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## **This Issue in the Journal**

### **Few smokers in South Auckland access subsidised nicotine replacement therapy**

Simon Thornley, Gary Jackson, Hayden McRobbie, Siniva Sinclair, James Smith

Nicotine replacement therapy or NRT (patch, gum or lozenge) is a life saving, effective treatment, that roughly doubles the chance of smokers quitting long term over 'cold turkey' methods. Government subsidised use of such products are recorded in national health databases. Analysis of this information showed that few smokers (~4%) in South Auckland use this treatment to help them quit annually. Pacific people's use of NRT is about four times lower than European after adjustment for smoking levels. From this information, we suggest that programmes to improve uptake of NRT among Pacific groups be prioritised. Offering quit smoking services to large manufacturing workplaces may be one approach to reducing this disparity.

### **Getting an outdoor smokefree policy: the case of Kapiti Coast District Council**

Leigh Halkett, George Thomson

A case study of Kapiti Council's adoption of a smokefree parks policy illustrates ways to help local authorities make similar moves. A collaborative approach amongst health and community groups, with a council, can be very effective. Success can be aided by demonstrated public support, the relative simplicity and low cost of such policies, and by information on the success of similar policies elsewhere.

### **A complex intervention to support 'rest home' care: a pilot study**

Shankar Sankaran, Tim Kenealy, Allan Adair, Vivienne Adair, Heather Coster, Noeline Whitehead, Nicolette Sheridan, Matthew Parsons, Elaine Marshall, Leslie Bailey, Catherine Price, Dwayne Crombie, Harry Rea

This Counties Manukau DHB initiative from the Health of Older People Service resulted in positive benefits for frail elderly people living in a rest home, with reduction in use of inappropriate medicines, improved training for care givers in the rest home, and enhanced the relationship between primary care and secondary care services (which in this case are private and public health services). It also introduced the concept of Advance Care Planning, which needs to be much more widely used in rest homes and the community. It may have reduced the number of people admitted to hospital from the rest home, though this would need to be confirmed by a larger study.

**Pacific solutions to reducing smoking around Pacific children in New Zealand: a qualitative study of Pacific policymaker views**

Tolotea Lanumata, George Thomson, Nick Wilson

Families and churches were seen by Pacific health policymakers as the major avenues for the changing smoking around children. They also wanted specific interventions for each Pacific ethnic group, along with better resourcing of Pacific tobacco control. Their general reluctance to consider smokefree regulation extensions is lagging behind the surveyed attitudes of Pacific peoples in New Zealand.

**Characteristics and quitting success of roll-your-own versus tailor-made cigarette smokers**

Judy Li, Michele Grigg, Deepa Weerasekera, Li-Chia Yeh

This study aimed to find out if roll-your-own tobacco smokers have an equal chance of quitting smoking 12 months after registering with the Quitline. We found that the type of tobacco smoked per se did not predict quit success. In other words, roll-your-own tobacco users were not more or less likely to quit smoking. However, certain callers were more likely to succeed in quitting, such as those who were older, less nicotine-dependent, had higher income and had received the full intervention from the Quitline, i.e. called to a Quitline Advisor, had read some of the written resources on quitting and had redeemed at least one voucher for subsidised nicotine replacement products. This finding would help the Quitline to identify gaps in their services in order to provide equitable quitting outcomes for all New Zealanders.



## Increasing delivery of smoking cessation treatments to Māori and Pacific smokers

Marewa Glover, Nathan Cowie

Thornley and colleagues, in this issue of *NZMJ*, report disappointingly low uptake of subsidised nicotine replacement therapy (NRT) among 15–64 year old people in Counties Manukau (CMDHB) during 2007—*Few smokers in South Auckland access subsidised nicotine replacement therapy* (<http://www.nzma.org.nz/journal/123-1308/3943>). They rightly suggest that there is vast room for improvement.

Several helpful smoking cessation policy and programme changes have been implemented since 2007:

- The *New Zealand Smoking Cessation Guidelines*<sup>1</sup> revised in August 2007 introduced the ABC approach and led to updated training for an extended range of health professionals.
- The Ministry of Health's (MoH) focus for cessation shifted to triggering more quit attempts and increasing the use of proven treatments at each quit attempt.<sup>2</sup>
- The Quit Group added *NRT Online* late 2007 and *Txt2Quit* mid-2008.
- All general practitioners (GPs), midwives, dentists, optometrists, and nurse practitioners were included in the *Quit Card (NRT)* programme from 2008.
- The nicotine lozenge was subsidised from September 2008.
- Zyban was subsidised from July 2009.
- The cost per 4 weeks per product reduced to \$3 from September 2009 when the subsidised NRT programme changed to allow practitioners to issue prescriptions as an alternative to Quit Cards.
- CMDHB developed a *Living Smokefree Plan*.<sup>3</sup>

In September 2009, CMDHB progress against the MoH's health target to provide advice and help to 80% of hospitalised smokers by July 2010 was poor (10%, ranked 17th out of 21 DHBs).<sup>4</sup> Clearly more needs to be done for CMDHB and other DHBs to achieve their targets.

Two main barriers need to be overcome to improve delivery of cessation to Māori and Pacific people in CMDHB: low health literacy and cost.

People are not going to use effective cessation methods if they don't know about or trust treatments. Preliminary results from *Keeping Kids Smokefree* (an intervention trial in the CMDHB area targeting Māori and Pacific Island parents<sup>5</sup>) suggests that awareness of the nicotine patch and gum is high among smokers (93%), but few smokers think they are effective (28% patch, 21% gum). Awareness of other evidence based pharmacotherapies is low (32% Zyban, 28% nortriptyline, 44% inhaler, 40% lozenge).

Conversely, awareness of treatments that lack evidence of efficacy is high (75% hypnosis, 73% acupuncture, 71% Nicobrevin).<sup>6</sup> Extending the range of subsidised cessation treatments is welcome, but smokers need to be better informed.

Cost of accessing treatments is a barrier for low socioeconomic smokers even when pharmacotherapies are subsidised. On top of the product charge it costs time and money to visit a GP and pharmacy. Access to cessation support and treatment needs to be as convenient as it is for people to buy cigarettes from their local convenience store.

Several innovative interventions for prompting quit attempts among Māori, Pacific, and low socioeconomic smokers address these barriers:

- **Quit & Win contests** at local and regional level can deliver quit rates above baseline community rates.<sup>7</sup> In 2000, a successful *Quit & Win contest* was piloted in Hawke's Bay with an indication that contests may be particularly appealing to low-income smokers.<sup>8</sup> *Keeping Kids Smokefree's* most effective strategy for prompting quitting among school students' parents and whānau (family) has been an adapted quit and win contest—*Sponsor To Win* (see [www.keepingkidssmokefree.org.nz](http://www.keepingkidssmokefree.org.nz)).

Minister Turia's *Whānau Ora Taskforce* is looking for whānau-centred initiatives that build on the strengths and capabilities present in whānau.<sup>9</sup> An *Iwi Whānau Ora Challenge* that pits iwi (tribes) against each other in a race towards improved *Whānau Ora* for their people could have a stop smoking goal for 2010. Individuals who smoke could nominate which iwi 'team' they are 'competing' for and those who are successful could be entered for a whānau prize. National contests such as this, using an enduring cultural model of inter-iwi competition (e.g. the Aotearoa Māori Performing Arts Festival) have the potential to catapult Māori towards an urgently needed reduction in smoking prevalence.

Pacific groups could use similar models to encourage quit attempts, with teams based on affiliations with particular islands, villages, or churches.

- **A retail approach to cessation**—*Keeping Kids Smokefree* workers trained in a retail approach, set up a display in or outside shopping centres, attract the attention of passing shoppers, talk about and show NRT samples, and issue Quit Cards. Over 800 Quit Cards were dispensed over a 2-month period in 2009 using this method—10% of cards were redeemed.<sup>10</sup> This proactive strategy has the potential to reach smokers unlikely to engage with 'reactive' services that advertise and wait for smokers to contact them. It shows that non-clinicians trained to deliver cessation treatments can target groups the health system has difficulty delivering to.
- **Proactive recruitment through cold-calling**—Quitlines, can also go out to the smoker. There is some evidence that a reasonable proportion of smokers would find an uninvited phone call from a quit support service acceptable, resulting in similar quit rates to those obtained among populations that initiate contact themselves.<sup>11</sup> Priority populations such as Māori and Pacific can be targeted by calling areas with elevated smoking prevalence and high proportions of Māori and Pacific residents.



Most smokers want to quit.<sup>12</sup> A suite of effective cessation treatments and services are now available at low cost in New Zealand. New approaches, such as those outlined above, need to be developed and rolled out to increase Māori and Pacific access to and use of NRT.

**Competing interests:** MG has delivered training for Novartis and sat on a Zyban Advisory Panel for GlaxoSmithKline NZ and a Varenicline Advisory Panel for Pfizer NZ.

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## **Smokefree parks in New Zealand: an important step towards the goal of a smokefree New Zealand in 2020**

Ben Youdan

As outlined by Halkett and Thomson in this issue of the *Journal* (<http://www.nzma.org.nz/journal/123-1308/3941>), Kapiti Coast has recently joined a growing number of local authorities that have introduced smokefree parks.

In council-run sport facilities, stadia, or even play areas where there are large gatherings of people in enclosed space, having a well promoted and enforced policy is an effective way of reducing secondhand smoke (SHS) exposure, and contributing to a growing public expectation for healthy smokefree environments. As one councillor in Kapiti was reported as saying, it's a 'no brainer'.

Whilst it is encouraging to see councils responding to concerns about the health risks of smoking in their regions, it is easy to feel that the public health community could be distracted with tinkering round the edge of the problem, rather than getting to the core of it.

Where considerable public health efforts are being focused on making public open spaces smokefree, we should be questioning if this is the best use of finite health resources, and if they might be better prioritised.

The evidence showing that smokefree parks will contribute toward reducing smoking rates and harm from smoking is slim. Indeed, if one compares it to strong evidence for other interventions—such as increasing tax, controlling the supply of tobacco, and providing targeted cessation support—then smokefree parks drops way down the shopping list.

The rationale for smokefree parks is to create positive role models for children, reduce exposure to SHS, and reduce cigarette litter. These are noble intentions, but we should be asking ourselves if smokefree parks really tackle the fact that smoking prevalence in New Zealand has been only declining at 0.2% per year for the last decade. Adult smoking remains at 20%, and an alarming 45% for Māori. Smoking prevalence has only reduced 3% since 1996.<sup>1</sup> In fact, the quantity of smoked tobacco released for sale in New Zealand per adult is the highest it's been since 2003.<sup>2</sup>

We are arguing that smokefree parks create positive role models for young New Zealanders, when the statistics are showing us that young people are already setting the positive role models that adult smokers should be following. Despite very little change in adult smoking rates, the major success story in New Zealand has been youth smoking. The daily smoking rate for Year 10 students is now down to only 7%, having halved from 15.6% in the last 10 years.<sup>3</sup>

As one of the first nations to introduce smokefree workplaces back in 2003, New Zealand has one of the best track records on SHS. The outcomes of this have been incredibly positive with strong public support, a dramatic decline in exposure to SHS, and an increase in self imposed smokefree homes. It's unrealistic that a person will be

exposed to enough SHS in an open park to cause harm<sup>4</sup> and still hundreds of public health hours are being put into eliminating this ‘menace’. Arguably, we have won the SHS debate, with a few loose ends such as smoking in cars with children<sup>5</sup> (a proposal that has exceptional levels of public support).

Public health could easily be accused of kicking smokers out of parks, suggesting we find these people undesirable, when actually keeping them alive with a higher quality of life is highly desirable. Most smokers regret the day they ever started, and many are desperate to quit, supporting strong tobacco control measures that will help them do so.<sup>6</sup>

Focus must shift from controlling the smoker to controlling the cigarette. This is a deadly and addictive drug yet we are failing to address its status as a regular consumer product. As smokers face greater and greater control on where they can smoke outdoors, there is still almost no control over where tobacco can be sold. A smoker may not be able to light up in the park in case a child sees, yet every time that child walks into the dairy next to school, they are faced with a wall of cigarette advertising. This widespread sale and exposure of children to tobacco in retailers is shown to have significant risk to them of starting smoking, and should be of primary concern.<sup>7</sup>

In a recent speech to Māori health advocates, Associate Health Minister Tariana Turia stated: ‘There is surely no more obvious indicator of the need for a tobacco control strategy in New Zealand than the reality that about 5000 deaths each year are attributed to tobacco use’.<sup>8</sup> This sense of urgency is shared by the Māori Affairs Select Committee who has called an investigation into the impact of tobacco use on Māori.

Turia’s leadership on tobacco and the select committee investigation is a major opportunity to put the supply of smoked tobacco in the limelight. We should ramp up our ambition by calling for a deadline for the systematic removal of smoked tobacco from sale in New Zealand. This deadline must reflect the lack of recent progress and the sense of urgency required to reduce smoking deaths. Members of the Smokefree Coalition and the wider health community have recently put forward the year 2020.<sup>9</sup> To get anywhere near achieving this we need focused and prioritised action.

The tobacco industry is releasing more tobacco for sale per capita than 5 years ago, and rigorous supply controls are required to reverse this trend. This includes reducing the availability, and the way it is marketed such as banning retail displays and light and mild packaging and even requiring plain packaging. Tobacco must not be considered as a legal consumer product, but as the most destructive drug to public health in New Zealand today. Urgent and uncompromising action to control the supply of smoked tobacco to the market are required if we are serious about eliminating the terrible impact on New Zealand.

Increasing tobacco tax is a long overdue priority. The World Health Organization and the Ministry of Health ranks this as the number-one most effective intervention to reduce cigarette consumption,<sup>10,11</sup> yet New Zealand has gone a decade without a dedicated tobacco tax increase. During this time, smoking prevalence has reduced by only 0.2% per annum and per capita consumption has increased. These are alarming signs that stronger action is needed. An annual schedule of tax increases would make

a significant impact on the adult smoking rates,<sup>11</sup> yet we have been failing to take advantage of this very basic health tool.

Councils have demonstrated their support for protecting the community from tobacco by backing smokefree parks. It will be encouraging if those councils that have taken action trigger others to do so. However, the public health community needs to consider whether the greatest benefit to public health is to be had by putting their resources into smokefree parks. At a time when tobacco consumption in New Zealand is at a 5-year high, smokefree parks are a luxury rather than a necessity. We urgently need to catch up with countries such as the UK, Australia, Canada, and Ireland who have overtaken the once pioneering New Zealand's tobacco control policies and achievements.<sup>12</sup>

Every smokefree park is a minor incremental victory, and we are settling for too little. We need strong united action on the big hitting basics such as tax increases and actively engaging with tobacco supply and market controls. We should be fighting for and celebrating these big victories if we seriously want to get to the core of the tobacco problem.

**Competing interests:** Director of Action on Smoking and Health New Zealand (ASH NZ), a tobacco control non-governmental organisation (with funding from the Ministry of Health) that is dedicated to eliminating the death and disease caused by tobacco ([www.ash.org.nz](http://www.ash.org.nz)).

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## Improving care for older people in residential care

Ngairé Kerse, Michal Boyd

In New Zealand, the older population (age 65 years and over) has increased by 43% and the number of residential care beds has increased by 3% in the last 20 years. Thus the proportion of older people in aged residential care has decreased from 74 to 53 persons per 1000 people aged 65 years and over and the level of dependency of those in care have significantly increased.<sup>1</sup> The corresponding funds to meet an increased need for care as a result of increased dependency have not been forthcoming from the public sector. This mismatch is most acutely experienced in rest home level facilities. Residential care for older people is, therefore, an area in need of ongoing quality improvement.<sup>2</sup>

Kenealy and colleagues, in this issue of the *NZMJ*—*A complex intervention to support 'rest home' care: a pilot study*; <http://www.nzma.org.nz/journal/123-1308/3948>—report a pilot study involving a complex intervention delivered to a long-term residential care facility housing rest home and hospital level residents by a geriatrician and clinical nurse specialist team.

Residents aged 85 and older and those with polypharmacy (taking 9 or more medications) were systematically assessed. The intervention was evidence-based<sup>3</sup> and involved medication review, education for all staff, and ongoing support. The number of prescribed medications decreased but parts of the strategy, particularly the education for nurses and the hotline support for GPs were not utilised and there was no apparent decrease in admission to acute hospital. The intervention was welcomed by staff and management and everyone felt good about providing support for this under resourced health sector.

This project is one of several actively being developed and implemented around New Zealand in response to increased identified needs in residential aged care. Further research is desperately needed to avoid disseminating sensible, but potentially ineffective and wasteful, programmes. Previously seemingly sensible interventions have not been able to show measureable positive effects<sup>4</sup> and some programmes may have caused harm.<sup>5</sup> In this century, research in residential care is increasingly possible and must be encouraged.<sup>6</sup>

The particular focus of the intervention does make a difference to the chance of success and having a defined outcome that has relevance to: the older person; the burden of care; and the health care funder is essential. Hospitalisation (to the acute sector) is such an outcome and at least one programme, *Evercare*, has been successful in reducing hospitalisations.<sup>7</sup> The same programme is not effective in other countries however, meaning that retesting in each different health care system is necessary. The project reported in this edition did not appear to benefit hospitalisation, and requires more rigorous testing with a larger sample before this can be commented on further.

Inappropriate medication use is another relevant outcome and is very common in older populations with between 21% (community) and 40% (residential care) of older

people being categorised as being prescribed inappropriate medications.<sup>8</sup> Adverse medication events are also common and increase in likelihood according to the number of medications per day an older person is prescribed. Most errors in medications are attributable to human error and there is a large potential for systematic processes and reviews to improve resident safety, at least with respect to medication use.<sup>9</sup> While some individual programmes, the current one included, have been successful, systematic reviews of medication related interventions are awaited.

Physical rehabilitation interventions are in general safe and provide benefit in reducing disability<sup>10</sup> however the intervention has to provide enough 'dosage and intensity' of physical rehabilitation to be effective and, when coupled with a health care component, may result in wider benefits. Other important outcomes that relate to staff retention, job satisfaction, family/whānau satisfaction are more difficult to measure.

Any intervention will require a significant expansion of the publically funded health care workforce. The residential aged care sector in New Zealand is publically subsidised and largely privately owned and administered. Privately owned facilities may appear to deliver poorer quality care than not-for-profit facilities, at least in the United States of America, and lower staffing levels may be one of the discernable reasons for this<sup>11,12</sup>

It is not surprising that the private sector has difficulty investing in improving health care quality as the financial savings of reduced hospitalisations and other consequences of poor care are realised in the acute hospital sector and not currently returned to residential care. Without some form of systematic overhaul of the funding and structure of aged residential care, with a focus on a population based approach and return of the health care savings to those paying for quality improvement, real progress is difficult to imagine.

Publically funded programmes, such as that represented in the report in this journal, are perhaps a logical response, but these must be accompanied by leadership from the residential care sector and incentives for staff and management to fully engage with new programmes. Adequate staffing levels are necessary to encompass change. Such incentives would most logically come from the providers of residential aged care. Public and private partnerships are needed in New Zealand so that success in improving resident outcomes is at least possible.

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## Few smokers in South Auckland access subsidised nicotine replacement therapy

Simon Thornley, Gary Jackson, Hayden McRobbie, Siniva Sinclair, James Smith

### Abstract

**Aims** Nicotine replacement therapy (NRT) is a life-saving, cost-effective smoking cessation treatment that doubles the chances of long-term abstinence regardless of the amount of additional support provided. We investigate the proportion of working age people (age 15–64 years) in Counties Manukau District Health Board (CMDHB) who obtained at least one packet of subsidised NRT during 2007, and whether this varied by demographic characteristics.

**Method** We linked health data in residents of CMDHB aged 15 to 64, using a cross sectional method, to estimate the odds of Māori and Pacific ethnic groups with high smoking prevalence accessing subsidised NRT during 2007 using logistic regression. Demographic variables such as age, gender, other ethnic groups, and socioeconomic deprivation (NZdep) were also included.

**Results** Subsidised NRT was infrequently (proportion of 'ever users' 0.5%/year, or about 2.1% of smokers) claimed for in CMDHB in 2007. When adjusted for demographic variables, Pacific peoples were 60% less likely to claim NRT than European (odds ratio 0.34; 95%CI 0.29–0.41), despite a higher prevalence of smoking in the former group. An over four-fold increased use of NRT was observed in those aged 55 to 64 years compared to 15 to 25 year olds.

**Conclusion** Dispensing of NRT is low overall in CMDHB. Lowest rates of treatment were observed in younger age groups, men and Pacific and Māori people. Programmes to increase uptake of such treatment in these groups are urgently needed.

Tobacco smoking in New Zealand accounts for about 23% of all cancer deaths and 16% of deaths from all causes.<sup>1</sup> When risk factors are ranked, smoking is responsible for more premature death and disability than competing risks such as physical inactivity, high blood pressure, low fruit and vegetable intake, and high cholesterol.<sup>2</sup>

Stopping smoking is the most important thing a person can do to improve their health. Those that quit before the age of 35 years have a normal life expectancy.<sup>3</sup> Also, quitting at any age (up until one's 70s) increases life expectancy by reducing risk of developing diseases such as lung cancer, cardiovascular disease, and chronic obstructive pulmonary disease. Smoking also has economic consequences for both individuals and companies. A packet of 20 cigarettes per day costs an individual \$3600/annum. For employers, smokers are sick more often and those who quit experience fewer days of illness and are absent from work less.<sup>4</sup>

In New Zealand the majority (~80%) of people who smoke wish to quit and this desire is relatively constant across socioeconomic, ethnic, and age distributions.<sup>5</sup> Each year about 45% of people who smoke will try to quit.<sup>5</sup> Three-quarters of these will

make a pharmacologically unaided quit attempt—an approach associated with the lowest long-term quit rates (2–3%). Use of smoking cessation treatments will roughly double these rates.

From surveys of smokers, older age groups were more likely to use medication to help them quit. Nearly 45% of smokers aged 50–59 years used quit products during their last attempt, compared to 12% aged 15–19. The most commonly used medicines were the nicotine patch (used by 68% of smokers in the last quit attempt) and nicotine gum (used by 35%). Less commonly used products were bupropion, nicotine inhalers and the lozenge, used by less than 10% of smokers during their last attempt.<sup>5</sup> Of smokers that access services, the majority obtained help to quit from Quitline, family or friends or their general practitioner.<sup>5</sup>

In New Zealand, government subsidised nicotine gum, patch, or lozenge are available through the Quit Group's 'Quit Card' scheme. These cards can be supplied by all health professionals with prescribing rights and others who have completed training. The cards are redeemed at a community pharmacy for NZ\$5 and a month's supply of nicotine patch, lozenge or gum will be dispensed. NRT may be accessed in other ways that are not subsidised such as from supermarkets and pharmacies. Other (unsubsidised) forms of NRT are available such as the microtab and inhaler.

In Counties Manukau District Health Board (CMDHB), smoking cessation services are available to inpatients and outpatients, with healthcare professionals increasingly trained in the delivery of brief advice to quit and the provision of NRT. The Quit Group reported 103 Quit card providers in CMDHB in 2008, with 17 residing in the District Health Board (DHB).<sup>6</sup> Initiatives are being undertaken by the DHB to promote smoking cessation in primary care, by training GPs and practice staff. Of note, all GPs were not able to provide subsidised NRT using the Quit Card system until after the study period (2008).

With the reported low use of the national toll-free Quitline by Pacific people in New Zealand,<sup>7</sup> our hypothesis was that Pacific people, who make up 20% of the CMDHB population, may have relatively low access to pharmacological quit support.

## Methods

We identified individuals usually resident in Counties Manukau who had evidence of health service use in 2007, indicated by hospital admission, claim for a pharmaceutical, laboratory test, or who appeared in mental health or outpatient datasets for that year who made up the denominator or 'health contact' population (similar to census estimates for 15 to 64 year age categories). We were able to link demographic variables (age, gender, ethnicity, socioeconomic status (NZdep06)) with medication use, using the national health identifier (NHI). We then identified individuals who had at least one claim for NRT in 2007. Use of subsidised NRT was then compared to the national prevalence of smoking (2006).

We eliminated all individuals that had died between 1 January 2007 and 31 December 2007, using national mortality data. Date of birth was used to select all individuals aged between 15 and 64 years on 1 June 2007. Ethnic groups were prioritised in the following order: Māori, Pacific, Indian, Chinese, Other Asian, European, and Other. The usually combined 'Asian' category was further split into Indian and Chinese because of the wide disparity in health status between these groups.

We linked access to at least one claim for NRT in 2007 (dependent variable) to demographic characteristics (independent variables) using univariate odds ratios and logistic regression for multivariate estimates. All demographic variables were force fit into multivariate logistic models. The glm function of the R package<sup>8</sup> and Microsoft Excel software were used for all analyses. We also used

linked health use data from 2007, to indicate individuals who had important diseases (diabetes or severe mental illness), or a hospital admission event to see if these groups had different rates of treatment. An indicator of diabetes was used based on linked health data,<sup>9</sup> and antipsychotic use (an indicator of severe mental illness) to determine the excess odds of prescription if health services had been accessed. Interaction terms were not included in the model. We tested model fit by investigating the proportion of discordance between observed and model predicted outcomes.

NRT purchased either over the counter in a pharmacy, or from a supermarket or other source was not included in this analysis because it is not recorded. Other medications may be used to support a quit attempt but were not included here. Both bupropion and varenicline are not subsidised, so do not appear in the pharmaceutical claims database, and nortriptyline is commonly used for other indications such as depression. Reports indicate that NRT is the most commonly used pharmacological quit aid in NZ, and that <20% of smokers use other smoking cessation products concomitantly.<sup>5</sup>

Ethical approval was not sought as all data was de-identified using encrypted national health identifier and only aggregate measures are reported.

## Results

In 2007, we counted 314,103 (cf. 305,710 from 2006 census projected to 2007) residents of CMDHB aged 15–64 as having health contact and were alive throughout that year (Table 1). CMDHB has a high proportion of people who identify with one or more of the Pacific ethnic groups represented in New Zealand (CMDHB 20% cf. NZ 6%) whereas Māori account for nearly the same proportion (13%) as expected from their national average in these age categories. NRT was claimed for by 1,475 (0.5%) individuals during 2007, or about 2.1% of the estimated 70,000 smokers in CMDHB.<sup>10</sup>

Demographic variables predicted variation in dispensing of subsidised NRT (Table 2). Women were more likely than men to record a claim for NRT (adjusted OR 1.25; 95%CI 1.13–1.38). Older age categories claimed more NRT than younger ones.

Whereas Māori had increased claims for NRT, which reflects their increased prevalence of smoking (Table 3), Pacific peoples were dispensed subsidised NRT at a rate less than half that of Europeans (despite a prevalence of smoking 75% higher than European). Increased uptake of subsidised NRT was associated with lower socioeconomic status, consistent with known smoking prevalence gradients.

The majority of those with a claim for NRT only had one during that year (74%; 1092/1468). Older age groups were more likely than younger age groups to access two or more NRT products (Figure 1).

Indicators of psychosis (any prescription for an antipsychotic) was associated with five times the odds of claiming an NRT prescription than those not in this category. Also, people who received hospital treatment in 2007 and those with indicators of a diagnosis of diabetes were two to three times more likely to receive NRT after adjustment for other demographic factors (Table 2).

**Table 1. CMDHB ‘health contact’ population (2007), 15 to 64 years by gender**

<i>Category</i>	<i>Gender</i>				<i>Total*</i>	
	<b>Male</b>	<b>%</b>	<b>Female</b>	<b>%</b>	<b>Number</b>	<b>%</b>
<b>Age category</b>						
15 to 24	33,693	10.7	34,269	10.9	67,975	21.6
25 to 34	28,956	9.2	34,758	11.1	63,731	20.3
35 to 44	33,140	10.6	38,536	12.3	71,686	22.8
45 to 54	30,146	9.6	32,047	10.2	62,205	19.8
55 to 64	22,023	7.0	23,136	7.4	45,173	14.4
<b>Ethnic group</b>						
European	51,613	16.4	60,672	19.3	112,286	35.7
Māori	18,252	5.8	23,496	7.5	41,751	13.3
Pacific	29,595	9.4	34,664	11	64,264	20.5
Chinese	5,143	1.6	8,346	2.7	13,492	4.3
Indian	8,859	2.8	10,031	3.2	18,896	6.0
Other Asian	4,886	1.6	6,674	2.1	11,562	3.7
Other†	31,210	9.9	20,596	6.6	51,852	16.5
<b>NZdep</b>						
Not specified	39	0	16	0	55	0.0
1 - 2 (least deprived)	12,355	3.9	13,983	4.5	26,343	8.4
3 - 4	25,806	8.2	28,699	9.1	54,510	17.4
5 - 6	19,505	6.2	21,240	6.8	40,756	13.0
7 - 8	10,696	3.4	12,010	3.8	22,713	7.2
9 - 10 (most deprived)	81,157	25.8	88,531	28.2	169,726	54.0
<b>Total*</b>	149,558	47.6	164,479	52.4	314,103	100

\*The total column includes 66 individuals with unspecified gender

†This group includes mainly people of Middle Eastern, Latin American, and African ethnicity

**Table 2. Crude and adjusted odds ratios for dispensed NRT in 2007\***

<i>Category</i>	<i>Dispensed NRT?</i>		<i>% dispensed</i>	<i>Crude OR (95% CI)</i>	<i>Multivariate OR* (95% CI)</i>
	<i>Yes</i>	<i>No</i>			
<b>Gender</b>					
Male	622	148936	0.418	1 (referent)	1 (referent)
Female	853	163626	0.521	1.25 (1.13–1.38)	1.20 (1.08–1.34)
<b>Age category</b>					
15 to 24	97	67878	0.143	1 (referent)	1 (referent)
25 to 34	240	63491	0.378	2.65 (2.09–3.35)	2.81 (2.22–3.57)
35 to 44	50	71280	0.070	3.99 (3.19–4.98)	4.22 (3.38–5.27)
45 to 54	372	61833	0.602	4.21 (3.37–5.27)	4.65 (3.71–5.82)
55 to 64	328	44845	0.731	5.12 (4.08–6.42)	5.58 (4.44–7.02)
<b>Ethnic group</b>					
European	714	111572	0.640	1 (referent)	1 (referent)
Māori	411	41340	0.994	1.56 (1.37–1.76)	1.45 (1.27–1.66)
Pacific	166	64098	0.259	0.40 (0.34–0.48)	0.34 (0.29–0.41)
Chinese	5	13487	0.037	0.06 (0.02–0.14)	0.07 (0.03–0.17)
Indian	23	18873	0.122	0.19 (0.13–0.29)	0.17 (0.11–0.26)
Other Asian	17	11545	0.147	0.23 (0.14–0.37)	0.25 (0.16–0.41)
Other	139	51713	0.269	0.42 (0.35–0.50)	0.41 (0.34–0.49)

**Table 2. Continued**

<i>Category</i>	<i>Dispensed NRT?</i>		<i>% dispensed</i>	<i>Crude OR (95% CI)</i>	<i>Multivariate OR* (95% CI)</i>
	<i>Yes</i>	<i>No</i>			
<b>NZdep</b>					
1 and 2 (least deprived)	48	26295	0.183	1 (referent)	1 (referent)
3 and 4	178	54332	0.328	1.79 (1.30–2.47)	1.77 (1.28–2.45)
5 and 6	148	40608	0.364	2.00 (1.44–2.77)	2.00 (1.44–2.78)
7 and 8	175	22538	0.776	4.25 (3.07–5.86)	3.71 (2.68–5.13)
9 and 10 (most deprived)	925	168801	0.548	3.00 (2.25–4.01)	3.36 (2.49–4.54)
<b>Diagnostic groups†</b>					
Antipsychotic use††	78	3202	2.378	5.41 (4.30–6.81)	5.52 (4.39–6.96)
Diabetes	188	15875	1.170	2.74 (2.35–3.20)	2.06 (1.74–2.44)
Annual hospitalisation	453	35933	1.245	3.43 (3.07–3.83)	2.87 (2.55–3.22)

OR—Odds Ratio; CI—Confidence Interval.

\* Missing gender and NZdep variables removed from analysis (n=121).

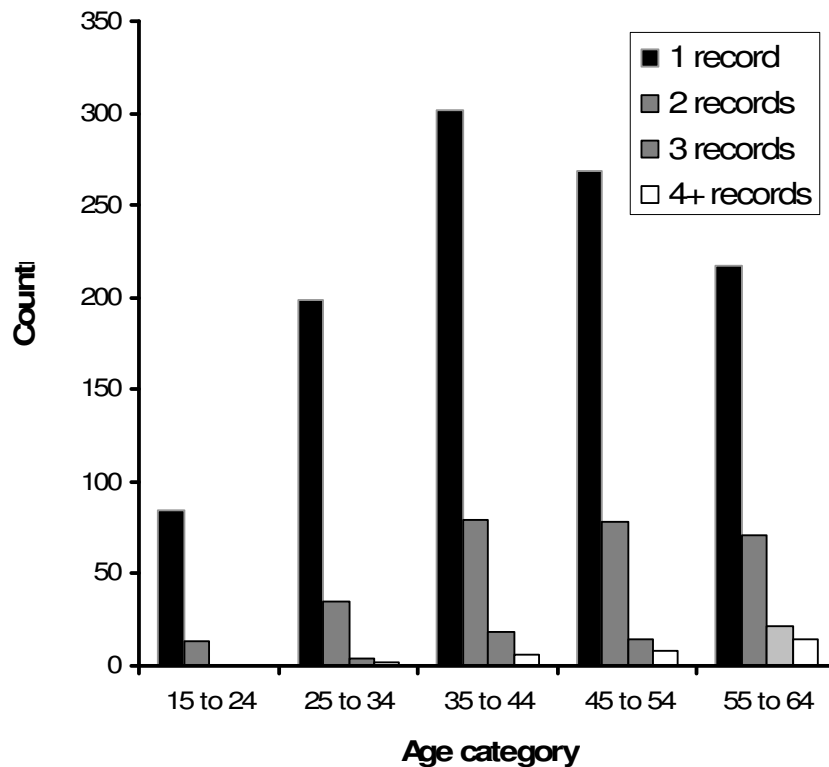
Adjusted for all other variables included in table except ‘diagnostic groups’ category.

† Referent—people not in each category.

†† Any prescription for which a claim was made in 2007.



**Figure 1. Number of NRT prescription records, by age category.**



**Table 3. Crude prevalence of regular smoking among adults (aged  $\geq 15$  years) in CMDHB, by ethnicity in 2006<sup>10</sup>**

<i>Ethnic group</i>	<i>Males (%)</i>	<i>Females (%)</i>	<i>Total (%)</i>	<i>NZ Total (%)</i>
Māori	42.5	50.3	46.8	42.2
Pacific	34.3	26.7	30.3	30.3
NZ European	20.8	19.3	20	19.4
Asian	16.3	3.4	9.6	11.1
MELAA	22	8.9	15.5	15.1
Other ethnicity	16.6	15.4	16	16.6
<b>Total</b>	<b>24</b>	<b>20.4</b>	<b>22.1</b>	<b>20.7</b>

MELAA – Middle Eastern, Latin American and African ethnicity.

We do not have individual level data indicating smoking status. To compare ethnic-specific NRT dispensing rates, we divided the multivariate odds ratio for subsidised



NRT by smoking prevalence for those ethnic groups which were comparable (in MOH smoking prevalence data). This index of NRT dispensing for Europeans was 1/0.194, or 5.14, for Māori 1.45/0.422 or 3.44, and for Pacific people 0.34/0.303 or 1.22. Thus, adjusted for ethnic specific smoking prevalence, Māori rates of NRT dispensing are 30% lower, whilst Pacific dispensing rates are 76% lower than European rates. Equivalent estimates for NZDep06 quintiles show similar claim levels apart from 7<sup>th</sup> and 8<sup>th</sup> combined deciles (Table 2) which had higher rates of dispensing.

Indices of global model fit (see methods) showed good agreement (<1% discordance) between observed and predicted values.

## Discussion

Our principle finding was that only about 2% of CMDHB smokers are dispensed subsidised NRT in 2007. A number of other patterns emerged. First, older age groups (35 to 64 years) and women are more likely to be dispensed NRT. Second, of ethnic groups with a high prevalence of smokers, Pacific people have the lowest rates of NRT claims. Māori also have lower rates of NRT dispensing than European (after adjustment for smoking status), however, the disparity is less than the difference between Pacific and European.

Reassuringly, we found individuals in the most deprived areas had a similar likelihood of claiming such treatment based on their reported prevalence of smoking as people from less deprived areas. For those that encounter the health care system, we see evidence of increased provision of NRT with those using antipsychotics, with a diagnosis of diabetes, or hospitalisation having evidence of increased rates of such treatment. This pattern suggests that people who are likely to get the most benefit from quitting are being targeted—or at least those who are in more frequent contact with the health services—however, the global picture suggests vast room for improvement.

The majority of smokers that make a quit attempt in CMDHB access NRT only once per year, obtaining at most, one month's supply. Older age groups have a higher likelihood of getting a second prescription dispensed. This evidence suggests that the majority of smokers attempting to quit are not using NRT long enough to get maximum benefit, as indicated by national guidelines ( $\geq 8$  weeks).<sup>11</sup> This may reflect either a failure of the quit attempt, early abandonment of NRT during a successful quit attempt, or failure of health care providers to supply NRT for long enough.

To our knowledge this is the first use of health administrative databases to assess use of NRT or pharmaceutically supported quit attempts at a population level. This technique has been used for other purposes such as to monitor the prevalence of diabetes in our own jurisdiction as well as overseas in Denmark<sup>13</sup> and Ontario, Canada.<sup>14</sup>

Putting aside the issues of differential rates of treatment, subsidised NRT was used by only 0.5% of the population, so that only ~2.3% of the estimated smokers in CMDHB annually accessed NRT. The number of calls registered by the Quit Group from CMDHB over this period was instead 8.2% of the smoking population.<sup>15</sup> This suggests many clients are not using NRT or their use is not recorded. The price of

NRT has been reduced substantially by government subsidy, so that cost is unlikely to pose a major barrier.

As in many other developed countries many smokers who choose to use NRT access this over-the-counter.<sup>16</sup> However, in our own informal survey of five community pharmacies in CMDHB, pharmacists reported low rates of over the counter sales (about 10%). Reasons for the low rate of claims for subsidised NRT may be due to a lack of awareness of the utility of such treatment and how to access it. Other barriers may include attitudes and beliefs by smokers in CMDHB that stopping smoking is best done ‘cold-turkey’, or that NRT is ineffective or dangerous.

Our study is limited in a number of ways. First, this study is cross-sectional, at one point in time. We are uncertain if any group’s claims of subsidised NRT have increased over time. Second, our study is limited to one region of New Zealand, and thus such patterns cannot necessarily be generalised to other areas, although we have no reason to believe that rates of NRT use would be different elsewhere. Third, we have used a simplified metric for access to NRT – using pharmaceutical claims – and have no way of assessing whether usage of the medication has followed dispensing. Also, to be linked with individuals, dispensing must be linked to NHI. If Quit cards are redeemed at pharmacies that do not have the person’s NHI on record, such dispensing episodes will not be counted. Finally we were not directly able to link the claims with smoking status.

The different rates of NRT use by ethnic groups may be due to divergent knowledge of NRT effectiveness and how to access it, or variation in use of cessation services. The nation’s largest provider of subsidised NRT, the Quit Group which manages the national Quitline service has previously reported low use of their service by Pacific people (<5% of callers in 2005) which triangulates with our study.<sup>7</sup> In contrast, Māori uptake of the Quitline service was reportedly high, again concurring with our results. Whereas Māori have ethnic specific cessation services (e.g. Aukati Kai Paipa, available in CMDHB through the charitable trust Raukura Hauora o Tainui ki Tamaki), Pacific people are not similarly served.

“Pacific” people in New Zealand come from a range of cultural, linguistic and national backgrounds and include recent immigrants from (mostly Polynesian) Pacific nations as well as those settled in New Zealand for generations. Pacific people in New Zealand are concentrated in Counties Manukau, with more than one in three (38%) of all NZ-based Pacific people residing there. Pacific people in New Zealand have underutilised health care services (compared to need and other groups’ utilisation rates) in other areas such as mental health.<sup>17</sup>

What needs to be done to improve access to NRT in this group is unclear, but more research is required to delineate structural impediments to support for a quit attempt as well as any cultural beliefs about the utility of such treatment. Simple barriers such as language may explain some of this reduced rate of treatment. For example, literacy surveys show that 75% of Pacific adults in New Zealand have English literacy levels insufficient to function in today’s economic market (cf. 42% for European and 70% for Māori).<sup>18</sup>

Younger age groups were also low users of NRT. Smoking cessation interventions in young populations have proved disappointing, with few interventions supported by

high quality evidence.<sup>11</sup> Nevertheless, younger smokers stand to benefit most from quitting and NRT is likely to improve their odds of quitting over cold turkey methods. Healthcare professionals who interact with young people need to ask about smoking status, advise those who smoke to stop, and most importantly offer treatment. NRT can be used in smokers under the age of 18. Additionally, opportunities outside the healthcare setting need to be explored to assist young people who smoke to stop.

In light of our findings, urgent strategies are required to address the ethnic treatment disparities to NRT use. Solutions will need to involve both health care and non health care settings. For example, smoking cessation interventions delivered in the workplace have been shown to be effective to help workers quit.<sup>19</sup> A large proportion of Pacific and Māori are currently employed in manufacturing industries and workplaces may be a strategic entry point to such groups.<sup>20</sup> Benefits beyond the individual may be expected - previous evidence suggests that in social networks of smokers, if one quits, others in the household or network are more likely to do so.<sup>21</sup>

Currently, CMDHB engages Pacific churches and Marae in health promotion campaigns to address issues of obesity and diabetes prevention. Equally, however, such programmes may incorporate smoking cessation streams – considering the clear effectiveness of such programmes and the demonstrated need. Methods also are available to train lay people to deliver smoking cessation interventions, enabling them to lead groups and prescribe subsidised nicotine replacement therapy. Such a ‘peer education’ approach may be one method of reaching people that remain difficult to access from population based strategies. As well as highlighting new services that may be offered, existing services may be tailored to better meet the needs of Pacific, Māori and low income groups.

Incentives to provide smoking cessation through primary care with high proportions of Pacific or Māori enrolees are an example of one such strategy. To achieve the greatest reduction in smoking prevalence these programmes need to run in conjunction with other important population level strategies that aim to reduce initiation and prompt smoking cessation.

## Conclusion

Our study shows low rates of use of NRT—a potentially life saving intervention for smokers—in Counties Manukau in 2007. We also identified a disparity in treatment for smoking cessation in an area of New Zealand with arguably the highest concentration of health need. To see a reduction in health inequality for Pacific and Māori populations, we argue that action to increase the uptake of NRT in this group be prioritised. The use of combinations of NRT, along with prolonged use ( $\geq 8$  weeks) are also likely to increase quit rates and reduce illness and need for hospital treatment associated with tobacco use.

**Competing interests:** Dr Hayden McRobbie has undertaken research and consultancy for manufacturers of smoking cessation medications, and also received honoraria for speaking at their meetings.

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## Getting an outdoor smokefree policy: the case of Kapiti Coast District Council

Leigh Halkett, George Thomson

### Abstract

**Aim** To explore how a smokefree parks policy was conceived, accepted and developed by and for Kapiti Coast District Council (KCDC).

**Method** Thirteen people involved in the smokefree parks policy process for KCDC were interviewed in person during November–December 2008. Supporting documentation and websites were accessed and reviewed.

**Results** In September 2008 the KCDC agreed to adopt a smokefree parks and playground policy, following an initiative from a smokefree coalition of several public health organisations. The policy was developed collaboratively by this coalition with input from the council, and was supported by key local organisations. The KCDC appears to have adopted a smokefree outdoor areas (SFOA) policy because of demonstrated public support, the relative simplicity and low cost of the policy, the success of similar policies elsewhere, and because of the alignment with desired community outcomes. The challenges included finding funding and allocating staff time for this project. There were also concerns with how the policy would be enforced.

**Conclusions** A collaborative approach amongst health and community groups for achieving SFOA policies works well. The experience with council SFOA policies has considerable impact on the adoption of similar policies by other councils. To maximise this influence, information about the policies needs to be spread nationally by the health and local government sectors.

Legislative efforts to reduce smoking and the exposure to secondhand smoke (SHS) in New Zealand have included the Smoke-free Environments Act 1990 (SEA) and the Smoke-free Environments Amendment Act 2003 (SEAA). The latter Act requires all public indoor places to be smokefree, and also require smokefree grounds for schools and playcenters.<sup>1</sup> These laws have replaced the voluntary smokefree policies previously used in some offices and shops, and the local smokefree bylaws that several New Zealand local authorities had passed for some indoor public places.<sup>2,3</sup>

**Smokefree local authority outdoor areas**—A new focus in the last 5 years in New Zealand tobacco control has been the introduction of smokefree outdoor areas (SFOA) by local authorities. SFOA have been introduced successfully in many places internationally, including parts of California and Australia, where bans prohibit smoking on beaches, parks, near entrances of public buildings, outdoor eating or drinking areas, and sports stadiums.<sup>4</sup>

New Zealand is following suit, with at least 20 district and city councils adopting SFOA policies for parks and playgrounds since 2005.<sup>5</sup> These New Zealand policies



are educative rather than legally enforceable, and endeavour to change behaviour by public pressure. That is, the council SFOA parks and playground policies use publicity, signposts, and media coverage to inform smokers, rather than trying to enforce SFOA by warnings and fines.

There are several arguments for creating SFOA, including:

- Positive smokefree role modelling for children,
- Preventing exposure to SHS,
- Reducing the environmental impact of litter from smoking-related materials,
- Reducing the fire hazard of cigarette butts, and
- Aiding smokers efforts to quit, and empowering non-smokers to be vocal about not wanting to be around smoking.<sup>4-6</sup>

Some research evidence suggests that reduced exposure to smoking as a 'normal' activity may decrease the risk of children starting smoking. The amount of smoking which youth observe appears to be associated with their views on the acceptability of smoking, and their likelihood of starting.<sup>7-9</sup>

In New Zealand, the main goal of SFOA has usually been to de-normalise smoking, by reducing role modelling of smoking so as to decrease smoking uptake in youth.<sup>5, 10</sup> Adult smoking behaviour is a risk factor for children starting smoking,<sup>11, 12</sup> and restrictions on smoking reduce smoking uptake in youth.<sup>13</sup>

There has been limited published research on SFOA. A study done in Upper Hutt parks in 2007 found that following the introduction of a smokefree parks policy in May 2006, 63% of park users knew about the policy and 83% of park users thought that having a smokefree parks policy was a good idea.<sup>14</sup> Other New Zealand research in 2007 found that local councillors in the Wellington region were unlikely to know of the smokefree parks policy in Upper Hutt.<sup>15</sup>

A review of 16 studies in Britain, New Zealand, and parts of Australia and the USA indicated that there is high public support (72% to 91%) for smokefree outdoor areas related to children.<sup>16</sup> Smoker support is also high,<sup>16</sup> including 66% smoker support in New Zealand for smokefree council owned playgrounds.<sup>17</sup>

Little research has been done on the policy process and context for smokefree parks,<sup>15, 18, 19</sup> and there appears to be no studies in the journal literature that detail how a jurisdiction adopted a smokefree parks policy.

**The role of local government**—Local government has a role in public health. The position of leadership, community influence and ability to build relationships gives local government many advantages in providing public health initiatives and services. New Zealand legislation supports the public health role, including the Local Government Act 2002 (LGA). The LGA states that one of the purposes of local government is to enable democratic decision-making and action by, and on behalf of, communities; and to promote community wellbeing.<sup>20</sup>

The KCDC long term community plan 2006 outlines the council's role to promote the social, cultural, economic and environmental wellbeing of the district. Seven desired community outcomes are identified, of which one (Outcome Seven) is: 'The district



has a strong, healthy and involved community.<sup>21</sup> SFOA could contribute substantially to achieving this community outcome.

The aim of the research was to find how a smokefree parks policy was conceived, accepted and developed by and for Kapiti Coast District Council.

## **Methods**

A qualitative case study was conducted of the SFOA policymaking process in the Kapiti district (in the lower North Island). During November and December 2008, people involved in the smokefree parks policy process for KCDC were invited to participate in this study. An initial contact, from Regional Public Health (RPH), had been closely involved with the KCDC smokefree parks policy. Other key people were identified during interviews, making the gathering of participants a progressive process. Interviews were done in person, using a semi-structured format and on the basis of anonymity, and lasted between 10 minutes and one hour. If the participant agreed, the interviews were recorded and later transcribed. If not, notes were taken. Ethics approval was obtained through the University of Otago ethics process.

Copies of relevant documentation, such as reports, media releases and minutes, were collected in hard copy, from websites, and by email.

## **Results**

Thirteen interviews were completed, six people from health organisations, four KCDC staff, a KCDC councillor, a Kapiti Youth Council member, and a communications advisor. Two interview invitations were declined.

### **Background work for the policy**

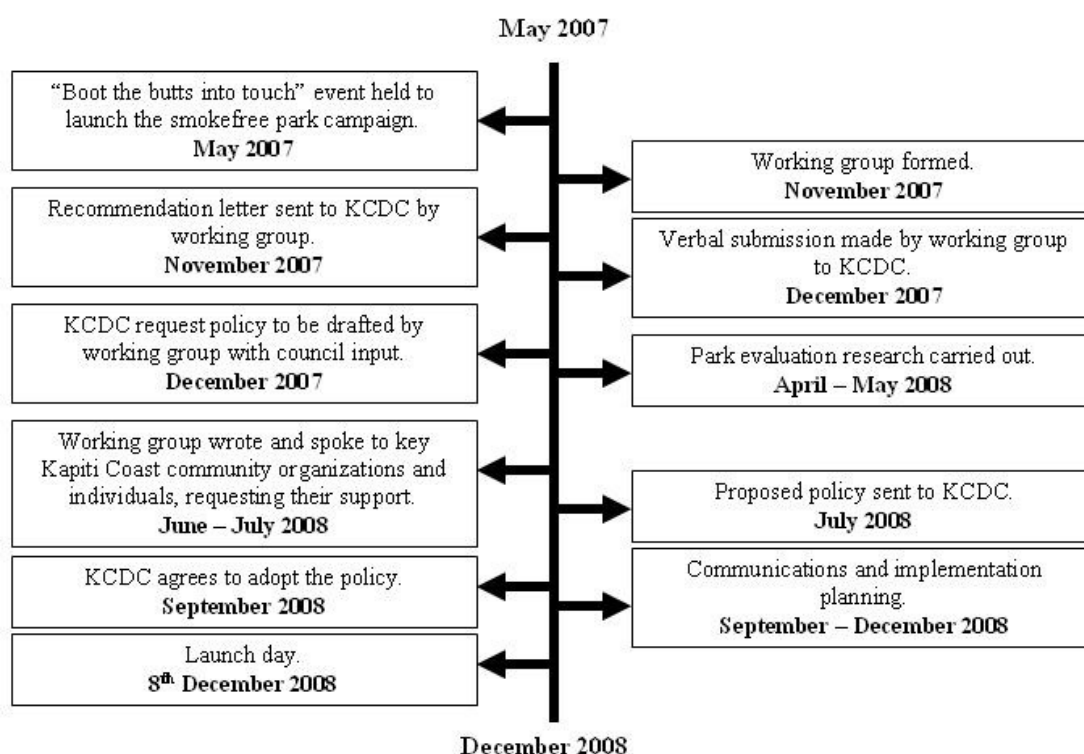
The idea of a smokefree parks policy for the Kapiti Coast came from an employee of the Otaki Primary Health Organisation (PHO). She had heard positive feedback about smokefree parks in other areas, and wanted to do something 'more significant than just putting up displays, something that had some impact'. On World Smokefree Day, May 2007, an event, 'Boot the Butts into touch' was run by her at a local primary school to launch the campaign and gather support for making KCDC public parks smokefree (see Figure 1). She took advantage of it being council election time, and asked the current Mayor and the mayoral candidates to attend.

Following 'Boot the Butts', she sent an email survey to KCDC electoral candidates. Approximately 90% of them replied, supporting the idea of smokefree parks. The Otaki PHO member made it widely known that the policy 'had a huge amount of support'. She said that 'by making that information public, it's very difficult for them to go back on it.'

### **Collaborative approach to the council**

The Kapiti PHO, RPH and the Cancer Society were then asked for advice on advancing the project, and invited to work collaboratively with Otaki PHO. An initial working group was formed of representatives from Otaki PHO, Kapiti PHO, RPH and the Cancer Society, in November 2007. The Health Sponsorship Council was involved in an advisory role, and contracted a communications expert to help in the efforts to get the smokefree parks policy adopted by the KCDC.

**Figure 1: Kapiti Coast Smokefree Parks Process**



The first formal contact was made with KCDC in November 2007, in the form of a recommendation letter from the working group to the KCDC. This was followed by a verbal submission by the working group at a council meeting in December 2007. At this meeting the council resolved that a draft policy be developed for consideration.<sup>22</sup>

The KCDC further responded with a letter a few days later, supporting the request for smokefree parks, and asking that a policy be drafted by the working group with input from the council.<sup>23</sup> In January 2008 the formation of the working group was finalised, and included a representative of KCDC. Members of the group said that having a council representative on the working group was valuable, ‘because it is hard from the outside to know what the council processes are.’

### **Policy development**

The Kapiti Council identified five ‘high use’ parks (as defined by the numbers of the public using them). These were considered to have the potential for a maximum effect on both park users and the Kapiti public by being made smokefree. A pre-evaluation of these five parks was done in April – May 2008, and a report produced in June.<sup>24</sup> The pre-evaluation measured community support among park users for a SFOA policy, using the survey form taken from the Cancer Society’s Smokefree Councils website.<sup>25</sup> Observation of park users’ smoking behaviour and a cigarette remnant collection was also done, to establish baseline data on smoking activity. Seventy-five percent of survey respondents thought that people should not be able to smoke at outdoor children’s playgrounds.

Several interviewees agreed that the support of the community was important to ensure 'different voices come through and it's not just the health groups saying you need to do this. It has come from the community.' In June 2008, the working group wrote and spoke to key local organisations and people, to request their support for a SFOA policy for Kapiti council parks.

A Cancer Society employee said 'the effectiveness of this [policy] is determined by how onboard the community is, so it was really important to get the support of organisations on the Kapiti Coast.' The communications advisor said 'The key is to make sure all your stakeholders know what's happening before it happens, that they understand the rationale behind it.'

Support of many community groups also helped to prevent the proposal looking like 'a council pushed initiative.' A KCDC staff member said: 'We want it to come across as a partnership, because that's what people in our area respond well to.'

The Kapiti working group emphasised that it would have made council involvement easier if the approach had been made earlier in the council budget cycle. Being in the third year of the Kapiti council's three year planning cycle made finding funding and allocating staff time for this project especially difficult. Parks and reserves staff were concerned about this because their 'budget didn't allow for it' and they were 'concerned with enforcement because there is no way that we [would] have... the resources to enforce it.'

The council was committed to the policy in principal from the beginning, so the funding difficulties were eventually sorted out. But a council staff member said 'it would have been simpler if...it had been budgeted for.'

In hindsight, parks and reserves staff do not appear to have been involved sufficiently from an early enough stage. Similarly, Māori representation was lacking, although the KCDC iwi (tribal) liaison person was asked to facilitate feedback on the policy. Several interviewees said they would have liked to have seen Maori representation from an early stage in the process. A council staff member said that 'Iwi are the kind of group that need to be brought in right at the beginning. It is one of those things that I think groups have got to understand. ... If they haven't been involved from the beginning, then it is difficult to get them involved when all the work is done.'

In July 2008 a summary document, including a proposed policy, an implementation and communications plan, and pre-evaluation report was produced by the working group and sent to the council.

## **Policy adoption**

In September 2008 the KCDC agreed, at an Environment and Community Development Committee meeting, to adopt the Smoke-free Parks and Playground Policy.<sup>26</sup> The policy stated that all council-owned parks, sports grounds and playgrounds on the Kapiti Coast were to be smokefree. A councillor said that passing the policy was 'a no-brainer' (an obvious move that required little consideration).

The working group observed that there was not much discussion around the council table, and said they 'didn't have to do a lot of convincing' of the committee. Factors that contributed to the council so readily accepting the policy were; there are 'a

number of health-conscious councillors’, ‘it’s a simple and cheap way to work towards our community outcomes’ (the policy aligned well with KCDC Community Outcome 7),<sup>21</sup> and ‘it’s all about the kids’. The communications advisor said ‘this [type of policy] has actually been done by a lot by other councils. It’s not new; it’s almost catching up with everyone else. And actually smokefree parks these days are not a big deal; it’s almost more of a big deal not to have them now for councils.’

A Kapiti Youth Council member said her impression of why a smokefree park policy was implemented was ‘for the wellbeing and health of younger kids .... So their parents can be role models and show them that it’s not a good thing to be smoking.’ Council staff said some aspects of the policy that made it attractive were that it gave the council the opportunity ‘to create situations where people can be role models’. KCDC ‘can see that it has been successful and that it has been positive. The pre-evaluation made it a really easy sell. It meant that we could confidently say that people support this.’

### **Policy content and rationalisation**

The policy involves putting up signs, and publicizing the policy, to discourage smokers from smoking in particular areas. The Cancer Society recommends that smokefree park policies take an educative approach rather than a punitive one, although many places overseas (e.g. in New South Wales, Australia), have opted for a punitive approach.<sup>27, 28</sup> Some jurisdictions with the power to fine prefer to use an educational approach.<sup>27, 28</sup> A Cancer Society staff person thought that New Zealand should be ‘focusing on creating a healthy environment and positive role models for children, rather than punishing smokers.’

This was echoed by others. This policy is ‘about the community and about de-normalising smoking. And it is about getting the community on board and saying we want to be positive role models for kids’, said another Cancer Society employee. She also said there was no need for a bylaw because ‘the concept of smokefree parks doesn’t fit into a bylaw...if the community is on board and they see value in not smoking in front of the kids, then that’s enough to keep the park smokefree.’

The working group stressed that the policy was all about the kids. It focuses on the effect on children of seeing adults smoking around them. An employee of the Cancer Society thought that the ‘focus on the kids’ message has worked well as justification as it is ‘less threatening and more acceptable to smokers.’

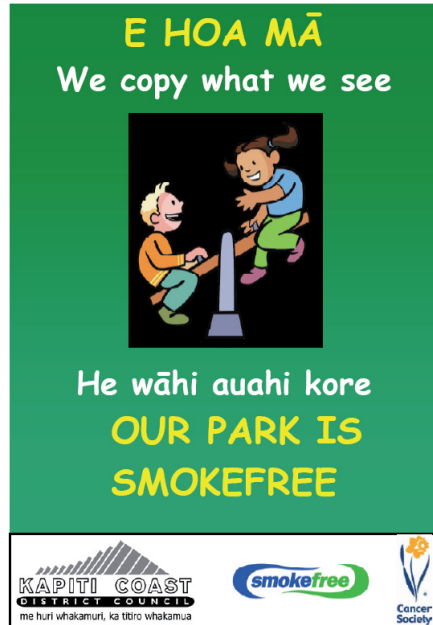
### **Policy implementation**

**Budget and signs**—The total SFOA project implementation cost to the Kapiti council and their project partners was estimated at approximately \$12,000. This covered signage, a full page advertorial in local newspapers and launch expenses. Regional Public Health (a public health unit run by Hutt Valley District Health Board), the Cancer Society, a Kapiti PHO, and the Capital and Coast District Health Board contributed funding, and the KCDC contributed funding to meet the difference. The Health Sponsorship Council contracted a communications expert.

Twenty playgrounds (within the initial five ‘high use’ parks, and elsewhere) were identified as ‘key’ to the policy, and signs were to be erected in high profile areas close to the playgrounds. The signs reflect the key rationale behind smokefree parks

‘it’s for the kids’ stating: ‘We copy what we see, our park is smokefree’ (see Figure 1). The KCDC, Cancer Society and Smokefree logos are included.

**Figure 1. Kapiti Coast District Council smokefree park sign**



Using cheaper signs was one solution suggested to solve the initial lack of funds for the project (due to the lack of a specific planned budget for it by the Kapiti council). However, ‘the concern with cheaper options is that they get vandalised, they blow away, fall down and don’t last as long.’ Parks and reserves staff wanted all the signs in the parks to match. ‘We just didn’t want it to look out of place. We wanted it to look like it belonged there.’

**Promotion and media coverage**—The SFOA policy was first promoted within the council staff. A parks and reserves staff morning tea was held before the public policy launch to ‘bring the parks and reserves team into it’. Taking a ‘hospitable approach’ was well received and provided a great opportunity for some of the working group to explain the rationale behind the policy to park staff.

A communications plan was developed and executed with the help of a professional communications expert. The policy launch in December 2008 (at a local park) reflected the rationale for the policy by including children from a local school in the launch ceremony. As part of the ceremony, games were played and smokefree merchandise was given to the children as prizes. The mayor gave a speech and unveiled the smokefree sign. Photos were taken to use in local media.

In the days immediately following the launch a full-page advertorial was put in local newspapers. Details of the policy and reasons behind it were communicated to KCDC staff via email. Information on the policy was sent to all local supporters, sports clubs and schools, and was made available on a number of websites. Supportive letter

templates were drafted by a working group member, to provide the basis for others to write to local newspaper editors.

However, after the launch there was no media reaction. Media were invited to the launch but none attended. One member of the council was 'not sure whether there has been enough publicity, are people that aware [of the new policy]?' Others said that the media response 'had been very quiet'. Suggestions to explain this lack of media response included that 'unless it's bad news you don't get it' or 'it's not big news so it may have been that they just were not interested.'

## **Risks**

Most interviewees did not see any problems arising in the future with the policy. However, some thought that the arrival of the winter sport season might present some questions. 'I think that [winter sports] is where any conflict may arise, when smokers who resent the fact that there are fewer places where they can do this. But having said that, as a follower of local rugby, the change [to smokefree].... club rooms was very noticeable and well received.'

## **Further work to be done**

KCDC policies on hiring of council owned facilities were to be updated with their smokefree status. Smokefree branding and other resources were to be made available to event coordinators, to enable them to promote all events in KCDC owned parks as smokefree.

## **Evaluation**

There were plans to repeat components of the pre-evaluation, at the same five parks on the Kapiti Coast, in 2009. One council staff member thought 'a post evaluation would be cool because we can then report back to our community and say we did this and it is well supported.'

## **Discussion**

'Educational' smokefree outdoor policies are a successful re-emergence of voluntary and local authority smokefree policies in New Zealand. However, there are some differences from the voluntary creation of public and private indoor smokefree policies that occurred before legislation required them. Few premises in New Zealand, outside the health sector, became voluntarily smokefree before being required to,<sup>2</sup> and very few councils adopted smokefree interior bylaws.<sup>3</sup>

Even more important, the new SFOA are being created by using information and education, rather than legal force. Rather than paid officials with legal powers, the front line for SFOA in New Zealand is composed of parents at sports grounds and playgrounds, sports club officials, and those who see tobacco smoke and smoking litter in streets, beaches and parks as nuisance costs to themselves.<sup>29</sup> Thus the policies will take time to have full effect, as both community awareness of the policies, and the willingness to stand up to those who smoke in defiance or ignorance of the policies, will take time to grow. The effective communication of the policies (and the rationale behind them) are therefore crucial health sector and government tasks.<sup>30-32</sup>



## **Key findings, significance and national policy implications**

Councils with existing smokefree park policies have a great deal of impact on whether other councils consider adopting a similar policy.<sup>19</sup> Because of the communication between them, the number of councils that have policies, and their experiences with planning and implementing these policies, influence councils that have yet to make the decision to develop one of their own.<sup>19</sup> The last four years has seen a ‘snowballing’ effect of councils in New Zealand adopting smokefree park policies.<sup>19</sup> In order to maximise this, publicity about the policies needs to be spread nationally.

The options for this include a greater role by central government in encouraging SFOA. This could include further media campaigns about the effects on children of the public normalising of smoking,<sup>33</sup> and efforts to increase the media coverage of SFOA. District Health Boards (DHBs), in areas where councils have yet to decide on a smokefree policy, could give a greater emphasis on facilitating SFOA. Because of the relationship between public smoking examples and youth smoking uptake,<sup>7-10</sup> this activity would tie directly to the achievement of central government required targets on the reduction of youth smoking. Thus central government could encourage DHB work in this area.

Facilitating a collaborative approach amongst health and community groups, and developing the SFOA policy in partnership with a wide range of groups within the community, are important principles to consider for any group considering a smokefree parks policy. We suggest that the public respond best to new policy that is supported by a range of voices within the community. The community are the ultimate enforcers of an educational policy, so the more depth of support for SFOA, the more likelihood of its success.

Educational SFOA policies have worked well in New Zealand so far,<sup>5, 19</sup> and appear to be well supported and received by the public.<sup>17, 34-37</sup> Although a legislative approach may be more effective in the long term, experience in New Zealand has shown that there may be resistance among decision-makers to adopting SFOA by a legislative approach.<sup>38</sup> It is possible that educative policies for SFOA could be the first step in a staged approach towards legislative bans.<sup>39</sup> Once most councils have educative policies, government could consider making nationwide legislation (at least for playgrounds) as the next step, to protect children in areas without SFOA policies.

Educational smokefree policies depend a great deal for their success on media coverage and word of mouth. Health workers, councils and government need to devise ways to increase this. One possible way could be annual awards to the council that has made the most progress in reducing smoking at playgrounds and/or sports grounds, as measured by trends in observed smoking and butt counts.<sup>5, 34</sup> NGOs, and local and central government agencies could be involved in such activities.

### **The lessons from Kapiti**

By using a wide stakeholder working group to create educative SFOA policies, it appears that councils are more likely to get ‘local buy in’. A ‘collaborative approach’ appears to have been a great way of tackling the development of this policy. In Kapiti this resulted in a cooperative working relationship between the council and public health workers.



This study has focused largely on the preparations before a final policy decision, a decision largely ensured by the thorough preparation. While the setting was small scale, as with the introduction of smokefree national and regional policies,<sup>40-42</sup> sympathetic officials and politicians, evidence of public support and good preparation were important. The Kapiti community appears to have been largely ready for the change, with a high ‘community readiness’ level.<sup>43, 44</sup> Further lessons are evident below in the Recommendations section.

## **Recommendations for future projects**

**Timing the approach to council (planning and electoral cycles)**—Health advocates and promoters need to be aware of what stage of the planning and budget cycle the council is in. Ideally council should be approached at the times when they invite submissions from the public (for annual or longer term plans). This way the council can plan what resources (financial and staff time) need to be allocated to such a project.

A strategy that worked well for this group was surveying the council candidates during the campaign period before local elections. This can provide some powerful information on what sort of support there is among individual councillors, and point to some useful allies.

**Parks and Reserves staff participation**—Although parks and reserves staff were drawn on for feedback once the practicalities began to arise, it would have been ideal if this group had been invited to participate from the beginning. A smokefree parks policy will affect their jobs, and they may wish to have involvement in the planning and be kept up to date with the policy progress.

**Stakeholder and interested parties participation**—One way of increasing interest in the policy, and increasing the impact of the launch, would be to spread information widely about how the process was progressing. This information could be sent to any organisations that might be interested, such as local sports clubs, and the local branches of NGOs like the Asthma Society and the Heart Foundation. Because they may be affected, and/or could provide support, there is a need to inform these groups of the prospect of smokefree parks in the local area, and then to keep those people in the loop. This could be helped by direct communication, such as sending them a summary of achievements and plans at the end of each meeting.

**Maori participation**—The Smokefree Councils Implementation Kit suggests that Maori representation is necessary on working groups to promote SFOA.<sup>5</sup> It would have been better to have had Maori involvement from the beginning, ideally on the working group. Such involvement could provide greater assurance of policy success, as well as being better for the long term Treaty relationships of a council.

**Limitations of the research and suggestions for future research**—Every council is to some degree unique in its structure and processes, due to differences in institutions and context. As this research investigated the experience of one council, not all of the findings will be relevant to others.

The experience of other councils has a great impact on councils considering the adoption of smokefree park policies.<sup>19</sup> It is therefore important that when new SFOA policies are considered, time is taken to ensure that sufficient pre and post evaluation

of new policies are done. This can be added to the information now available to councils from the experience of others,<sup>5</sup> to help make the arguments for having smokefree park policies more convincing.

Research into community change for smokefree policies also suggests that policy process evaluation can be valuable during the change.<sup>44, 45</sup>

## Conclusion

The smokefree parks and playground policy for KCDC was facilitated using a participatory approach involving public health groups, and was developed collaboratively by public health and KCDC. The KCDC appears to have adopted a SFOA because of demonstrated public support, the relative simplicity and low cost of the policy, and because of the alignment with desired community outcomes.

**Competing interests:** One of the authors (GT) has undertaken work for health sector agencies working in tobacco control.

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## **A complex intervention to support 'rest home' care: a pilot study**

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### **Abstract**

**Aims** To describe an intervention supporting Aged Related Residential Care (ARRC) and to report an initial evaluation.

**Methods** The intervention consisted of: medication review by a multidisciplinary team; education programmes for nurses; telephone advice 'hotlines' for nursing and medical staff; Advance Care Planning; and implementing existing community programmes for chronic care management and preventing acute hospital admissions.

Semi-structured interviews were conducted with members of the multidisciplinary team, rest home nurses and caregivers. Quantitative data were collected on medication changes, hotline use, use of education opportunities and admissions to hospital.

**Results** Medications were reduced by 21%. Staff noted improvements in the physical and mental state of residents. There was no significant reduction in hospital admissions. Nurses were unable to attend the education offered to them, but it was taken up and valued by caregivers. There was minimal uptake of formal acute and chronic care programmes and Advance Care Planning during the intervention. Hotlines were welcomed and used regularly by the nurses, but not the GP.

**Conclusions** The provision of high status specialist support on site was enthusiastically welcomed by ARRC staff. The interventions continue to evolve due to limited uptake or success of some components in the pilot.

The number of people aged 65 or over, living in Counties Manukau District Health Board (DHB), is expected to increase by 132% from 2006 to 2026.<sup>1</sup> Over the same time, across New Zealand, the number aged 85 or over is expected to treble,<sup>2</sup> placing significant pressure on future health services.<sup>3,4</sup> Only 15% of people over 85 in NZ remain independent of support services.<sup>5,6</sup> Without any other changes, the number of older people in residential care would double by 2021.<sup>5</sup> The trend is for older service users with higher needs having shorter stays.<sup>7</sup>

Counties Manukau DHB has made a commitment to ensure that older people in ARRC facilities have the same access to geriatric services as those living in their own home. The DHB elderly service had noted considerable variability between rest homes in their catchment area in the number and reasons for hospital admissions. Anecdotally, they were aware that the ARRC system was under duress and it appeared that many nurses and doctors were working in the system with little support. The Health and Disability Commissioner has stated that rest home care has been a disproportionate source of complaints.<sup>8</sup>

The Community Geriatric Service (CGS) is a new initiative to provide a consultative service for general practitioners (GPs) and nurses working in ARRC facilities. The service includes a community geriatrician, two Clinical Nurse Specialists (CNS) and a social worker. A multi-component support strategy was devised following discussions with stakeholders and a survey of relevant literature.<sup>9-11</sup> The strategy included elements that have individually been shown to be successful, but we are not aware of such a combination being used previously either in New Zealand or internationally. One of the large rest homes agreed to support this development and trial the new system.

## Methods

**The setting**—The facility comprised a hospital with 50 residents and a rest home with 46 residents. It is owned by a local subsidiary of a large international organisation which has a focus on aged residential care. The hospital was staffed by a unit coordinator who was a registered nurse, four registered nurses, two enrolled nurses and 28-30 caregivers. The rest home was staffed by a unit coordinator who was an enrolled nurse, another enrolled nurse and 12 caregivers. A nurse manager was responsible for the overall operation of the facility. One GP ('the GP') provided primary care for 90% of the residents. Primary care for the remainder was shared across five GPs.

**The intervention**—The intervention consisted of five main components delivered in an intensive phase from December 2007 to May 2008, followed by an ongoing maintenance phase. The specialist staff consisted of one geriatrician and one clinical nurse specialist (CNS) who did not consult directly with patients—they worked with the front-line caregivers to discuss, train, mentor and support.

- Medication reviews were conducted for all residents age 85 or more, and for younger residents on 9 or more medications. The review team included the geriatrician, a CNS, the GP, a community pharmacist (who participated by teleconference), the facility clinical manager and the two unit coordinators. During the intensive phase the review was held weekly at the rest home and was led by the geriatrician. Since then meetings have continued monthly and are led by the GP.

The geriatrician and CNS read the residents' medical record prior to the review. At times this review naturally extended beyond medications to include a fuller clinical discussion. Medication changes were based on the Beers criteria.<sup>10</sup> The geriatrician wrote detailed notes following the review, which were faxed to the facility within a week. Changes to medications and progress chart were made by the GP. Facility nurses and caregivers were informed of changes at each shift change. Changes were discussed with the family wherever possible.

- Two telephone 'hotlines' were established. The first provided registered nurses with advice from a CNS, and the second gave GPs direct access to the geriatrician. The hours of service were 0830 to 1530. A template was provided to guide clinical information collection prior to using the hotline. The nursing hotline was not intended to address acute problems—the advice given in such cases was to contact the GP or, if needed, arrange acute admission to hospital.
- Advanced Nursing Support was provided on-site by a CNS. This included review of residents who were complex and the direct care staff required advice. From these reviews, on-site education was provided by the CNS. The nurses were also offered a web and CD course Assessment Treatment and Rehabilitation Advanced Core Training (ATRACT), which was available to all nurses working in the DHB catchment area.<sup>12</sup>
- Both nurses and GPs were encouraged to use a Counties Manukau DHB scheme called Primary Options for Acute Care (POAC) that gives access to additional resources short term if they could keep a patient out of Middlemore Hospital. This scheme funded a CNS to train all the registered nurses in intravenous fluid administration. Nurses and GPs were also encouraged and supported to enrol patients in the DHB Chronic Care Management (CCM) programme. This programme is intended to provide systematic case management free to patients with congestive heart failure, diabetes, chronic obstructive pulmonary disease, cardiovascular disease and depression. It has been largely unavailable to residents in ARRC



facilities as it depends on specific information technologies and is relatively complex and time consuming.

- Nurses and GPs were offered training to initiate and support a formal process of Advance Care Planning (ACP) that was undertaken by a project manager who had a background as a social worker. ACP supports patients and their family/whanau to think ahead to the care and medical treatment one would desire to receive in the future. While not binding on health care providers, a Plan should be taken into account if later treatment decisions are made when the person is not competent to discuss and consent. The process used was adapted from an Australian and United States model.<sup>13</sup>

**Data collection-direct observation**—Two authors (AA, HC) directly observed the medication reviews and made field notes.

**Data collection-interviews**—Interview schedules were constructed following a review of the stated programme objectives and discussion with the programme developers, senior managers at the facility and members of the evaluation team.

**Two interviews**—one before and one after the intensive phase of the intervention—were held with each of the senior management team at the rest home and hospital, the geriatrician, the GP and the pharmacist. Interviews were also held with two CNSs and two DHB elderly services managers; the registered nurses who had been involved in medication reviews and with a convenience sample of enrolled nurses and caregivers at the facility. Interviews before the intensive phase were conducted in November 2007, and subsequent interviews were in June to August 2008. Interviews were conducted at a time and location of the interviewee's choice.

Interviews were recorded and transcribed. Transcripts were sent to interviewees for verification. All transcripts were independently coded for themes by three authors (AA, VA, HC) using a general inductive approach.<sup>14</sup>

The original proposal was to interview residents or their families. However, these interviews were not held as senior management of the facility decided that few residents aged over 85 years would be able to remember whether changes in their medication, made several months prior to an interview, had affected their health. It was also considered that the families of the residents would not have sufficient knowledge of the details of the programme to enable valid information to be collected.

**Data collection-admissions to hospital and hotlines**—Quantitative data were collected on medication changes, hotline use and admissions to hospital. The Community Geriatric Service hold a weekly case conference during which they assess and record the appropriateness of each hospital admission of rest home residents. This is a clinical judgement which may differ from the formal discharge ICD-10 codes used to assess Ambulatory Sensitive Hospitalisation. The hospital database was queried for the time of admission (i.e. week day, night or weekend); if accompanied by a referral note; and length of stay. The geriatrician kept a record of hotline calls and recorded a judgement about whether an admission was avoided by a hotline call.

**Ethics**—Patients and their families were all given leaflets explaining the project prior to it starting and verbal consent was obtained in all instances from either the patient or their legal representative. Staff and DHB interviewees provided written consent. The research was approved by the Northern Regional Ethics Committee NTY/08/05/043.

## Results

Four medication reviews were directly observed. Sessions lasted about one hour and each reviewed about five patients. Twenty two informants contributed 43 interviews.

**Medication reviews**—Sixty-four residents had their medications reviewed (56 aged over 85 and 8 aged 50–85). Across these residents 84 different medications were being prescribed at the start of the study, a total of 466 medications to the 64 residents, reduced to 366 after the reviews (a reduction of 21%). For 50 residents at least one medication was stopped, and for a further 8 at least one medication was reduced; overall 54 different medications were stopped. Table 1 shows the top ten prescriptions at the start of the intervention and after the medication reviews.



Seventeen residents had at least one medication started, the most common being paracetamol (7), calcium carbonate (3) and cholecalciferol (3).

**Table 1. Medications prior to intervention, and those stopped or reduced after review**

<b>Top 10 medications prescribed at start of intervention. (Number of residents)</b>	<b>Top 10 individual drugs stopped or reduced. (Number of residents)</b>	<b>Stopped medications that can lower blood pressure and that can impair cognition</b>
Cholecalciferol (44) Calcium carbonate (36) Furosemide (30) Omeprazole (27) Aspirin (29) Metoprolol (17) Ducosate (16) Simvastatin (14) Paracetamol (11) Alendronate (11)	Calcium carbonate (15) Simvastatin (11) Omeprazole (10) Multi-vitamins (7) Metoprolol (6) Furosemide (6) Aspirin (6) Enalapril (5) Paracetamol-codeine (5) Paracetamol-dextropropoxyphene (5)	Lower blood pressure (beta-blockers, calcium blockers, alpha-blockers, ACE inhibitors, diuretics) 32 medications 25 people  Impair consciousness (tricyclics, neuroleptics, hypnotics, sodium valproate, codeine, dextropropoxyphene) 17 medications 16 people

Medication delivery time was reduced.

My drug round takes less time. I am not giving out as many meds. It used to take one and a half hours now takes one hour (CG #4)

Reduced delivery time saved resources for the facility; however the pharmacy supplying the facility was concerned that reducing medication would also reduced their revenue.

Medications stopped or reduced could be grouped into those that might lower blood pressure and those that might impair cognition—also shown in Table 1. All staff at the facility reported physical and mental improvements in residents, which they attributed to reduced medication.

Reducing over-medication has reduced the risk of falls. (CG #3)

They used to be sleepy and confused and that doesn't happen so much now. (CG #5)

The nurses and caregivers valued the timely and detailed notes both for individual patient care and more generic education.

Having full notes in the patients files with explanations for medication and care changes mean we can understand the reasons for the change. (CG #5)

One unanticipated change was observed by a senior caregiver.

While we are getting the medications better reviewed, there is also more of a personal interest in the resident. The doctors have moved to talking with the residents rather than talking around them. (CG #3)

However, time and availability of the GP remained an issue.

...there are usually patients that I have admitted to the rest home in the last month and I have not had time to review the case notes before they are presented to me at the case review (GP)

**Admission Rates from the facility to Middlemore Hospital**—Key informants suggested that, prior to the intervention, some inappropriate or ad hoc admissions to Middlemore Hospital were contributed to by limitations of knowledge, experience and continuity of nursing staff.

Problems arise when the condition of the patient is outside the ability or experience of the nurse. This commonly occurs at nights or weekends where the nursing staff may have less experience or training than the nurses who are on duty during week days. There are a number of nurses who are foreign trained who have less experience. (KI #10)

Managers, nurses and caregivers believed that, as a result of the intervention, residents were less likely to be referred to secondary care.

panic send-offs have stopped (KI #10)

we have probably had less necessity to make emergency calls after hours because the whole programme has made our residents more stable (KI #6)

Actual admission numbers are shown in Table 2. Changes are not statistically significant.

**Table 2. Acute admissions to Middlemore hospital during 6 months periods before and during the intervention then during the maintenance phase**

Variables	Jun-Nov 07	Dec 07–May 08	Jun 08–Nov 08
Admissions (patients)	34 (26)	25 (21)	33 (29)
Formal referral	1	8	23
Unnecessary admission* (week, afterhours)	1, 3	0, 2	Not assessed
Patient days in hospital; total, median, (inter-quartile range)**	227, 4 (1–9)	181, 3 (1–8)	301, 5 (2–9)

**Note:** No attempt is made to adjust for seasonal variation.

\*Admission judged to be unnecessary by consensus during weekly community geriatric service case conference. Examples include uncomplicated falls.

\*\* t-test before versus during  $p = 0.81$ ; during versus after  $p = 0.61$ .

**Education and training**—Weekly in-house education sessions were offered, principally intended for the RNs. However, the sessions were offered at times when the RNs were unable to attend due to other work commitments including the medication reviews. The limited number of RNs meant that it was not generally possible to roster some for clinical duties while releasing others for education sessions.

One of the things that has highlighted for us is that we shouldn't be trying to do the whole thing at the same time at the same place. (KI #9)

Nevertheless, these sessions were highly valued by those who did attend, which was mainly the caregivers. As a result, these care givers felt more valued by the

organisation and said that their behaviour had changed as they had more information and were now aware of the reasons for particular tasks.

Care givers are more aware of necessity to weigh, take blood pressure regularly etc. (KI #3)

The intended individually tailored formal education programmes (ATRACT) for the registered nurses did not materialise. The nurses had neither protected time nor access to a computer during working hours, and did not access it out of working hours.

I have visited the [web] site and it seems very helpful. But it needs time to read it all. (RN #2)

**Primary Options for Acute care (POAC)**—All registered nurses at the facility were trained by a CNS to administer intravenous therapy, although the training was completed late in the intervention. By September 2008 only one patient had been so treated. In part this may be because cases were relatively infrequent, but also because the necessary decisions were outside the scope of nursing practice and at times they had difficulty getting a doctor to visit after hours.

**Chronic Care Management programme (CCM)**—The GP provided a dedicated laptop computer and one of his practice nurses commenced enrolling residents into CCM. Early indications are that both rest home staff and patients have found the process educational and likely to improve care.

An action plan is left in the resident's room for family and rest home staff with correct response for chest pains for a patient with heart disease. (KI #11)

**Hotlines**—The unit coordinators and clinical manager used the hotlines two to three times a week during the intervention and in the following 6 months. They were enthusiastic about the process and wanted the hours extended.

it is good to have that line of advice... Sometimes you are sort of just guessing yourself or trying to do the best you can...whereas you have back-up there now. (KI #7)

None of the RNs used the nurse hotline—they were encouraged to take advice from someone more senior within their facility.

No. I have not got to the point of using it. I always go to a senior. (RN #3)

No. Not me personally. If I have a problem I take it to the senior manager and then it goes to the unit co-ordinator then the clinical manager. (RN #1)

The GP did not use the hotline.

**Advance Care Planning (ACP)**—All nurses at the facility, but no GPs, received training. During the 6 month intensive intervention, no ACPs were completed. The introduction of ACPs was delayed by the need for a legal review of the documents, which were developed and introduced relatively late in the intervention. By this time implementation was further challenged by outbreaks of illness in the residents and a building project at the hospital.

Staff were concerned that encouraging residents to sign a document regarding future care might undermine their sense of security with the quality of care the staff were providing. The time taken to work with a resident to complete a plan also concerned staff. In addition, senior management suggested that the cognitive level of the residents was too low, a perception that differed from that of the social worker and the specialist geriatrician.

Staff reported that patients were ambivalent, saying that they wished to talk with their family first or wait for a medical review; that they preferred to leave it to their

Enduring Power Attorney (Care and Welfare) (EPA); that they did not want to pursue it currently; and that they felt it was already taken care of through a Resuscitation order.

The attitude of the residents is that they are under the care of the doctors and nurses and they are happy for them to make any relevant decisions for their care. (RN #3)

Overall staff would have preferred the focus of ACP to be with older people in the community who are living independently. They also suggested that the optimal time for discussion of an ACP was near the time of admission, or perhaps as part of a case review.

**Personal skills and a spirit of cooperation**—The geriatrician and the CNS had earned a great deal of respect through their many years of involvement in the sector.

What was really important to us was having three specialists who care about the elderly and show interest in improving their health. (KI #6)

A number of the facility nursing staff reported that it was more than being offered information and resources but a genuine attempt to empower them through a shared professional relationship through knowledge and understanding.

**Workforce pressures**—A shortage of registered nurses has been noted. Pay rates are a barrier to both recruitment and retention of experienced nurses.

There need to be changes to pay scales especially for seniority and long service. For example, some people have been here for more than 10 years and not had a pay rise. People will stay longer as it is a good place to work really. (CG #6)

Continuity of care for the residents is important. (RN #2)

Dependence on bureau staff continues to be problematic.

...bureau staff... do not know our patients and sometimes ... they are not always quite as competent. (KI #2)

Similarly, limited GP availability, especially afterhours, remains a problem.

There needs to be a GP available at the weekend. (RN #4)

Not only was it difficult to free nurses to attend education, but it was also difficult to provide CNSs at alternative or flexible times.

**Lack of data to monitor progress**—It is difficult, in routine practice, to monitor quality of care and therefore difficult also to track the patient-related outcomes from education and system changes.

I can't say that pressure ulcers are reduced, that constipation is reduced, that dehydration is reduced or delirium has been picked up. (RN #3)

**Since the initial intervention**—The GP has continued to conduct monthly medication reviews at the facility. The medication reviews have continued, without the CNS and the clinical case review, which has been taken up in a separate nursing review lead by the CNS. The ACP programme has continued, but has been taken over by a dedicated programme manager. The formal educational sessions during working hours been stopped in the meantime. Facility managers note that POAC has been used on several occasions to prevent admissions. They also note that at the end of the intervention they employed two new nurses each with their own educational requirements. The geriatrician and CNS have moved on to two other large residential care facilities, with the intention of similarly supporting staff for 6 months using the processes as modified in the first facility.

## Discussion

This study is clearly limited by being confined to one, albeit large, residential facility with primary medical care mostly from one GP. All components except perhaps ACP seemed welcomed, however uptake varied, being high for medication review, modest for hotlines, mixed for education and minimal for acute care and chronic care management programmes. The intervention continues to evolve and there appear to be useful lessons for other geriatric services and ARRC facilities in New Zealand. Repeated comments suggested that any successes of the programme were built upon newly developed personal relationships with trusted and respected specialist professional colleagues.

**Interventions: medication reviews**—The multidisciplinary medication review (including clinical case reviews if considered indicated) resulted in about one-fifth reduction in medication use by those reviewed. The bulk of individual medication changes fitted into a small number of patterns—stopping statin medications in those age 85+; substituting paracetamol for paracetamol-codeine and paracetamol-dextropropoxephene combinations; and increasing osteoporosis prevention. It seems likely that these patterns could be quickly taught and quickly adopted in any ARRC facility. In terms of short-term resident well-being, the most important changes were likely to be those that reduced medications that could lower blood pressure or impair cognition. Adjustment to these medications typically requires careful judgement and clinical follow up.

**Chronic care management and primary options for acute care**—Despite training and encouraging nurses and the GP to deliver POAC and CCM, these options were little used. POAC can be used to pay for a wide variety of services, but in the opinion of the geriatrician it is unlikely that any of the admissions during the time of the intervention would have been prevented by using POAC.

An ‘elderly review’ module is being developed for the CCM programme, targeted at elderly people living at home or in ARRC facilities. But, if systematic care is needed for elderly in their homes, and ARRC is the home for a particularly disabled group of people, then we suggest that the same process, or equivalent, should be made available to support their care. However, this project warns that it may be difficult to achieve wide uptake of such a module within ARRC; it would require more prolonged training than was given in this instance, and probably needs protected time for nurses.

**Advance care planning**—Advance directives are most commonly used to give instructions about if or when life-support treatments should be withheld or withdrawn. However, they can be used to express other wishes as well, such as a request for pain management, a preference to die at home if possible, or preferences regarding organ donation. Although most older adults want to die at home,<sup>15</sup> only 25% of all deaths take place there, with nearly 50% occurring in hospitals and another 20% to 25% in nursing homes.<sup>15</sup>

While the uptake of ACPs during the time of the intervention was disappointing, and it became clear that there was considerable ambivalence from both staff and patients, nevertheless, by the end of the project the ACP documentation and processes were established. It is clear that more information and discussion is required for staff, patients and their families than was initially anticipated. Ongoing review will

establish uptake and any further revisions to process. The specialist clinicians, the facility managers and the authors remain convinced of the value of achieving ACPs.

One additional difficulty is that currently in New Zealand such a plan can only be made by the elderly person themselves, and about one third of the residents in this facility were not mentally competent to fill out the forms.

This situation contrasts with Australia, where ACPs can be completed on behalf of a resident by the person or agent who holds their Enduring Power Attorney. Even so, one Australian study noted relatively low uptake of ACPs, but claimed that the associated consultation and education produced a culture change in the ARRC facilities and in residents' family members, resulting in fewer hospital admissions among the intervention than the control group.<sup>9</sup>

The residential care contract between DHBs and ARRC providers specifies a three monthly medical review. It may be possible to specify that the ACP be included in this review every three months, or at least yearly—and that families be routinely invited to participate.

**Hotline access to specialist advice**—The hotline support for nurses was used and highly valued by the senior facility staff, and extended hours are requested. It was seen as a symbol of personal and professional openness bridging professional and organisational boundaries between secondary and primary care. It would seem an easy and low cost option to extend the hours; this seems to offer further opportunities for education, avoiding the occasional admission—and to be seen to support primary care. It is possible that the clinical template to be completed prior to hotline use made it easier and preferable for nurses to ask a more senior colleague rather than use the hotline. The GP did not use the hotline; perhaps it was rendered unnecessary by frequent contact with the geriatrician during medication reviews.

**Education**—The CNS provided informal education that was welcomed by all. Education sessions found a willing audience with the caregivers, with the unexpected benefit of increasing their understanding of and enthusiasm for their potential contribution to clinical resident care. The inability of the nurses to attend education sessions and undertake the ATRACT programme raises concerns about the daily work pressure on them, and their limited access to computers for education. Initiatives to increase the percentage of nurses and carers with specific training qualifications in aged care need to focus on national portability, on-the-job training, incentives to complete, and availability of time to complete.

**Hospital admissions**—Hospital admission numbers and total days stay decreased during the intervention but the changes were not statistically significant, nor was the study specifically powered to detect such a change. Any further comment is merely speculative. Changes to medications that could lower blood pressure or impair cognition could potentially reduce—or increase - hospital admission, but we have not direct evidence for this. POAC, CCM, ACP and perhaps hotlines were not used frequently enough to make a clear difference to admissions.

If admission numbers did decrease we could also attribute this—by default - to improvement in caregiver and nursing confidence, education and skills; however, we did not capture sufficient data on this to comment in detail. Furthermore, any rise in



numbers after the intervention may indicate that support and education needs to be more prolonged.

**Engaging general practitioners**—Engaging GPs remains an ongoing issue with ARRC care, especially after hours. Lack of suitable GP availability is considered to drive at least some admissions to hospital from ARRC facilities. Strategic options might include strengthening secondary care support for ARRC, as in this initiative, and strengthening education and career pathways for ARRC workers including the GPs who work there. Long-term solutions might include paying GPs at market rate afterhours; a salaried, shift-working GP workforce; greater use of nurse practitioners (who will need similar payment arrangements); and telemedicine support from secondary care.

**Engaging pharmacists**—Pharmacy revenue associated with medication services to ARRC facilities is normally directly related to the number of prescriptions dispensed for that facility. Although pharmacies are entitled to charge packaging and additional fees, in a competitive market these fees are often minimal. This funding arrangement means that, although professionally satisfying, pharmacists do not have any financial incentive to facilitate medication discontinuations. Funding needs to reflect intellectual and professional services, and should not provide a real or apparent disincentive to quality of care.

**Funding and workforce**—In general, aged care funding has kept pace with inflation over the last 10 years, while costs have increased faster. The four main drivers of costs are labour, increasing audit standards, increasing building and property prices and increasing acuity of the residents. Given that there is a single price paid by DHBs for ARRC it is inevitable that these four factors have resulted in considerable pressure on health care spending with ARRC facilities.

It is interesting that Scotland has chosen to separate funding for ‘hotel or living’ costs (for which state subsidies are means-tested) from ‘personal’ and ‘nursing’ care—which is provided free for people whether in their own home or in ARRC.<sup>16</sup> While this may protect the ‘health’ care funding and encourage more flexibility of contracting to source care from wherever it is needed, there remains an overall issue of the level of funding. Over the last decade or so major additional funding has been applied to mental health, primary care or elective surgery; it must be time for the same attention to be paid to aged care.

As part of planning further investment in aged care, it would be helpful for the Ministry of Health, within its national “ageing in place” strategy, to clarify the respective contribution of initiatives such as this and the place of residential aged care in general so that those working in the field have a clear sense of how services need to develop to meet the coming demographic challenge. Development of the strategy needs to be practical and pragmatic. It should recognise the reality that, as in all OECD countries, the majority of care is now provided by immigrants from “the third world” almost always with low wages compared to the rest of the health sector and with all of the language and cultural barriers to that inevitably come with migrant populations.

**Further research**—This evolving complex intervention programme needs to be followed for longer, collecting data on costs and resource use. In addition, there is a



need to more directly assess the impact on residents and families both qualitatively by interview and quantitatively with quality of life measures. Establishing more definitively whether hospital admissions are reduced by this initiative is important, including an attempt to establish a causal link between admission numbers and components of this intervention. This should become possible as the intervention is extended to include further ARRC facilities in Counties Manukau DHB.

It also remains unclear whether this intervention should evolve into a more formal comprehensive geriatric assessment (CGA), which is a multidimensional interdisciplinary diagnostic process focused on determining a frail older person's medical, psychological and functional capabilities, in order to develop a coordinated and integrated plan for treatment and long-term follow-up.<sup>17-20</sup> When CGA is linked with an overall plan for treatment and follow-up, there is a reduction in risk of both admission and re-admission to hospitals or residential facilities.<sup>21 22</sup> Further, there is growing evidence that CGA not only improves physical and cognitive functioning, but moreover improves survival rates.<sup>17</sup> The importance of a comprehensive approach to individual needs assessment, in order to fully establish an older person's needs are widely acknowledged.<sup>23</sup>

## Conclusion

The main thrust of both the programme and the evaluation is best summed up by one of the interviewees.

The hope is that in the long term going to the site to educate and up skill staff will empower them to intervene when the problems are not acute rather than the approach that one person described as "they are just unwell we can't manage them, we will send them into hospital". (KI #6)

Traditionally geriatricians have looked after older people in hospital and in outpatient clinics. The fragile group of older people in ARRC have had little access to specialist geriatric medical and nursing care unless referred to hospital. Geriatrician and CNS led community initiatives which promote inter-disciplinary care and improved knowledge and skills in ARRC facilities are both desirable and appear to produce better outcomes for residents and aged care staff. Our particular model of delivery is not fully effective. However, we think there are enough positive outcomes to continue to further develop our model and we believe that these processes should be piloted in other areas of New Zealand.

**Competing interests:** None known.

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## **Pacific solutions to reducing smoking around Pacific children in New Zealand: a qualitative study of Pacific policymaker views**

Tolotea Lanumata, George Thomson, Nick Wilson

### **Abstract**

**Aim** To explore the views of Pacific policymakers on solutions to reducing smoking around Pacific children in New Zealand (given smoking is a cause of health inequalities between Pacific peoples and other New Zealanders).

**Methods** Documentary and media sources were searched for Pacific policymaker attitudes. Key informants (n=18) were recruited and interviewed by Pacific interviewers during May-October 2008, in person or by phone.

**Results** There was a focus on the need to change attitudes (e.g. by education), rather than on government regulation for secondhand smoke protection (e.g. smokefree cars). Families and churches were seen as major avenues for the changes, with increased bottom-up, community-controlled activity. Specific interventions for each Pacific ethnic group were sought by these policymakers, along with better resourcing of Pacific tobacco control. There was considerable variance of opinion on the extent to which smokefree areas should be extended, with some informants reluctant to interfere with smokers' 'choices'.

**Conclusions** Research on Pacific involvement in health policy is feasible and practical, and could be extended. General Pacific policymaker reluctance to consider smokefree regulation extensions is at odds with surveyed attitudes of Pacific peoples in New Zealand.

In the 2006 census, approximately 8% of New Zealand smokers were of Pacific ethnicity (over 50,000 including youth).<sup>1</sup> Pacific children are more likely to be exposed to secondhand smoke than non-Pacific children. While the reported smoking in the homes of Pacific 'Year 10' students declined from 35% to 22% during 2001-2008, this compares to an equivalent figure of 17% in 2008 for European/Other students.<sup>2</sup> Tobacco use contributes significantly to the health inequalities between Pacific and other New Zealanders.<sup>3,4</sup> In particular, Pacific children have higher rates of hospitalisation for acute and chronic respiratory diseases than any other ethnic group in New Zealand.<sup>5</sup>

There is strong support by Pacific peoples for greater government intervention on smoking around children. In a 2008 New Zealand survey of 324 Pacific adults, 92% agreed that smoking should be not be allowed in cars with children under the age of 14, and 73% agreed that smoking should be banned in all outdoor public places where children are likely to go.<sup>6</sup> In a 2007-8 survey of 90 Pacific smokers, 85 (95%) *disagreed* with the statement: 'Smoking should be allowed in cars with pre-school children in them.'<sup>7</sup>

There have been a number of recommendations by Pacific researchers and non-government organisations, and from *fono* (meetings), on policies needed to improve tobacco-free and smokefree activity for Pacific peoples in New Zealand. These have included the need for more staff of Pacific ethnicity employed specifically for smokefree work, and a greater focus on smokefree material in Pacific languages.<sup>8</sup> Current knowledge about effective smokefree policies suggest the need for increasing 'smokefree home, car, school, work, and play environments, both inside and outside',<sup>9</sup> through comprehensive tobacco control programmes that include mass media campaigns and smokefree places legislation.<sup>10</sup>

To date, there has been little published research on possible Pacific solutions to reducing smoking around Pacific children, and none on the attitudes of Pacific policymakers on this issue (that is, politicians and senior officials). This article begins the exploration of these attitudes.

## Methods

A range of documentary and media sources were searched for relevant Pacific policymaker attitudes. The Factiva media database was searched for the New Zealand region. The websites of the following organisations were searched: New Zealand Government (<http://www.beehive.govt.nz/> and <http://www.executive.govt.nz/96-99/index.html>) Ministry of Pacific Island Affairs and Pacific Islands Heartbeat. Further sources were suggested by the material found, and by interviewees.

A semi-structured interview schedule was developed. The schedule included questions on the interviewee's views on what needs to take place to reduce smoking around Pacific children, and examples of effective decision-making processes for reducing smoking around Pacific children. As context to the views on solutions to reducing smoking around Pacific children, we asked questions about the relative importance of secondhand smoke harm to children, and the significance of the example of smoking to them.

A purposeful sample of key informants was identified, using Pacific tobacco control and health networks, and by examining the Pacific membership of health decision making structures in New Zealand. The criteria for selection included Pacific ethnicity, closeness to, or a clear view of, health policy decision-making. The sample was augmented by snowballing—asking those interviewed who they thought should be included in the research.

An information sheet, consent form and proposed questions were provided by email prior to the interview. Interviews (on the basis of anonymity) were conducted by Pacific interviewers during May-October 2008, in person or by phone, and were taped and transcribed. Ethics approval for the process was obtained through the University of Otago ethics review process. The documentary and interview data were analysed for themes by the first two authors. Some of the themes emerged from the questions asked. Themes identified in a preliminary analysis were adapted and changed, as further themes emerged through discussions.

## Results

Seventeen interviews with 18 interviewees were conducted (one interview was of two people together). The 18 interviewees included two current or ex-MPs, five senior officials from District Health Boards (DHBs), seven senior central government officials with expertise in health policymaking, and four senior officials from non-government organisations (two had been government officials) with knowledge of, and interest in, Pacific tobacco control. They all had a minimum of 10 years experience within health policy.

While the interviews gave a wide range of ideas and views, the decreasing incidence of *new* views and ideas by the end of the series indicated that the number of interviewees was sufficient for an exploratory study (some saturation of themes was

occurring). Little relevant comment by Pacific policymakers was found in the documentary sources.

As context, it was clear that there was high concern by the interviewees about the exposure of children to secondhand smoke, and that role modelling by smokers was seen as a major threat to Pacific children.

### **How to reduce smoking around children**

The ideas of Pacific policymakers are given below in two main sections. First, general ideas, and second, those that particularly relate to homes, cars, playgrounds and church grounds.

**General ideas**—The general ideas covered the education and persuasion of adults (particularly parents), ethnic-specific programmes, and the use of avenues that may be particularly effective for Pacific peoples (e.g. churches, the use of Pacific role models).

*Changing attitudes and knowledge*—There was a strong theme of the need to change the knowledge and attitudes of Pacific adults, particularly smokers and parents:

We've got to educate people who are making the smoking environment around those children. It's the home, the car, the church, outside the church, those kinds of environments that we've got to change. And it will be the adults that are responsible for those environments that have got to see the need for a change. (Interview 15)

The home and parents were a major focus of comments:

Inform and educate parents about the dangers of [adult] smoking for their children, and encourage them to perhaps not smoke in the house or in the car. (Interview 12)

Everything must start from the home, and the family unit is the fundamental unit of any community and society. The roles of parents become critical in ensuring that kids are protected from [tobacco smoke]. (Interview 16)

This theme was echoed in 2008 by the then Minister of Pacific Island Affairs, Hon Winnie Laban, when speaking of all health initiatives for Pacific children:

[The] inclusion of families. ...this is an important theme for any response that we develop for our children—it is crucial that we encourage and support Pacific families to make positive steps to benefit their children.<sup>11</sup>

Some mentioned the role of grandparents in childcare, and their influence on grand children:

Grandparents play a very big part in the lives of the grandchildren. And often the grandparents are the ones to get to about making the rules. ... they've got to be factored in somehow. (Interview 12)

Other comments were on the need for language specific education programmes for older people:

I think there is still space for language-specific targeting of educational programmes. (Interview 6)

Interviewees also saw a need to allow for the wider influences on Pacific youth:

...the kids/youth nowadays, they are more connected to BEBO [a social networking website] than they are to Tonga or to where they come from. So I think we have to think of things a little bit differently.' (Interview 4)



*Churches*—All interviewees acknowledged the important place of the church in Pacific families and communities. Working and building relationships with churches was seen as crucial:

In the Pacific community, the church is a significant part of their upbringing, and so what the church is going to agree to is going to have a huge influence over their behaviour. (Interview 15)

Churches probably need to do a little bit more ... The churches are the villages, so a lot of information can go out there. Not all of them are prepared to participate, but by and large, most churches will give the opportunity for these kinds of message to be promoted to the young people. Some churches do it really, really well. (Interview 16)

Another repeated theme was the need for a spiritual aspect to smokefree efforts:

You go to church for your spiritual growth, and smoking does not contribute any spiritual growth in relation to Christianity or to other beliefs as well. It should be seen as an evil substance and I think that is what they should preach in the churches, to make it non-acceptable for smoking. (Interview 1)

*Message content*—The interviewees emphasised that the need to protect children was an effective way of communicating with Pacific audiences:

...you're doing harm to your kids, I think that that has a high likelihood of appealing, or having some impact to the parents, and adults and caregivers. (Interview 12)

Part of the message needed was that Pacific children have:

...the highest rates of admissions to hospital for respiratory illness'. (Interview 17)

One interviewee recommended promoting the positive side of *not* smoking rather than the negative messages about smoking:

Positive things ... this is what you can be if you don't smoke or if you eliminate smoking, this is what you can achieve. (Interview 5)

Another interviewee thought that the use of shocking images and messages is needed to shake Pacific peoples into action:

Shock tactics that kind of shake our people to think or see what the consequences are ... but it has to be language-specific [to provide] for our older folks. (Interview 6)

*Structural ideas*—There was a strong theme of a need for Pacific-specific policies. The major documented comment we found on a necessary direction for government policy was by the Chief Executive of the Ministry of Pacific Affairs, in 2007:

Continued reliance and adaptation of mainstream tobacco control interventions is unlikely to reduce tobacco use among Pacific peoples in Aotearoa/New Zealand. More specific programmes for Pacific peoples are urgently needed, with particular focus on young men. Effective interventions to reduce tobacco-related deaths will substantially reduce health inequalities in the country. Pacific communities need to be resourced and supported to own and participate more effectively in the provision of tobacco control programmes.<sup>12</sup>

The Pan-Pacific approach to tobacco control was seen by interviewees to have worked to some extent, but in order to move forward, they recommended an ethnic group specific approach. This was due to the ethnic differences in the smoking prevalence statistics of Pacific peoples:

Rather than taking a blanket approach, we do know there are ethnic differences ... we should certainly be looking at those differences, and then targeting the policies more at those sort of differences. (Interview 12)

Some of the structural solutions suggested by policymakers included a more ethnicity targeted approach for policies:

...if you think about the standard New Zealand smoke policy, we try and put everyone in it, and it probably applies to Palangi [Pakeha/European New Zealanders]. But the characteristics in Pacific communities are so different, and isn't going to be effective for them. That's why I think a more targeted approach to policy, addressing and focussing on those most at risk, is a far better approach. (Interview 12)

Another theme was of the need for resources for Pacific tobacco control:

If you look at the smoking rates in New Zealand, and the amount of resource that goes into it, ... it's inadequate. (Interview 12)

And to get resources to providers and community groups:

...because they're the ones that are going to have to fight it, and [should] be given the resources. (Interview 1)

This included a bottom-up approach for interventions, with communities developing their own priorities, rather than a top-down approach:

You go out to the community, and you ask them what they think. And that is why some of the things are working, because they have developed the priorities for their community and they [the community] drive it. (Interview 2)

Another interviewee felt that the only way to stop people from smoking around children is to ban tobacco altogether:

Regardless of how much they keep putting up the price of cigarettes, people will still buy them because they are there, but if they take it away, ban tobacco, then no one will buy it. (Interview 14)

Many interviewees suggested restricting some of the environments where people could smoke:

Restrict the different environments they [can smoke] in ... for the good of the public. And I think it would also give them a strong message that hey, we don't like smoking... We should ban smoking from anywhere near where children are, whether it's indoor or outdoor. (Interview 4)

And being consistent in being smokefree in any health-related setting:

You're going to push for like a healthy event; you should always have smokefree as your message. (Interview 9)

**Ideas about policies for homes, cars, playgrounds and church grounds—**A number of interviewees had strong views on smokefree homes, cars, playgrounds and church grounds:

Ban smoking in homes, cars, playgrounds and church grounds. (Interview 3)

People should not smoke in their homes at all. Children are often in cars and they breathe in all the poisons. (Interview 1)

I just wish it was [required] for people not to smoke in vehicles, with passengers in there. (Interview 9)

However, some interviewees felt that homes and cars are private, and gave varied ideas about ways to reduce smoking in these areas, such as community persuasion or norm setting:

It's people's private homes but still, if they are going to smoke, not inside but away from where children are, not in the garage. Probably somewhere in the back yard or under the tree or even around the corner somewhere, down the road'. (Interview 1)

Some were particularly reluctant to impose on ‘private choices’:

I would like to think that they shouldn’t smoke in any of those areas but their car is their own property, their house is their own property. (Interview 4)

It’s a balance between the rights of the families to freedom and personal choice, but also the welfare of children. (Interview 11)

So it’s about people being able to make decisions for themselves, and hopefully they will make it based on good evidence, and good information about the dangers of smoking ... people can and should make these decisions for themselves. (Interview 7)

Regulatory measures in that direction might be going a bit too far. So I don’t believe that regulatory approaches in those sorts of environment are going to be feasible, but I certainly think an educational approach might work. That’s in the private sort of environment, like homes and cars. (Interview 12)

Therefore, in order to try and change behaviour in hard-to-regulate places, one interviewee suggested changing the social acceptability in a setting as an alternative approach:

Change the social acceptability in a setting, and raising the awareness of it, of all the different environments which you wouldn’t expect [smoking]. (Interview 8)

Another interviewee suggested starting with the ‘smoke outside’ campaign rather than banning smoking around private properties:

I think we’ll take the ‘smoke outside’ sort of campaign, and highlight [how] other people are affected by ... smoke’. (Interview 4)

*Church grounds*—There were mixed attitudes about smoking in church grounds. Some interviewees were aware that some churches already banned smoking in their church grounds:

Church grounds, I’m not sure that we have explored what the policy is. ... they’re kind of privately-owned property, like homes and cars.... (Interview 8)

They shouldn’t be smoking [there]. It’s the same reason why I think they shouldn’t be drinking beer at church functions. (Interview 4)

[Smoking in church grounds and playgrounds] ‘that should be regulated, in a useful and effective way. (Interview 11)

*Playgrounds and parks*—Some suggested that playgrounds and parks should be smokefree because it is a natural environment for families to spend quality time together:

Parks are supposed to be a natural place for people to go and then you got people smoking. That’s not natural...and that’s interfering with nature...Playgrounds are place where families enjoy being in the outdoors and having family time. If you got people smoking it just ruins that time. It also impacts on [those] who are around breathing in the smoke. (Interview 1)

A park is where you go and get fit...children run around...and having smoking as part of that is an undesirable association. (Interview 13)

However, some felt that smoking in playgrounds was alright, as long as smokers are away from the children:

Play grounds [and] wide open spaces, so long as they don’t smoke over the kids .... Sometimes we encroach on people’s rights; it’s their choices. (Interview 5)

*Other outdoor places that should be smokefree*—When asked about other outdoor places that should be smokefree, two interviewees suggested promoting smokefree outside events, such as the ASB Polyfest annual outdoor cultural festival in Auckland, for example:

The ASB Polyfest. We are trying to make it completely smokefree. It's not completely smokefree yet but we have seen the huge difference from last year to this year. A lot more people not smoking and going outside these sites rather than smoking inside. We still got a long way to go but I think we did make a huge impact in the ASB Polyfest environment to make it smokefree. (Interview 1)

We should have smokefree events. ... outside events, there shouldn't be any smokers around. (Interview 16)

A few interviewees felt that any public places where people congregate should be smokefree, particularly those areas where there are young children (and several particularly mentioned swimming pools):

Every place where people congregate. And where ... young children are, [smoking] should be barred, should not be allowed....Whether it's the church, or car parks, or whatever. (Interview 18)

Pools, hot pools, beaches... they shouldn't allow people to smoke there. I just don't think we can afford to associate cigarette smoking with anything pleasant or nice. (Interview 13)

Auckland Airport are really good because they have smokefree areas and smoking areas [outside]. (Interview 1)

## Discussion

**Major findings and interpretation**—Those interviewed felt strongly that changing adults' *attitudes* towards smoking around children is critical to the generation of change in smoker and community behaviour. The home was seen as an essential starting point for such changes, including the education of parents on the dangers of secondhand smoke to their children. Some acknowledged the role of grandparents in childcare and their influence on children's behaviour.

There was agreement that it is time to focus on specific Pacific communities in New Zealand with ethnic-specific interventions, and some feeling that smokefree policies relevant to those communities need to be driven more by Pacific peoples. This agreement and feeling is consistent with our findings of the views of the Pacific smokefree community *outside* of policymakers.<sup>8</sup> It is also consistent with the stated approach by the New Zealand Government from the early 1990s of enabling 'by Maori for Maori' approaches in health policy.<sup>13</sup>

A related theme was the need for a Pacific community-owned and driven, bottom-up approach. This approach, using groups of churches and other community agencies, may be already having some local effects in efforts such as LotuMoui (a health promotion programme with Pacific churches).<sup>14</sup> A further theme was that despite the higher Pacific smoking rates, the resources devoted by central government have been inadequate to make any substantive change.

One aspect of the Pacific specific approaches needed for Pacific smokefree work was the strong support and acknowledgment of the major role of churches in the lives of Pacific communities. The participants believed it is crucial to build and maintain good relationships with churches, because they have huge influence over attitudes and behaviour.

There was strong agreement that the need to protect children from the harmful effects of smoking should be the focus of smokefree promotions in Pacific communities. The interviewees felt that this is likely to be effective with Pacific parents and caregivers. There is some evidence in New Zealand and other settings to support this, if this is part of a wider tobacco control effort.<sup>15-17</sup>

Ideas about policies for homes, cars, church grounds and outdoor places—While all supported smokefree environments for children, only a few policymakers recommended banning smoking in homes, cars, playgrounds and church grounds. The majority were reluctant to support such regulation, with a strong feeling that homes and cars are private property, and that smokers should have the ‘freedom to choose’ where to smoke. For cars, this is in contrast to surveys of Pacific peoples, which have shown strong support for banning smoking in cars with children.<sup>6,7</sup>

There was stronger support by interviewees for smokefree parks and playgrounds, but again, only a few suggested bans. The policymakers appeared to be lagging behind the general attitudes among Pacific peoples, where a significant majority wanted smoking banned in settings where children were likely to be.<sup>6</sup>

**Policy implications**—Whether or not New Zealand tobacco control policy continues to be incremental or engages in tobacco phase-out endgame approaches, there is a need for a greater focus on Pacific communities and Pacific smokers. In particular, greater knowledge of the extent of Pacific support for government intervention on smoking around children may help Pacific policymakers in their efforts to protect children. The strength of the policymaker concern with children suggests the framing to them of smokefree interventions as the protection of vulnerable children, and of the future Pacific generation.

The desire by Pacific policymakers for interventions more effective and appropriate for Pacific peoples also suggests a redistribution of current funding, or additional funding directed for “for Pacific, by Pacific” interventions. For example, government resourcing could fund social marketing campaigns designed by Pacific workers and for Pacific audiences (e.g. utilising Pacific radio stations and television channels with high Pacific audiences).

**Limitations**—This exploratory study was limited by the number of eligible interviewees, and the very limited amount of relevant documentation of Pacific policymaker views in the public domain. The marginal status of the Pacific community in New Zealand society has meant that few members are close to the centres of central government power, i.e. Cabinet, and the upper reaches of large government departments and DHBs. Thus while many senior Pacific people in the health policy community were accessed, their views of the breadth and depth of the policy processes in this country will have been constrained. The results are also limited by the relatively greater power of non-Pacific policymakers in policies that affect Pacific peoples.

**Implications for research**—This study indicates that other aspects of Pacific involvement in New Zealand health policy could be investigated. We found in-depth interviews, using Pacific interviewers, produced candid and extensive material. Those within the Pacific health policy community were helpful and knowledgeable.

Intervention research is required for the design of social marketing campaigns by Pacific workers, and their evaluation in terms of changes in knowledge, attitudes and behaviours by Pacific adults with children. Aspects of the “About Whanau Campaign” (a ‘for Maori, by Maori’ campaign) could be considered in the formative development of such campaigns.<sup>18</sup>

To go with policymaker views, more information on the views of the Pacific public on smoking around children is also needed. The Health Sponsorship Council 2008 survey on attitudes to smoking,<sup>6</sup> is one of very few with an augmented sample of Pacific peoples.

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## Characteristics and quitting success of roll-your-own versus tailor-made cigarette smokers

Judy Li, Michele Grigg, Deepa Weerasekera, Li-Chia Yeh

### Abstract

**Aims** Roll-your-own (RYO) tobacco use is exceptionally high in New Zealand with 61% of current smokers using it exclusively or in conjunction with tailor-made (TM) cigarettes. This study examines the characteristics of RYO users and their likelihood of quitting smoking compared to TM and mixed tobacco users.

**Methods** A random sample of Quitline callers with a booster sample of Māori, was invited to participate in a telephone survey three times within a 12-month period. The response rates for the first survey were 57% for Māori and 63% for non-Māori, resulting in a total of 2002 participants. Among these participants, 64% completed the 6-month follow-up and 42% completed the entire study. Two participants were excluded from this analysis as they smoked neither RYO nor TM. We compared the eligible participants' characteristics and quitting outcomes by tobacco type. Quit status was assessed by 7-day abstinence at 6- and 12-month and we used a conservative approach to treat missing cases.

**Results** RYO use was common among particular smokers such as Māori, male, and low socioeconomic status subjects. When sociodemographic and smoking variables were controlled for using a logistic regression model, quit rates were not different by tobacco type.

**Discussion** This study confirms the different characteristics of RYO, TM and mixed tobacco users, and fills a gap of limited research about quitting success of RYO smokers.

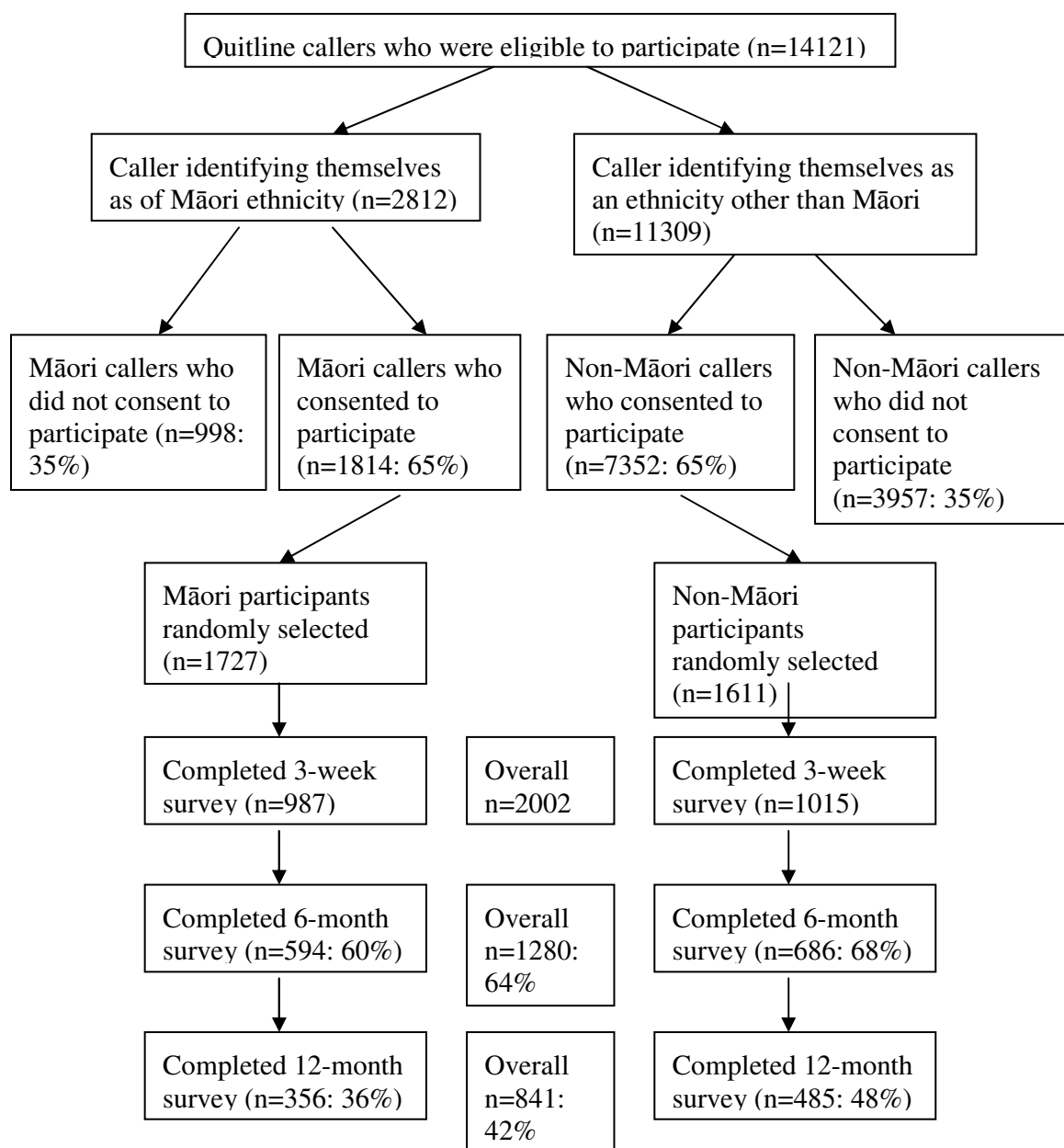
Roll-your-own (RYO) tobacco or “rollies” are hand-rolled cigarettes made of loose tobacco and cigarette papers, and may be smoked with or without a filter. Smoking prevalence among people aged 15 years and over in New Zealand is around 21%. Among them, 61% smoke RYO with or without tailor-made (TM) cigarettes.<sup>1</sup> The prevalence of RYO use differs by ethnicity, being more popular among Māori and European/Other than Pacific and Asian smokers.<sup>1</sup> Overall, use of RYO is more common in New Zealand than other developed countries such as United States, Canada, Australia, and United Kingdom (e.g. 7–25% of current smokers).<sup>2</sup>

Previous reports suggested that RYO smokers are more sociodemographically disadvantaged and nicotine-dependent.<sup>1,3,4</sup> They are therefore in a less likely position to quitting smoking successfully.<sup>5-8</sup> The purposes of this study are to confirm the different characteristics of RYO users compared to TM and mixed tobacco users, as well as to investigate whether tobacco type has an additional explanatory power for quit success when sociodemographic and smoking behaviours are controlled for. This study fills a gap of limited research on RYO smokers and is especially relevant to this country with a high prevalence of RYO smoking.

## Method

Data for this analysis comes from a 12-month cohort study which formed part of a wider evaluation programme of the national Quitline, focusing on customer satisfaction, programme effectiveness and cost-effectiveness. The Quitline is the largest smoking cessation provider in New Zealand, and the most common source of quit advice received by regular smokers who have quit or tried to quit.<sup>9</sup> As this study is considered as a client satisfaction survey, ethic approval was not required. Between March and September 2002, all Quitline callers were asked to register their interest to participate in an evaluation of the service. As the provision of subsidized nicotine replacement therapy (NRT) is a core component of the service, callers were automatically excluded from the sampling frame if they were ineligible for NRT (due mainly to medical reasons) although they were still provided telephone support by the Quitline. Among those who were eligible for the study, 65% registered their interest in participating although not all of them were recruited (Figure 1).

**Figure 1. Flowchart for subject recruitment**



Ethnicity was self-reported during callers' initial call to the Quitline, and total responses were recorded. Callers identifying themselves as Māori ethnicity were classified as Māori and otherwise non-Māori. Two different sampling frames were used to randomly select Māori and non-Māori callers from all consenting callers, in order to recruit an adequate size of Māori callers for some focused analyses. In 2002, 22% of overall Quitline callers were Māori, while Māori were over-sampled in this evaluation to comprise almost 50% of the sample.

Randomly selected participants were contacted by an external marketing and social research company via the telephone 3 weeks after starting the Quitline programme. Among them, 57% of Māori and 63% of non-Māori callers contacted agreed to participate and completed the initial survey, resulting in a total of 2002 participants. The participants were followed-up via the telephone 6-months and 12-months after they started the Quitline programme. Participants lost to the 6-month survey were not contacted again in the subsequent survey. Among those who completed the initial survey at 3-weeks, 64% completed the 6-month follow-up and 42% completed the entire study. The interviewers were not blind to the type of tobacco the participants smoked, but they were unaware that the quit rate would be analysed by tobacco type.

The three surveys covered a range of topics which included sociodemographics, smoking behaviours, and smoking status. Two participants were excluded from this analysis as they smoked neither TM nor RYO (i.e. pipe or cigar). Among the 2000 participants included, 52% smoked TM, 39% smoked RYO and 9% used both TM and RYO regularly.

TM cigarette smokers were asked for the number of cigarettes they smoked on a typical day, and RYO smokers were asked for the amount of tobacco (in grams) they smoked in a typical week. To compute a single index for daily cigarette consumption of TM, RYO and mixed tobacco users, it is assumed that each RYO cigarette equates to 0.51 gram,<sup>10</sup> and that an equal number of RYO cigarettes were smoked each day during a week (i.e. number of cigarettes smoked per day=grams smoked per week/7/0.51).

Smoking status was self-reported at the 6-month and 12-month follow-ups, and quit status was assessed using seven-day abstinence to define quitters, i.e. not having a single puff in the last seven days. We used a conservative measure whereby participants lost to follow-up are assumed to be smoking. This assumption is commonly used in smoking cessation research.

The proportions lost to follow-up were similar across the three tobacco types (40% for RYO, 35% for TM and 38% for mixed tobacco users at 6-months, and 61%, 57% and 63% at 12-months). Therefore this approach in dealing with missing cases should not bias the findings. Self-reported smoking status was not bio-chemically verified with cotinine levels. Nonetheless, participants were encouraged to provide truthful responses and reassured that their responses would only be used to assess the effectiveness of the Quitline programme and would not affect the current or future services they received from the Quitline.

Sociodemographic and smoking characteristics of RYO, TM, and mixed tobacco smokers were compared using SPSS 15.0. Statistical significance was indicated by the

Chi-squared test of proportion. A logistic regression model was fitted for each outcome variable: 7-day point prevalence quit at 6-months and 12-months, using STATA. The model was adjusted for all the significant variables identified in the univariate analysis.

## Results

**Callers' characteristics by tobacco type**—The proportion who smoked RYO, TM and mixed tobacco varied by sociodemographic factors. Thus RYO use was more common among Māori, male, younger (<40 years), low income, and less educated smokers. RYO use was also more common among those who were married or in a partnership, and those who were not in full time employment. In general, the profile of the mixed group resembled RYO smokers more closely than TM smokers. It is also noteworthy to point out the high proportion of mixed tobacco use in participants aged 15–19 at 17%, compared to only at 4–9% in all older age groups.

**Table 1. Distribution of RYO use by sociodemographic and smoking characteristics, weighted by age and ethnicity**

Sociodemographics characteristics	RYO (%)	TM (%)	Mixed (%)
Ethnicity (n=2000)**			
Non-Māori (n=974)	37.9	55.1	6.9
Māori (n=1026)	40.6	49.2	10.2
Gender (n=2000)**			
Male (n=778)	41.4	50.4	8.2
Female (n=1222)	36.3	56.6	7.1
Age (n=1968)**			
15–19 (n=92)	42.9	40.0	17.1
20–29 (n=503)	40.6	50.0	9.4
30–39 (n=600)	45.1	48.6	6.3
40–49 (n=432)	32.1	60.7	7.3
50–59 (n=252)	29.5	65.6	4.9
60 or over (n=89)	37.7	58.0	4.2
Income (n=1857)**			
<\$20,000 (n=534)	46.5	44.2	9.3
\$20,000–\$40,000 (n=672)	40.8	51.6	7.6
\$40,001 or over (n=651)	31.1	62.6	6.3
Employment (n=1996)**			
Full time (n=1029)	34.8	58.3	6.8
Part time (n=300)	40.6	51.4	8.0
Other (n=667)	44.4	46.8	8.8
Qualification (n=1980)**			
No secondary school (n=735)	46.0	46.7	7.3
Secondary school (n=506)	35.5	56.8	7.6
National certificate/trade certificate (n=310)	41.8	46.8	11.4
Tertiary (n=429)	29.4	65.5	5.2

<b>Sociodemographics characteristics</b>	<b>RYO (%)</b>	<b>TM (%)</b>	<b>Mixed (%)</b>
Marital Status (n=1994)**			
Married/living with partner (n=1118)	40.6	52.5	6.9
Never married (n=497)	36.0	57.5	6.5
Other (n=379)	34.9	55.0	10.1

\* denotes  $p < 0.05$

\*\* denotes  $p < 0.01$

**Note:** Data are weighted to represent the profile of overall Quitline callers who were eligible for the study

In comparison to TM and mixed tobacco smokers, RYO smokers had a shorter smoking history but the relationship between tobacco type and nicotine dependency was not clear. Specifically, while the first cigarette measure indicated that RYO smokers were more nicotine dependent, the number of cigarettes smoked per day showed the contrary. This inconsistency may be due to the method used in converting the weight of loose tobacco into cigarettes, which is discussed in further detail in the limitations section.

**Table 2. Smoking characteristics by tobacco use, weighted by age and ethnicity**

<b>Smoking characteristics</b>	<b>RYO (%)</b>	<b>TM (%)</b>	<b>Mixed (%)</b>
Years Smoked (n=1970)*			
<5 years (n=209)	7.8	11.2	15.4
5–15 years (n=606)	32.7	29.7	36.0
16 years or over (n=1155)	59.5	59.1	48.6
First Cigarette (n=1971)*			
<30 minutes after waking (n=1481)	78.3	70.8	75.9
30 minutes or longer after waking (n=490)	21.7	29.2	24.1
Number of cigarettes per day (n=1981)**			
<10 (n=791)	85.6	10.2	39.2
10–19 (n=492)	13.0	33.0	25.5
20 or over (n=662)	1.5	56.8	35.3

\* denotes  $p < 0.05$

\*\* denotes  $p < 0.01$

Distribution of tobacco type is also compared by the degree of Quitline support received by callers. Full intervention is defined as those who had spoken to a Quitline Advisor at least twice, had read some of the Quitline quitting resources, and had redeemed at least one voucher for subsidised NRT. Remaining clients belonged to the partial intervention category. The difference in distribution of tobacco type between these two groups was not statistically significant.



**Table 3. Distribution of tobacco type by degree of Quitline support**

Quitline support (n=2000)	RYO (%)	TM (%)	Mixed (%)
Full intervention (n=856)	39.9	53.2	6.9
Partial intervention (n=1144)	37.4	54.6	8.0

**Quit outcomes by tobacco type**—Two logistic regression models were fitted on two outcome variables, being 7-day abstinence at 6- and 12-months. Apart from the demographic and smoking characteristics mentioned in Tables 1 and 2, the degree of Quitline service provided to clients is likely to have an impact on quit success. Thus this additional variable was included in the model.

Considering the results from the logistic regression models, the type of tobacco Quitline callers smoked prior to their quit attempt was not a contributing factor to their likelihood of quitting 6- and 12-months after registering with the cessation programme (Table 4 & 5). Instead, a number of other socioeconomic and smoking characteristics, and programme intensity, contributed to quit success.

Quitline callers who quit at 6-months were more likely to be older, male, and have higher income. They were also less dependent on nicotine (first cigarette measure) and were more likely to have received the full intervention from the Quitline. Regression analysis of quit rate at 12-months showed similar results, except that gender did not contribute to quit success.

**Table 4. Quit rate at 6-months by tobacco type**

Variable	Quit (weighted row %)	Crude odds ratios (OR) for being quit (95% CI)	Adjusted* odds ratios (OR) for being quit (95% CI)
Total (n=2000)	20.8 (18.7–22.8)	–	–
Type of Tobacco			
RYO (n=784)	20.2	1.00 Ref	1.00 Ref
TM (n=1046)	21.2	1.06 (0.81–1.39)	0.97 (0.71–1.31)
Mixed (n=170)	20.6	1.03 (0.62–1.70)	1.03 (0.59–1.82)
Ethnicity			
Non-Māori (n=1026)	21.6	1.00 Ref	1.00 Ref
Māori (n=974)	17.4	0.77 (0.62–0.96)	0.89 (0.69–1.14)
Gender			
Male (n=778)	23.6	1.00 Ref	1.00 Ref
Female (n=1222)	18.8	0.75 (0.58–0.97)	0.81 (0.60–1.09)
Age	–	1.03 (1.02–1.04)	1.03 (1.01–1.04)
Income			
<\$20,000 (n=534)	14.8	1.00 Ref	1.00 Ref
\$20,000–\$40,000 (n=672)	20.5	1.48 (1.03–2.13)	1.34 (0.85–2.10)
\$40,001 or over (n=651)	24.8	1.90 (1.33–2.70)	1.42 (0.85–2.37)
Employment			
Full time (n=1029)	23.0	1.00 Ref	1.00 Ref
Part time (n=300)	21.7	0.93 (0.65–1.35)	1.00 (0.65–1.54)
Other (n=667)	16.4	0.66 (0.49–0.88)	0.72 (0.48–1.09)

Variable	Quit (weighted row %)	Crude odds ratios (OR) for being quit (95% CI)	Adjusted* odds ratios (OR) for being quit (95% CI)
Qualification			
No secondary school (n=735)	19.7	1.00 Ref	-
Secondary school (n=506)	19.1	0.96 (0.69–1.35)	-
National certificate/trade certificate (n=310)	20.6	1.06 (0.72–1.56)	-
Tertiary (n=429)	24.3	1.31 (0.94–1.83)	-
Marital Status			
Married/living with partner (n=1118)	24.3	1.00 Ref	1.00 Ref
Never married (n=497)	13.6	0.49 (0.35–0.69)	0.75 (0.48–1.18)
Other (n=379)	19.0	0.73 (0.52–1.04)	0.90 (0.60–1.34)
First cigarette			
<30 minutes after waking (n=1481)	18.9	1.00 Ref	1.00 Ref
30 minutes or longer after waking (n=490)	25.4	1.46 (1.10–1.94)	1.62 (1.19–2.21)
Years smoked			
<5 years (n=209)	16.4	1.00 Ref	1.00 Ref
5–15 years (n=606)	17.0	1.05 (0.64–1.72)	0.76 (0.44–1.32)
16 years or over (n=1155)	23.7	1.59 (1.00–2.52)	0.69 (0.39–1.22)
Number of cigarettes per day			
<10 (n=791)	20.6	1.00 Ref	
10–19 (n=492)	23.2	1.16 (0.85–1.60)	
20 or over (n=662)	19.8	0.95 (0.71–1.29)	
Quitline support			
Full intervention (n=856)	28.8	1.00 Ref	1.00 Ref
Partial intervention (n=1144)	14.5	0.42 (0.32–0.54)	0.40 (0.30–0.53)

\* Adjusted for the variables that became significant in the univariate analysis.

**Table 5. Quit rate at 12-months by tobacco type**

Variable	Quit (weighted row %)	Crude odds ratios (OR) for being quit (95% CI)	Adjusted* odds ratios (OR) for being quit (95% CI)
Total (n=2000)	13.0 (11.2–14.7)	–	–
Type of Tobacco			
RYO (n=784)	13.4	1.00 Ref	1.00 Ref
TM (n=1046)	13.1	0.97 (0.70–1.34)	0.85 (0.59–1.22)
Mixed (n=170)	10.4	0.76 (0.39–1.48)	0.80 (0.39–1.65)
Ethnicity			
Non-Māori (n=1026)	13.8	1.00 Ref	1.00 Ref
Māori (n=974)	9.8	0.68 (0.51–0.89)	0.84 (0.62–1.15)
Gender			
Male (n=778)	15.4	1.00 Ref	1.00 Ref
Female (n=1222)	11.2	0.69 (0.51–0.95)	0.84 (0.59–1.19)
Age	–	1.02 (1.01–1.03)	1.02 (1.01–1.04)
Income			
<\$20,000 (n=534)	8.5	1.00 Ref	1.00 Ref
\$20,000- \$40,000 (n=672)	10.9	1.31 (0.82–2.10)	1.07 (0.63–1.84)
\$40,001 or over (n=651)	18.3	2.41 (1.55–3.75)	1.65 (0.89–3.05)
Employment			
Full time (n=1029)	15.1	1.00 Ref	1.00 Ref
Part time (n=300)	12.5	0. --1.26)	0.79 (0.45–1.38)
Other (n=667)	9.1	0.56 (0.38–0.81)	0.75 (0.45–1.24)
Qualification			
No secondary school (n=735)	11.5	1.00 Ref	-
Secondary school (n=506)	13.1	1.16 (0.77–1.75)	-

Variable	Quit (weighted row %)	Crude odds ratios (OR) for being quit (95% CI)	Adjusted* odds ratios (OR) for being quit (95% CI)
National certificate/trade certificate (n=310)	13.7	1.22 (0.76–1.94)	-
Tertiary (n=429)	14.1	1.26 (0.83–1.92)	-
<b>Marital Status</b>			
Married/living with partner (n=1118)	16.0	1.00 Ref	1.00 Ref
Never married (n=497)	7.5	0.43 (0.28–0.66)	0.71 (0.40–1.25)
Other (n=379)	10.9	0.64 (0.42–0.98)	0.92 (0.57–1.51)
<b>First cigarette</b>			
<30 minutes after waking (n=1481)	11.0	1.00 Ref	1.00 Ref
30 minutes or longer after waking (n=490)	17.7	1.74 (1.25–2.43)	1.84 (1.28–2.64)
<b>Years smoked</b>			
<5 years (n=209)	11.1	1.00 Ref	-
5–15 years (n=606)	11.0	0.98 (0.55–1.76)	-
16 years or over (n=1155)	14.7	1.38 (0.80–2.35)	-
<b>Number of cigarettes per day</b>			
<10 (n=791)	13.0	1.00 Ref	-
10–19 (n=492)	13.9	1.08 (0.73–1.59)	-
20 or over (n=662)	13.1	1.01 (0.70–1.45)	-
<b>Quitline support</b>			
Full intervention (n=856)	17.7	1.00 Ref	1.00 Ref
Partial intervention (n=1144)	9.3	0.48 (0.35–0.66)	0.46 (0.33–0.65)

\* Adjusted for the variables that became significant in the univariate analysis

## Discussion

RYO, TM and mixed smokers were different in their sociodemographic and smoking characteristics. In particular, those who smoke RYO either exclusively or in conjunction with TM cigarettes were more likely to be Māori, male, younger, have lower income and lower qualifications. This result is consistent with findings from overseas studies and population surveys in New Zealand.<sup>1,3,4</sup> The regression models suggest that tobacco type did not have an additional power to predict quit success, after a range of socioeconomic factors, smoking characteristics and cessation support intensiveness were controlled for.

**Limitations**—There are some limitations to the current study. The first relates to the conversion weight of loose tobacco to number of cigarettes. In the current study, a RYO cigarette is assumed to weigh 0.51 gram based on the findings of an empirical study.<sup>10</sup> However, there is no best-practice measure available in this area and other studies use different assumptions ranging from 0.4 to 1.0 gram.<sup>11-12</sup> The small proportion of RYO smokers in this sample who smoked 10 cigarette equivalents or more (21%) may indicate that the current measure still over-estimates the amount of loose tobacco contained in a typical RYO cigarette. Furthermore, it may be difficult for RYO and mixed smokers to accurately report the amount of loose tobacco they smoke by gram, leading to an additional source of error.

Secondly, the response rates reported earlier were calculated based on the number of people completing the initial survey divided by those who consented to the evaluation and were contacted by the research company. If we take into account the fact that some eligible Quitline callers refused to take part in the research at the time they registered with the Quitline, the response rate drops to 42%. This may affect

generalisability of the results. In other words, our findings may only apply to a highly selective group of Quitline callers.

**Future direction**—More research on RYO smokers in general is needed and our findings highlight a few key areas. Firstly, there is a need for more empirical research investigating the average size of RYO cigarettes to establish a best-practice measure to convert grams to number of cigarettes smoked. Future research may also look into the usefulness of asking RYO smokers to report both the weight of loose tobacco and the number of RYO cigarettes smoked. This allows investigators to work out the average weight of RYO cigarettes for a particular sample population.

As recognised in the limitations section, our findings may not be generalisable to the wider smoker group. Future research should address smokers who used different cessation support services or products, as well as those who chose to quit smoking cold turkey.

Previous research studies and tobacco industry documents have suggested that smokers have a high brand loyalty whereby a large majority of smokers do not switch brands.<sup>13-14</sup> There appears to be no research on transition between tobacco types. It would be useful to find out if and in what circumstances smokers change the type of tobacco they smoke. The current study shows that RYO use is common among younger smokers and this may suggest a transition from RYO to TM for some smokers as they get older. However, the age difference may also be a cohort effect. In New Zealand, RYO has only been popular since the 1980s.<sup>15</sup>

Future studies should focus on the transition between tobacco types, that is, whether those who began their smoking career with RYO tobacco would eventually switch to TM. If they remain smoking RYO tobacco, an increased proportion of RYO smokers in New Zealand will be observed over the years.

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## **Government paralysis? Stable tobacco prices mean preventable deaths and disease persist, along with health inequalities in New Zealand**

George Thomson, Des O’Dea, Nick Wilson, Richard Edwards

### **Abstract**

Tobacco affordability, prices and tobacco tax rates have considerable effects on smoking uptake, consumption, and quitting. We examined the trends in New Zealand per capita tobacco consumption and real cigarette prices from 1975–2008.

Since 1984, there has been a close inverse relationship between real price and per capita tobacco consumption. Thus price increases drive consumption falls. However, in the periods of 1992–1997 and 2002–2008, both price and consumption were largely stable.

The stability since 2002 means other tobacco control interventions have been undercut by increased tobacco affordability (due to increased average real incomes). Furthermore, the lack of tobacco tax increases (to be used to fund better tobacco control) is against majority surveyed New Zealand public opinion, and may be contrary to even smokers’ views. The great majority of smokers, who want to quit, could be assisted by more extensive programmes funded by the extra revenue from tobacco tax increases. These could include more prime-time mass media campaigns and greater Quitline capacity. Tobacco tax increases are a highly evidence-based policy that could help reduce harm to the health of New Zealanders and reduce health inequalities.

### **Tobacco affordability in New Zealand**

The affordability of tobacco products is a major determinant of smoking prevalence in New Zealand,<sup>1-3</sup> as it is elsewhere in the world.<sup>4,5</sup> Tobacco affordability reflects a combination of tobacco product prices and levels of consumer disposable incomes.<sup>6</sup> Affordability is particularly important for children and youth—the cheaper the price of tobacco, the more likely children and youth are likely to start smoking.<sup>7,8</sup> It is also important for those on low incomes, with tobacco price increases reducing both smoking prevalence and tobacco consumption far more for those on low incomes compared to those on medium and high incomes.<sup>9,10</sup>

In New Zealand, tobacco product prices are largely determined by the level of tobacco taxation (about 70% of the price is tobacco tax or GST).<sup>11</sup> However, tobacco companies and retailers can also affect the price. For example, in July 2009, British American Tobacco and Imperial Tobacco reduced the prices for several of their brands in New Zealand.<sup>12</sup> Public health and other organisations in New Zealand and elsewhere have argued that tobacco taxes should be increased, in order to reduce smoking prevalence and tobacco consumption.<sup>13,14</sup>



The Framework Convention on Tobacco Control Treaty, which New Zealand has ratified, states that countries:

...should take account of its national health objectives concerning tobacco control and adopt or maintain, as appropriate, measures which may include: (a) implementing tax policies and, where appropriate, price policies, on tobacco products so as to contribute to the health objectives aimed at reducing tobacco consumption.<sup>15</sup>

## **Trends in tobacco consumption and real cigarette prices**

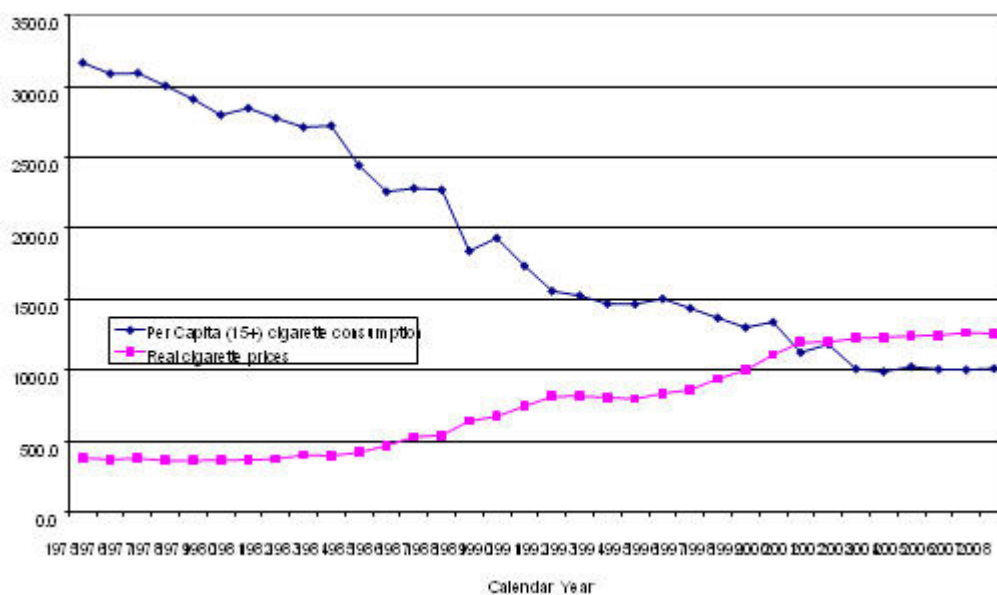
To inform discussions around appropriate tobacco tax levels, we examined the rates of per capita (15 years plus) tobacco consumption and the real cigarette prices, from 1975 to 2008. For detail on the data sources for real tobacco prices and consumption, see pp.25-6 of our 2007 report,<sup>11</sup> and Table A.2 of the report Volume 2. In this work 'consumption' is measured by the manufactured cigarettes and loose tobacco released by tobacco companies from bond. For cigarette consumption, one gram of loose tobacco is counted as one cigarette. There can be some year to year trend variations, if there are fluctuations in tobacco product releases close to the start or end of a data year.

Figure 1 shows the change in the real price (adjusted for inflation) of cigarettes against per capita consumption of manufactured and roll-your-own (RYO) cigarettes. The results indicate two key points. The first is that from 1975 to 1984, while the real price was very stable, there was a considerable decline in per capita consumption, from 3168 to 2724 cigarettes a year. This decline occurred before most established evidence-based tobacco control interventions were implemented in New Zealand, and suggests that during that period other factors, such as increasing information about health risks in the mass media, were sufficiently compelling for some groups to prompt quitting and reductions in the amount smoked.

The second key point is the reciprocity of price and consumption since 1984. When the real price rose, consumption fell markedly. For example, between 1988 and 2001 the real price of cigarettes more than doubled, and per capita consumption approximately halved. However, when the price was stable, per capita consumption was also fairly stable; see for example the periods between 1992–1997 and 2002–2008.

The real price of tobacco products in New Zealand has changed little since the last tobacco tax rise (beyond inflation), in 2000. Furthermore, because of rising average real incomes, the affordability of tobacco products has effectively been increasing over this time period, despite the annual inflation adjustment in the tobacco tax rate.<sup>11pp.45-46</sup>

**Figure 1. Real cigarette prices and per capita tobacco consumption, 1975–2008\***



\*‘Consumption’ is from ‘tobacco released from bond’ data, and includes both RYO and factory made cigarettes. Scale is the same for both series. Real cigarette prices are expressed relative to all groups consumer price index (June 1999 = 1000).

## Measuring the effects of tobacco control

Besides tobacco consumption, a more widely used measure of smoking at the population level is adult smoking prevalence. Some survey (self-reported) data indicate that daily smoking rates fell 5% in absolute terms between 2003 and 2007.<sup>16</sup> However, this may be misleading, and may reflect that as smoking becomes less normalised, smokers are increasingly giving socially desirable responses to survey questions and stating that they are non-smokers. This can result in an increasing underestimate of true smoking prevalence over time.<sup>17</sup> The lack of decline in per capita consumption during this period supports this explanation.

There are also some potential problems with the use of annual consumption measures. For example, these could be distorted by higher or lower releases at the beginning or end of the measurement year, or prior to implementation of interventions like tax and duty changes; or due to changes in stock ordering and invoicing procedures. However, these are unlikely to result in systematic bias over long periods of time, and so should not distort observed trends. Hence, for multi-year periods, per capita consumption, measured through cigarettes and tobacco released to the market, may be a more robust measure of overall levels of smoking in the New Zealand population.

## The consequences of stable tobacco prices

The stability of capita tobacco consumption (and possibly adult smoking prevalence) since 2002 suggests that tobacco control activities in New Zealand have been undercut by increased tobacco affordability, due to the failure to increase real

cigarette prices. It further suggests that all the *other* tobacco control interventions introduced during this period in New Zealand besides tax (e.g., graphic health warnings, extension of the smokefree indoor workplaces legislation, mass media campaigns, and enhanced smoking cessation assistance) have been needed just to keep per capita tobacco consumption stable. The tobacco control spending and efforts appear to be running hard just to maintain the status quo.

Do smokers and non-smoking New Zealanders want tobacco taxes to stay unchanged in real terms? There is public (combined smoker and non-smoker) support for a tobacco tax increase, provided the extra revenue raised is used to help smokers. For example, in a 2008 national survey of over 1600 people, 64% agreed with the statement 'Tax on cigarettes and tobacco should be increased and all the extra money used to help smokers wanting to quit.'<sup>18</sup> The data about smokers' views is more mixed. In the same survey, only 30% of current smokers agreed with this statement (46% of those who had made two or more quit attempts).<sup>18</sup> However, in another national survey of over 1300 smokers and recent quitters in 2007–8, almost 60% supported an increase in tobacco tax, if all the extra revenue 'was used to promote healthy lifestyles, including helping smokers wanting to quit.'<sup>19</sup>

### **The need for government action on tobacco affordability**

The possibility of raising alcohol taxation levels has currently been raised by the Law Commission.<sup>20</sup> The government could take this opportunity to also review tobacco taxation, and to put in place an effective health-driven tobacco price strategy that extends beyond episodic and ad-hoc revenue raising decisions.

Besides the overall tobacco tax rates, there is the urgent need to consider the relative cheapness of RYO tobacco, because smoking thinner RYO cigarettes is cheaper and provides an alternative to quitting.<sup>21</sup> Over 80% of New Zealand RYO smokers give lower cost as a reason for their RYO preference, with this being the most common reason given.<sup>22</sup> RYO cigarettes are also more likely to be used by young smokers, due to the lower cost,<sup>23</sup> with 69% of smokers aged 15-19 smoking RYO.<sup>24</sup> In 2008, 12% of New Zealand year 10 students were regular smokers (and 31% of Māori girls).<sup>25</sup> Of these regular smoking students, 57% (68% of Māori) usually smoked RYO.<sup>26</sup>

New Zealand smokers regret starting smoking and want to quit,<sup>27,28</sup> with over 60% attempting to quit over a five year period.<sup>24</sup> They need far more help. For instance, the Quitline and its associated media work, (the most prominent cessation intervention by government) results in less than 10% of smokers contacting the Quitline annually.<sup>29</sup>

Less than 5% of tobacco tax revenue in New Zealand is used for preventing the tobacco problem. There are strong practical arguments for a much greater proportion of the revenue being used for prevention.<sup>30</sup> Extra tobacco tax revenue could help pay for more prime-time mass media campaigns and greater Quitline capacity.<sup>31</sup> Furthermore, there are strong ethical grounds for *all* tobacco tax revenue to be used to help smokers quit.<sup>32</sup>

Decisions about tobacco tax rates should be informed by the evidence that tobacco smoking is highly addictive.<sup>33,34</sup> The addiction causes a huge burden of avoidable disease, disability, premature death,<sup>23,35</sup> and economic costs.<sup>36</sup> Tobacco use is a major contributor to health inequalities in New Zealand, with Māori and those on low

incomes particularly affected.<sup>37-39</sup> In terms of life lost, the harm to populations on low incomes from tobacco tax rises, due to increased economic hardship among continuing smokers, is far less than the gains from quitting and reducing smoking.<sup>40</sup> Households where smokers quit as a result of a tax increase experience considerable financial gains (in 2007 calculated as about \$2200 per year on average).<sup>11</sup> Real increases in tobacco product prices are a highly effective public health measure to reduce smoking uptake and consumption, and to increase smoking cessation.<sup>4,7</sup>

The revenue raised by tobacco tax increases represents an opportunity to fund support for smokers to quit, and other interventions to reduce smoking. Successive governments have refused to institute a long term tobacco tax plan, with regular above inflation tax increases.<sup>11</sup> This represents a failure to implement evidence-based policy, which has resulted in repeated missed opportunities to reduce smoking and save lives. This failure also means that tax-payers are not getting full value-for-money from government expenditure on tobacco control.

These failures have contributed to the continuing high death toll from the tobacco epidemic, the persistence of youth smoking, and result in a continuing tobacco epidemic which kills over 4000 New Zealanders every year,<sup>23</sup> and causes and exacerbates health inequalities.<sup>37</sup>

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

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## Omental torsion: a rare cause of acute abdomen

Rohit Sarvepalli, Stephen M Kyle

### Abstract

Omental torsion is a rare cause of acute abdomen which often required surgical intervention. Preoperative diagnosis by clinical examination alone is almost never possible. Increasing use of CT is making it possible to diagnose this preoperatively. An adult male case is presented that highlights these points.

### Case report

A 25-year-old male presented with a 3-day history of right sided abdominal pain which started gradually and remained constant with episodes of severe exacerbations. There were no specific aggravating or relieving factors for the pain, and there was no associated vomiting, diarrhoea, or urinary tract symptom. Patient denied any similar complaints in the past. He did not have any previous abdominal operations.

On examination he was afebrile, abdomen was soft with tenderness in the right iliac fossa, no masses were palpable. Blood investigations showed a mildly elevated white cell count (13.5) and CRP (25), urine dipstick was normal. Plain abdominal X-rays did not reveal any evidence of renal calculi.

A diagnosis of acute appendicitis was made and the patient was scheduled for surgery. At laparoscopy a patch of gangrenous omentum was found, the appendix was normal looking. We found a pedicle which was twisted and responsible for the torsion. The omentum was excised laparoscopically.

Patient had an uneventful postoperative period. Histology revealed a necrotic and haemorrhagic omentum and a normal appendix.

### Discussion

Omental torsion was first reported in 1889 by Eitel. This occurs when the omentum twists along the longitudinal axis resulting in vascular compromise. According to literature<sup>1</sup> omental torsion can be primary or secondary, precise causes for primary torsion are not well recognised, several factors like anatomical variation, accessory omentum and venous malformations have been proposed<sup>1,2</sup>. Right sided omental torsions are more commonly documented than the left and it has been suggested that this is possibly due to the greater mobility and the length of the omentum on the right side. Precipitating factors are those that cause displacement of the omentum—e.g. heavy exertion, sudden change in body position, coughing, straining and hyperperistalsis<sup>1</sup>. Secondary omental torsions have predisposing factors like scarring from surgeries, foci of inflammation and hernias.

Clinical presentation is usually that of an acute abdomen, mimicking appendicitis, cholecystitis or diverticulitis depending on its location. Pain is usually sudden in onset with abdominal tenderness and in some cases peritonism. Associated symptoms like

nausea, vomiting or low grade fever may be present. Leucocytosis can also be present.

With increasing use of ultrasound and CT characteristic features which suggest omental torsion have been reported. Ultrasound may show a complex mass with mixture of solid and hypoechoic material. The CT finding of an omental fatty mass with a whirling pattern is characteristic of omental torsion.<sup>3-5</sup>

Omental torsion must be considered if preoperative diagnosis is not confirmed during surgery and there is serosanguineous fluid in the peritoneal cavity. A thorough and methodical search of the abdominal cavity must be made. With increasing use of laparoscopy this is being made easy without having to extend the incision or use separate incisions. Treatment consists of resecting the necrotic omentum and in case of secondary torsion correcting the factor that predisposed to the torsion.

After a series study Miguel Perelló et al,<sup>6</sup> Abadir et al<sup>7</sup> have suggested conservative management of this condition when it has been diagnosed preoperatively in selected patients. The question of conservative versus operative management would depend on the presentation and the clinical condition of the patient.

In summary, omental torsion is a rare cause of acute abdomen that often mimics common causes of acute abdomen like appendicitis. Pre operative diagnosis by clinical examination alone is not possible. With increasing use of imaging it is likely that more cases will be reported.

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## Tuberculosis verrucosa cutis in a Pacific island

Gilles Guierrier, Laurent Morisse

### Abstract

Cutaneous tuberculosis is rarely reported in Oceania. We describe a case of tuberculosis verrucosa cutis diagnosed in a Pacific island to underline the attention that clinicians should pay when confronted with a warty lesion in this region of the world.

Compared to other organs, skin is an uncommon site of tuberculosis involvement. We describe a case of tuberculosis verrucosa cutis (TVC), which is rarely reported in the Pacific islands, including Wallis Island (northeast of Fiji) where this case occurred.

### Case report

A 70-year-old women presented to the hospital with a unique painless swelling on the medial side of left forearm. Cutaneous examination revealed a well limited, irregular, hyperkeratotic warty plaque associated with depigmentation areas and central involution with atrophic scar.

The patient's history revealed that a skin lesion had developed 10 years ago after being injured by a metallic tool. The lesion persisted despite the use of various antibiotics and ointments including corticosteroids. The patient gave no history of tuberculosis in the family.

There was no regional or generalised lymphadenopathy. General physical examination, including the respiratory system, was normal. A complete blood count as well as hepatic and renal function analysis results were normal. Both HIV and the VDRL tests were negative but the tuberculin skin test was positive with erythema and induration of 30 mm after 48 h.

Histologic analysis of biopsy specimens from the lesion (see photo) showed caseating granulomas with giant cells, dense inflammatory infiltrate of neutrophils, and lymphocytes suggestive of TVC. Smear and culture from skin biopsies for *Mycobacterium tuberculosis* were negative.



Initial treatment included isoniazid, rifampin, ethambutol, and pyrazinamide for a course of 2 months followed by a dual therapy (isoniazid, rifampin) for an additional

6 months with close surveillance. The lesions healed and no recurrence was observed after 1 year follow-up.

## Discussion

Tuberculosis verrucosa cutis (TVC) is one of the rarest forms of tuberculosis encountered. TVC occurs in previously sensitised individuals due to exogenous reinfection with *Mycobacterium tuberculosis* or *Mycobacterium bovis*. Mantoux test is usually positive as in this case. Staining and culture of skin lesions for acid-fast bacilli are usually negative<sup>1,2</sup> as in our patient. She might have acquired the infection from direct inoculation into her wound 10 years ago.

Adult men are reportedly most commonly affected<sup>3</sup> probably because they are prone to injuries facilitating the entry of the tubercle bacilli. Our patient, though female, was involved in heavy manual work predisposing her to skin lesions.

The most frequently reported location of TVC lesions is not the same on every continent—i.e. hands in Western countries,<sup>4,5</sup> foot and sole in India,<sup>6</sup> and buttocks and knees among Chinese people.<sup>7</sup> Polynesian people, walking barefoot frequently should be at risk to develop TVC on their sole, although the incidence of cutaneous tuberculosis is generally unknown in this region of the world.

There are two other forms of cutaneous tuberculosis: lupus vulgaris and scrofuloderma. Cutaneous tuberculosis is a great masquerader. Its differential diagnosis is wide and includes mycotic infection (sporotrichosis, chromoblastomycosis, lobomycosis), Hansen disease, late syphilis, cutaneous leishmania, squamous cell carcinoma, amelanotic melanoma, and other dermatologic malignancies.

The present case of TVC is being reported to underline the attention that clinicians should pay when confronted with a warty lesion in a patient living on a Pacific island.

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## An unusual case of large bowel obstruction

Magdalena M Sakowska, Philip Bagshaw, Tim Eglinton

**Clinical**—An 87-year-old woman presented with symptoms of generalised colicky abdominal pain with associated constipation and vomiting of 3-days duration. She had no previous abdominal surgery. Abdominal examination revealed a distended, tympanic abdomen that was diffusely tender, maximally over the left iliac fossa. Bowel sounds were reduced on auscultation. She was initially investigated with plain film radiology (Figure 1) and then with computerised tomography (CT; Figure 2). Laparotomy findings are shown in Figure 3.

**Figure 1. Plain film radiology**

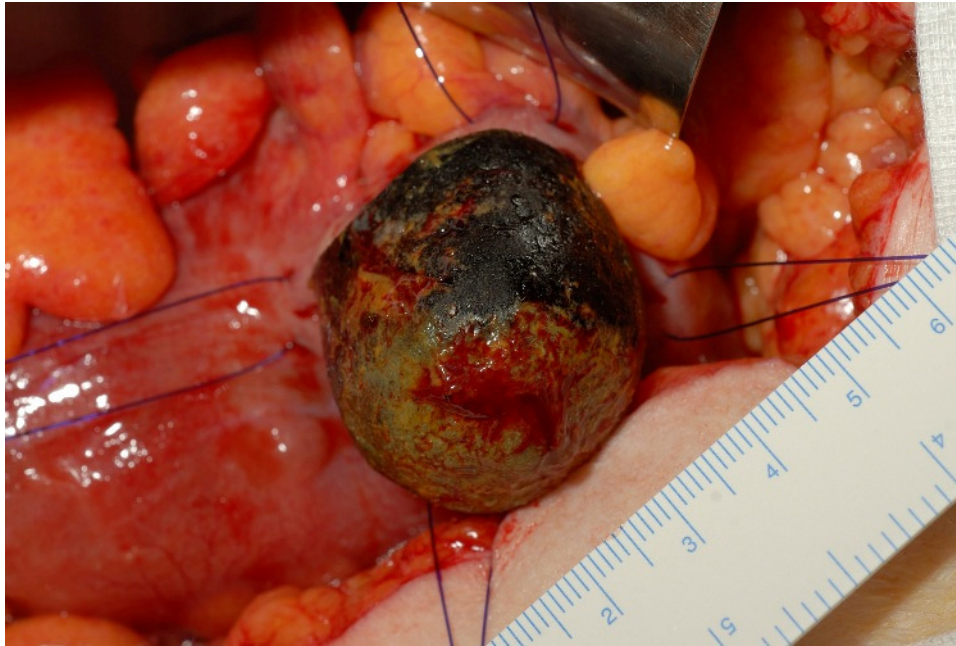


**Figure 2. Computerised tomography**





**Figure 3. Intraoperative view of colotomy**



*What is the diagnosis?*

**Answer**—*Gallstone ileus*

The plain films showed gas-filled loops of large and small bowel. A ring calcified structure was visible in the left lower quadrant. On CT, the gallbladder was thick-walled, with pericholecystic fat stranding, and contained gas (pneumobilia) as well as numerous gallstones. A fistulous tract connected the gall bladder to the proximal transverse colon. The proximal sigmoid contained a 30 mm gallstone, with some minor dilatation, wall thickening and surrounding fat stranding.

At laparotomy, the gallstone was easily palpable in the sigmoid colon which was the point of impaction. There were no other stones palpable on examination of the remainder of the bowel. The sigmoid colon was noted to have marked diverticulosis with a mildly narrowed lumen. The gallstone was manipulated proximally in the colon and cololithotomy was completed. Cholecystectomy was not performed at this emergency presentation.

**Discussion**—Gallstone ileus, first described by Danish scientist and physician Dr Erasmus Bartholin in 1654,<sup>1</sup> complicates fewer than 1% of cholelithiasis.<sup>2</sup> It occurs as a result of luminal impaction of one or more gallstones which navigate through a cholecysto-enteric or -colic fistula. Only a quarter of patients give a history of biliary colic in the year preceding presentation.<sup>2</sup>

Intestinal impaction occurs most commonly in the ileum (60.5%), followed by the jejunum (16.1%), the stomach (Bouveret's Syndrome; 14.2%) and less commonly, the large bowel (4.1%).<sup>2</sup> Colonic impaction usually occurs at a pathological site of



narrowing, for example, due to diverticular disease or colonic malignancy.<sup>3</sup> The classic radiological triad of pneumobilia, bowel obstruction and an ectopic gallstone<sup>4</sup> occurs in less than half of cases on plain abdominal films.<sup>5</sup>

Laparotomy and cololithotomy are usually required although endoscopic management has been described.<sup>3</sup> The entire length of the large bowel should be carefully examined as there is a 10-40% incidence of multiple stones.<sup>3,6,7</sup> The primary goal of the emergency surgery is to relieve the bowel obstruction and often cholecystectomy will be omitted at the initial procedure. Performing cololithotomy in combination with cholecystectomy and cholecystocolic fistula repair is associated with higher mortality and morbidity.<sup>2,8</sup>

Delayed cholecystectomy and cholecystocolic fistula repair can be performed in patients fit for further surgery. However, the majority of patients presenting with gallstone ileus are elderly with co-morbidities and the operative risk in this group may outweigh the low risk of recurrent complications of cholelithiasis.<sup>2</sup>

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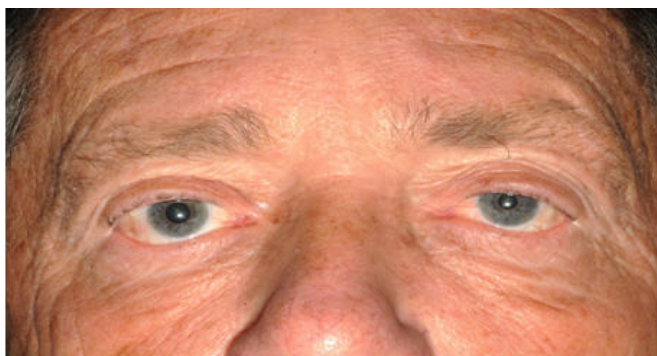


## Carotid dissection presenting as Horner's syndrome

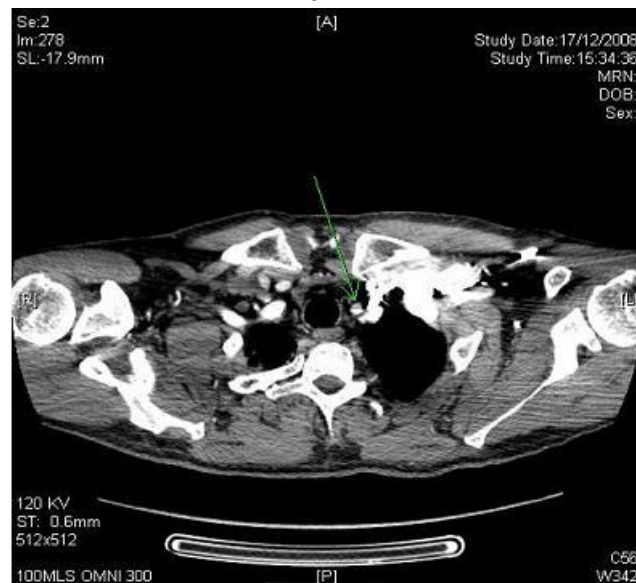
Bander Dallol, Hala Alsafadi

A 60-year-old man presented to the accident and emergency department with a 2-day history of constant left-sided supraorbital headache, associated with ipsilateral facial numbness and blurred vision. On examination he had left ptosis and miosis (Figure 1) with no other focal neurology identified. His blood pressure was 195/120 mmHg and his pulse was regular, at 75 beats per minute. Horner's syndrome was diagnosed and a CT scan of his neck revealed a common carotid artery dissection (Figure 2). This was treated conservatively. The patient made a good recovery and was discharged home.

**Figure 1. Photograph showing miosis with ptosis on the left side**



**Figure 2. CT scan with contrast demonstrating the dissected origin of common carotid artery (arrow)**



Internal carotid artery dissection is under-recognised as a cause of Horner's syndrome and can be missed. It can be caused by minor or major trauma, or can be spontaneous. Painful Horner's syndrome should alert clinician to the possibility of a silent carotid dissection. The treatment advocated for dissection is anticoagulation to prevent carotid thrombosis and embolism.

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## The good apprentice in medical education

Dale Sheehan, Warwick Bagg, Wayne de Beer, Stephen Child, Wayne Hazell,  
Joy Rudland, Tim J Wilkinson

### Abstract

This paper targets both current apprentices and their supervisors drawing on current research to answer the following questions. What is apprenticeship and what are the key elements? What is a good apprentice and what can an intern or registrar do to assist their own learning and development? It takes a pragmatic approach and seeks to assist apprentices and their supervisors by attending closely to what is practicable, realistic, expedient and convenient; articulating this and laying it out as clearly as possible.

Apprenticeship is a well established, traditional, and valued component of medical education.<sup>1,2</sup> During internship and registrar years, doctors learn by applying their knowledge to real workplace problems in the context of professional practice. Learners start by observing clinical practitioners and are then given progressive responsibility.<sup>3</sup> However, competing interests occur as the core activity of hospitals and primary care providers is patient care rather than clinical teaching.

Time pressure, competing demands on staff from service, research, administration and teaching conspire to make the hospital a highly unstructured and complex learning environment.<sup>1</sup> Learning is often driven by the day-to-day demands of the workplace where learning opportunities and supervision may not have first priority.<sup>4,5</sup> Despite these challenges apprenticeship remains an important component of postgraduate and undergraduate medical education.<sup>2</sup>

This paper considers and describes the attributes and behaviours of a good apprentice in the light of current research. We adopt a view of the apprentice as an active participant moving into a social learning environment requiring participation and active engagement in the clinical team, and the professional medical community.<sup>6-8</sup>

It answers the following questions:

- What are the key elements of apprenticeship?
- What can an intern or registrar do to assist their own learning and development?

### What is apprenticeship?

The basic notion of apprenticeship is showing the apprentice how to do the work and helping the apprentice to do it. In this article, we have drawn on two conceptual models we see as suited to modern healthcare environments: apprenticeship as situated in a community of practice and cognitive apprenticeship. These two models are not mutually exclusive.

**Apprenticeship within a community of practice**—Lave and Wenger<sup>9</sup> argue that, for new practitioners, learning begins by practising “legitimately” on the periphery of a community. Initially newcomers to a workplace assume a relatively passive role and watch what is happening (at the periphery). Provided such newcomers feel entitled to be attendant (legitimate), much significant learning can occur as they become more involved in the activities of the workplace and assume more responsibility. Through this process, newcomers learn about the practice of the community by being situated within it and receiving guidance from its established members. We see this well embedded within the way vocational medical colleges admit, support, teach and provide ongoing education for their members. “The community of practice” is defined as; “Groups of people informally bound together by shared expertise and passion for a joint enterprise”.<sup>9</sup> (p. 139)

Communities of practice are a way practitioners can share and gain practice knowledge. As a learner becomes more engaged in the learning workplace, increasing interactions will occur with other members of that community. It is these interactions that promote good apprenticeship learning. By the sharing of stories and discussing problems, practitioners can reflect on experiences and receive feedback from other members of the group on their shared passion or subject. This sharing leads to new ways of “doing”, and so creates a cyclical learning pattern that is driven by practitioners themselves. Wenger<sup>10</sup> theorises that meaning is continually negotiated and renegotiated through the processes of participation, the active experience of ongoing practice and the use and development of shared tools (e.g. case notes, ward rounds).

**Cognitive apprenticeship**—In cognitive apprenticeship, one needs to deliberately bring the thinking to the surface, to make it visible. The expert’s thinking must be made visible to the novice just as the novice’s thinking must be made visible to the expert. In the cognitive professions, such as medicine, learners benefit from insight into the cognitive processes underlying expert performance; it can make it easier for them to reproduce certain procedures on their own.<sup>11</sup>

As novice learners share their thoughts and reasoning, expert clinicians can listen in order to diagnose errors in reasoning and defective analysis or synthesis of patient information. Making explicit the generally tacit cognitive processes of experts can elucidate complex task performance and help students in observing, enacting and practicing such tasks.<sup>12</sup> This requires both the teacher and learner to “think aloud”. For example, this might mean not just asking for the problems/diagnoses but also asking how these were arrived at.

## **What can an intern or registrar do to assist their own learning and development?**

Considering these two conceptual models of apprenticeship allows us to describe the behaviours and attributes of a good apprentice. We have selected four themes in the current literature to describe the good apprentice and we present these as tips to students and teachers: engagement; managing uncertainty in decision making; learning from practice and maximising feedback; and adopting an ethical and moral commitment to patient safety.

**Engagement**—Engagement and participation have key roles in workplace learning. It is essential to the “community of practice” style of learning. Clinical workplaces can enhance effective learning through encouraging or inviting newcomers to engage in interactions with peers and practitioners that are more experienced, encouraging newcomers to participate fully as a member of the healthcare team.<sup>7,13</sup> This benefits the learner as well as the entire healthcare team.

Key components of this engagement are listed in Box 1. It is important to note also that learning occurs from a wider healthcare team than one might initially think. The healthcare team includes, but is not limited to, a more experienced supervisor, the inter-professional team delivering care, the patient and their family, the more expert medical practitioners, and the relationships inherent in the clinical environment. Learning is participatory and knowledge is built within the clinical team as the community of practice that provide patient care and the medical colleges as those that support the novice practitioner

### **Box 1. Key messages for engagement and participation**

- Get involved by building relationships

Be willing; take all opportunities to be involved. Look for things to do, do not stand back, offer to do things, accept all invitations to be involved in patient care.

- Be proactive, show enthusiasm

Bring a sense of urgency and enthusiasm to your work and others will notice you and respond. Ask questions and develop an attitude of enquiry.

- Be an active learner

Look up information, read around cases, attend case meetings and contribute even in small ways. Offer suggestions and do not be afraid of being wrong. Talk through your decision making process with your peers and supervisors, check that the way you are solving problems is effective. Ask questions all the time and of everybody.

**Managing uncertainty in decision making**—Good decisions require underpinning knowledge and skills but also require a diagnostic approach i.e. a way of thinking about problems which is not innate, but needs to be learnt. Diagnostic skills are often acquired subconsciously but there is growing literature that explains how this occurs.

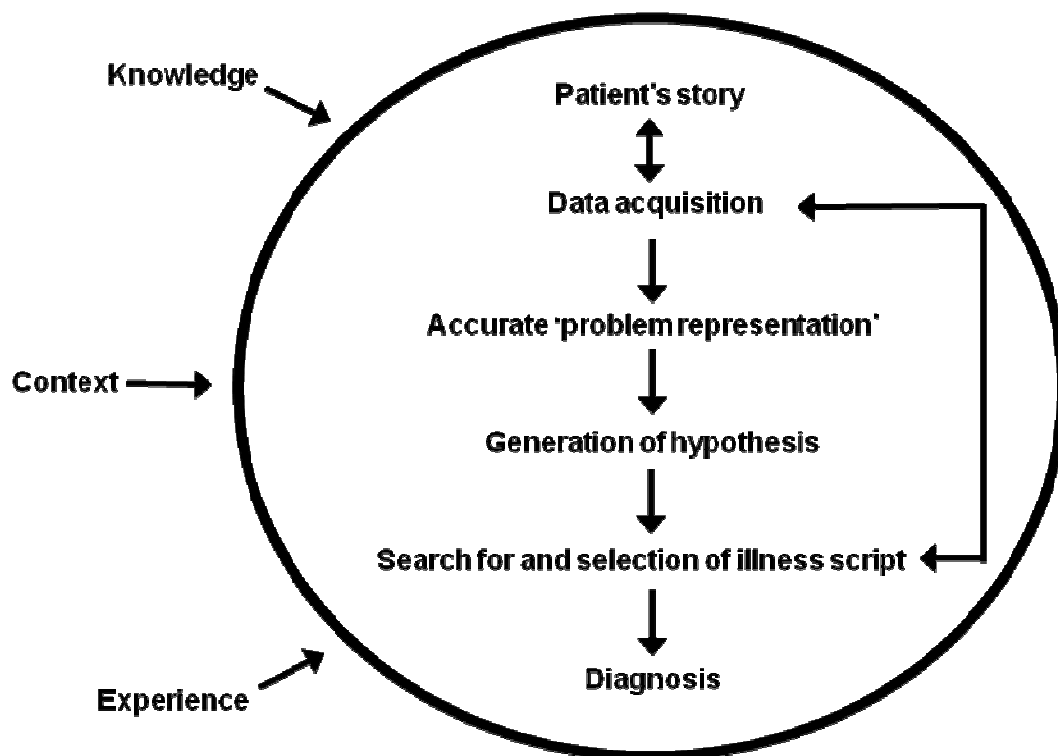
Clinical decision making arises within the context of varying needs of patients, who do not necessarily present as “textbook cases”. Therefore clinical decision making requires the development of judgment in applying knowledge to specific cases.

Judith Bowen<sup>15</sup> offers a process an apprentice can utilise when making decisions about a clinical problem. (Figure1). Decisions will be influenced by knowledge already acquired, the context in which the decision making occurs and past experience. Taking the history, gathering data, accurate problem representation and generating the problem are skills usually well developed by graduation from medical

school. The difficult step for the apprentice can be matching their hypotheses to an 'illness script'.

An illness script is how more experienced clinicians store diseases, conditions or syndromes. Matching the problem representation against the illness script enables recall of knowledge and appropriate matching - hence diagnosis. Apprentices usually have limited knowledge and prior experience to draw on and will therefore need to discuss diagnostic reasoning with senior colleagues and frequently consult medical texts.

**Figure 1. Diagnostic Reasoning Process – from Bowen <sup>14</sup>**



When interacting with a supervisor, a good apprentice should provide a differential diagnosis, including ranking why some diagnoses are more probable than others. To aid learning, the apprentice should be able to highlight which key features of the history, examination and investigations support the favoured diagnoses, and be willing to debate these with their supervisor. To develop good clinical decision making the good apprentice should be prepared to be active rather than a passive receiver of information. Fish and de Cossart<sup>15</sup> provide some guidance for those new to clinical reasoning based on their research within the surgical education programme in the United Kingdom (Box 2).



**Box 2. Guide to clinical diagnostic reasoning**  
(Adapted from Fish & de Cossart<sup>15</sup>)

- Prioritise tasks, focus on the decision in hand, and be willing to reconsider the order of their tasks
- View the problem from a distance, look for inconsistencies
- Welcome uncertainty, recognise the inevitability of complexity
- Do not ignore or leave to one side those elements that do not fit one's developing decision
- Think carefully about the significance of all elements
- Look at the patient as a whole
- Do not rush to identify resemblances between this case and others
- Be willing to ask for another opinion

**Learning from practice and maximising feedback**—An independent practitioner, as well as good apprentice, should continually reflect on practice in order to ensure ongoing development as an effective practitioner. Schon,<sup>16</sup> Kolb,<sup>17</sup> and Boud<sup>18</sup> have described processes by which professionals learn from practice (experiential learning and reflection). It is the reflection on experience and the problem solving that occurs alongside experience that creates what Ken Cox<sup>19</sup> describes as “working knowledge”. Cox<sup>19</sup> describes learning “doctoring” as involving:

the exploration of clinical working knowledge, practical skills and responsible behavior to learn how clinical experience builds judgment, expertise and eventually wisdom in the specific context of the patient. (p. 768)

Reflection can be a retrospective activity after the process (*on-action*), reflecting as you are doing it (*in-action*), and/or reflecting forward (*for-action*), which is anticipatory, thinking about what might happen, planning for the future, and how it can be improved.<sup>20</sup> Whilst reflection requires self-evaluation, the use of peer and supervisor feedback is required to accurately self assess one's level of competence and to gain insight. Insight is not innate but can only be learnt when there is recognition of congruence or discrepancies between one's self assessment and the assessments of others. If feedback from others is not forthcoming, or if there is insufficient reflection on which to build self-assessment, then insight will be lacking.

Feedback is important to aid reflection and also practical development but it is not the sole responsibility of the supervisor or other members of the health care team. Many articles focus on the role of supervisor as the giver of feedback (for example, Ende, Pendleton, Silverman) underplaying the importance of the active role of the receiver (the apprentice).<sup>21–23</sup>

The good apprentice will identify deficits or areas for improvement and seek feedback from more experienced practitioners in order to confirm these deficiencies. They will accept and value feedback from multiple sources within their community of practice, reflect on their practice and the feedback they receive and use it to plan their own

learning. For new or uncertain areas of practice, the apprentice should take the responsibility of asking more senior colleagues “how you might do it?”<sup>24</sup>

**Box 3. Suggestions for obtaining feedback**  
(Adapted from Teunissen & Dornan<sup>24</sup>)

- Challenge yourself , seek feedback, but remember
- If you are inexperienced, get instructions first.
- Think first about the areas you already know are satisfactory, and areas that you know are not. Check if your supervisors agrees with this
- Think about areas that you are uncertain of, and pose these as questions to your supervisor.
- Seek answers to the following three questions. Where am I going? How am I getting there? What next?
- Get feedback directed at: the task, processes needed to understand the task and how you can monitor your own performance on the task

**An ethical and moral commitment to patient safety**—The good apprentice holds the patient central to all decisions for learning and delivery of care and is constantly looking to improve both their patient’s health and the health of the system as a whole.<sup>25</sup> Part of ensuring patient safety is the necessity for practitioners to have excellent communication skills and competence in communicating risk.<sup>25–27</sup>

Box 4 provides some practical tips.

**Box 4. Patient safety tips**

- Know your limitations and be honest about these with your supervisor.
- Reflect on your practice and its implications for patient safety. Recognise when you are overwhelmed by your caseload and it’s complexity; seek help early.
- Consult widely and utilise the wider health care team and systems to assist you.
- Recognise serious illness and the deteriorating patient; seek help early
- Communicate clearly and comprehensively at all times but especially with phone consultations.
- Maintain a life-work balance; seek to build personal and professional resilience and develop strategies to manage stress.

## Summary

We see the good apprentice as an active participant.<sup>9</sup> It is engagement with the team (through conversation and dialogue) that aids the passage from observer to involvement with the clinical team and wider inter-professional and medical community.<sup>15</sup> The good apprentice is proactive making the most of the formal and informal learning opportunities available within the workplace.

The apprentice doctor demonstrates commitment to the medical and inter-professional teams in which they work by acknowledging team members, sharing within the team respecting the diversity of members within the team and respect for each of these members. It is the conversations, the questions/answers and hearing more experienced practitioners “thinking aloud” that helps the new practitioner improve their skills in clinical reasoning. It is the dialogue, the language and the behaviours that give the experience meaning.

While it is possible to learn by “doing the job” it is not easy to do this alone and there is evidence that the quality of supervision is the most significant factor in the clinical learning environment. A subsequent article in this series focuses on supervisors’ practices that encourage participation and learning.

**Competing interests:** None known.

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## Goitre in Fairlie

*Excerpt from article "On Goitre" by Dr Colquhoun published in NZMJ 1910 Feb;8(33):17-71.*

RIMUWHARE, FAIRLIE, N.Z.—Dr. Cook writes:—

"1. Goitre is endemic in this district and is very common—' common in both males and females at puberty—also develops in both sexes commonly up to 35 years—very rarely see a case develop after 35 years—commonest form is parenchymatous or vascular, or a combination of both—occasionally I see cystic cases, but not often.

2. The only cause I can find is the snow water, which is commonly used here. A fair percentage of the drinking water in this district is highly charged with lime salts. Cases develop in patients using both forms of water.

3. Exophthalmic goitre is not common—have only seen four cases in 7½ years in this district.

4. I always treat all my cases of goitre with Iron tonics (if required), and use locally Ung: Hyd: Ox: Ruba. I get them to rub well into the neck each night, and at same time sit in front of the fire, with the neck exposed to the heat. All cases seem to respond to this treatment, and at end or three months the goitre as a rule is gone. Goitre is slightly more common in females than males here. I cannot recall a case that has not responded to the above treatment. Some goitres respond in a shorter time, but as a rule they are three months under treatment. All the cases I have seen have been in people who have been born here and lived here all their lives. Have not seen any cases in people who have lived here only a few years."

WAIMATE.—Dr. H. C. Barclay was one of the first to draw attention to the usefulness of Adrenalin in active goitre.

NELSON.—Dr. F. A. Bett's report is negative for both forms.

PATEA.—Dr. Simmons' report is negative for both forms.



## **A pain in the neck—what is the best treatment for recent onset cervical radiculopathy?**

In this paper from the Netherlands 205 patients with symptoms and signs of cervical radiculopathy of less than 1 month's duration were randomised to treatment with semi-hard collar and taking rest for 3 to 6 weeks; 12 twice weekly sessions of physiotherapy and home exercises for 6 weeks; or continuation of daily activities as much as possible without specific treatment (control group).

Both collar with rest and physiotherapy were substantially better in reducing symptoms when compared to the wait and see policy group. An editorial commentator was surprised that both immobilisation with rest and mobilisation with exercise were better than nothing. He felt that the patient should be offered the choice. The Dutch researchers opted for the collar as it was cheaper than the physiotherapy option.

BMJ 2009;339:b3952.

## **More about pain in the neck—efficacy of low-level laser therapy in the management of neck pain**

Chronic neck pain is a common occurrence and some believe that low-level laser therapy (LLLT) may be useful. Exactly why is uncertain but it is known that LLLT does have anti-inflammatory effects. This meta-analysis looks at 16 randomised trials which compare LLLT with placebo, or in some analgesics, in the management of acute or chronic neck pain. 820 patients were involved and the researchers report that LLLT reduces pain immediately after treatment in acute neck pain and up to 22 weeks after completion of treatment in patients with chronic neck pain.

Adverse effects were mild and not different from the placebo group. After speculating about whether some of the trials may have been sponsored by laser manufacturers, an editorial commentator shows general approval.

Lancet 2009;374:1897–908.

## **Performance of graduate entry medical students compared with mainstream students**

Many medical schools are offering shorter courses for graduates. This will improve numbers to cope with increasing demands. Furthermore, as graduate entry students are generally more mature than non-graduate entry medical students they might be expected to be 'highly motivated and committed' and, it has been suggested, 'are much more self-directed, challenging, demanding, questioning'. There may be a downside—stress related to the intensive learning environment and greater likelihood of familial responsibilities.



As the University of Birmingham has, in addition to its 5-year medical course, offered a 4-year graduate entry course (GEC) since 2003 it is in a good position to make some judgements on outcomes. They have analysed 19,263 examination results from 1547 students. Of these 161 were GEC students and 1386 were mainstream medical students. On average the academic performance of the graduate entry students was better than that of the mainstream students.

J R Soc Med 2009;102:425–30.

### **Haemoptysis with a normal chest radiograph—what investigations are appropriate?**

In this study a retrospective analysis was conducted of consecutive patients presenting with haemoptysis and normal chest radiograph over a period of 56 months irrespective of their smoking status.

The cohort of 270 patients had a median age of 60 years and 60% were males and 90% were past or current smokers. All patients were investigated by CT of the thorax and fiberoptic bronchoscopy.

26 were found to have a respiratory malignancy—predominantly bronchogenic carcinoma. Bronchoscopy was diagnostic of cancer in 14 (54%) of the 26 patients with malignancy. CT of the thorax was suggestive of cancer in 96% of the patients with malignancy.

Hence they firmly recommend such investigations in male smokers. They are less certain about female and non-smoking subjects because of the smaller number of non-smokers.

Thorax 2009;64:854–6.

### **Chronic obstructive pulmonary disease—any long term benefit from inhaled fluticasone with and without salmeterol?**

Inhaled corticosteroids and long-acting  $\beta$ -agonists improve chronic obstructive pulmonary disease (COPD) symptoms, but the effect of these treatments on lung function and inflammation is uncertain.

This randomised trial conducted in the Netherlands attempts to elucidate. Steroid-naïve patients with COPD were randomised to fluticasone inhalation, fluticasone, and salmeterol inhalation or placebo for 30 months. The investigators found reduced inflammatory cells in sputum and bronchial biopsies and attenuated decrease in lung function during fluticasone treatment. Adding salmeterol did not further alter the decrease in lung function.

As we suspected. However, as the  $\beta$ -agonist relieves symptoms dual therapy may be appropriate.

Ann Intern Med 2009;151:517–27.



## **Ciguatera poisoning: an increasing occurrence in New Zealand**

We wish to draw the attention of healthcare professionals to the occasional cases of ciguatera poisoning in New Zealand citizens. In recent years, the National Poisons Centre (NPC) has received an increasing number of inquiries regarding patients contracting this marine poison following vacations in tropical regions, notably the Pacific islands and the northern regions of Australia. Tourists have become ill following the ingestion of contaminated fish that have been caught around tropical reefs. They may display symptoms while still on holiday or not develop clinical effects until they return to New Zealand; the onset of symptoms can be quite variable ranging from less than 1 hour to up to 48 hours following exposure.<sup>1</sup> Affected people may present to New Zealand medical facilities without any knowledge of the cause of their illness. Their symptoms can be severe and persist for one to two weeks in mild cases, but up to months or even years in some cases.<sup>2</sup> If there is a suspected case of ciguatera, appropriate advice can be sought from the NPC (calling 0800 POISON). The local Health Protection Unit, as agent for the NZ Food Safety Authority (NZFSA), should also be notified.

Ciguatera is a human poisoning caused by the consumption of fish from tropical and sub-tropical reefs.<sup>1</sup> These fish contain heat-stable marine biotoxins called ciguatoxins; they are produced by benthic dinoflagellates, predominantly of the genus *Gambierdiscus*, that are believed to live on dead coral, thriving in a medium rich in algae, fungi, yeast and bacteria.<sup>2</sup> Events such as storms, heavy rains, earthquakes, tidal waves or human activities can cause increased destruction of coral, leading to an increase in ciguatera outbreaks.<sup>2</sup> The toxins and their metabolites are transferred up the food chain as the algae are consumed by herbivorous fish, which are consumed by larger carnivorous fish, which in turn are consumed by humans at the top of the food chain.<sup>3</sup> Ciguatoxins tend to accumulate higher up in the food chain, thereby rendering larger predatory fish more toxic.<sup>2</sup> Cooking will not destroy these toxins and they are resistant to gastric acid.<sup>1</sup>

The hallmark of ciguatera poisoning are gastrointestinal and neurological symptoms; often they occur in combination, but one may be more prominent than the other, depending on the geographical location of the contaminated fish.<sup>1</sup> The initial symptoms typically consist of moderate to severe gastrointestinal effects including diarrhoea, abdominal pain and vomiting. Neurological symptoms commonly include cold allodynia (dysaesthesia when touching cold water or objects), generalised paraesthesia with numbness around the lips and tongue and tingling in the limbs. In addition, muscle weakness, myalgia, arthralgia, extreme fatigue, headaches, ataxia, and dizziness are also reported.<sup>1,4</sup>

Cold allodynia is almost pathognomonic of ciguatera poisoning but is also reported following exposure to brevetoxin.<sup>1</sup> Other less common effects include dysuria, pruritis, sweating, nonspecific, often macular skin rashes, and hypotension and bradycardia.<sup>2,5</sup> Although deaths have been reported,<sup>5</sup> ciguatera appears to be rarely

life-threatening; however, symptoms are often quite prolonged and debilitating.<sup>2</sup> Diagnostically, the consistent presence of paraesthesia differentiates ciguatera from most other forms of food poisoning and gastroenteritis.<sup>6</sup>

The various neurological effects are attributed to prolonged activation of the neuronal fast sodium channels, causing excess sodium influx across excitable nerve cell membranes, with prolongation of refractory periods and slowing of nerve conduction velocities in both myelinated and unmyelinated fibres. Associated influx of water may also play a role; axonal oedema and nodal swelling are reported.<sup>4</sup>

The major treatment requirement is typically symptomatic and supportive care, though this is not always highly effective. Intravenous mannitol has been considered an antidote,<sup>7</sup> but a controlled, double-blind, randomised trial has shown no significant difference between administration of saline and mannitol treatment.<sup>8</sup> In the majority of cases, the outcome is good provided the patient receives appropriate supportive care.

Medications such as amitriptyline,<sup>9</sup> fluoxetine,<sup>10</sup> tocainide,<sup>11</sup> gabapentin,<sup>12</sup> nifedipine<sup>13</sup> and corticosteroids<sup>7</sup> have been used with varying degrees of success. Some of these, including amitriptyline, have fast sodium channel blocking activities,<sup>14</sup> which may be useful for persistent neurological effects such as paresthesia, pruritis and dysesthesias.<sup>9</sup> A beneficial effect may not, however, occur in every case.<sup>15</sup> Uncommonly, aggressive fluid replacement and vasopressors are required for severe cases involving cardiovascular collapse.<sup>4</sup>

**Summary and recommendations**—A diagnosis of ciguatera poisoning should be considered in patients returning from tropical holidays with persistent neurological symptoms, and a history of consuming fish that may have been obtained from reefs. This illness can be debilitating and there is no specific antidote or well proven treatment regimen. Therefore, a greater focus on prevention is required. Practitioners, for example, should consider including a discussion of the hazards of ciguatera prior to travel. Until there is a reliable, widely used method of detecting ciguatoxins in fish, people should be warned to avoid ingestion of large piscivorous fish taken from reef waters in tropical or subtropical regions of the world.

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## **Nicotine electronic cigarette sales are permitted under the Smokefree Environments Act**

**Summary**—Here we (ML and End Smoking NZ) canvass some new thinking on tobacco and nicotine law. End Smoking NZ is a charitable trust dedicated to end the sale of traditional tobacco-containing tobacco products for smoking by 2020. Before this can be done, it is essential to free up access for smokers to effective, safer nicotine products. These products, we find, could theoretically, probably be sold now for recreational use under the Smokefree Environments (SFE) Act. For example, nicotine-containing electronic cigarettes (which simulate smoking, by vaporising nicotine into a mist without burning tobacco or creating smoke) could provide safer alternatives to cigarette smoking. Allowing time for regulations for safety reasons, which we support, it should be possible to permit approved brands of nicotine electronic cigarettes by 2011. This is better than waiting years until such brands can be approved as medicines.

**Findings**—Tobacco products in the SFE Act 1990, we find, are defined broadly, as products of tobacco, made from tobacco, whether or not they contain tobacco. Since nicotine is manufactured exclusively from tobacco, the nicotine in nicotine ‘cigarettes’, including nicotine electronic cigarettes, fits the SFE Act definition of tobacco product. This means nicotine-containing electronic cigarettes, can be sold, and sold for recreational or pleasurable purpose under the SFE Act, without negating the powers of Medsafe to approve and license the sale of medicinal nicotine products under the Medicines Act 1981. Some products, perhaps with different brand names, could eventually finish up obtaining approval under both Acts.

**Current situation**—Smoking cessation is a Ministry of Health priority, but the Ministry’s enhanced cessation programme now embarked on, aided by substantial use of subsidised medicinal nicotine, is not expected to prevent more than a minority of smoking or cigarette-attributable deaths in the next few decades. A raft of new policies and products are needed to reduce cigarette smoking more rapidly.

For tobacco addicts, medicines have their limitations. Most smokers, most of the time, do not want medicines or to see the doctor about their smoking. Indeed, most probably regard themselves as healthy. Even when they quit, only 30% use medicinal nicotine. Smokers want to smoke, except for a few days per year when under half make a serious quit attempt. It is mostly nicotine they smoke for. An electronic cigarette emits about 100 times less toxicant than a regular cigarette. So why not let them inhale their nicotine without the toxic smoke?

Most drugs of pleasure, whether legal or not, attract regulation, and need a regulatory “home”. Until now, we all assumed nicotine for human consumption only had only one home - the Medicines Act 1981. This has meant all nicotine must perforce be medicinal, whereas patently, it is not. Currently, non-nicotine electronic cigarettes can be sold, but any nicotine-containing electronic cigarette for sale must first be approved as a medicine –an expensive process, and none is, so far. Some are imported for personal use. In reality, 99% of nicotine is non-medicinal, inhaled for pleasure and

regulated under the SFE Act. Inhaling vapour from a simulated cigarette for pure nicotine pleasure, subject to safety checks, could in fact gratuitously assist in reducing smoking mortality and morbidity, just as methadone is used successfully to treat heroin addiction.

**The proposal**—We propose that nicotine-containing electronic cigarettes be on general sale by the 2011 at the latest, under the SFE Act. This timetable allows for passage of the necessary Regulations in 2010, enabling testing and shop sales in 2011, which would:

- Be popular with smokers;
- Provide safer choices for smokers;
- Provide a cheaper, safer, alternative for smokers facing rising prices;
- Reduce consumption of tobacco cigarettes;
- Provide in future, a permanent alternative to continued cigarette sales.

The Minister of Health with suitable regulation of e-cigarettes, would be able to do what no previous Minister of Health has been able to do, that is, promise 100-fold risk reduction for continuing “smokers”, something impossible, even with the strictest regulation, of commercial tobacco cigarette smoke.

For human consumption, it seems clear, we now have two Acts for nicotine, depending on how the purchaser wants to use the product – for recreational or medicinal purposes:

The SFE Act provides for recreational (non-medicinal) use of nicotine, General sale of cigarettes and electronic cigarettes is permitted, but no therapeutic claims can be made. No dose is prescribed.

The Medicines Act provides for the medicinal use of nicotine by various routes; and allows therapeutic claims, for example, about giving up smoking (example, nicotine patch). Some sales may be restricted to pharmacies, as with current medicinal nicotine inhalers. Guidance on dose and duration of treatment is given.

**Definition of a tobacco product**—“Tobacco product means any product manufactured from tobacco and intended for use by smoking, inhalation, or mastication; and includes nasal and oral snuff; but does not include any medicine (being a medicine . . . . that is sold or supplied wholly or principally for use as an aid in giving up smoking.”<sup>1</sup>

The definitional wording suggests that it is *the intention of the seller or supplier* that determines whether it is wholly or principally for use as an aid in giving up smoking. Thus the seller cannot make claims that it helps smokers quit.

**Regulations to control for possible hazardous substances in nicotine electronic cigarettes**—The Smokefree Environments Act at Section 31, permits Regulations to limit or remove hazardous substances or additives of concern. Although in the one brand studied (Ruyan), few hazardous substances were identified, and only in small amount,<sup>2</sup> this cannot be assumed to apply to all brands without a monitoring system. Regulations should ensure ongoing, regular and random monitoring, and could be financed from charges on the brands to be licensed for sale.



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## **Kiwi support for the end of tobacco sales: New Zealand governments lag behind public support for advanced tobacco control policies**

The scale of harm from tobacco use in New Zealand has not been matched by appropriate government action to advance tobacco control. Since 1991, there has been a pattern of incremental and widely spaced changes, resulting in relatively small reductions in smoking prevalence. The major government policy-level action over the last 5 years, since the new Smoke-Free Environments Act, has been to introduce graphic warnings on tobacco packs. Both Labour and National led governments have hesitated over retail display bans, and since 2001 have failed to increase tobacco taxation over the rate of consumer price inflation.

The idea of the end of tobacco use in New Zealand by 2020 has been suggested.<sup>1</sup> To investigate the extent of support for more radical and rigorous government action, we examined the data from the Health Sponsorship Council's national *2008 Health and Lifestyles Survey*, conducted by the National Research Bureau.<sup>2</sup> This survey involved face-to-face interviews with 1608 people aged 15 and over, and included 422 smokers (26%), 392 Māori (24%), and 324 Pacific peoples (20%). Data were weighted to allow for the over-sampling of groups.

**Support for the end of tobacco sales**—For all ethnicities, about half or more people wanted an end to tobacco sales within 10 years, with significantly more agreeing to this than disagreeing (see Figure 1 and Table 1). Almost 60% of Pacific peoples, and two-thirds (67.4%) of those in households of six plus people supported this move.

- Half (49.8%) agreed that 'Cigarettes and tobacco should not be sold in New Zealand in 10 years time' and 30.3% disagreed (19.9% neither agreed nor disagreed).
- 47.9% of Māori agreed and 34.9% disagreed.
- 59.7% of Pacific peoples agreed and 19.7% disagreed.
- Even 26.2% of smokers agreed (55.3% disagreed), with 37.3% support from those who had made a quit attempt in the last 12 months (39.3% of them disagreed).

**Table 1. Support for the end of tobacco sales within 10 years**

**'Cigarettes and tobacco should not be sold in New Zealand in 10 years time'**

	Total	Parent/Caregiver Status		Ethnicity				Smoking Status			Quit attempts		
		PCG	Non PCG	Māori	Pacific	Asian	Other	Never	Current	Past	0	1	2+
Strongly agree	18.9	18.5	19.0	19.2	20.4	23.9	18.2	23.4	6.6	20.7	6.4	8.9	15.1
Agree	30.9	30.4	31.1	28.7	39.3	38.2	30.0	36.7	19.6	31.3	15.8	34.4	17.0
Neither agree nor disagree	19.9	20.2	19.9	17.3	20.2	15.9	20.7	18.0	18.4	23.1	10.5	15.7	29.9
Disagree	24.9	25.0	24.8	27.3	15.4	21.1	25.5	20.0	37.3	22.9	45.7	26.9	27.7
Strongly disagree	5.4	5.9	5.2	7.6	4.3	0.9	5.6	1.8	18.0	2.0	21.6	14.1	10.2
Don't know/Refused	0.0	0.1	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Unweighted n	1608	624	984	392	324	74	818	583	422	585	230	112	131

**Table 2. Support for plain packs**

**'Tobacco companies should not be allowed to promote cigarettes by having different brand names and packaging'**

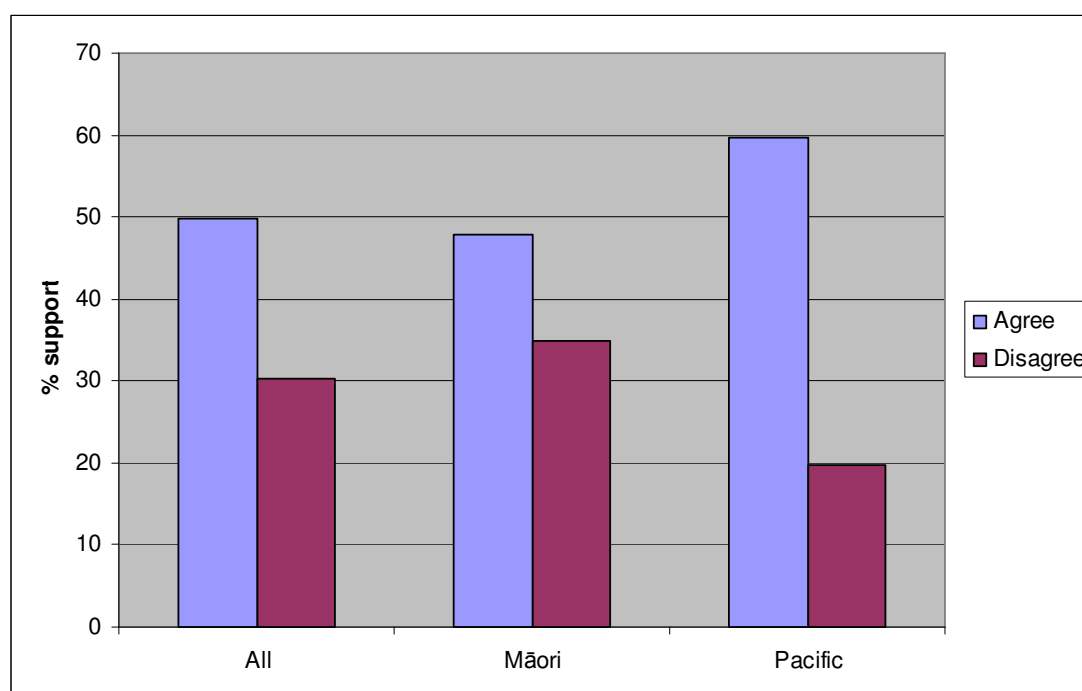
	Total	Parent/Caregiver Status		Ethnicity				Smoking Status			Quit attempts		
		PCG	Non PCG	Māori	Pacific	Asian	Other	Never	Current	Past	0	1	2+
Strongly agree	16.0	20.6	14.7	18.4	16.7	20.1	15.2	19.3	4.0	18.8	3.7	5.7	7.2
Agree	37.4	39.4	36.8	35.9	51.5	48.0	35.6	41.0	27.7	39.2	24.8	38.3	25.9
Neither agree nor disagree	23.7	20.4	24.7	19.4	18.0	24.4	24.7	23.6	27.4	22.2	25.9	19.6	31.2
Disagree	19.7	16.8	20.5	21.6	12.5	7.5	21.1	14.4	34.4	17.6	33.9	31.3	32.7
Strongly disagree	2.9	2.5	3.0	3.8	0.6	0.0	3.2	1.1	6.1	2.0	11.6	3.4	3.0
Don't know/Refused	0.4	0.4	0.4	0.9	0.7	0.0	0.3	0.5	0.5	0.1	0.0	1.7	0.0
Unweighted n	1608	624	984	392	324	74	818	583	422	585	230	112	131

**Table 3. Support for fewer tobacco retailers**

**'The number of places selling cigarettes and tobacco should be reduced to make them less easily available'**

	Total	Parent/Caregiver Status		Ethnicity				Smoking Status			Quit attempts		
		PCG	Non PCG	Māori	Pacific	Asian	Other	Never	Current	Past	0	1	2+
Strongly agree	22.5	25.6	21.6	22.9	23.0	33.6	21.3	28.7	6.8	23.5	6.7	7.6	14.5
Agree	43.1	41.5	43.6	37.7	50.6	52.5	42.4	49.8	28.6	44.4	30.6	32.4	27.8
Neither agree nor disagree	12.8	11.0	13.3	13.9	12.0	5.2	13.4	8.0	18.4	14.8	9.9	25.1	25.2
Disagree	19.5	20.4	19.3	22.5	13.1	7.8	20.7	12.6	39.8	16.2	46.1	29.8	26.3
Strongly disagree	2.1	1.3	2.3	3.1	1.2	0.9	2.1	0.8	6.3	1.1	6.6	5.0	6.2
Don't know/Refused	0.1	0.3	0.0	0.0	0.1	0.0	0.1	0.2	0.0	0.0	0.0	0.1	0.0
Unweighted n	1608	624	984	392	324	74	818	583	422	585	230	112	131

**Figure 1. Support for an end of tobacco sales within 10 years<sup>2\*</sup>**



\*Note: A moderate proportion of respondents neither agreed or disagreed (see Table 1).

**Support for plain packs**—Over half the respondents supported plain (unbranded) packs, with significantly more agreeing to this than disagreeing (see Table 2). Almost 70% of Pacific peoples, 67.6% of those in households of six plus people and 60% of parents and caregivers supported this move.

- 53.4% agreed that ‘Tobacco companies should not be allowed to promote cigarettes by having different brand names and packaging’ and 22.6% disagreed (23.7% neither agreed nor disagreed).
- 54.3% of Māori agreed and 25.4% disagreed.
- 68.2% of Pacific peoples agreed and 13.1% disagreed.
- 31.7% of smokers agreed and 40.5% disagreed.

**Support for fewer tobacco retailers**—Over 65% of the respondents wanted fewer retailers (see Table 3).

- 65.6% agreed that ‘The number of places selling cigarettes and tobacco should be reduced to make them less easily available’ and 21.6% disagreed (12.8% neither agreed or disagreed).
- 60.6% of Māori agreed and 25.6% disagreed.
- 73.6% of Pacific peoples agreed and 14.3% disagreed
- 35.4% of smokers agreed and 46.1% disagreed.



This survey data indicates that a majority of New Zealanders want major changes to improve the regulation of tobacco. At present, half want an end to the commercial tobacco supply within 10 years. We believe this proportion will grow, as public debate on the tobacco endgame progresses. The data should also be seen in the light of other national survey data indicating the high support by *smokers* for further tobacco regulation.<sup>3</sup> In particular, when asked ‘if effective nicotine substitutes that are not smoked became available, the government should then set a date to ban cigarette sales in 10 years time’ 46% of Māori smokers and 44% of non-Māori smokers agreed.<sup>3</sup>

New Zealand political parties now need to engage with the idea of the *end* of commercial tobacco sales in a finite and predicable timetable, rather than using small steps to control the tobacco epidemic. All the businesses involved in tobacco supply, including retailers, transporters, and bankers, need to plan for different areas of business. The public needs to be aware that vested commercial interests will seek to delay the changes that the public supports.

In particular, the Māori Affairs Select Committee needs to consider such endgame approaches in its current inquiry into ‘the tobacco industry in Aotearoa and the consequences of tobacco use for Maori’.<sup>4</sup>

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

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## **Additional benefits (beyond the benefits to global health) of New Zealand health services adopting a carbon reduction strategy**

I write in reference to the viewpoint article *Climate science, denial and the Declaration of Delhi* by Laking, Woodward, Metcalfe, et al in the 11 December 2009 issue of the *NZMJ*: <http://www.nzmj.com/journal/122-1307/3917/content.pdf>

In regards to climate change, as with any evolving paradigm shift, it is undeniable that contention regarding the supportive evidence still exists within the medical profession and indeed within the global community at large.

It may take many more years before everyone can be satisfied with the evidence.

However, confirming the exact extent of climate change is unnecessary, given that measures to mitigate climate change are often in the best interest of our patients anyway. Thus when looking at measures that can be taken to reduce carbon emissions, there are often other gains in the form of: reduced health spending, more efficient hospital systems (reduced wastage and waiting times), improved patient care and improved staff morale.

At a recent workshop hosted by the Hutt Valley DHB,<sup>1</sup> a presentation was given by Mike Poole, an independent Environmental Management Consultant to the NHS.<sup>2</sup> Over recent years, areas of the NHS have engaged in reducing the carbon footprint of their own organisations or departments.<sup>3</sup>

Examples were given of a Renal Unit, a Community Hospital and a Pathology Lab that each achieved significant monetary savings. The Renal Unit did particularly well, saving £1,200 per employee per annum. This was achieved through reduction in food wastage, laundry usage, reduced packaging, reduced wastage of dialysis fluid, reduced deliveries (optimised ordering allowing fewer, bulk deliveries) and reduced patient transport trips (by geographical ambulance sharing). In addition, the improved systems and coordination resulted in fewer 'DNA's (non-attendance at booked appointments), reduced outpatient waiting times and increased throughput of the ward. Finally, there was also an increase in patient morale and indeed in staff morale.

With this in mind, I believe it is sensible to move on with such improvements in our health system. Some DHBs are already beginning carbon-reduction initiatives along these lines, with the efficiency side appealing to their financial officers. It is likely that these initiatives will increase efficiency of health funding and therefore make the tax dollar go further.

The Sustainable Development Unit of the NHS has an excellent website ([www.sdu.nhs.uk](http://www.sdu.nhs.uk)) which outlines their carbon reduction strategy, initiatives, and case studies. This could be a good starting point for discussions about future initiatives in New Zealand.

Essentially then, there's nothing to lose and a lot to gain. Certainly, the climate change evidence debate can continue but hopefully in tandem with the changes to our health system that are of benefit to everyone, including the planet.

Rebecca Randerson

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## **A survey of use and knowledge of vitamins and supplements in the Bay of Plenty, New Zealand**

Over the last two decades there has been a trend for people to supplement their nutritional intake with dietary supplements (DS) (e.g. vitamins, minerals, botanical material and active ingredients derived from food or other biological material) bought from a variety of sources (e.g. pharmacists, health food stores, supermarkets, Internet).<sup>1</sup>

The largest recent survey in New Zealand, found that around 60% of adults had taken DS in the previous year.<sup>1</sup> However, there is little information available on other factors associated with DS consumption in New Zealand, such as: how many DS people take; where they buy them; where they get advice; and how they decide what to take. We therefore undertook a survey to increase understanding regarding these questions.

A convenience sample of 265 adults waiting in five GP surgeries in the Bay of Plenty completed the survey during the period October to November, 2008. There were 215 females and 50 males; age groups were less than 21 years ( $n=8$ ), 21–30 years ( $n=32$ ), 31–40 years ( $n=53$ ), 41–50 years ( $n=69$ ), 51–60 years ( $n=48$ ), 61–70 years ( $n=26$ ), 71–80 years ( $n=13$ ), over 80 years ( $n=8$ ), and no response ( $n=8$ ).

Responses indicated that supplements used (by at least 3% of respondents) included: Multivitamin (42%), Fish oil (32%), Calcium (16%), Vitamin B (9%), Folic acid (8%), Vitamin C (6%), Glucosamine (6%), Iron (6%), Magnesium (4%), Spirulina (3%). Overall, 61 different supplements were reported as being used.

Sixty-nine respondents (26%) reported taking no supplements, of whom 30 reported this was due to cost, 21 because they believed they did not help, 37 that they were not sure what to take and 5 that they already had a balanced diet (more than one response option was possible). Of the 196 respondents who reported having consumed supplements, the following sources were reported (more than one response option was possible): Pharmacist (50%), Health Food Store (45%), Supermarket (45%), Internet (4%), Doctor (3%). Regarding the frequency of DS consumption, 26% reported taking 1 per day, 20% took 2, 8% took 3, 7% took 4, and 6% took 5 or more per day.

With regard to whom respondents trusted for advice on supplements, 79% respondents reported they would trust their doctor, 61% their pharmacist, 56% advice from a health food store, 12% advice from the internet, 12% advice from television and/or from magazines

We also asked respondents how much they agreed with a series of statements designed to provide more information regarding their consumption of DS (Table 1).

**Table 1. Factors influencing respondents use of supplements**

Statements	Agree strongly	Agree slightly	No firm opinion	Disagree slightly	Disagree strongly	No Answer / Not applicable
	<i>N (% in parentheses)</i>					
Supplements and vitamins are essential to ensure that you stay healthy	80 (30%)	80 (30%)	69 (26%)	19 (7%)	8 (3%)	11 (4%)
The country where the supplements are manufactured is important	156 (59%)	45 (17%)	42 (16%)	5 (2%)	8 (3%)	8 (3%)
If there was good evidence that supplements would stop some diseases developing, such as heart disease, would you take them?	170 (64%)	56 (21%)	24 (9%)	5 (2%)	3 (1%)	8 (3%)
I never know which supplements to take	48 (18%)	82 (31%)	50 (19%)	32 (12%)	34 (13%)	19 (7%)
There are so many supplements that it is confusing	95 (36%)	77 (29%)	37 (14%)	16 (6%)	24 (9%)	16 (6%)
I am concerned that I may be wasting money by taking supplements that do not work	87 (33%)	77 (29%)	37 (14%)	13 (5%)	37 (14%)	13 (5%)
I am concerned that I may not be taking supplements that do work, because I do not have the best information	69 (26%)	93 (35%)	45 (17%)	13 (5%)	32 (12%)	16 (6%)

**Table 2. How important are the following in helping you decide what to take?**

Factor	Not at all	Not very	No opinion	Somewhat	Extremely	N/A
Price	21 (8%)	37 (14%)	19 (7%)	117 (44%)	50 (19%)	19 (7%)
Good scientific proof that they work	5 (2%)	5 (2%)	5 (2%)	82 (31%)	148 (56%)	19 (7%)
Endorsed by celebrities	170 (64%)	32 (12%)	19 (7%)	5 (2%)	8 (3%)	32 (12%)
Advice from your doctor	8 (3%)	5 (2%)	5 (2%)	82 (31%)	148 (56%)	16 (6%)

To provide further understanding of respondents' reasons for taking supplements, they were asked four questions that we hypothesized might reasonably influence people's decisions to use supplements (Table 2). The most common reason appeared to be advice from a doctor and evidence of effectiveness.

The main findings of this survey were that 74% of adult respondents take at least one DS, the most common being a multivitamin followed by fish oil. Many responders felt that DS were important for maintaining good health but many also reported a large degree of confusion regarding what they should take.

The prevalence of DS use of 74% was somewhat higher than that found in other studies and may represent differences in survey questions. For example, New Zealand data collected in 1997 found a rate of 59% had taken DS in the previous year;<sup>1</sup> whilst a USA survey from 1999 to 2004 found that 34% had taken a DS in the previous month.<sup>2</sup>

DS were bought approximately equally from three main sources: pharmacies, health food stores and supermarkets. Scientific proof of efficacy and doctor advice to be important, however, price was also an important consideration. Up to 25% of respondents expressed some concerns about which DS may be suitable and useful to use.

We acknowledge a limitation of this survey is that it was only conducted in one part of the country and thus our findings may not be representative of the prevalence and opinions of DS use in other areas of New Zealand in 2008.

In conclusion, our findings suggest that most adult New Zealanders take DS, but they also want better information on which ones work. Given the potentially adverse outcomes and waste of money associated with inappropriate use of some DS, and concerns expressed by some respondents, the means by which accurate and independent information regarding DS can be communicated to potential users would be welcomed.

Shaun Holt, Avrille Holt, Pieter Erasmus, Maryann Watson, Tony Farrell, Gareth Blackshaw  
Tauranga

Mogens Poppe  
Ohope

Mike Williams  
Rotorua

Andrew Gilbey  
Palmerston North

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## The prevalence of lactose intolerance (adult hypolactasia) in a randomly selected New Zealand population

Lactose intolerance (adult-type or primary hypolactasia) in Caucasians is predominantly determined by a single nucleotide polymorphism (SNP) in intron 13 of the *MCM6 helicase* gene, 13,910 bases upstream of the first base of the lactase gene on chromosome 2.<sup>1</sup> The presence of a cytosine (C) at this site confers intolerance to lactose. This is a recessive trait, so the SNP combinations C/T and T/T are lactose-tolerant, while C/C confers the intolerant phenotype. The C to T transition is of relatively recent origin (10,000 to 12,000 years ago), and was strongly selected for with the advent of herding and the associated activity of consuming bovine milk.

This mutation arose in a northern European population, and is thus widely distributed in their descendants. Nearly all of the Caucasian New Zealand population derives from northern Europe and would be expected to be in large part lactose tolerant, but the prevalence of primary (inherited) lactose intolerance in the New Zealand adult population has yet to be formally documented.

**Method**—Rapid lysis DNA samples<sup>3</sup> were genotyped in batches of 50. A PCR mastermix containing buffer, dNTPs, flanking primers and Platinum Taq DNA polymerase (Invitrogen) was prepared and dispensed in 9  $\mu$ L aliquots. 1.0  $\mu$ L of sample DNA was added to each 9  $\mu$ L reaction, and the samples amplified in an Eppendorf MasterCycler using standard cycling parameters. Following amplification, a cocktail containing restriction endonuclease *BsmF* 1 (New England Biolabs, 2000U/mL) was prepared, and 15  $\mu$ L added to each sample. Digestion was carried out at 65°C for 120 min, followed by heat inactivation at 80°C for 30 min. Digests (8  $\mu$ L) were electrophoresed on 15 $\times$ 15 cm<sup>2</sup> 3% agarose gels, stained in ethidium bromide solution, and visualised under UV light.

**Results and Discussion**—The numbers of the three genotypic combinations in this population (n=1064) was 88 C/C homozygotes (lactose intolerant), 419 C/T heterozygotes, and 557 T/T homozygotes. Thus, the percentage of this population that is genetically lactose intolerant is 8.23%. The allele frequencies found are consistent with the expected Mendelian distribution ( $p=0.72$  and  $q = 0.28$ ).

The finding that more than 8% of this sample of the Christchurch population has adult type hypolactasia may be surprising, but it is consistent with data on lactose intolerance in other countries.<sup>4,5</sup> General practitioners should be wary when patients complain of non-specific symptoms associated with the ingestion of dairy products. The existence of this simple and rapid genetic test to determine the presence or absence of adult hypolactasia should make the task of gastroenterologists to distinguish between primary and secondary lactose intolerance considerably easier.

A substantial majority of southeast Asian peoples are lactose intolerant (among Thais, the figure is nearly 100%), and the influx of Asians into the Christchurch urban region in recent years will have increased the incidence of adult type hypolactasia. Of the thirty survey participants self-identifying as being either Māori or Polynesian (2.9%

of the sampled population), 9 were found to be lactose intolerant. This frequency of 30% is highly statistically significant ( $p=0.0004$ , Fisher's exact test).

The finding of a significantly increased prevalence of lactose intolerance in the Polynesian and Māori communities is consistent with current theories about the origin of these people (in Southeast Asia), but requires more formal documentation. It is hoped that this can be achieved in the near future.

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Peter George

Clinical Director

Canterbury Health Laboratories, Christchurch, New Zealand

**Acknowledgements:** The authors thank Drs Michael Burt, Bruce Chapman, and Judith Collett of the Department of Gastroenterology, Canterbury District Health Board for granting access to the bank of DNA samples.

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## William Grattan O'Connell

*QSM MB ChB (NZ) FRNZCGP; 3 March 1925—27 November 2009*

Dr Grattan O'Connell was born in Dunedin, the only son of William and Doris O'Connell.



Grattan's father, who worked for the Government Tourist Bureau, was appointed resident manager of the Waitomo Caves Hotel, and from that time on until his marriage Waitomo was Grattan's home base.

His early education was at the small, one-teacher school at Waitomo, then he spent 3 years as a boarder at Sacred Heart College in Auckland. The last 4 years of his secondary schooling was at St Patrick's Silverstream, where he was Head Boy and a member of the First XV in 1942.

After doing his final year in Auckland, Grattan obtained his medical degrees from Otago University at the end of 1949. GP training courses were unheard of in those days, but he spent the next 3 years as a house surgeon at the Auckland hospitals, endeavouring to gain as wide a range of clinical experience for general practice as possible.

During this time, in 1951, he married Verna Stone of Devonport, and Verna was a wonderful and supportive wife throughout their long marriage. They were to have three daughters, Cathryn, Ainsley, and Helen.

Grattan did a long-term locum at New Lynn, and during 1953 established a general practice in Glen Innes, then a very new, raw, and rapidly-expanding suburb consisting largely of State houses, most with young families. About the same time Sacred Heart, one of Grattan's old schools, re-located to Glen Innes in brand-new premises, and he was appointed the visiting doctor, to be held in high regard by the boys and Brothers for the next 40 years.

Grattan was a competent obstetrician, and we considered obstetrics to be an important component of good general practice. In addition he found time to give regular anaesthetic lists at Green Lane Hospital and in private. I moved into general practice in Glen Innes in 1955, and though we were never in partnership, we worked in close association for the remainder of our medical careers.

Grattan set high clinical and ethical standards which I know were valued highly by patients, the community in general and his medical, surgical and dental colleagues.

In 1967, another dimension in Grattan's life opened up. He became a Charter Member of the Glen Innes Rotary Club (later to be re-named Auckland East). With Rotary as in medicine, everything he took on was aimed at, and achieved, excellence, right from club presidency, later as District Governor and eventually to world level, when he became a director of Rotary International.

One notable instance where he was able to bring his medical experience to bear was the *Polio-plus* campaign, Rotary's ongoing attempt to eliminate poliomyelitis from the world. In this Grattan was closely involved for 20 years, including, among other things, visits to Third World countries and giving opinions and advice in the "nuts and bolts" of the campaign. For this and other outstanding service Rotary awarded him their Exceptional Service Award, which I understand is given only rarely.

Grattan was included in the Royal Honours list in 1997 with the award of the Queen's Service Medal, for services to the community.

While on Rotary business in Fiji in 1976 Grattan suffered a serious coronary attack, and we feared for his survival, but he made it. At this stage he gave up anaesthetics in favour of the less stressful, but no less important, field of geriatrics. He joined me on the visiting staff of Meadowbank Home and Hospital, where he was a valued colleague. He retired from his practice in 1993, and from Meadowbank a few years later.

Grattan was a keen golfer, and he was to reach the age of 80 before giving it up. In recent times he became a member of the Glendowie Probus Club, where he was as active as his declining health would allow.

Four years ago, Grattan and Verna moved into Grace Joel Retirement Village at St Heliers, and for the last 6 months Grattan was cared for in the hospital section.

The large chapel at Sacred Heart College provided a fitting venue for his funeral service, and the congregation was widely representative of friends, colleagues, Rotary, old patients, and citizens of the Eastern Suburbs he had served so well. The College choir and haka party added their tributes.

Grattan was a strong family man and proud of the many achievements of its members. To Verna, his daughters, grand-daughter and three grandsons, who looked after him with such devotion through his long illness, our profession offers their love and sympathy.

This obituary was written by Dr Bill Brabazon, with help from Verna and Cathy.

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## John Apthorp

*MB ChB; Fellow of Royal Australian College of Physicians; Fellow of the Royal College of Physicians, Edinburgh*

John was born at Braemar Hospital (top of Lake Road, Hamilton) to Edward Harold and Violet Ida Apthorp.



Violet did not realise she was having twins, so they were going to name the son Peter John. Hence, upon arrival, the eldest was named Peter and then came John born 30 minutes later. Both were to become medical doctors.

John and Peter were educated at Southwell School from 1932 to 1939 where his father was a Teacher of Music. Whilst at Southwell School John was soloist in many Gilbert & Sullivan operas—produced by Paul Sergel with father Harold as musical director. Harold was also organist at St Peters Cathedral Hamilton and John and Peter choir boys. Both boys went to Christs College in Christchurch from 1940 to 1942.

Next came Selwyn College, Dunedin from 1943 to 1948 and a year at Wellington Hospital (worked in the TB ward at Ewart Hospital branch) living in the hospital grounds. Because of the war, while back in Hamilton on holiday from University, John was taken by bus and man-powered to grow vegetables on a farm towards Te Awamutu (brother Peter helped maintain the tractors).

Later on, while a 5<sup>th</sup>-year medical student, John worked at Waikato Hospital Laboratory under Dr Marcus Fitchett (whose father was Professor Fitchett in Dunedin).

John was promoted as Registrar of the Chest Unit in 1951. He married Phyllis Mary Willcocks on 25 August 1951. (Mary was a TB specialist nurse who had emigrated from England.) In 1953 John was appointed Registrar at Hutt Hospital (stayed at Silverstream Hospital) arranged by the Superintendent of Wellington. After qualifying as a doctor whilst in Wellington, John joined the choir of Saint Thomas's Anglican Church, Wellington South.

In 1954 he travelled by sea via the Panama Canal with Mary and two sons Chris and Paul to England to attend the Hammersmith Medical School Hospital for postgraduate experience. Then he was appointed to Hammersmith Hospital staff, working there during 1955 and 1956. Third son Tim was born whilst in England.

He was reappointed to Silverstream Hospital after an eventful plane trip (the plane caught fire while going down the Brisbane runway) from England.

In 1957 he applied to the position of Physician Anaesthetist at Thames Hospital, travelled up the North Island to Thames in a black Morris 8 which John had bought from a nurse. John was sole Physician at Thames Hospital. He planned and had built



the Coronary Care Unit and provided paediatric and general adult care. While at Thames Hospital John did autopsies for the Hospital and Police. With the opening of the nurses' tutorial block in the Nurses' Home, John was lecturer of medicine for senior nurses. He was appointed as examiner for senior medical nurses for the whole of NZ.

Late 1981 Mary and John moved to Hong Kong for John to work in the Tang Chi Ngong Specialist Families Clinic for 2½ years. These were some of the most happiest years of their lives. One of his patients, Rowena Chu, held John in such high regard that every fortnight without fail after he returned to NZ in 1984 she would phone him for a chat. This went on for 25 years.

John returned to Thames in 1984 but didn't want to work in the hospital so they rented a house in Papatoetoe and John worked in the Geriatric Dept of Middlemore Hospital, Auckland. They moved to Taupo at the end of 1985, John was the Geriatrician for the whole of the South Waikato region including Putaruru, Tokoroa, Taupo, Turangi, and Rotorua. (Mary and John used to stay at the Nurses' Home in Rotorua for 2 nights a week.) John was also appointed Medical Superintendent of Taupo Hospital. A colleague in Taupo later wrote in sympathy "John was the finest man, a brilliant physician, he contributed so much to medicine."

John was compulsorily retired at the age of 65 in 1991. (He didn't want to retire but he was told they wanted his salary.) He then decided to move back to Thames and buy a house because of the cold weather in Taupo.

Dearest Mary passed away peacefully at home on 7 May 2009. She was cremated and her ashes placed in the Garden of Remembrance Totara Cemetery, Thames. John followed very unexpectedly on 23 November, exactly 200 days later. He missed her very much. He was also cremated and his ashes placed next to Mary's in plot 219.

John was a devoted choir member to various Anglican churches (including St Georges Anglican Church Choir, Thames for many years), he also played the piano a little and the recorder. He loved listening to classical music, he was an avid reader, and the couple developed an award-winning garden in Thames—he knew all the Latin names of trees and shrubs there. John had a wonderful sense of humour and he was always able to have people smiling and laughing.

He was a devoted family man and loved all of his 6 children, 11 grandchildren, and 4 great grand children unconditionally, as did Mary. He was incredibly busy with work but was always able to find time to support his family. He loved the outdoors and in his student days at Otago often went tramping, including the Milford Track. He was also a very good table tennis player and would have great contests down in the rumpus room with this children. Most of all he was devoted to his wife Mary, they were inseparable for 58 years.

His twin brother, Dr Peter Apthorp, a long-time GP at Masterton and an Anaesthetist, passed away on 10 January 2010—48 days after John's death.

Dr John Apthorp is survived by his sons Paul (maths teacher at Hauraki Plains College, Thames), Reverend Christopher (Hamilton), Timothy and Peter (Thames); and daughters Cathy (RN, Noosa, Australia), and Ruth (Pauanui).

Son Paul wrote this obituary.



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## Upali Manukulasuriya

*QSM*

Dr Upali Manukulasuriya, affectionately known as 'Dr Manu' to his patients, passed away on the 12 July 2009 after a brief battle with cancer. Dr Manu immigrated to New Zealand from Sri Lanka in 1970.



After working as a junior doctor in various New Zealand hospitals, he settled in Taumaranui as a Rural General Practitioner in 1973.

Dr Manu said he had initially moved to Taumaranui because it was close to the ski fields and the fishing around Lake Taupo; but had fallen for the small King Country town, which he served for 31 years. During this time he served 20 years as a Senior Police Doctor and Prison Doctor to the Justice Department. Dr Manu was also passionate about Rural General Practice undergraduate and postgraduate teaching.

He was a member of the Educational Committee of the Royal New Zealand College of the General Practitioners from 1996–98. From early in his career Dr Manu actively lobbied the District Health Boards and politicians about the plight of the overworked rural General Practitioner, long before it became an election issue. He was an Executive Committee Member and Foundation Member of the New Zealand Rural General Practice Network.

In 1999 Doctor Manu was awarded a Queen's Service Medal (QSM) for services to Rural General Practice and the Sri Lankan community. He made a significant contribution to the Sri Lankan and wider community in New Zealand over a number of years, serving as spokesman for the United Sri Lanka Association of New Zealand since 1983.

In 2004, Dr Manu moved to Auckland to be closer to his family, eventually working, as a General Practitioner in the ethnically diverse and high needs area of Otahuhu, South Auckland.

At the time of his passing, Dr Manu was a member of the Medical Practitioner's Disciplinary Tribunal, a position he had held for 7 years. Despite being active in medical and community service, Dr Manu always remained a dedicated, full time General Practitioner working at the coal face.

On the lighter side, Dr Manu had a fondness for cooking Italian cuisine. When entertaining friends and family, he would regularly serve a tasty pasta dish with a glass of red wine.

Dr Manu is survived by his wife Shantha, two daughters Shereen and Hiranthi, and two grandchildren Isla and Nico.

Dr Kevin Gabriel (FRNZCGP) wrote this obituary.



## Hugh Douglas

*Radiologist (1938–2009)*

Some events are inevitable. One was that Hugh Douglas would follow his father and grandfather into medicine, and like them would give the best part of a lifetime to service in Hamilton and at Waikato Hospital. It continues; his son, also named Hugh, is fourth in the line and one of the hospital's senior anaesthetists.



The story of Hugh Douglas (1938–2009) is inseparable from Waikato Hospital and his family line. The history extends 110 years, back to 1899 when the first Hugh Douglas was appointed Waikato Hospital's second medical superintendent. There were 16 patients then.

The story is a little confused and needs wit to capture, for the four Douglas doctors were all named Hugh. One of the chapters closed on Wednesday November 4. Hugh Douglas (1938–2009) died at his Hamilton home after a 5-year battle with cancer. He was 71. He was stoic. Wife June says he never complained.

Son Hugh says he maintained his sense of humour throughout. With cancer that's a huge achievement.

Hugh (1938–2009) was born in Pukekohe on January 29, 1938, the son of Dorothy and Hugh Stewart Douglas (known as Stewart) and was one of four siblings. Stewart was one of Pukekohe's and later Hamilton's busy general practitioners. World War II borrowed him to serve as an army doctor, his record rewarded with an MBE for notable work at the front line.

His son attended Fairfield Primary School and Hamilton High School before launching into medicine at Otago Medical School. He qualified in 1962, and was a house surgeon at Waikato Hospital in 1965–66. The next year he was a radiology registrar in Tasmania, and in 1968 a radiology registrar in Perth. He was made a Fellow of the Royal Australasian College of Radiology in 1969, and that year returned to Hamilton as a radiology consultant.

He worked at Waikato Hospital for 35 years. Radiologist friend Malcolm Baigent describes Hugh as the quietest, friendliest radiologist you could find. "He never lost his cool. All the staff loved him, from the orderlies to his medical colleagues." He said Hugh had an acute funny bone and was a dreadful tease. When he pulled off a good one "I've seen the tears running down his face".

Malcolm recalls Hugh was a pioneer of angiography in the Waikato—a procedure to view blood vessels by X-ray after injecting radio-opaque dye. He also recalls Hugh and June were a keen and clever gardening team.

June Montgomery, a physical education teacher, met Hugh when both were at university. They married in 1962. “He was pretty retiring and quiet, despite what his children may say,” says June. “We had a wonderful time together.”

Son Hugh reflects that one half of “a dynamic duo” has departed. “My brothers and I had the most wonderful parents anyone could hope to have.” He remembers wonderful holidays. “Dad always liked to explore and do unconventional things. He never got lost, he merely found new and interesting places on his shortcuts.”

He was exceptionally open-minded and had diverse tastes. “I guess that and his sense of fun were two of the reasons that he was always a best mate as well as a dad. He took us to see movies like MadMax, while also enjoying at the other extreme a huge variety of foreign-language movies. His taste in music was even more diverse. Despite loving classical music he was always more up to date with the latest alternative music than any of his children or grandchildren, often introducing us to some new band we had never heard of.”

Friend of 49 years Graeme Etheridge, who conducted Hugh’s funeral farewell, told of close companionship, solving the world’s problems, and terrible wine. “Whether you were a relative, friend, business colleague, fellow horse racing enthusiast, golfing partner or, as I was, a mate, we all had one thing in common—a love and respect for a lovely man.”

Hugh is survived by June, sons Michael, Hugh and Andrew, and eight grandchildren.

The Douglas story deserves an outline. The first Hugh Douglas was born in 1870 at Newcastle upon Tyne. He qualified in medicine at Edinburgh in 1896 and emigrated to New Zealand. He practised at Devonport before being appointed medical superintendent of Waikato Hospital in 1899. He lived in Hockin House for 20 years and patient numbers increased from 16 to 150. Today there are about 600 beds. After he retired as medical superintendent he took up general practice and occasionally did surgery. He was president of the New Zealand branch of the British Medical Association in 1928–29, president of Hamilton Golf Club from 1921 to 1925, was a foundation member of Hamilton Rotary in 1923, and was the original club on-course doctor of Waikato Racing Club. (His son Stewart followed in that role, as did Stewart’s son Hugh). He died in 1943.

Stewart was born in 1906, qualified at Otago Medical School in 1929, and played rugby for New Zealand Universities. He was a director of the Waikato Times, president of the Hamilton Club, was a general practitioner first in Pukekohe then in Hamilton—and his patients loved him. He died in 1970.

Hugh Douglas (1938–2009) followed worthy footsteps.

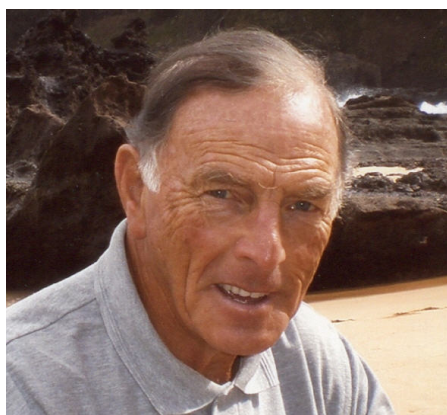
This obituary entitled *Popular doctor kept humour right to the end* originally appeared in the *Waikato Times* newspaper. We thank them for the reprint permission.



## Robert James Dallas

*25 May 1931 – 21 October 2009*

Dr Bob Dallas practised as a GP in Tirau from 1964 until retirement to Mount Maunganui in 1987.



Bob was born in Coventry, England, but after being evacuated because of the worsening blitz, spent much of his childhood with his two brothers and parents in Angus County, Scotland, near where his father's clan were originally from.

Bob attended school in Dundee but his focus was drawn to medicine only after serving 2 years compulsory national service, after the war, in the British Army. Bob was a renowned athlete and excelled at school and in the army as a sprinter and soccer player.

He graduated MB ChB at St Andrews University, Scotland, in 1958 and gained D.Obst.RCOG in 1964. Bob was also awarded a Blue, representing Scottish Universities at soccer. Family links to medicine included two uncles and one brother as doctors while Bob's father and older brother were pharmacists.

Bob met Frances Buchan, who had newly qualified MBChB from Glasgow Medical School, while working at Dumfries and Galloway Royal Infirmary in 1959. They married in 1960 and, after short periods where Bob practised as a GP in Dundee and Millom, emigrated to New Zealand via Australia with three sons in 1964.

The rural township of Tirau welcomed Bob and Frances and family.

Although Bob was the sole practitioner at Tirau, he received strong support from Frances (who also served at Waikato, Tokanui and Tokoroa hospitals as a physician and anaesthetist latterly). Bob shared a rostership with colleagues from Putaruru and delivered many hundreds at Putaruru Maternity Hospital.

Bob's main passion was golf but he was also a ready participant at tennis, swimming, water-skiing, and snow-skiing. He played music by ear; was accomplished at chess, sudoku, and cryptic crosswords; and enjoyed travelling within New Zealand and abroad with Frances and family.

Professionally, Bob had been troubled by the mysteriousness of SIDS and had made observations on occasions where incidences occurred within his practice. Bob would always be keen to move quickly to the simplest solution and, since the 1970s, never wavered from the conclusion that over-heating is the most significant causal factor. While Bob monitored research developments, he would simultaneously refer back to factors such as age spread, time of year, house insulation, parental tuck-in, record-taking at scene, no PM clues, cooling mechanisms, and difficulty with proof—there is

no incompatibility with hyperthermia was his contention. Simply, Bob would draw the link to dogs that are left in cars and to refugees who succumb in containers.

Frances still lives at Mount Maunganui; son Angus resides with Michelle and their son Cameron in Te Awamutu; and son Graham resides with Lynette and Sam, Kieran, and Nicholas in Cambridge. Son Alan and Janette reside with daughters Morgan and Lucy in Wanganui.

Alan Dallas (son, Civil Engineer, CPEng) wrote this obituary.





## Reviewers for the New Zealand Medical Journal in 2009

The Editorial Board (F Frizelle, T Buckenham, R Mulder, R Beasley, J Connor, J Reid) and Editorial Team (F Frizelle, B Edwardes, S Bagley) thank all those who generously gave their time and expertise in reviewing papers for the *New Zealand Medical Journal* in 2009. (We apologise to anyone whose name has been inadvertently omitted from the following list.)

Abernethy M	Coughlan E	Horne G	Moot A	Short J
Adams J	Coulter G	Hughes R	Morris A	Simcock B
Alchin J	Cox B	Hunn M	Morris C	Simcock J
Anderson T	Crampton P	Jackson R	Morriss W	Simmers D
Ardagh M	Croucher M	Jarvis J	Morton J	Simmons M
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Bailey W	Cunningham R	Judson J	Norris P	Soule S
Baker M	Cunningham W	Kearns R	Nosa V	Spearing R
Balsingham A	Danesh-Meyer H	Keenan J	Nunn C	Spooner C
Barclay M	Darlow B	Kelly P	Nye T	Stamp L
Barrett P	Davidson P	Kennedy R	Parkinson S	Stedman C
Batten L	Davie G	Kent D	Parnell W	Steele R
Beaglehold R	Dawson S	Kenwright D	Paterson R	Stevenson S
Beasley M	Day A	Kerse N	Pearce N	Stewart R
Beasley S	Deacon R	Kidd J	Pear N	Stiven P
Beckert L	Dennett E	Kilfoyle D	Perez D	Streat S
Begg E	Dew K	King S	Perrin K	Stubbs R
Berridge M	Dijkstra B	Kool B	Phillipson G	Sundborn G
Bills J	Doughty R	Kueppers F	Pitama S	Sykes P
Bird P	Dowell T	Kyle P	Pithie A	Taylor R
Bishara S	Dowson C	Lamb D	Podd J	Teague C
Bismark M	Edwards L	Large J	Polonowita A	Theis J-C
Bisset I	Edwards R	Laugesen M	Ponniiah S	Thomas P
Blackmore T	Eglinton T	Leckey E	Poole G	Thomson C
Blake J	Elder P	Le Gros G	Porter R	Thomson I
Blakely T	Elley R	Leikis R	Priest P	Thorne P
Booth M	Ellis C	Lennon D	Pringle K	Thwaites J
Braatvedt G	Farry P	Lewis D	Rea H	Tin Tin S
Bridgman P	Fergusson D	Lintott C	Reeder T	Tobias M
Broughton J	Fink J	Lunt H	Reid I	Todd F
Brown P	Firth H	MacFarlane M	Reid R	Toomath R
Bunton R	Flint R	Maharaj D	Richards D	Travers J
Burgess C	Florkowski C	Mann J	Riddell T	Tukuitonga C
Burt M	Ford R	Martin I	Roberts R	Tweed M
Busby W	Freeman P	Mason D	Robertson G	Van der Merwe W
Butler A	French G	McBride D	Robertson R	Vickers M
Callaghan K	Frye J	McCall J	Robinson B	Voss D
Campbell D	Garrett J	McCool J	Roche A	Voss L
Campbell J	Gearry R	McCowan L	Roche D	Walker R
Campbell M	Gee P	McGill A-T	Salter D	Walton M
Carter G	Glass W	McKinlay E	Samarakkody U	Ward I
Cawood T	Glover M	McPherson K	Samson P	Watson P
Chambers J	Gorman D	McQueen F	Sarfati D	Weatherall M
Chambers S	Grace V	Malcolm A	Schlup M	Weston P
Chapman B	Gray A	Malcolm L	Schluter P	White H
Chapman P	Grundy K	Maoate K	Scollo M	Wilkinson T
Chin P	Hanger C	Mark S	Scott B	Williams M
Chin S	Haslett C	Marshall N	Scott N	Willis J
Chunilal S	Henshaw K	Marshall R	Scott R	Wilson G
Civil I	Herbison P	Matheson D	Scragg R	Windsor J
Coates M	Hicks P	Melton I	Seddon M	Wong C-K
Cole D	Hider P	Mercer P	Sellman D	Worthington J
Colls B	Highton J	Merry A	Sharpe N	Wynne C
Connor S	Hill A	Metcalfe S	Shaw J	
Coppell K	Holt S	Meyer R	Sheerin I	
Cormack D	Hooper G	Mitter C	Shipton E	

# THE NEW ZEALAND MEDICAL JOURNAL

Journal of the New Zealand Medical Association



## Erratum

Re: Poole PJ, Moriarty HJ, Wearn AM, Wilkinson TJ, Weller JM. *Medical student selection in New Zealand: looking to the future*. NZMJ 20 November 2009, Vol 122 No 1306; ISSN 1175 8716: <http://www.nzma.org.nz/journal/122-1306/3884> and <http://www.nzma.org.nz/journal/122-1306/3884/content.pdf>

The authors apologise for two errors in the section ‘Student numbers and selection practices’:

- (1) The latest increase in medical students occurred in 2008, not 2009.
- (2) For undergraduates applying to Otago, ranking decisions are based upon GPA and UMAT in a 66:34 weighting, provided the designated academic and UMAT thresholds are met. Graduates must meet the UMAT threshold and, thereafter, ranking is based on GPA alone. In contrast to Auckland, no interview is undertaken.

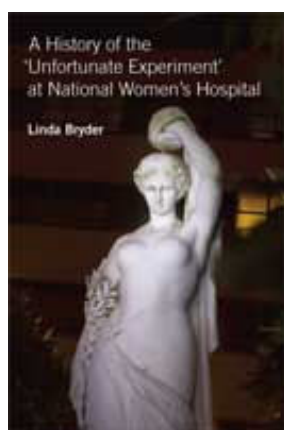
Please refer to the above links to view the corrected article.



## A History of the 'Unfortunate Experiment' at National Women's Hospital

Linda Bryer. Published by [Auckland University Press](#), August 2009.  
ISBN 978186940435. Contains 264 pages. Price \$45

This account by an Auckland historian of the events leading to the Cervical Cancer Inquiry in 1987 is based on the premise that the 'unfortunate experiment' did not occur.



Perhaps it is unreasonable to expect a historian to give much thought to the pathology that underpins clinical practice. But Dr Bryder seems not to have realised that Herb Green's approach to management stemmed from an idiosyncratic view of cervical pathology. He had noted that adult carcinoma *in situ* looked very similar under the microscope to a lesion found quite commonly in the foetal cervix. Because young girls do not get cervical cancer, Green deduced that the foetal lesion was innocuous. Therefore, he surmised, adult carcinoma *in situ* might also be harmless.

He proceeded to test this hypothesis.

While the textbooks of his day classed cervical dysplasia (with carcinoma *in situ*, or CIN3, as its most severe manifestation) as a growth disorder that could culminate in cancer, Herb Green saw it as no more than a relatively benign developmental anomaly. Its sinister appearance under the microscope was, according to this interpretation, misleading. The clearest account of his perception of the pathology was provided at the inquiry by a couple of his patients (Patient Codes 4F1 and 4S, p 33 of the Report of the Cervical Cancer Inquiry. In essence: "we are born with cancer but it lies dormant"). It was a highly unorthodox interpretation, about which Herb Green wrote relatively little.

I was surprised that Dr Bryder had chosen not to interview the people who were involved with the inquiry, and especially, not to talk to Ron Jones. He had co-authored the original 1984 paper that led to the inquiry, and he had later collaborated with David Skegg, Charlotte Paul and others, to publish data which, for all practical purposes, now comprise the Results section of the original investigation. I think he would agree that this was how things started.

For some readers, Dr Bryder's account of the social history may serve to balance the extravagant claims and hurtful accusations made in the media at the time of the inquiry. But like Herb Green's pathology, her science would have benefitted greatly from discussion with others.

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