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**Title:**

**How Nurses Address the Burden of Disease in Remote or Isolated Areas in Queensland**

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## **Abstract**

Nurses have a role in addressing the burden of disease in remote or isolated areas of Queensland. Activities to prevent chronic and acute disease and injury, while promoting a health lifestyle, are a part of nurses' work that help to meet the goal of keeping a population healthy. The findings presented in this article, as part of a broader study into the role of nurses working in remote or isolated areas of Queensland, describe how registered nurse in these locations address local burden of disease. Participants discussed the increased workload that engaging in health promotion and disease prevention activities creates for them when providing health care services for their communities. Establishing stronger working relationships with visiting members of the primary health care team, while addressing organizational barriers, may have a significant impact on the nurses' ability to help reduce the burden of disease in these areas.

**Key words:** burden of disease, health promotion, isolated areas of Queensland, rural and remote nursing

## **Introduction**

Burden of disease refers to the years of life lost as a result of premature death and disability (Begg et al., 2007). Every episode of a person experiencing either chronic disease or an acute episode adds to the total burden of disease in a given area. In Australia however, it is difficult to get a clear picture of the extent of the burden of disease because of its varied nature (Australian Institute of Health and Welfare, 2008a) a reliance on the self-reporting of physician-diagnosed diseases (Must et al., 1999), and disparities between States and Territories in data collection. Information about burden of disease and health care conditions that have a high impact on particular populations is important for effective allocation of health resources (Australian Institute of Health and Welfare, 2008a).

In Queensland, challenges that face primary health-care service providers include inadequate focus on the prevention of chronic disease and patient self-management strategies, coupled with a need to improve workforce capacity (Wilson, 2008). It is reported in the literature that healthcare professionals, particularly nurses, are left to manage difficult situations with few resources, thus adding to their professional workload (National Rural Health Alliance, 2002).

From a policy perspective, there is agreement that specific interventions to address the burden of disease in a population:

*should target diseases, conditions and determinants of health which pose significant threat and are potentially preventable* (Harper et al., 2004, P.5).

As part of a broader study, this article describes how nurses working in remote or isolated areas of Queensland experienced their role in addressing the local burden of disease. An analysis of findings generated in a multiple case study is presented in the context of the literature.

## **Literature Review**

A review of the literature using the keywords listed for this paper failed to locate any studies that identified the role of nurses in addressing the burden of disease in remote or isolated areas of Queensland. It was found however, that in order for nurses more generally to address burden of disease in their community, a multi-strategy approach

is required that includes: addressing equity of access to health care, focusing on both risk and protective factors, and promoting different sectors of the health care system working together (Harper et al., 2004).

Total burden of disease increases with remoteness from major urban centers. The health of people living in rural and remote areas of Australia is poorer than those in metropolitan areas (Strong, Trickett, Titulaer, & Bhatia, 1998), with people living in these communities having a 26.5% greater burden of disease than populations in major cities (Begg et al., 2007).

International studies reveal that a large percentage of patients with chronic diseases do not receive effective therapy or have control over their illnesses (Østbye et al., 2005; Rothman & Wagner, 2003; Wagner et al., 2001). The greatest contributors to Queensland's burden of disease are chronic diseases such as diabetes, asthma (Australian Institute of Health and Welfare, 2008a, 2008b, 2007), and arthritis (Access Economics, 2001) all of which rank among the seven national health priority areas (Australian Bureau of Statistics, 2006a). In remote or isolated areas of Queensland, cardiovascular diseases, road traffic accidents, injury, chronic obstructive pulmonary disease, diabetes (Harper et al., 2004; Jirojwong, Prior, & Wowan/Dululu Community Volunteer Group, 2005) and suicide (Caldwell, Jorm, & Dear, 2004) are leading causes of death.

Risk factors such as smoking, alcohol consumption (Rehm et al., 2003), inadequate fruit and vegetable consumption (Begg et al., 2007; Harrison et al., 2007; Mathers, Vos, Stevenson, & Begg, 2001), physical inactivity, hypertension, high blood cholesterol, and obesity also attribute to high mortality rates (Andreasyan, Hoy, & Kondalsamy-Chennakesavan, 2007) with a doubling of resultant hospitalisations projected over the coming decade (Wilson, 2008). The burden of disease for individuals increases with more severe obesity because of their high susceptibility to develop a second and third morbidity (Must et al., 1999). The burden of chronic disease also increases with the high cost of healthy food, particularly among people of low socioeconomic status (Harrison et al., 2007). Prevention and effective management of chronic diseases and promotion of healthy habits are best addressed through an effective and ongoing relationship between health care provider and patient (The Canadian Nurses Association, 2005) a situation in which nurses can play major role.

Queensland has the largest indigenous population after New South Wales including over 60% of the total Torres Strait Islander population (Australian Bureau of Statistics, 2006b). In Australia, Indigenous people have higher rates of hospitalisations and a greater prevalence of chronic disease, in particular renal diseases (McDonald & Russ, 2003). Indigenous Australians have a lower life expectancy than non-Indigenous Australians (Andreasian & Hoy, 2009; Australian Bureau of Statistics, 2006a), with a 2.5 times greater burden of disease than the total Australian population (The Australian Bureau of Statistics and Australian Institute of Health and Welfare, 2008).

In 2003, the burden of disease and injury for Indigenous Australian children was 21% of the total burden of disease and injury for all Indigenous Australians (The Australian Bureau of Statistics and Australian Institute of Health and Welfare, 2008). Rates of chronic health problems in Aboriginal and Torres Strait Islander children in remote Far North Queensland reflect the broader Indigenous Population and are alarmingly high, which has created a situation that requires active public health interventions (Rothstein, Heazlewood, & Fraser, 2007).

A comprehensive primary health care approach is the most effective way to address Indigenous health needs in Australia (Hunt & Geia, 2002; Struber, n.d.), in which adequate resources and well supported staff are essential (Hoy, Kondalsamy-Chennakesavan, & Nicol, 2005). Such an approach will go a long way towards addressing the total burden of disease in remote areas. A study in the Northern Territory found less than expected mortality and morbidity rates in an Aboriginal cohort, which was contributed to by the standardized nature of primary health care services provided (Rowley et al., 2008). Factors that contributed to the good health of this cohort included community-controlled social and health care delivery, successful prevention of chronic illness, and lower rates of obesity and smoking. The Federal Government has commissioned a National Primary Health Care Strategy that we hope will address many of the issues that we identified in the literature. In the future, such a strategy will place much more importance on addressing the burden of disease in Australia (The Australian Government, 2008). In the meantime, it is of value to understand the role of health care professionals in identifying and managing the burden of disease in remote and isolated communities.

## **Method**

The broader research design of which this investigation is part, used a multiple-case study to examine the role of registered nurses in remote or isolated areas of Queensland (Mills, Birks, Francis, Coyle, & Al-Motlaq, 2008). Remote or isolated health care services in Queensland have been grouped into three practice settings for nurses, that in turn formed the cases investigated.

1. Case 1 – Primary health care clinics in Indigenous communities;
2. Case 2 – Primary health care with overnight bed capacity in Indigenous communities; and
3. Case 3 – Outpatients clinics/small acute services in non-Indigenous communities.

Ethics approval was gained from the research team's University ethics committee. Written consent was obtained from participants prior to commencing fieldwork in 2008. Data were generated through semistructured individual and focus group interviews with a sample of 35 registered nurses in three cases drawn from five geographical areas across Queensland. Stake's method of multiple-case study design analysis (2006) was used to identify common themes. Findings from the multiple-case study that relate to the role of the registered nurse in addressing the burden of disease are presented for discussion in the following sections.

## **Results**

While participants in all three Cases identified preventative primary health care as a high priority for the communities they worked with, they recognised that their actual work was in the form of secondary- and tertiary- level care. Largely functioning using an interventionist model of secondary health care, participants provided a 'bandaid' service and defined the type of care they provide as reactive rather than proactive in nature. Recognising an imbalance in the model of service delivery and care, one Case 3 participant stated;

*I think we've got the back end of primary health care, which is managing disease process - the disease process - fairly under control with the chronic disease doctor one day per week. What we don't do well is the early part of primary health care...there's so many environmental issues that contribute to health issues that we see on a regular basis.*

Diseases and conditions that participants saw most often in their work are summarised in Table 1. However, variations existed between the 3 cases which is reflective of the known data about the burden of disease for Aboriginal or Torres Strait Islander people

Table 1: Common presentations reported by the participants

<b>Classification</b>	<b>Disease</b>
Chronic diseases	Diabetes CVD RHD and COAD/asthma
Mental health issues	Depression, suicide and drug-induced psychosis
Dental problems	-
Infectious conditions	Strap nephritis, skin infections, gastroenteritis, ENT infections and STIs
Accident/injury/trauma	-
Abuse disorders	Alcohol, marijuana and gambling

In all Cases participants identified the need for a greater focus on health education and promotion that targeted collectives as opposed to individuals. Presently, they pointed out, the promotion of health and education was opportunistic rather than strategically planned. This supports the other findings that describe how registered nurses in remote or isolated areas consider the promotion of health and the provision of health education as being the business of visiting teams that focus on chronic disease:

*We keep people's health on a level but we don't encourage self management very well.*

*I've backed off a bit because I found that people get too much...different advice...well if the diabetes educator's got a degree in diabetes perhaps she should be left to do the educating and I'll do the organising.*

Several Case 1 and 3 participants spoke of strategies that they use to promote community-based health care. Examples provided were of running clinics in public places and/or during special community events such as rural expos. One Case 3 participant told of how she monitored 'the community' particularly during times of hardship, such as drought. This was particularly important as individuals were more



prone to exacerbations of acute mental illness during times of uncontrollable natural disasters.

Case 3 participants felt underprepared to include more health promotion and prevention in their role, even though they recognised the importance of working more closely with the wider community to promote health, particularly from a population health perspective.

*We are not good on actively doing health promotion, but doing health education as inpatients, we do that well.*

*I'd like to see people made to clean up...it's difficult to contemplate [as] it would be quite rude to say 'your house is dirty...' I'm not sure our role extends that far.*

Some Case 3 participants argued that they did not have time to take on the additional work that using a primary health care approach to their practice would entail. These participants prioritised acute care and trauma services over health promotion and preventative health care.

*As an individual and a team we don't do our role effectively, we don't necessarily have the opportunity – we do brief interventions with mums and kids...broadly we don't do too much prevention and promotion of health. We get caught up with see, doing, looking after our walk-ins and follow on and what that entails.*

There were very few data that described registered nurses using a systematic approach to chronic disease management in their communities. Participants in Case 3 discussed the need for a 'proper recall system' to facilitate such care. Working within an interventionist model of secondary health care led to registered nurses managing the outcomes of unforeseen events and medical crises that resulted from inadequate or absent preventative care. This was different in Cases 1 and 2 however, as diabetes management and teaching chronic disease self-management was considered to be an important part of nursing work in Indigenous communities.

*Diabetes and all its associated problems, hypertension, obesity. It's got so many complications it's a challenge, self management's a challenge...lots of resources needed to be able to spend time – education, self-confidence in self-monitoring, checking their feet, understanding why they need three monthly pathology.*

For registered nurses, managing the burden of disease in relation to chronic diseases was made more difficult by poor communication from tertiary facilities back to smaller primary health care facilities. In saying this, communication varied between patients who had diabetes and those who did not, with the management of diabetic patients being more integrated. Overall though, communication regarding discharge planning was problematic in all cases:

*Don't have cardiac rehab – when they come back from Cairns or Townsville...often they're back in town and we don't even know they're back – so no opportunity to follow them up...Diabetes services we do reasonably well – endocrinologist visits every 6 weeks – always on the end of the phone – they're very, very good.*

Managing health-care issues associated with harmful use of alcohol and other drugs were also identified as part of the role of the registered nurse. As one Case 3 participant put it:

*If they didn't smoke and they didn't drink, I wouldn't have a job. But I'm absolutely [serious]. Alcohol is the biggest curse to this small country town.*

## **Discussion**

As outlined in the literature review, burden of disease in remote or isolated areas of Queensland is high with chronic diseases being the greatest contributors. The poor status of Indigenous health plays a considerable role in this elevated burden. Disease survival for Indigenous Australians might be worse than for other Australians, as a study of lung cancer showed (Coory, Green, Stirling, & Valery, 2008). Potential causes for this difference was treatment diversities and the presence of other co-morbidities such as diabetes. Findings presented in the preceding section support this assertion. Even though strategies for the prevention of injury and disease and the promotion of health and well-being are recognized as important activities to reduce the burden of disease (Vos, Barker, Stanley, & Lopez, 2007), findings discussed above suggest that nurses working in remote or isolated areas of Queensland do not routinely engage in such activities

The high prevalence of chronic disease in remote or isolated areas is increasing the workload of nurses and other health care professionals. In order to meet this need, a combination of secondary and tertiary models of service delivery and care are being provided using a reactive approach. In the future, nurses working in a broader local or

virtual team will need to shift the emphasis of health care to a proactive, preventative primary health care approach (Keleher, 2009). In saying this however, it is recognized that the effective management of chronic diseases requires an ongoing balance of services across the care continuum (Wilson, 2008).

Given the importance of health promotion in decreasing the burden of disease, findings from the multiple case study presented here indicated that nurses do not strategically and routinely plan health promotion and education activities. Factors that influenced this situation were high workloads and a lack of educational preparation including time and resources to access available continuing professional development opportunities. There is enormous potential for nurses to be leaders in health promotion (Gott & O'Brien, 1990), however to do so they need to be better prepared. In Queensland opportunities for effective management of chronic diseases include reorganisation and development of the skills of the current workforce including nurses (Wilson, 2008) in addition to improving allocation of available resources to reduce major causes of disease burden and decrease health differences between populations (Michaud, Murray, & Bloom, 2001). Lauder, Sharkey, and Reel (2003) argue that nurses will be the cornerstone of future primary care services, therefore a fundamental reorganization of primary health care practices in remote and rural Australia needs to be undertaken. This reorganisation includes considering enhancing the capacity of remote-area nurses through continuing professional development and providing them with more resources. It is also important to consider the individual needs of nurses in identifying and managing the burden of disease in their remote and isolated communities through establishing stronger working relationships with members of primary health-care team and addressing organizational barriers.

## **Conclusion**

Findings from this multiple-case study describe how registered nurses in remote or isolated areas of Queensland have an actual or perceived inability to implement health promotion and disease prevention activities. The study exposes the need to reconsider priorities for models of service delivery. Registered nurses in remote or isolated areas appreciate the importance of understanding the communities with whom they work but must also possess the skills and capacity to develop and modify their practice according to changing needs.

High burden of disease is a reality in remote or isolated areas of Queensland. Nurses' ability to address and reduce the increased burden of disease is limited by how they conceptualize and operationalize their role. Although further studies are necessary to support and enhance these findings, clearly more resources are required to enact these changes. Government policy and models of service delivery require a paradigm shift to promote a stronger primary health care approach to practice.

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