructure and teams. Although some PHOs are taking a lead in developing relationships with community pharmacy and there are small pockets of activity around the country, integration of community pharmacy representation into PHO governance structures appears to be slow. Involvement of community pharmacy in integrated primary care initiatives also appears to be tardy.

DHBs have a role to play and significant responsibility in the development of integrated community pharmacy services. In much the same way as the PHOs, DHBs have been relatively slow to engage with community pharmacy.

The MedNZ strategy calls for increased involvement of community pharmacy to ensure the optimal use of medicines and DHBs need to fully support this strategy. In some regions this has occurred through the formation of district wide advisory groups and project leaders who are assigned to community pharmacy development portfolios. Involvement of community pharmacy in integrated care projects has flowed from this approach but requires full engagement by community pharmacy.

Last but not least, the policies of PHARMAC impact significantly on the activities of community pharmacy in New Zealand. Historically community pharmacy has spent considerable energy 'policing' PHARMAC policies rather than delivering the best possible health care. The most recent example is the need for community pharmacists to check the scope of practice of the prescriber for every prescription received.

This requirement for 'PHARMAC policing' needs to stop and the considerable time and energy spent chasing insignificant and distracting bureaucratic problems needs to be channelled back into patient care. PHARMAC has considerable responsibility in ensuring that this transition happens.

We suggest the entire primary health care sector within New Zealand is made aware of and understands the ramifications of policy reform for community pharmacy as a key partner in the delivery of primary health care. Equally, we call for the community pharmacy sector to understand the challenges ahead, to drive the change necessary to overcome barriers to moving forward under current health policy reform.

There is a need to think about how the community pharmacy workforce should evolve and how further integration of community pharmacy services will be undertaken to ensure that pharmacy contributes to health outcomes through coordinated approaches with other primary health care providers. This cannot be undertaken by community pharmacy alone.

Summary

The implications of primary health care reform are significant for New Zealand community pharmacy and there is positive stakeholder opinion of what community pharmacy should be able to achieve. However, there is only so much that can be addressed through health policy, the rest needs to come from change within the pharmacy sector with awareness, understanding and support from key external stakeholders including health funders and planners and other primary care providers.

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New Zealand's drug development industry—strengths and opportunities

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Abstract

Aim Globally the traditional model of drug development is changing and the large pharmaceutical companies are looking externally for innovative compounds, new technologies and cost-effective drug development services.

New Zealand (NZ) can capitalise on its expertise in innovative drug discovery and development but needs to be able to define and promote its capabilities to the global drug development industry. An approach that will enable a ready assessment of NZ's expertise is presented.

Method Interviews will be carried out with key senior personnel from NZ drug discovery groups, drug development companies and organisations that provide a wide range of research and development services. The resulting data will be collated to document current capabilities and expertise, as well as limitations, in NZ's industry and assess their potential for the future. Participants will be asked to identify factors that support and factors that limit their organisation's progress in drug development and to suggest policies that could be implemented to positively influence future performance.

Conclusion A formal assessment of New Zealand's capabilities, strengths and limitations in drug development will aid in the promotion of its expertise to overseas organisations and enhance the economic benefits that could accrue to New Zealand.

Background

The changing model of drug development—The model of drug development is changing. Whereas the traditional approach was that of large pharmaceutical companies developing their own pipeline compounds and focussing on a few blockbuster products, we have now entered an era of partnerships and alliances between big PHARMA and smaller companies and universities the latter being sources of innovative compounds and specialised drug development services. This has resulted in a trend towards personalised therapeutic approaches with niche products that may not provide a high volume of sales but which can, nevertheless, be highly profitable.¹

This change in the traditional approach to drug development has occurred as the industry adapts to an evolving environment caused by:¹⁻³

- The failure of the large pharmaceutical companies to identify sufficient promising new compounds, leading to waning investor confidence;
- The disease categories that require therapeutic innovation (e.g. cancers, neurodegenerative diseases) are less well understood and hence more difficult

to research than disorders that already have a wide range of treatment options (e.g. in cardiovascular and infectious fields);

- Escalating research and development (R&D) costs;
- The wide range of new scientific and technological improvements which make it impossible for one firm to keep up-to-date with all opportunities that they create;
- Current blockbuster drugs coming off-patent and increasing generic competition;
- An increasingly risk-averse regulatory environment which has been exacerbated by safety issues associated with some high profile drugs (e.g. Cox-2 inhibitors); and
- More demanding users who have extremely high expectations of the efficacy, safety and value of their medicines

The costs and risks of drug development—The average capitalised cost to develop a pharmaceutical agent, taking into account costs of discovery, lead generation and failed candidates, has risen with time reaching \$US1.24 billion in 2005 dollars.^{3,4} The 3 phases of clinical drug development (Phase 1—first pharmacokinetic and safety studies; Phase 2—larger safety and efficacy studies in patients; Phase 3—safety and efficacy studies in large numbers of patients, usually required for drug registration) carry different risks and costs. The largest variation being in the costs of phase 3 as they are most dependent on the therapeutic indication being sought.⁵

Table 1. Clinical development: average (range) cost and chance of success for each phase in a drug’s development

Clinical development phase	Average (range) cost (\$US) ⁵	Chance of success ^{5,6}
1	15.2 million (9–23 million)	70–80%
2	24.0 million (20–31 million)	30%
3	86.8 million (65–137 million)	80%

Phase 2 (i.e. showing clinical proof of principle) is more expensive and has a much higher risk of failure than phase 1. The Phase 3 programme is the most expensive due to the numbers of patients required to establish both efficacy and safety in the long-term and to obtain data in special populations. In addition to these costs of running the clinical programme there are the costs arising from pre-clinical studies, manufacturing and formulation.

From every 10,000 molecules that are screened, approximately 5 will enter clinical trials and only 20% of these will succeed to the end of phase 3.⁶ Even then, regulatory approval is not guaranteed and some compounds are discontinued for reasons including commercial viability and long-term animal toxicity issues.

The opportunity for New Zealand—The uncertainties and changes in the global drug development industry noted above create opportunities for countries with recognised capabilities. New Zealand (NZ) can capitalise on the advantages of a

strong biomedical research basis for drug discovery, a resourceful and entrepreneurial society that encourages innovation,⁷ a reputation for conducting world-class medical and clinical research, an acknowledged ability to produce research results “on time”, and a comparatively weak dollar which leads to competitively priced drug R&D services.

Potential opportunities available in this new world of drug development include the discovery and development of innovative compounds, production of generic medicines, reformulation and new presentations of existing medicines, and provision of drug development support services.^{8,9}

NZ has the potential to add value and effectively compete on a global basis in at least three of these areas:

- The discovery of innovative compounds targetted to treat diseases that currently have insufficient treatment options.
- The development of novel compounds.
- The provision of R&D services to the global drug development industry.

Each of these could bring substantial economic benefits to NZ and the research proposal outlined in brief here is aimed at assessing the viability of these three opportunities.

Though a high-risk enterprise requiring significant financial investment, the discovery and development of a NZ novel compound has the potential to provide significant financial returns to its investors as well as economic and knowledge benefits to all NZers.

NZ’s most recent success in this regard is the anti-cancer agent, DMXAA, identified in 1989 at the Auckland Cancer Society Research Centre (ACSRC) and developed under the direction of Professors Bruce Baguley and Bill Denny. The development was complicated and protracted due to lack of funds and expertise in NZ at the time. However, DMXAA, now named Vadimezan, was licensed by Novartis in 2007 and phase 3 trials are underway.

The case of DMXAA highlights some problems and potential benefits to NZ of identifying and developing novel compounds. Much of the clinical development of DMXAA involved NZ clinical sites and the out-license agreement with Novartis included upfront and milestone payments, and royalties on eventual sales. However, in reality, some of these financial returns may be quite limited as the NZ investment has been diluted by larger overseas investment partners and, because of the protracted development process, Vadimezan may well be off-patent by the time it reaches the market.

At \$US1.24 billion the cost of drug development is too high for the NZ government and NZ private investor funding even if the costs in NZ are much lower than elsewhere (e.g. by using NZ’s Centres of Research Excellence and less expensive local drug development service organisations).

In order for NZ to maximise the returns from its innovative drug discovery and development industry it needs to have access to sufficient capital and to assess the best point in the development process at which to share the risks and costs.

The provision of R&D services (e.g. chemistry, formulation and manufacturing, clinical research and project management) to the global pharmaceutical industry is less profitable than the potential returns from sales of a novel pharmaceutical. However it carries a much lower risk, does not require a large financial investment and can still contribute significant economic returns on a regular basis.

There are already a number of successful but R&D centres in NZ working under contract with large pharmaceutical companies and there seems every reason to build upon the success of these endeavours.

In order to capitalise on its opportunities NZ needs to be able to compete against countries such as Australia, the UK, India and Singapore which are also seeking to attract overseas partners and investors to assist in the discovery and development of novel compounds and to obtain drug development contracts from large pharmaceutical companies. NZ needs to be able to define and promote its drug discovery and development capabilities to the global pharmaceutical industry. This paper outlines research already underway which aims to define those capabilities.

The research approach

Questionnaires based on developed theoretical frameworks will be administered during semi-structured interviews with individuals who have a key role in NZ drug discovery, drug development or R&D organisations. The questionnaires will be used to collect data on drug discovery and development capabilities, industry enablers and barriers, and the potential economic benefit to NZ.

Assessment of capabilities, knowledge management and innovation—Data will be collected to assess the expertise and capabilities of both the participant and the organisation they represent. All eligible drug development companies and R&D support services organisations will be approached to participate. A representative sample of the drug discovery groups will also be taken into account.

For the purposes of this research, a drug development company must be registered in NZ and have conducted at least one clinical trial on a novel compound in the last 5 years. The R&D organisations will include those that provide any of the following services: chemistry, pharmaceutical formulation, analytical methods, toxicology, data management and statistics, clinical research and project management. The drug discovery groups will be those with the potential to carry a compound into human clinical trials in the next 5 years.

The participant information collected to assess the expertise in drug discovery and development will include qualifications, relevant career experience and outputs (such as publications, especially in peer-reviewed journals, and conference presentations), personal competencies, membership of appropriate organisations and any formal recognition of their expertise.¹⁰ Similarly the information collected on the organisations will include their range of drug discovery and development capabilities, qualifications and experience of staff and, where applicable, data on previous and current compounds in discovery and development.

Participants will be asked to compare their organisation's knowledge sharing and knowledge management behaviours both within their organisation and externally with that of their facet of the industry. Based on a knowledge management questionnaire

developed by Lui and Lui,¹¹ participants will also be asked to rate the importance of different sources of knowledge (e.g. codified and non-codified information, external and internal sources). Since the process involved in the discovery and development of a new medicine requires extensive knowledge in different specialities distributed across many individuals, knowledge acquisition and sharing is essential.^{11,12}

Measuring innovative performance objectively is very difficult because measures such as the number of patents registered or scientific papers published can be affected by the type of organisation. Thompson and Heron¹³ adapted seven ‘innovator’ questions from a broader scope instrument and used this sub-scale as a measure of innovative behaviour in organisations. This sub-scale will be used by participants to rate their organisation’s ability to produce new ideas, develop contacts with external experts, make time to work on ideas and projects, solve problems that caused others difficulty, project planning, innovative output, teamwork and communication.

The inter-relationships between NZ drug discovery groups, the NZ drug development companies and the R&D support services organisations used both locally and by overseas companies will be explored. NZ’s interconnecting network of expertise will be compiled and assessed in terms of the quality and quantity of expertise, and ability to adhere to timelines and budgets.

Enablers and barriers to NZ’s drug development industry—Participants representing the three facets of NZ’s industry will be asked to identify the enablers and barriers that have affected their organisation’s efforts in drug discovery and development. In addition they, plus government agencies and other industry stakeholders, will be asked for their opinion on which factors have encouraged and threatened NZ’s industry as a whole and policies that NZ could implement in order to further support growth of its drug development industry.

Economic benefit to New Zealand—An assessment of the economic benefits that NZ’s drug discovery and development industry could provide will be made based on the estimated sales potential of a novel compound discovered and developed in NZ, and on NZ’s R&D capability being used by overseas firms.

NZ needs to carefully consider its options for compounds entering clinical development or that have positive data from phase 1 studies. The outcome of the NZ compounds that have entered clinical development in the last 5 years will be considered in order to assess the best time to look for a partner to share risks and costs. Different funding and risk-sharing scenarios will be used to obtain a range of potential economic returns if a NZ-discovered and developed compound reaches the market.

Estimates of the economic benefits that would accrue to NZ through the provision of drug development services to overseas companies will be made. NZ’s competitiveness in the provision of these drug development services will be assessed by comparing quotes from NZ companies for standardised services (e.g. investigator fees, hourly rates of personnel associated with clinical research, laboratory tests, ECG costs) with those from equivalent companies in competitor countries such as Australia, the US and India. In addition the cost and time required to obtain the regulatory and ethical approvals to initiate clinical studies will be compared.

Conclusions

The NZ Government invests in science, research and technology with a goal to maximise NZ's potential to conduct excellent and relevant health research and ensure that the economic benefits of health research are captured for NZ.¹⁴ With the current major change in the landscape of new drug development, it is important to assess the potential of NZ to play a much greater role in this evolving industry.

The major aim of this project is to calculate the potential economic value of the NZ drug development industry and the feasibility of supporting those facets that could be internationally competitive:

- Drug discovery
- Development of NZ novel compounds
- Provision of R&D services to overseas drug development companies

This formal assessment of NZ's capabilities in drug discovery and development will aid in the promotion of NZ's expertise to overseas organisations and may assist in attracting investors to fund the discovery and development of NZ's novel compounds, thereby reducing the risk to local investors. Both these outcomes will enhance the economic benefits that accrue to NZ from investing in and promoting its industry.

Competing interests: None known.

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Misuse of over-the-counter codeine-containing analgesics: dependence and other adverse effects

Geoffrey M Robinson, Sophie Robinson, Patrick McCarthy, Christina Cameron

Abstract

Aim To review cases of codeine dependency from over-the-counter (OTC) combination analgesics admitted to a hospital detoxification unit.

Method Case records of all admissions following an index case were reviewed over a 2-year period.

Results There were 7 cases reporting chronic excess of Nurofen Plus, of which 6 had prior or current histories of alcohol dependency. Complications which were likely contributed by excessive ibuprofen consumption included: gastric ulcer (4 patients), gastrointestinal bleeding (3), hepatotoxicity (1), and inflammatory bowel conditions (2).

Conclusions This pattern of admissions is new to the detoxification unit, and may relate to higher codeine content in the combination product, and marketing strategies. These cases likely represent the severer end of the spectrum of codeine dependency acquired from OTC pharmacy sources. The paucity of evidence to support additional benefit from the inclusion of codeine in analgesic combination products is concerning. There is a need for increased pharmacovigilance around these and other OTC medications.

For many decades codeine phosphate has been available OTC in combination with aspirin or paracetamol for analgesia. There was some scrutiny of this situation in the 1980s during the period of “homebaking” when large quantities of Panadeine (paracetamol 500mg and codeine 8mg per tablet) were purchased for/by homebakers who converted codeine to morphine for illicit use.¹ However no restrictions on sale were imposed.

Homebaking was a particular issue arising from the dearth of imported heroin into New Zealand, which continues to this day. Currently the over-riding concern is the increasing practice of prescribed Class B drugs, such as morphine, being diverted to the street market.

Over recent years codeine (Class C) has become available OTC also in combination with non-steroidal anti-inflammatory (NSAID) drugs, particularly ibuprofen. A variety of codeine-containing analgesics products are currently available as shown in Table 1.

Table 1. Over the counter codeine-containing analgesics 2009

Product	Codeine dose (mg)	Other analgesics dose		Box size (tablets/box)	Maximum number of tablets/24 hour (as per product information)
		Ibuprofen (mg)	Paracetamol (mg)		
Nurofen Plus	12.80	200		12,24,48,72	6
Panadeine	8.00		500	12,24,48,50,100	8
Panadeine Plus	15.00		500	12	8
Mersyndol*	9.75		450	20	8
Paracetene	8.00		500	12,20	8
Panafen Plus	12.80	200		24,48	6
Codalgin	8.00		500	100	8

* Also contains 5mg doxylamine.

Despite labelling on combination products including maximum dosage, as in Table 1, and cautions regarding potential adverse effects from codeine (drowsiness, driving, and interaction with alcohol), and the NSAID (gastrointestinal, renal adverse effects, exacerbation of asthma, and in pregnancy), there remains a potential for misuse because of the dependency potential of codeine. Despite a call for more research into OTC drug dependence,² little is known about this issue. Addiction warnings are being considered on labelling in the UK.

We have been prompted to report a change in pattern over the last 2 years of patients being admitted to the Kenepuru Hospital Detoxification Unit with codeine dependency from OTC preparations and various likely complications of excessive ibuprofen.

Patients

All 7 patients with a substantive history of OTC codeine abuse are reported since the first one in August 2007. During this period there has been only one admission for codeine dependence which related solely to prescribed codeine.

These cases are summarised in Table 2.

Clearly there was difficulty discerning the confounding contribution to complications in those patients with current active alcoholism (4 cases) and the effects of the NSAID. However, it is likely the high-dose NSAID significantly contributed, as these patients had ulcers as opposed to gastritis which is much commoner with alcohol excess alone. The patient with hepatotoxicity had an atypical pattern of liver tests for alcohol per se, and other causes of acute hepatotoxicity were excluded.

Table 2. Detoxification Unit admissions 2007–2009 with OTC codeine dependence

Date of admission	Gender/age	Product/reported dosage tabs per 24hrs/duration	Comorbidities	Likely complications of NSAID
Aug 07	M 52	Nurofen Plus 60-80/2 years	Alcoholism*	Hepatotoxicity Gastric ulcer and GI bleeding
Oct 07	F 31	Nurofen Plus 48/2 years	Depression	Peptic ulcers and anaemia 76 g/l on admission
Aug 08	F 63	Nurofen Plus (and prescribed codeine) 20/3 years	Alcoholism* Bronchiectasis* Depression*	Gastric ulcer (diagnosed during detox)
May 09	F 47	Nurofen Plus Up to 72/1 year	Alcoholism* Depression/anxiety* Psychosis* Gastric bypass 2000 Headache* Partial colectomy	“Inflammatory bowel disease”
June 09	M 52	Nurofen Plus 80/1 year	Alcoholism and opiate dependency	Ileal resection
July 09	F 31	Nurofen Plus Up to 120/2 years	Chronic pelvic pain* Alcohol abuse* Depression* Cannabis*	Gastric ulcer and bleeding Gastrectomy 03/07
July 09	M 35	Nurofen Plus 48/2 years	Previous alcohol abuse Benzodiazepine dependency	

* current

These patients described patterns of visiting multiple pharmacies, sometimes travelling considerable distances, to obtain the Nurofen Plus. Many of the patients suffered significant opioid withdrawal symptoms despite treatment with ancillary medications.

Discussion

The seven patients demonstrate a new pattern of admissions with OTC codeine dependence, and this has occurred since the introduction of combination products containing codeine and ibuprofen. This may reflect issues of marketing and availability, as well as increased doses of codeine per tablet.

We consider that ibuprofen likely contributed to proton pump inhibitor-resistant gastric ulceration in four, hepatotoxicity in one and bowel inflammation in two. None had renal impairment, or hypokalaemia as has been reported with ibuprofen excess.³ It is perhaps remarkable that these patients tolerated the reported dosages of ibuprofen without sustaining greater morbidity.

A recent report from Australia described 77 cases who had escalated to average dose of 50 tablets a day of OTC analgesics containing codeine over a mean of two and a half years because of codeine dependence. Amongst the 77 there were 39 cases of gastrointestinal haemorrhage or perforation, seven cases of renal failure and five cases of serious hypokalaemia.⁴

Our cases probably represent one end of a spectrum, being those referred for admission for medical detoxification as part of their addiction treatment. It is important to note that six had pre-existing or current other substance or alcohol dependency diagnoses. The extent of OTC codeine misuse with lower degrees of severity is unknown. Ford refers to two UK websites <http://over-count.org.uk/> and <http://codeinefree.me.uk/> with 4000 people self-reporting having codeine dependency problems.²

Enquiry to the NZ Pharmacovigilance Centre (NZPhVC) revealed 5 notifications attributed to Nurofen Plus (2 gastrointestinal, 1 jaundice, 2 allergic reactions). The National Poisons Centre reported 136 ibuprofen intentional overdoses (Slaughter R-personal communication) from a variety of OTC products. There was only one report relating to chronic abuse.

Whatever may be the true prevalence of adverse effects from OTC analgesics containing codeine, it remains remarkable that the combinations have not been given more scrutiny regarding their efficacy versus risks of adverse effects. In particular we understand that for codeine to have significant effect additional to paracetamol, that doses of 30mg or more are recommended.^{5,6} In addition, regular use of combination products produces more adverse effects.⁷ Indeed the British National Formulary itself is lukewarm stating “compound analgesics preparations containing paracetamol or aspirin with a low dose of opioid analgesic (e.g. 8mg of codeine phosphate per compound tablet) are commonly used but the advantages have not been substantiated.

The low dose of opioid may be enough to cause opioid side effects (in particular constipation)...yet may not provide significant additional relief of pain. A full dose of opioid component, e.g. 60mg of codeine phosphate in compound analgesic

preparations effectively augments the analgesic activity but is associated with the full range of opioid side effects...”⁸

The lack of supportive pharmacological evidence for combinations of lower dose codeine in compound analgesics, and the risk of adverse effects prompts the need for a review on the rationale for the continuing provision of these commonly used OTC products

The Medicines Classification Committee (Ministry of Health NZ) has considered the classification of codeine in combination products as a restricted medicine with limitations on codeine dosage and pack size, and a requirement for a labelling warning on addiction potential to come into effect 4 October 2010.

It would seem that the public uptake and marketing of OTC analgesics (combination or not) is increasing. Thus in this culture of convenience, and increased consumer involvement, there are distinct risks around the overuse of these drugs, and the level of advice around safe use that can be provided.

There are clearly reasons for pharmacovigilance systems on non-prescribed drugs to be equivalent to those of prescribed. We have reported seven cases of codeine dependency arising from an OTC combination product, with various other medical complications, but suggest these are one end of a broad spectrum involving many more cases. Practitioners need to report their experiences on patients, who are likely to present to addiction/psychiatric services as well as acute services (including gastroenterology, surgical, renal and internal medicine), to build a wider database on the adverse effects and morbidity from OTC medicines.

Competing interest: Nil

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Group A streptococcal toxic shock syndrome from a traumatic myositis

Sum Sum Lo, Anubhav Mittal, Ian Stewart

Group A streptococcal toxic shock syndrome (StrepTSS) was defined in 1993 by the Working Group on Severe Streptococcal Infections in response to rising cases of severe and life-threatening streptococcal infections worldwide.¹ However, streptococcal myositis presenting as septic shock after blunt injury is rare.²

We report StrepTSS in a previously healthy 22-year old Caucasian male who 2 days earlier suffered a blunt injury while playing soccer.

Case report

The patient had seen a doctor on day 1 post-injury and was prescribed diclofenac. He presented to the hospital on day 2 with a systolic blood pressure (SBP) of 60 mmHg, tachycardia of 120 beats/min and tachypnoea of 28 breaths/min. He had right upper quadrant and right flank tenderness with no bruising or external wounds. The initial impression was hypovolaemic shock secondary to retroperitoneal haemorrhage or hepatic injury.

Computed tomography (CT) showed right-sided retroperitoneal oedema and fractures to four right lumbar transverse processes. No solid organ or hollow viscous injury was identified (Figure 1). Table 1 lists the patient's admission bloods.

Figure 1. CT scan images. Blue arrow indicates areas of retroperitoneal oedema

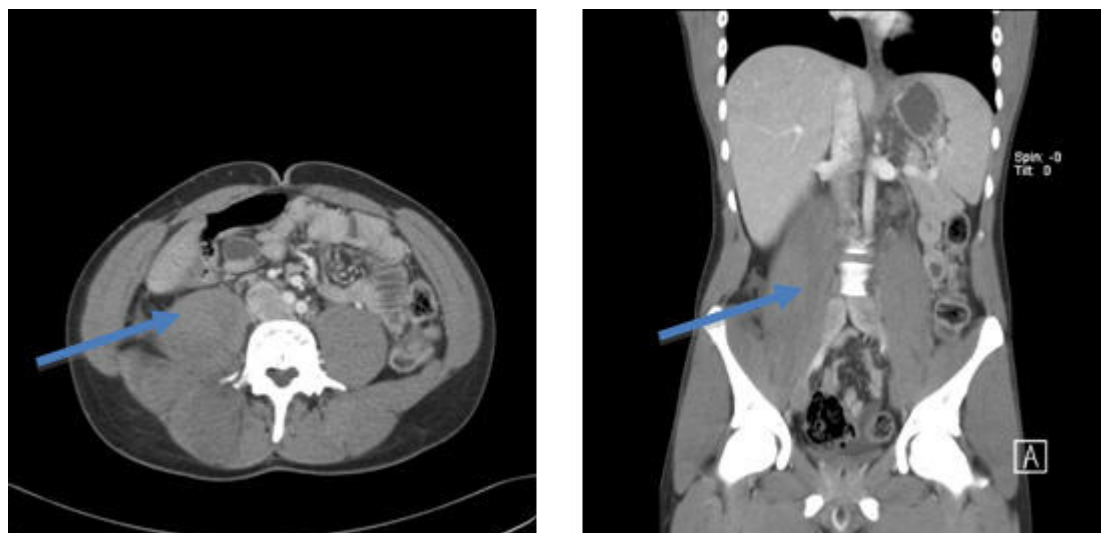


Table 1. Patient's admission blood results

Bloods	
Haemoglobin	130
White cell count	11.8
Myelocytes	0.1
Band neutrophil	3.6
Prothrombin ratio	1.4

Despite fluid resuscitation, SBP remained at 60 mmHg. Seven hours after admission, the patient's temperature rose to 37.8 degrees Celcius. His abdomen became distended but remained non-peritonitic. Due to the history of blunt trauma, abdominal distension and septic shock, the working diagnosis changed to septic shock secondary to small bowel injury.

Laparoscopy revealed fibrinous material in the right upper quadrant, however the subsequent exploratory laparotomy excluded intraperitoneal solid or viscous injury. Straw-coloured fluid from peritoneal cavity was sent for microbiology analyses. Despite antibiotics, he deteriorated with overwhelming sepsis leading to multiorgan failure requiring inotropes, ventilatory support and dialysis.

The following morning, the patient's lower abdomen and scrotum became cellulitic. A repeat CT scan showed no definitive evidence of necrotising fasciitis. However, to exclude a necrotising infection, the right retroperitoneum and scrotum were explored. Extensive oedema was found in the retroperitoneum and scrotum. Muscle and fascia were unremarkable. Retroperitoneal fluid was sent for microbiology analyses.

Eventually, intraperitoneal and retroperitoneal fluid grew *Streptococcus pyogenes*, a type of group A streptococcus. Histologically, debrided tissue revealed acute inflammation of right psoas muscle and scrotal wall.

With the commencement of intravenous penicillin, clindamycin and aztreonam, the patient made a gradual recovery and was discharged from the intensive care unit at day 9. Total hospital length of stay was 19 days.

Discussion

Non-penetrating trauma has been reported as a risk factor for StrepTSS.³ Vimentin, a 57 kD intermediate filament protein, has been reported to be the primary skeletal-muscle surface protein in injured muscle which binds to group A streptococci.⁴ Moderate injury increases surface expression of vimentin.⁴

One to 2 days post-injury, regenerating muscle cells and infiltrating immature muscle-cell precursors maximally express surface vimentin facilitating the adhesion of group A streptococci.⁴ Consequently, the organisms proliferate, elaborating potent cytotoxins that cause further cell injury.⁴

Maximum upregulation of surface vimentin (up to 8-fold) is reported to occur at 48 hours after initial insult, and this correlated to our patient's time of presentation.⁵ Hamilton et al proved that nonsteroidal anti-inflammatory drugs (NSAIDs) further enhance binding of group A streptococci on injured muscle.⁵ Our patient's treatment with NSAIDs for musculoskeletal pain may have contributed to the development of StrepTSS.

Delay in making the correct diagnosis and subsequent treatment initiation can contribute to poor outcome in StrepTSS.² StrepTSS has mortality rates of up to 70% and significant morbidity from emergent amputation, extensive surgical debridement and prolonged hospital stay.^{2,6}

Our patient's initial presentation with hypotension with abdominal pain clouded the diagnosis. This case should remind clinicians that StrepTSS should be considered in the event of blunt injury with delayed shock (48 hours) in patients with normal haemoglobin and NSAIDs use.

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Stuck in the stoma: an unusual cause of small bowel obstruction seen on abdominal computed tomography

Giovanni Losco, Brett Lyons

Clinical

A 72-year-old man presented with colicky abdominal pain and distension over the previous 24 hours. His past history included a total colectomy and terminal ileostomy for Crohn's disease. He had had no output per stoma over the past 12 hours.

Clinical examination revealed a soft distended abdomen with a swollen, oedematous and painful stoma. A finger probing the stomal lumen could not pass beyond 5 cm due to an apparent hard food bolus. The lumen was also found to be tight at the level of the fascia.

A sigmoidoscope was unable to pass beyond this level. He proceeded to computed tomography (CT) of the abdomen in order to further elucidate the nature of the obstruction.

Figure 1. CT of the abdomen (axial image) with intravenous and oral contrast showing half a peach stone just deep to the cutaneous surface of the stoma

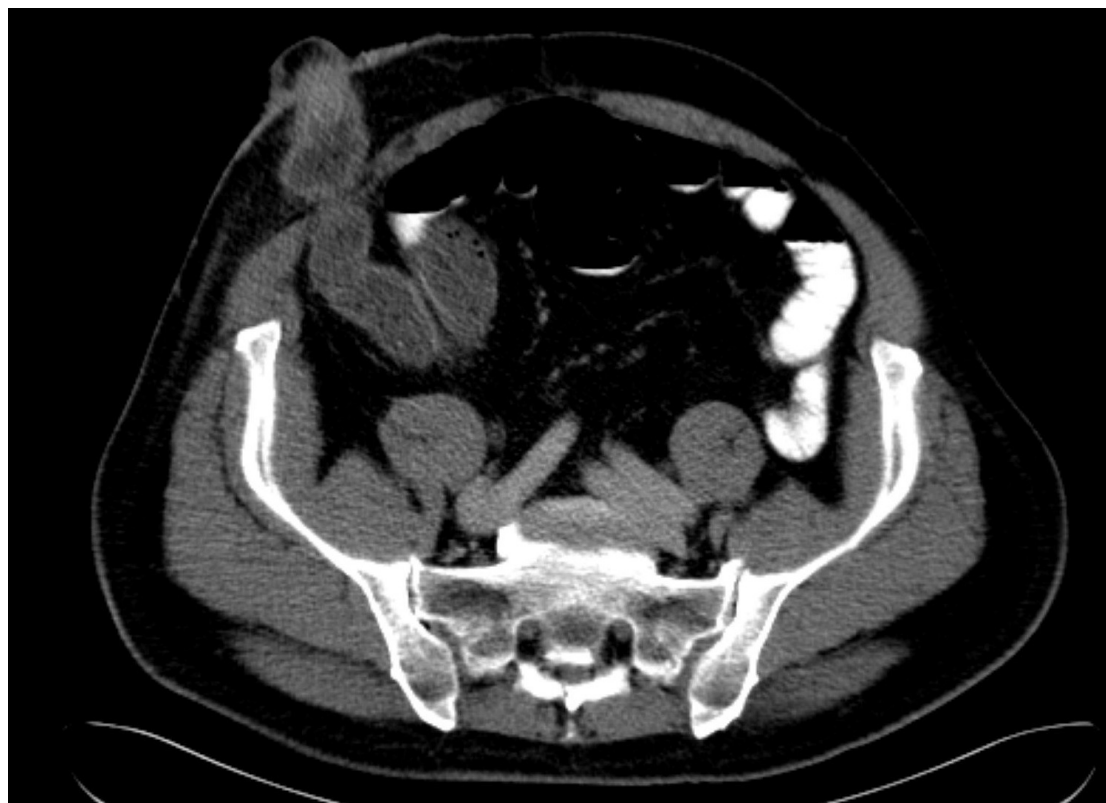


Figure 2. CT of the abdomen (sagittal reconstruction) showing half a peach stone just deep to the cutaneous surface of the stoma. The proximal bowel is prominent without appearing obstructed



Figure 3. Scout CT image shows prominent small bowel without overt obstruction. Oral contrast is seen in pelvic small bowel loops



The images shown (Figures 1–3) are from the portal venous phase of a contrast-enhanced CT scan of the abdomen on a Philips Brilliance 16-slice scanner (Philips Medical Systems, Cleveland, Ohio, USA). Sagittal reconstruction is provided (Figure 2). Dilute meglumine diatrizoate with sodium amidotrizoate (Gastrografin, Berlimed Sa, Madrid, Spain) was used to opacify the bowel. Both the sagittal and axial scans

clearly demonstrate a dense structure, 16 mm in length, just deep to the cutaneous surface of the stoma.

The scout image (Figure 3) shows prominent air-filled loops of small bowel without overt obstruction. Gastrografin can be seen in pelvic loops of small bowel that are of normal calibre, which negates the possibility of an ileus. Likewise, the bowel immediately deep to the observed density is prominent without appearing obstructed. On closer questioning, the patient revealed that he thought he had swallowed half a peach stone 1 day earlier.

The patient proceeded to theatre where, under general anaesthesia, half a peach stone was extracted from the stomal lumen using sponge forceps. The patient had a return of bowel function and was discharged the following day.

Interestingly, perusal of the clinical notes showed a previous small bowel obstruction 14 years earlier thought to be secondary to a food bolus obstruction. That episode settled conservatively with an enema via the ileostomy.

Discussion

Up to 76% of patients with an ileostomy experience stomal complications within 20 years. Bowel obstruction is seen in 17–22% of patients.¹ Foreign material is widely known to cause a range of intra-abdominal complications, including obstruction of stomas, presumably causing greater clinical effect in patients with a narrower stoma or a tighter fascial defect, although there are seldom reports in the literature.^{2,3}

Foreign body obstruction of a stoma should therefore always be considered and actively sought in the history and examination of a stoma patient with obstructive symptoms. Dietetics staff in our institution routinely advise patients to avoid certain foods, such as nuts and seeds, due to their bowel obstructing potential.

There have been very few previous reports of imaging studies so nicely demonstrating the nature and location of obstructing matter.^{4–6} Whilst our case demonstrates how CT diagnosis enabled appropriately tailored definitive treatment, it would be expected that many cases of food bolus obstruction could be diagnosed and managed clinically, without the need for cross-sectional imaging.

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Cancer research

Correspondence by Dr H.V. Mark—published in NZMJ 1910 May;8(34):44–5.

To the Editor N.Z. Medical Journal.

Sir,—About four years ago I wrote a letter on the subject of Cancer, containing a suggestion as to "possible" treatment, but, upon re-consideration, the notion seemed so crude and based on such slight evidence (and that entirely hypothetical) that I decided not to send it. I have followed as closely as I have been able the published results of those engaged in cancer research, and lately I concluded from some observations made by Drs. Bashford and Murray that the deductions I made a long time ago might have some justification. I am therefore sending this letter for what it is worth.

It has been recorded by several observers how slight a modification of the economy of the animal experimented upon is sufficient to prevent the successful inoculation of cancer; that mouse cancer will not grow continuously in other animals, that a cancer graft from a tame mouse will not affect a wild one, an English graft will not affect a German one, etc,

Drs. Bashford and Murray made the curious observation that a few drops of blood from a healthy mouse injected into another healthy mouse would make the inoculation of cancer grafts in mouse No. 2 impossible. Mr. Edmond Owen, in his Bradshaw lecture, says, "If these results are confirmed by other observers, the next question will be, Why?"

These results have since been confirmed (September 25th, 1907). It was due to reading this indication of the very slight modification in the mouse's blood, affecting the susceptibility of the second mouse to cancer, that caused me to write this letter, conveying my previous impressions of the subject. On thinking the matter over, I could not call to mind any animal that with age does not become liable to cancer, but was impressed by the well-known fact that young animals,; are practically exempt, and are insusceptible to inoculation, the inference being that the young are ill some subtle way "protected."

If this be so, then I think that it is to the young we must look for protection, which, by the way, seems only natural.

The same species living under the same conditions are alone influenced. I therefore venture, with all humility, to suggest that the young of the same species susceptible to inoculation with cancer after a certain age may possibly be looked to, being themselves insusceptible, to provide the material for the protection of the older and incurable individuals.

My proposal amounts to this:- That human blood from a young subject, if transfused, might (reasoning from analogy) be supposed to contain some substance, incompatible with cancer life, and likely to afford protection from the disease and possibly exert

some curative influence, I have not heard of its having been tried or even suggested, and few fond parents would be willing to supply the " needful" in the interests of those not related to them, made especially as an experiment, even if based on a reasonable hope of success. But, obviously, no certain result is possible if no attempt be made, and perhaps frequently repeated.

I certainly think an attempt on the lines indicated rational and justifiable, even if followed by failure; but—should it succeed! And it certainly has the merit of never having been tried. I cannot even suggest whether the young blood from a cancerous stock would be likely to exert more influence than blood free from such hereditary" taint, if such exist.

—I am, Sir, etc., etc.,

H. V. DREW, :F.R.C.S., Eng.

Timaru, 10th January, 1910.



Does the 23-valent pneumococcal polysaccharide vaccine prevent pneumonia and improve survival in nursing home residents?

This study from Japan reports on a double blind, randomised and placebo controlled trial, which involved 1006 nursing home residents. Half were immunised with the polyvalent vaccine and the other half received placebo injections (sodium chloride). All-cause pneumonia developed in 63 (12.5%) participants in the vaccine group and 104 (20.6%) in the placebo group. Pneumococcal pneumonia was diagnosed in 14 (2.8%) in the vaccine group and 37 (7.3%) in the placebo group.

Death from pneumococcal pneumonia was significantly higher in the placebo group, 13, vs no deaths in the vaccine group. Consequently the researchers favour use of the polyvalent vaccine in nursing home residents. They speculate that similar benefits would probably be achieved in the general elderly population. No harms occurred in those vaccinated in this study.

BMJ 2010;340:c1004.

Statin therapy and the risk of development of diabetes mellitus

Statin therapy is well established as an effective treatment for the prevention of cardiovascular events and is generally well tolerated. Documented adverse effects include increases in liver function tests, muscle aches, and, more rarely, rhabdomyolysis which are reversible when the statin is discontinued. There have been conflicting reports on whether statin treatment may be diabetogenic. This meta-analysis sets out to clarify the issue by reviewing 13 statin trials involving over 90,000 patients followed for a mean period of 4 years.

They have demonstrated that there is a 9% increase in the diabetes incidence in those taking statins. The effect was noted only in those older than 60 years and appears to be a class effect for all statins. It is put in context by their observation that treatment of 255 patients with statins for 4 years resulted in one extra case of diabetes.

As this is trivial when compared with the beneficial effects the authors recommend no change in clinical practise in patients with moderate or high cardiovascular risk.

Lancet 2010;375:735–42.

Shingles prevention—herpes zoster vaccine?

Two papers and an editorial ponder this problem. Currently it is believed that approximately 30% of the population will develop herpes zoster. The incidence will probably increase as the aged population continues to increase. Previous studies have shown that a live attenuated herpes zoster vaccine is effective in preventing herpes zoster and postherpetic neuralgia in immunocompetent older adults.

The first of these papers reports a placebo controlled trial of the vaccine and shows that it is safe.

The second study and the editorial point out that less than 10% of those eligible are vaccinated. Information derived from a survey of approximately 600 physicians and family physicians in the USA produce two important reasons. The first is the cost—about US\$200 which may not be covered by insurance. The other barrier is that the vaccine must be kept in a freezer which is inconvenient.

Ann Intern Med 2010;152:545–54 & 555–6 & 609–11

Overuse of gastric acid suppression therapy

The authors of this paper point out that acid suppression therapy (AST) is one of the most commonly prescribed classes of medications in hospitalised patients. They believe such treatments are overused and set out to prove the point. They have done a retrospective chart review of 279 randomly selected patients admitted under their general medicine service. 70% of the patients were started on AST, the majority on proton pump inhibitors and some on H₂ antagonists, at the time of admission. In their opinion 73% of this group had no valid reason for taking AST. Furthermore 69% of this group were discharged on their AST. They point out that such overuse is unscientific, potentially harmful through drug interactions and extremely wasteful. Hard to argue against their conclusions.

Southern Medical Journal 2010;103:207–12.

Estimated glomerular filtration rate and the nephrology service

Laboratory reporting of estimated glomerular filtration rate (GFR) has been widely implemented. This would be expected to have an impact on nephrology services and this study evaluates this point.

The authors report a substantial increase (nearly 70%) in the rate of clinic referrals in patients with chronic kidney disease whose estimated GFR was <60mL/minute. There was an even greater increase in those with a GFR of <30mL/min. So a much greater workload but whether clinical outcome is improved has not yet been noted.

An editorial commentator discusses what should be the threshold for referral in such circumstances. He suggests that referral is not appropriate for older patients with an estimated GFR of 45mL/min/1.73m² or greater unless concomitant overt proteinuria or other findings are present (such as haematuria, abnormal imaging, a family history of renal disease, or significant comorbidity).

JAMA 2010;303(12):1151–8.



Living with motor neurone disease

I submit this letter to mark MND Awareness Week, from Sunday 20 to Saturday 27 June 2010.

My name is David Yates; I am a retired medical GP. I have advanced motor neurone disease (MND). I cannot speak and I am totally dependent on others to stay alive. Retrospectively, my MND started in March 2004. I had problems with bilateral ankle swelling over the summer of 2006, a known consequence of MND. I then developed atrial fibrillation and right heart failure—complete with flaky, unhealthy skin, from head to my now-purple legs and feet—as a consequence of progressive MND. (I had no cardiac predisposing factors whatsoever.) I have required medication since then, which has greatly restricted my life.

I totally accept and respect the advice from my neurologist—of international repute in the MND field—was statistically and practically correct, when he reassured me that there was no hurry to introduce Bilevel Inspiratory Positive Air Pressure (BiPAP) overnight respirator. However, I regret that I did not heed the advice of the respiratory physician to do so. BiPAP inflates my lungs, then allows them to deflate. The use of BiPAP—especially overnight—rests the diaphragm, by enabling breathing to occur without effort. Studies show that those who use it have an improved quality of life.

My medical opinion is that BiPAP should be introduced earlier. The neurologist told me: “You may be interested to know that a study is ongoing to determine whether institution of BiPAP earlier improves outcome in terms of survival, not just quality of life. Traditionally BiPAP is introduced when FVC falls to 50% of the predicted value but this study will compare survival and QOL in people started at 85% with those started at 50%. Your own experience suggests that we may be waiting too long.”

Presuming you are not claustrophobic, overnight wearing of the mask is not without problems, especially with the eventual loss of facial muscle bulk and fat. If you have problems with a standard mask, try the Fisher & Paykel FORMA FlexiFit Full Face one.

Choking is one of the first symptoms that MND people will experience. It is very uncomfortable—complete with a feeling of impending doom—but rarely dangerous. The laryngeal reflexes are so exaggerated, that any food or sputum is vigorously expelled, to avoid entry into the lungs. Eventually, people with MND will need nutrition by drip via PEG (Percutaneous Endoscopic Gastrostomy, a tube endoscopically inserted through the abdominal wall, into the stomach).

I've coped with not eating, by modifying one of the central foundations of Alcoholics Anonymous; that oral food is not good for me. This enables me to enjoy watching Rick Stein etc, by focussing on the place of food—and its variations—in different cultures and not the food itself. I can't feel hungry if I can't actually proceed to eat a juicy steak, or delicious Asian or Middle Eastern meal.

I'm interested to hear at davidyates@paradise.net.nz if other people with MND also don't feel hungry or thirsty. For all those potential helpers out there, please remember

that the full-time family carer might be alone. They have to do the jobs that the person with MND once did, plus their own jobs—around the house and property—plus actually care for the patient, while finding time, to address their own needs.

Even after some years with MND, it is still difficult to accept that I can't physically help at all. Any external help is always gratefully appreciated. About 15% of people with MND develop significant impaired cognition. Intact cognition enables us to "see" and "hear" a word, yet it's unintelligible, when we try to speak.

People with MND consider it very demeaning to be addressed in the third person, through a carer. Please speak to them as if there's nothing wrong and they'll respond in some way. People with MND might also have Bulbar Palsy (BP), with loss of control of emotions. Don't be embarrassed if they do cry or laugh. Ignore an episode and it will quickly pass.

This is a list of suggestions for people with MND:

- Try to retain good humour and a positive attitude as much as possible and set goals. While a scientifically proven cure is currently not available, you never know when the treatment breakthrough will occur. The dilemma arises when you become concerned about the emotional and physical effects—on your family—of 24/7 care, in order to keep you alive. Resolution is usually reached, with the family's reassurance that they can do it and if it's still a great pleasure for you to wake each morning, to see your loved ones.
- Maintain sensible passive stretching exercises, to prevent contracture and deformities. Remember that there is decreasing joint protection of the joint by the muscles, as MND progresses, so don't overdo the stretching.
- If you use a computer, maintain a master record of common things repeated to others in emails, to save duplication of typing.
- Remember, many adjustments can be made to your mobility chair, including memory cushions, to improve your comfort.

I hope that I have given you an objective insight into the lives of people—and their families—who are affected by MND.

David Yates
Retired Medical GP
Whitianga (formerly Hastings)



We don't need a pilot bowel cancer screening programme: please just get on with it!

Each year in New Zealand, bowel cancer kills over 1200 people.¹ Pre-cancerous polyps and early bowel cancers can both be successfully detected and treated at an early stage using a combination of faecal occult blood testing (FOBT) and colonoscopy, often avoiding the major risks of bowel surgery. These procedures are successfully preventing thousands of deaths from bowel cancer all around the world today.

In 2005, The Australian Government National Health and Medical Research Council² recommended the introduction of organised screening with home-based faecal occult blood testing (FOBT), to be performed once every 2 years, for the well Australian population over 50 years of age.

In 2008, the Australian Government Department of Health and Ageing³ introduced free bowel cancer screening. This programme involves sending free FOBT kits to people at home as their 50th, 55th, and 65th birthdays are recognised by Medicare. The Australian Cancer Council⁴ is currently conducting a campaign to encourage the Australian Government to broaden this programme to offer well over 50-year-old Australians free 2-yearly bowel cancer screening.

The United States Preventive Services Task Force⁵ also recommends screening for colorectal cancer using FOBT, sigmoidoscopy, or colonoscopy, in adults, from age 50 to 75 (and up to age 85 for those who are very fit). Their recommendation is partly based on research⁶ that was published 17 years ago which showed a 33% reduction in death rate by FOBT screening.

The National Health Service in Britain is currently rolling out a bowel cancer screening programme across the UK. For example, Bowel Screening Wales⁷ offers bowel screening to men and women every 2 years. Initially, people aged between 60 and 69 are being invited, and by 2015, the programme will be extended to invite everyone aged between 50 and 74.

A large trial conducted across Britain⁸ has just demonstrated a massive 43% reduction in deaths from bowel cancer, after performing a single flexible sigmoidoscopy in asymptomatic men and women aged 55 to 64.

In 1985, the world's largest single aircraft accident occurred when a Boeing 747 in Japan crashed killing 520 people on board. However, each year in New Zealand we accept the same number of people dying from bowel cancer (520) who could have been saved if a single flexible sigmoidoscopy had been performed once in their middle years (43% of 1200).

We don't need a pilot programme. The only pilot we need is someone with the courage and funding to roll out a national FOBT and/or flexible sigmoidoscopy programme to save over 500 Kiwi lives each year!

Therefore, what are we waiting for? How long are we going to put up with this completely preventable loss of life? Would the decision-makers and funders please just get on with it!

Guy Hingston
Surgical Oncologist
Port Macquarie, NSW, Australia

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Queen Mary Hospital at Hanmer Springs

Wellington Public Hospital is a labyrinth of white brilliantly-lit corridors with hundreds of doors opening and shutting as members of the staff make their way from one part of the huge complex to another. “Can you direct me to the Medical School Library?” I said to a passing employee. “I can reach it from the outside, but not from the inside. I’ll get lost in these corridors.” We set off together, and after a few false turns we found the right route. The employee gave me a curious look as we walked along, and said to me. “May I ask why you are going to the Medical School Library?”

I said, “I’m doing some research on Queen Mary Hospital at Hanmer in North Canterbury. It was a psychiatric facility for over half a century. The Hospital began by treating soldiers sent back from the Great War with shell-shock and other nervous disorders. Later the Hospital dealt with alcoholics. Some soldiers graduated from the first condition to the second.”

“My mother was a patient in Queen Mary Hospital,” said my companion. “She was suffering from depression, and they gave her shock treatment there. Puerperal depression, they said it was. My grandfather was an alcoholic when he returned from the Second World War. Maybe he should have gone to Hanmer. The Library is through that door. Good luck with your work.”

In the Library I asked for the small bound volumes that contain all copies of the *New Zealand Medical Journal* for the years 1917, 1918, 1919 and 1920. It did not take long to skim through them. At this distance in time, they tell a story of a medical community, and a small country, that was carrying on under extreme stress.

New Zealand was a colonial society, with a high incidence of mental disorders and heavy drinking, and the Great War shattered thousands of relationships. Between a third and a half of all the seven to eight hundred doctors simply quit their practices in order to serve abroad. The country became a medical desert, with a doctor/patient ratio of 1:2500. The leading medico-political issue was how to make sure that the Army doctors got their patients back when the war was over. Another issue was the recruitment of new graduates, who were needed as much for the hospitals at home as they were for work on the Western Front. Senior doctors were given commissions as Army officers, and this gesture probably neutralised any opinions they might have had on military matters.

I found a good article on the Queen Mary Hospital, in which it was noted that the hotel closest to the hospital was 25 miles away. Other articles were on the management of the incurable disorders tuberculosis and syphilis, and some were by Army surgeons on the treatment of severe injuries.

An informative piece about the sixteenth century military surgeon, Ambroise Paré, tells how he abandoned the use of boiling oil for dealing with the wounds received in battle. A famous reformer, Ettie Rout, described scenes in Cairo during the war, where “outside the more notorious brothels long queues of soldiers waited their turn.”

In a recent book about the Great War of 1914 to 1918, a French writer said, “No-one escaped the war unharmed.”

For whatever reason, the medical records of Queen Mary Hospital have been destroyed.

Roger M Ridley-Smith
Retired GP
Wellington



Growth-promoting hormones are not used in the New Zealand poultry industry

From time to time, the poultry industry in New Zealand is the subject of a recurring urban myth about the use of growth-promoting hormones in chickens causing side effects in humans.

The fact is that growth-promoting hormones are not used in the New Zealand poultry industry and have been the subject of an industry-wide policy against their use for more than 30 years. In fact, ours is the only meat processing industry that is routinely testing for introduced hormones. They have never been detected in New Zealand-produced poultry meat.

So we were a little surprised to see a medical professional quoted in the *Southland Times* and the *Christchurch Press* as saying that hormones in chicken meat were a likely cause of the increase in demand for breast reduction surgery among New Zealand men.

Whatever the cause for that increase in demand, it's not our chickens, and we'd appreciate your readers being made aware of the facts. And you can't blame imported poultry meat either.

New Zealand's poultry industry is unique in that we are free of the three main poultry diseases that afflict and devastate flocks around the world. To protect that status, our borders are closed to the import of fresh and frozen poultry meat and eggs.

If you see raw or frozen poultry meat in your supermarket, medical professionals and consumers alike can rest assured that there are no added hormones.

Michael Brooks
Executive Director
Poultry Industry Association of New Zealand
Auckland



High and increased support by Māori and non-Māori smokers for a ban on point-of-sale tobacco displays: National survey data

Considerations around advancing tobacco control are particularly relevant to New Zealand at present, given the current Inquiry by the Māori Affairs Select Committee into the tobacco industry.¹ While there are good arguments for a rapid endgame solution to the tobacco epidemic (involving a phase out of tobacco sales over 10 years²) other supplementary measures should also be considered to help lower demand for tobacco – regardless of the adoption of endgame policies.

There is international evidence,³ and evidence from New Zealand,^{4 5} that point-of-sale (PoS) tobacco displays encourage tobacco uptake among children and undermine cessation among smokers wishing to quit and who have recently quit. Other New Zealand research has identified that the arguments *for* tobacco displays are contradictory and flawed⁶ and that there is poor compliance with the current (albeit relatively weak) law on tobacco displays.⁷

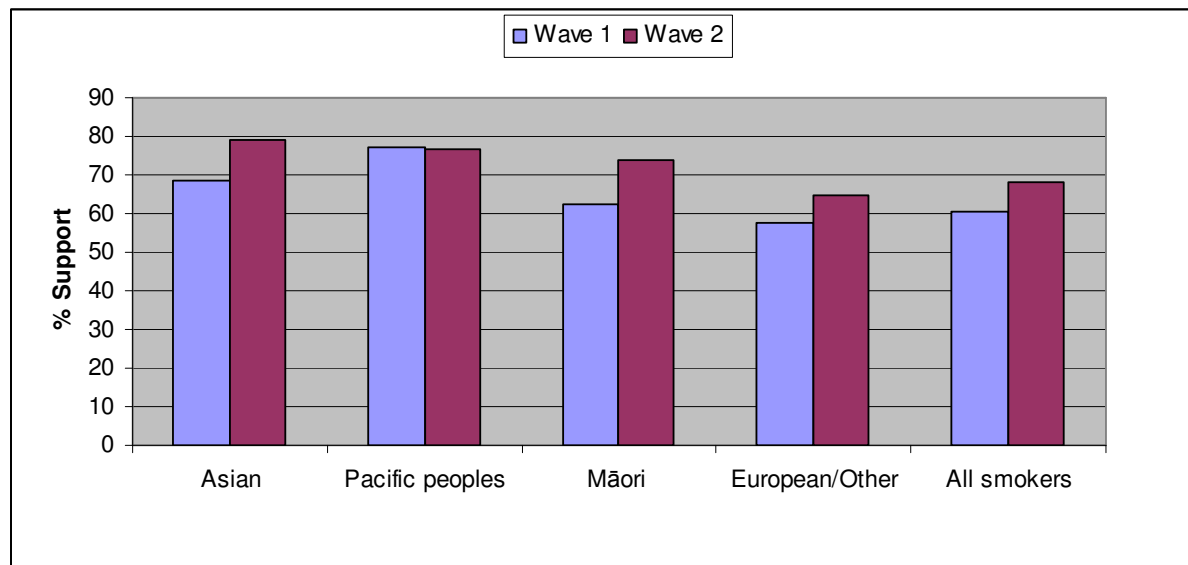
New Zealand data indicate majority public support for additional marketing restrictions on tobacco. Around half (53.4%) of respondents to a national survey agreed that “tobacco companies should not be allowed to promote cigarettes by having different brand names and packaging” (22.6% disagreed), and 65.6% wanted fewer tobacco retailers.⁸

We have previously reported that a majority (62.5%) of Māori smokers support a ban on PoS tobacco displays.⁹ Here we draw on additional survey data to examine this issue further.

Methods—The New Zealand arm of the International Tobacco Control Policy Evaluation Survey (ITC Project) derives its sample from the 2006/7 NZ Health Survey (a representative national sample). From this sample, we surveyed adult smokers in two survey waves (n=1376 and n=923) one year apart (wave 2 in 2008/early 2009). Further detail on the survey methods are available in an online *Methods Report*¹⁰ and in publications.^{11 12} All analyses were weighted and adjusted for the complex sample design.

Results—When we analysed the data for the 1376 smokers in wave 1 and 923 smokers in wave 2, there was majority support in both waves and the between-wave increase was statistically significant i.e., from 60.4% (95%CI = 56.9% – 63.9%) to 68.3% (95%CI = 64.3% – 72.3%) (Figure 1). For Māori, the increase was from 62.5% to 73.8% (n=607 respondents in wave 1 and n=370 in wave 2). This increase was statistically significant when we did the more rigorous analysis of just comparing the same Māori respondents who participated in both waves (p=0.005).

Figure 1. Smokers' support for a ban on point-of-sale displays of tobacco in two survey waves (by ethnic group)*



* Respondents were asked “do you support complete bans on displays of cigarettes inside shops” and results shown are for those responding either “somewhat” or “a lot”.

Discussion—The high and increased level of smoker support for a PoS display ban is consistent with other evidence that New Zealand smokers^{9 11 12} (including Māori⁹ and Pacific smokers¹³) and the general public,⁸ favour advances in tobacco control. The increased support over time for a PoS display ban coincided with media coverage and public debate of the issue (e.g., we counted over 40 relevant print media articles during March 2008 and February 2009).

Given the evidence (see introductory comments above) and the public support, the Māori Affairs Select Committee should consider making a clear recommendation for an immediate PoS display ban. This would provide a strong signal of their concern to reduce the serious impact of the tobacco epidemic on Māori health and development. It would also reduce the current “policy incoherence” present in New Zealand,¹⁴ where some forms of tobacco marketing are prohibited (i.e., advertising and sponsorship) while various others are permitted (including PoS displays and attractive tobacco packaging¹⁵). Nevertheless, a PoS display ban is ultimately only a modest advance in tobacco control and the Committee critically needs to focus on an endgame policy (e.g.^{2 16}) for phasing out tobacco sales in this country.

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Competing interests: Although we do not consider it a competing interest, for the sake of full transparency we note that some of the authors have undertaken work for health sector agencies working in tobacco control.

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Barrie Russell Jones

1921 – 2009

Otago alumnus and ophthalmologist the late Barrie Jones changed forever the way in which ophthalmology is taught and practised.



Many Otago graduates are high fliers with international careers, but few attain the degree of professional success achieved by ophthalmologist Barrie Jones.

Jones not only revolutionised the way ophthalmology is taught, but also brought the gift of sight to thousands in developing countries.

On his retirement in 1987, the British Journal of Ophthalmology dedicated an entire issue to honour his work, with tributes flowing from “colleagues and friends who are proud to have sat at his feet”. On his death last year, obituaries appeared across the world in praise of a man who had made a difference.

Jones read physics and chemistry before studying medicine at Otago. He spent time clinical training in his home town of Wellington before returning to Dunedin in 1950 as a registrar in ophthalmology under Professor Rowland Wilson, who had undertaken important research on trachoma in Egypt.

Wilson inspired in Jones a lifelong love of research-based medicine and of the study of ocular infections, in particular trachoma, a leading cause of the world’s infectious blindness.

Encouraged by Wilson, Jones moved to the UK in 1951 to advance his training in clinical ophthalmology, with an idea of returning to Dunedin to work with his mentor. But after gaining a training post at Moorfields Eye Hospital and enrolling at the Institute of Ophthalmology, Jones believed he would be able to pursue his scientific investigations into eye disease more readily if London-based.

Within 6 years he was a senior lecturer at the institute and an honorary consultant at Moorfields. In 1963 the University of London became the first in the country to establish a chair in clinical ophthalmology and Jones was appointed its professor. Under his leadership the department soon became renowned as a centre for research and teaching, and attracted many young academic ophthalmologists and scientists from Britain and overseas.

Innovation came naturally to Jones, partly because of his Kiwi roots, says his daughter Jenny Robin Jones.

“His early experience in the New Zealand bush helped him with his lifelong career,” she says. “He adored tramping and botany, and it made a deep impression on him that every living organism was linked with all the others.

“He took that understanding into medicine. He had a holistic approach long before it was popular and the broad training he received in Dunedin helped support that.”

Jones changed the method and direction of ophthalmic practice at Moorfields and transformed the relationship between clinicians and researchers. He insisted on all trainees using the operating microscope, thus spawning a new generation of microsurgeons, and encouraged subspecialisation in every branch of ophthalmology. His changes revolutionised cataract and other ophthalmic surgery, introduced antibiotics, anti-virals and anti-inflammatory medications, and improved treatment for corneal and external disease.

He was passionate about teaching and was noted for coining memorable phrases. The indiscriminate mixing of ocular secretions between members of a family which spread trachoma he described as “ocular promiscuity”, while an “ocular condom” was a hat with a mesh around it to prevent flies reaching the eyes.

His daughter remembers how he briefly gained the nickname “the pox doctor” when the contraceptive pill was introduced in the swinging ’60s and he advised condom use to help prevent the spread of a chlamydia organism involved in transmitting eye infections.

“He often came up against the establishment for clear thinking and speaking his mind—but quite enjoyed being outspoken and always had a twinkle in his eye.”

Jones’ long-term campaign against trachoma saw him undertake a programme of research in the Middle East, where the disease was particularly rife. He and his wife, Pauline, spent several weeks each year in Iran, and Jenny Robin Jones recalls her mother learning Farsi so she could communicate with the local women—something a man could not do.

“They were very much a dynamic duo, a hands-on team that was much more than just a sum of its parts,” she says. “After one trip my mother asked my father when he was going to do something for the people who had provided data for his research for so long.”

“This triggered what he called ‘an identity crisis’. The result was a total switch in emphasis, because he had identified that the reason for ‘ocular promiscuity’ of trachoma was overcrowding and poor sanitation.”

“From then on his focus was the far less glamorous work of preventive ophthalmology.” He resigned from the chair of clinical ophthalmology in 1981 to establish and lead a new International Centre for Eye Health, which enrolled students from many fields, some unrelated to ophthalmology.

Instead of offering training in Western medicine, which was city-based, he trained people who wanted to learn about the diseases of their own countries and were interested in returning home to work with their people in rural areas. His efforts led to

a world-wide movement for eye health, with training centres in Africa, India and America.

His daughter recalls: “When he set up the new department it was a radical development for ophthalmology. People thought he was barmy, but he was undeterred. He was dedicated to his work to the point of being obsessive. It was difficult being in his shadow, but he was inspiring to be around.”

She remembers when she was little how her mother took her and her younger brothers to the hospital so they could see their father where he was working long hours.

“It was quite a special thing to have a parent like that and to see how much could be done, and how you could be so excited by things and put so much energy and dedication into life.”

After Jones retired in 1986, he followed up requests from his students to help with research programmes in their countries, particularly with the control of onchocerciasis (river blindness) in Africa. By then a seasoned fundraiser and winner of monetary awards, he was able to fund and pursue this work into his late seventies. He remained as Emeritus Professor at the University of London until 2002 when he and Pauline returned to New Zealand, where three of their four children were living.

Although Jones had spent his entire career overseas, his reputation and Otago connections have had a positive effect on the University, says Department of Ophthalmology Associate Professor Gordon Sanderson.

“In ophthalmic circles Otago punches far above its weight,” he says. “This is the place people turn to when they want postgraduate training or they want to get representation on a committee.

“Otago has inordinate influence and that is partly a result of Barrie Jones.”

Jones received many honours, including a CBE in 1985, the 1986 King Faisal International Prize in Medicine, the 1990 Gonin Medal (the highest award of the International Council of Ophthalmology) and the International Agency for the Prevention of Blindness 2004 Global Achievement Award.

“He had great respect for those who had gone before,” says his daughter. “He often talked in lectures about honouring those heroes who had led the way. Now he is playing that role for others.”

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Some additional obituaries are published at:

Lancet: [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(09\)61940-1/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(09)61940-1/fulltext)

Times Online: <http://www.timesonline.co.uk/tol/comment/obituaries/article6820579.ece>

International Centre for Eye Health:

<https://www.iceh.org.uk/display/WEB/Saying+goodbye+to+Professor+Barrie+Jones>.

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Applications close on **16 July 2010** with the Department Manager, Department of Women's & Children's Health, Dunedin School of Medicine, PO Box 913, Dunedin 9054, from whom further details may be obtained (wch.admin@otago.ac.nz)

