Health policy responses to rising rates of multi-morbid chronic illness in Australia and New Zealand

Abstract

Objective: To examine current health policy in Australia and New Zealand and assess the extent to which the policies equip these countries to meet the challenges associated with increasing rates of multi-morbid chronic illnesses.

Method: We examined reports from agencies holding data relating to chronic illness in both countries, looking at prevalence trends and the frequency of multiple morbidities being recorded. We undertook content analysis of health policy documents from Australian and New Zealand government agencies.

Results: The majority of people with chronic illness have multiple morbidities. Multi-morbid chronic illnesses significantly effect the health of people in both Australia and New Zealand and place substantial demands on the health systems of those countries. These consequences are both predicted to increase dramatically in the near future. Despite this, neither country explicitly acknowledges multi-morbidity as a major factor in their policies addressing chronic illness.

Conclusion and Implication: In addition to considering policy responses to chronic illness, policy makers should explicitly consider policies shaped to address the needs of people with multi-morbid chronic illness.

Key words: chronic illness, co-morbid, chronic illness, health policy, multi-morbid, prevalence.

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In Australia and New Zealand, as in many other parts of the world, chronic illnesses pose serious threats to the health and well being of people and the communities to which they belong. These threats are made more serious by the fact that many people with chronic conditions usually have more than one illness - that is, co-morbid or multi-morbid chronic illness.

In Australia, chronic illnesses are responsible for almost 80% of the total burden of illness and injury experienced by the Australian population and this figure is predicted to increase within the next decade.[1] Similarly, in New Zealand chronic illnesses account for a significant portion of the health budget expenditure and this is expected to increase within the near future.[2] In 2003, cardiovascular disease (CVD), osteoarthritis, diabetes, chronic kidney disease and chronic obstructive pulmonary disease (COPD) made significant contributions to the total burden of chronic disease, with cardiovascular disease being the leading cause of death in both Australia and New Zealand.[1,3]

In 2005, the prevalence of multi-morbid chronic illness was estimated at 25.5% of the Australian population and 29% of people who attended a general practitioner (GP) during that year.[4] The prevalence of single chronic illnesses was much higher, with an estimated 77% of the Australian population having a long-term condition of at least six months' duration.[5] Rates of chronic illness increase with age and in 2004/05 all people aged 85 years and over

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had at least one long-term condition and most people in this age group had more than one condition, with 40% having five or more long-term conditions.[5] Similarly, the prevalence of multi-morbid chronic illness in New Zealand is increasing, with this being most marked among older New Zealanders.[6] In a study to screen for co-morbidity in three Auckland hospitals using the Charlson Index, one-third of patients were found to have co-morbid disease, with the most prevalent being chronic heart failure and COPD.[7] In a country comparison study conducted by Schoen et al. rates of multi-morbid chronic conditions were higher in Australia (63%) than in New Zealand (51%) although the reason for this was not reported.[8] The study noted that in New Zealand, 51% of New Zealand adults with hypertension, heart disease, diabetes, arthritis, lung problems, depression or cancer, had two or more of these conditions.[8]

In the past 20 years, there has been an increase in longevity and, in some respects, a reduction in the burden of disease caused by specific chronic illnesses. This has occurred as a result of some success in the prevention of CVD and COPD as well as improved treatment of CVD.[1] However, this does not apply to chronic illnesses in general and despite gains such as these, the burden of disease imposed by chronic illnesses is expected to increase significantly, with this being due to a number of factors. The incidence of diabetes type two is increasing, a trend that is expected to continue.[9] Because people live longer lives they are exposed to chronic illness risk factors over a longer period of time than before.[1] As well, new and emerging trends such as rising average blood pressure levels among children[10] and rising levels of diabetes among young people[11] point to an increase in the future burden of chronic illness. This rising burden of chronic illness will have a severe impact on health systems and is expected to be a major contributor to poor health outcomes and reduced life expectancy.[12] In order to meet these future challenges, it is imperative that health policy be designed so that it provides guidance for the effective prevention and management of multi-morbid chronic illness.

Recent qualitative research conducted as part of the Serious and Continuing Illness Policy and Practice Study (SCIPPS) has confirmed that many people with chronic illness have more than one chronic condition and that they confront significant challenges related to the coordination of care and economic burden as a result of these multiple conditions.[13] While the SCIPPS qualitative research was limited to two sites within Australia (Western Sydney and the Australian Capital Territory), literature suggests that people with multiple chronic conditions living in New Zealand face similar challenges.[6]

Currently, health policy in both countries fails to address the multiple needs of ageing populations with increasingly complex health needs related to multi-morbid chronic illness. Rather, policy focuses on individual chronic illnesses and fails to address issues related to multi-morbidity. Given the complex challenges associated with chronic illness management, especially for people with multiple illnesses, it is imperative that governments address these issues through policy that is designed to enhance the coordination and quality of care as well as access to health services. Health policies that directly address multi-morbid chronic illness have the potential to improve quality of life for patients and reduce the cost of care for the health system as well as the patient.

In this paper, we assess current health policy in Australia and New Zealand and examine the extent to which it addresses the impending demands posed by multi-morbid chronic illness.

Method

This study focused on three major chronic illness categories – respiratory disease, cardiovascular disease and diabetes – and used them to compare health policy responses in Australia and New Zealand. These illnesses were chosen because they are common and costly in both these countries. Most major chronic disease health policies in the two countries were concerned with these three disease categories, although some policies dealt with other illnesses as well such as musculoskeletal conditions, cancer and mental illness.

The data collection and analysis were carried out by four research workers with multidisciplinary backgrounds in health, policy and social sciences. A search of websites of the health policy and health data collecting agencies in both countries was conducted (Sept-Oct 2008) (New Zealand Ministry of Health, Australian Institute of Health and Welfare, Department of Health and Ageing). Twenty-three key chronic illness policy documents were identified through word searches of these websites using the terms 'co-morbid' or 'multi-morbid' AND 'cardiovascular', 'respiratory' or 'diabetes.' Snowballing (identification of data sources through reference lists and relevant websites) was also used to identify an additional 18 related health policy documents and articles.

We then conducted database searches (March 2009) of Pubmed using the terms 'co-morbid' or 'multi-morbid' AND 'cardiovascular', 'respiratory' or 'diabetes' AND 'New Zealand' or 'Australia' (searching abstracts only) to find articles that related to the objectives of this study. The Pubmed searches identified five articles and the second author deemed all five to be relevant by reviewing titles and abstracts. The total number of documents included for this review is 46. See Appendix 1.

The 46 documents were subjected to content analysis with a focus on the extent to which policies are supportive of people with multiple conditions. All references to co-morbidity and multi-morbidity in these documents were recorded, with attention being paid to the identification of multiple conditions and strategies for dealing with them in the two countries.

Results

The prevention and management of multi-morbid chronic illness in Australia and New Zealand

Any effective strategy to confront and curb the burden of chronic illness must address both prevention efforts and the actual management of chronic illness. In both Australia and New Zealand, these two components underpin chronic disease health policy.

While there are many differences in health service organisation between New Zealand and Australia, both countries have recognised the increasing challenges posed by chronic illnesses and have responded by developing policies to guide their management and to inform prevention strategies. In New Zealand, the management of chronic illness is guided primarily by three principal policy documents: The New Zealand Health Strategy,[14] The Primary Healthcare Strategy:[15] and He Korowai Oranga: Maori Health Strategy.[16] In Australia, the management of chronic illness has been largely shaped through the 2006 Chronic Disease Strategy[17] and the Australian Better Health Initiative, a joint Australian, state and territory program intended to reduce risk factors for chronic illness. In Australia, the policy focus has been single-illness oriented and in New Zealand, this has also been largely the case, with one exception being the Care Plus program launched by the Ministry of Health in 2004 to address the needs of people with two or more chronic conditions.[18]

In Australasia, New Zealand has been at the forefront in developing Primary Care Networks in the 1990s, and this has had a positive impact in the area of chronic illness management.[19] This approach has been supported in the Australian context as indicated by the implementation of the Coordinated Care Trials of the late 1990s.[20] The adoption of this approach reflects a strong commitment to the belief that the coordination of care for people with chronic illness within general practice is more effective and efficient than the patterns of uncoordinated care that continue to exist in some sectors of the health system.

The short-term episodic care of people with acute exacerbations of chronic illness is well catered for in Australia and New Zealand. However, there are well documented inadequacies in the comprehensiveness of early diagnosis,[21] continuing care, care coordination and preventive care for people with chronic illness and this is the focus of ongoing policy reform activity in both countries. The difficulties of this should not be underestimated: success will require a cultural change in the relationships between health professionals and patients, between hospitals and community services, and between professionally provided care and community development strategies.[22]

The New Zealand policy context

As well as The New Zealand Health Strategy, The Primary Healthcare Strategy and He Korowai Oranga: The Maori Health Strategy, a number of other policy documents also have a specific disease and behaviour focus, and provide guidance on the management of chronic diseases. These include Healthy Eating – Healthy Action: Oranga Kai – Oranga Pumau,[23] Clearing the Smoke: A Five-Year Plan for Tobacco Control in New Zealand (2004–2009),[24] the Diabetes and Cardiovascular Disease Quality Improvement Plan[25] and the New Zealand Cancer Control Strategy.[26]

These national policies are enacted at a local regional level and are applied across a number of services, which are planned, administered and funded at local regional level. Currently, there are 21 of these services. They are known as District Health Boards (DHBs) and have responsibility for primary and secondary care management. Within these jurisdictions, primary healthcare services are delivered principally through general practices which are linked together in Primary Health Organisations (PHOs). The PHOs enrol patients so that they receive their care through the same designated general practice. A measure of the success of this initiative is that most of the New Zealand population is now enrolled with a PHO.[27] Nevertheless, several years of observation are needed to assess whether this policy is able to contribute to a reduction in the current disparities between Maori, the indigenous people of New Zealand and non-Maori. The policy has the potential to improve health outcomes for people with multi-morbid chronic illnesses, and especially so for Maori.[28]

The New Zealand Health Strategy provides the framework within which DHBs and other health sector organisations operate. The strategy identifies 13 population health objectives that include reducing smoking, improving nutrition, reducing obesity, increasing the level of physical activity and reducing the incidence and impact of cancer, cardiovascular disease and diabetes. As well, it makes special mention of the need to reduce health inequalities, particularly in relation to Maori, Pacific people and people living in highly deprived neighbourhoods.[14]

A second important policy document in the management of chronic illness is the Primary Healthcare Strategy, which signalled a move from episodic care to a more coordinated multidisciplinary approach to primary healthcare, particularly in response to chronic conditions.[15] This policy document led to the establishment of PHOs, which are expected to identify and address the needs of those people in their jurisdictions who have poor health outcomes and confront difficulties in accessing health services. The implementation of this policy was combined with an increase in government funding for primary healthcare so that there would be a reduction in cost and a subsequent removal of cost as a barrier to healthcare. This reorientation of healthcare has significant implications for people with multi-morbid chronic illnesses since it means that these patients can gain their care and support in a more coordinated way than was previously available.

For Maori, the major policy document is He Korowai Oranga: Maori Health Strategy.[16] This document supports the strengthening of whanau (family) networks as a pathway to enhanced physical, spiritual, mental and emotional health of people who make up these networks. This holistic approach to the health and well-being of indigenous peoples is likely to make an important contribution to the effective management of chronic illnesses in indigenous communities in the expectation that this will contribute to a reduction of the health disparities that currently exist between Maori and non-Maori. Moreover, this approach to the reduction of disparities may provide a useful model for Australian policy makers in their efforts to confront the impact of chronic illness among Aboriginal and Torres Strait Islander people.

The Australian policy context

Australia is a federation comprising six States and two Territories, each with its own governing body. The States and

Territories provide public health services through public hospitals and a variety of community and primary healthcare services. The Federal Government funds private medical services in primary and acute settings largely through a fee-for-service arrangement. The Federal Government also provides significant funding to the States and Territories towards the operation of the public hospitals and the nation's universal healthcare system, Medicare Australia.[1] There is a resulting complex interplay between funding, policy and service delivery that inhibits coordination. Some health policies arise at a federal level, others at a state or territory level and all require action and implementation at a local level in response to often different policy approaches and objectives. This system poses challenges to consistency and co-ordination of care as each State and Territory has individual policies and programs in place, many of which do not easily translate across borders, a characteristic of the Australian health system that was highlighted in a recent enquiry into accountability within the health system.[29] Recent years have seen the launch of several Commonwealth policies aimed at increasing consistency and co-ordination of care in Australia, most notably the 2005 National Chronic Disease Strategy (NCDS) and the National Service Improvement Frameworks developed through federal/state/territory collaborative processes and released by the Australian Department of Health and Ageing.[30] The NCDS is supported by the National Action Plan on Mental Health and the Australian Better Health Initiative, both of which were launched by the Council of Australian Governments (COAG). These national policies provide the basis for policies, programs and services that are enacted at Federal and State and Territory levels. An example of a program emerging at Federal level from the NCDS and the COAG initiatives is the National Primary Care Collaborative program.[30] Examples of State and Territory policies and programs that have emerged include the ACT Diabetes Strategy and the Primary Care Partnerships Strategy in Victoria.[31]

The NCDS contains agreed national directions for managing prevention and care in chronic disease, established by the National Health Priority Action Council. It comprises five frameworks specific to the major contributors to chronic disease burden: asthma, cancer, diabetes, heart, stroke and vascular disease; and osteoarthritis, rheumatoid arthritis and osteoporosis. The NCDS provides a foundation on which to build future chronic disease policy as well as improved communication and collaboration between members of the health community to improve the continuity of care for patients and to reduce avoidable hospital admissions. The NCDS emphasises a need to increase patient self-management, patient education and decision making, and patient ability to act on risk factors. Multi-morbidity issues are only addressed in the NCDS indirectly and no mention is made of management issues specific to multi-morbidity. While the NCDS has provided a much-needed focal point for the management of chronic conditions in Australia, five years on, there are still indications that primary care policies and initiatives remain fragmented, inconsistent and single-illness oriented.[13,32]

Future directions and international health systems perspective

The most recent general elections in Australia and New Zealand led to a change of government in both countries with Australia now being led by a Labor Government after 11 years of conservative leadership and with New Zealand now being led by a National Government after nine years of social democrat leadership. This change of political direction in both countries may herald new developments in the management of chronic illness. In Australia, there is expected to be renewed emphasis on the development and implementation of the Primary Healthcare Strategy. A number of reports such as those released by the National Health and Hospitals Reform Commission, the Preventative Health Taskforce as well as the Australian Government report into Primary Healthcare have signalled the need for significant restructuring of the health sector, with one desired outcome being the inclusion of strategies to deal more effectively with people with multiple illnesses.[33-35]

In New Zealand, there are early indications that health system reform will be a major component of the new government's agenda in health. In a recent speech to the Royal New Zealand College of General Practitioners, the Minister of Health emphasised the importance of clinical leadership, patient focused care and workforce development as key ingredients of an improved health system that is capable of addressing future challenges within the New Zealand health sector. As yet, no new specific policies have been developed for the management of chronic illnesses but these priorities provide a worthy starting point from which to address the growing demands that chronic illnesses will place on the health system, clinicians and communities.

Internationally, people with chronic illnesses confront a similar range of challenges, with the seriousness of these challenges varying from one country to another. A recent report from the World Health Organization emphasised the need to provide enhanced primary healthcare around the world in order to eliminate inequities that currently exist and which contribute to ongoing poor health outcomes.[12]

Challenges associated with chronic illnesses in developed countries include deficiencies in discharge plans when patients leave hospital, lack of coordination of services, and a lack of strategies to engage patients in the self-management of their conditions.[8] In the US, for example, the health of people with multi-morbidity is placed at risk of poor health outcomes as a result of delays in access to primary care, poor coordination and lack of affordable care, each of which is higher in the US than in other comparable countries, including New Zealand and Australia.[8] Facilitators to good healthcare for people with multi-morbidity include a strong and affordable primary healthcare system such as that which is in place in New Zealand, The Netherlands and the UK where people are required to register with a single general practitioner.[8] This arrangement contributes to a greater degree of coordinated care as well as relatively quick access to care, both of which contribute significantly to enhanced health outcomes, especially for people with multiple chronic illnesses.

Implications

Increasing prevalence of chronic illness, especially when it includes multi-morbidity, is associated with a vicious cycle of increasing intensity, with more and more time spent on healthcare and preventive activities. This can often result in a reduced likelihood of optimal treatment along with a lack of compliance with preventive strategies, leading to a more rapid rate of increase in morbidity. This cycle, mediated by patient inability to respond to demands on their time, is well-understood by health professionals and patients in their consultations, but has rarely been the subject of chronic disease policy.[37,38] An exception is the tentative moves toward improved scheduling of patient appointments through the development of multidisciplinary clinics (e.g. the ACT Community Health Diabetes Periodic Review Service) and information technology based appointment scheduling reforms (e.g. the ACT Health Outpatients SMS reminder service, and internet based appointment scheduling in the UK).

In both Australia and New Zealand, this situation is exacerbated by an institutional structure that has been developed and built up over many decades and has yet to respond effectively to the recent wave of chronic multi-morbid illnesses, aspects of which have reached epidemic proportions.[36] Within this system, a profession based on specialities, sub-specialities and hierarchies of power has been a major contributor to an inflexible and fragmented system, which has a single disease focus and as a result, presents significant barriers to addressing multi-morbid chronic illnesses. An interdisciplinary, team-based approach that is carefully coordinated across diverse components of the health system is one solution identified in the policies that could make a substantial contribution to the effective management of chronic illness.

For this approach to work, however, government policy agencies need to develop and implement policies for addressing multi-morbid chronic illness. Currently, these policies are not available in a cohesive and coordinated way. In both Australia and New Zealand, while a multiple risk factor reduction approach to both primary and secondary prevention has gathered momentum, policy for chronic disease management continues to have a single illness orientation despite the evidence, which shows that most people with chronic illness are affected by multi-morbidity and that more effective healthcare will result when different combinations of illnesses are treated together rather than in isolation. To be effective, national policies need to focus on a range of factors that include the coordination of social and health funding, the coordination of primary and secondary healthcare, integrated information systems, workforce development, governance as well as community consultation and partnerships. For healthcare professionals to be able to respond effectively to the rising rates of multi-morbidity, it is essential that policies and guidelines on effective management of multiple chronic conditions be made available as a matter of urgency, along with implementation approaches that recognise the need for cultural change within health systems and services.

More broadly, there is a particular policy challenge in recognising and responding to multi-morbidities in chronic disease where the co-morbid disease operates to limit evidence-based interventions in the area of another chronic disease. For example, depression can lead to reduced compliance with medical care and reduced motivation to take preventive measures, producing a similar vicious cycle to that described above. As an example, reactive airways disease or cognitive impairment are relative contraindications for the use of beta blockers for people with CVD, because of different and unexpected interactions. Guidelines that describe the care and management of people with multi-morbid chronic illnesses are an essential component of a health system that is capable of responding effectively to demands in the future.

From a policy perspective, the diverse interactions associated with both co-morbidity and multi-morbidity pose significant but not insurmountable obstacles. Furthermore, the evidence base supporting interventions at the biological, health service and system level is slow to mature because of the wide variety of specific sets of interacting diseases, and the methodological difficulties in investigating them. The collaboration of people across disciplines is needed to advance significant cultural change within this field and the wider health system. Nevertheless, the impending urgency of multi-morbid chronic illnesses provides a strong incentive for health systems and policy agencies to implement the necessary changes.

Australia and New Zealand, together with other countries around the world, can expect to face severe challenges in the future as they confront the challenges associated with chronic illnesses, with these challenges being compounded when we consider that both countries have a high prevalence of multi-morbid chronic illnesses. Currently, health policy in these two countries fails to acknowledge the severity of the problem posed by multi-morbidity and this means that the health system is likely to struggle to provide effective care, with this having severe negative impacts on people who have multi-morbid chronic illnesses.

This paper has identified a number of important issues related to health policy with regard to co-morbidity and multi-morbidity. As we move into the future with the assurance of increasing rates of chronic illnesses, we need to take strong and assertive action to counter the negative impacts of this epidemic. By addressing these issues in health policy, we lay an important foundation for the development and implementation of well-focused strategies that will confront the challenges that derive from multi-morbidity and ensure beneficial health outcomes for people living with chronic illnesses. Australia and New Zealand are in a position to take a strong leadership role is this area of health policy development for the good of their populations, and in so doing, this will provide a worthy example for other countries around the world.

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Competing interests

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Appendix 1: Publications included for review of health policy responses to rising rates of multi-morbid chronic illness in Australia and New Zealand.

Publication details	Type of publication	Search used to identify publication
Australian Government Department of Health and Ageing. Australian Better Health Initiative: promoting good health, prevention and early intervention. Canberra: Australian Government Department of Health and Ageing; 2006.	Government document	Government website
Silagy C. The Australian Coordinated Care Trials: Final technical national evaluation report on the first round of trials. Canberra: Commonwealth of Australia; 2001.	Government document	Government website
Australian Government Department of Health and Ageing. Australian Primary Care Collaboratives. Canberra: Australian Government Department of Health and Ageing; 2006.	Web page	Government website
Australian Institute of Health and Welfare. Australia's Health 2008. Canberra: AIHW; 2008.	Government document [book]	Government website
Australian Institute of Health and Welfare. Chronic diseases and associated risk factors in Australia, 2006. Canberra: AIHW; 2006.	Government document	Government website
Ministry of Health. Clearing the Smoke: a five-year plan for Tobacco Control in New Zealand (2004-2009). Wellington: Ministry of Health; 2004.	Government document	Government website
Ministry of Health. Diabetes and Cardiovascular Disease Quality Improvement Plan. Wellington: Ministry of Health; 2008.	Government document	Government website
Australian Bureau of Statistics. Diabetes in Australia: A Snapshot, 2004-05. Canberra; 2006.	Government document	Government website
Ministry of Health. He Korowai Oranga: Maori Health Strategy. Wellington: Ministry of Health; 2002.	Government document	Government website
Ministry of Health. Health eating - Healthy Action. Oranga Kai - Oranga Pumau: A strategic framework 2003. Wellington: Ministry of Health; 2003.	Government document	Government website
Ministry of Health. Health Targets: Moving towards healthier futures 2007/08. Wellington: Ministry of Health; 2007.	Government document	Government website
National Health Committee. Meeting the needs of people with chronic conditions. Hapai te whanau mo ake ake tonu. Wellington: National Advisory Committee on Health and Disability; 2007.	Government document	Government website
Ministry of Health. Mortality and Demographic Data 2002 and 2003. Wellington: Ministry of Health; 2006.	Government document	Government website
National Health Priority Action Council. National Chronic Disease Strategy. Canberra: Australian Government Department of Health and Ageing; 2006.	Government document	Government website
Commonwealth of Australia. National Diabetes Strategy, 2000-2004. Canberra: Commonwealth Department of Health and Aged Care; 1999.	Government document	Government website
Ministry of Health. The New Zealand Cancer Control Strategy. Wellington: Ministry of Health; 2003.	Government document	Government website
Ministry of Health. The New Zealand Health Strategy. Wellington: Ministry of Health; 2000	Government document	Government website
Ministry of Health. A Portrait of Health. Key Results of the 2006/07 New Zealand Health Survey. Wellington: Ministry of Health; 2008.	Government document	Government website
Ministry of Health. A Portrait of Health: Key results of the 2002/03 New Zealand Health Survey. Wellington: Ministry of Health; 2004.	Government document	Government website
Ministry of Health. The Primary Healthcare Strategy. Wellington: Ministry of Health; 2001.	Government document	Government website
Ministry of Health. Primary Healthcare: Care Plus. Wellington: Ministry of Health; 2007 [updated 10 October 2007];	Government document	Government website
Ministry of Health. Te Rau Hinengaro: The New Zealand Mental Health Survey. Wellington: Ministry of Health; 2006	Government document	Government website
House of Representatives. The Blame Game Report on the inquiry into health funding. Canberra: Commonwealth of Australia; 2006.	Government document	Government website
Sorensen R, Iedema R, Severinsson E. Beyond profession: nursing leadership in contemporary healthcare. *Journal of Nursing Management* 2008;16(1):535-44.	Journal article	Snowballing

Appendix 1: Publications included for review of health policy responses to rising rates of multi-morbid chronic illness in Australia and New Zealand. Continued.

Publication details	Type of publication	Search used to identify publication
Britt HC, Harrison CM, Miller GC, Knox SA. Prevalence and patterns of multimorbidity in Australia. *MJA* 2008 21 July 2008;189(2):72-7.	Journal article	Snowballing
Rea H, Kenealy T, Wellingham J, Moffitt A, Sinclair G, McAuley S, et al. Chronic care management evolves towards integrated care in Counties Manukau, New Zealand. *NZ Med J*, 2007;120(1252).	Journal article	Snowballing
Chew M, Van der Weyden M. Chronic illness: the burden and the dream. *MJA* 2003;179(1):229-30.	Journal article	Snowballing
Bodenheimer T. Coordinating care: a perilous journey through the healthcare system. *N Engl J Med* 2008;358(10):1064-71.	Journal article	Snowballing
Wellingham J, Tracey J, Rea H, Gribben B. The development and implementation of the Chronic Care Management Programme in Counties Manukau. *NZ Med J*, 2003;116(1169).	Journal article	Snowballing
National Health and Hospitals Reform Commission. A Healthier Future for All Australians - Interim Report. Canberra: Commonwealth of Australia; 2009.	Government document	Snowballing
Schoen C, Osborn R, How SKH, Doty MM, Peugh J. In Chronic Condition: Experiences Of Patients With Complex Healthcare Needs, In Eight Countries. *Health Affairs*; 2008 November 13; w1-w16.	Journal article	Snowballing
Glasgow N, Zwar N, Harris M, Hasan I, Jowsey T. Australia In: Nolte E, Knai C, McKee M, editors. Managing Chronic Conditions: Experience in eight countries. European Union: European Observatory on Health Systems and Policies; 2008.	Book chapter	Snowballing
Australian Bureau of Statistics. National Health Survey 2004-05. Canberra: ABS; 2006.	Government document	Snowballing
Baum F. *The New Public Health: an Australian Perspective*. Melbourne, VIC: Oxford University Press; 2008.	Book	Snowballing
Hefford M, Crampton P, Foley J. Reducing health disparities through primary care reform: the New Zealand experiment. *Health Policy* 2005;72(1):9-23.	Research article	Snowballing
Russell L, Boxall A-M. Working together the key to care. Australian Policy Online [serial on the Internet]. 2008; (21 July 2008): Available from: http://apo.org.au/commentary/working-together-key-care.	Research article	Snowballing
World Health Organization. The World Health Report 2008, "Primary healthcare – now more than ever". Geneva: World Health Organization; 2008.	Report	Snowballing
Jewell, C.J., Bero, L.A. "Developing Good Taste in Evidence": Facilitators of and Hindrances to Evidence-Informed Health Policymaking in State Government. *The Milbank Quarterly*, Vol 86, No.2, 2008 (pp.177-208).	Research article	Snowballing
McAvoy, B.R., Coster, G.D. General practice and the New Zealand health reforms – lessons for Australia? *ANZHP* 2005, 2:26 (pp1-11).	Research article	Snowballing
McDonald, J. Harris, M.F., Cumming, J., Powell Davies, G., Burns, P. The implementation and impact of different funding initiative on access to multidisciplinary primary healthcare and policy implications. *MJA*, Vol 188: 8 (S69-S72) 2008.	Research article	Snowballing
Cumming, J., Gribben, B. Evaluation of the Primary Healthcare Strategy: Practice Data Analysis 2001-2005. Health Services Research Centre; 2007.	Report	Snowballing
Baade PD, Fritschi L, Eakin EG. Non-cancer mortality among people diagnosed with cancer (Australia).*Cancer Causes Control* 2006 Apr;17(3):287-97.	Research article	Pubmed
Davis P, Lay-Yee R, Fitzjohn J, Hider P, Schug S, Briant R, Scott, A. Co-morbidity and health outcomes in three Auckland hospitals. *N Z Med J* 2002 May 10;115(1153):211-5.	Research article	Pubmed
McDonald SP, Russ GR. Burden of end-stage renal disease among indigenous peoples in Australia and New Zealand. *Kidney Int Suppl* 2003 Feb(83):S123-7.	Research article	Pubmed
Senior H, Anderson CS, Chen MH, Haydon R, Walker D, Fourie D, Llilis, S, Gommans, J. Management of hypertension in the oldest old: a study in primary care in New Zealand. *Age Ageing* 2006 Mar;35(2):178-82.	Research article	Pubmed
Walpola HC, Siskind V, Patel AM, Konstantinos A, Derhy P. Tuberculosis-related deaths in Queensland, Australia, 1989-1998: characteristics and risk factors. *Int J Tuberc Lung Dis* 2003 Aug;7(8):742-50.	Research article	Pubmed