

Building the rural dietetics workforce: a bright future?

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Introduction

Dietitians play an important role in the provision of services to address the chronic disease epidemic in rural Australia.¹ The lack of detailed workforce data especially for rural and remote areas is an issue for the dietetics profession, as the development of a best practice dietetic workforce is reliant on adequate data about the current and projected workforce numbers and employment trends.² Previous research has reported on the dietetics workforce across sites in rural New South Wales (NSW)² and as a small subset of allied health workforce surveys.³ Census data has also provided some data for comparison across Australia in rural and metropolitan areas.²

The dietetics profession has grown and diversified over the past 20 years² with the expansion of the private practice sector⁴ and *ad hoc* funding opportunities for largely project and short-term positions.¹ Despite this the profession is under-represented in rural and remote areas compared with urban areas.² It has previously been reported 32% of the rural population is being serviced by 24% of the workforce¹, of which approximately one quarter are new graduates.² The dietetics profession is relatively small, young and female dominated, which may pose issues with recruitment and retention.² Problems experienced by the workforce include high turnover, a fragmented part-time workforce and disruptions to career, and as a result, a fragmented workforce.⁴ National data show that approximately 50-60% of dietitians work full-time hours and there is a trend towards obtaining full-time work through multiple part-time jobs.² Given the fragmented nature of existing workforce data, a clear picture of the dietetics workforce in Australia remains to be elucidated.²

Previous research has found that dietetic services in rural areas of NSW are typically based in the public sector, with limited private practice services available.⁵ The largest proportion of the workforce continues to be hospital-based clinical dietitians⁴, however in recent years the dietetics workforce has grown in the areas of industry and private practice.^{6,9} According to the Dietitians Association of Australia (DAA) membership database between 2005 and 2007 the number of dietitians in private practice in Australia increased by 35%⁴ This shows the growing diversification of the profession beyond the traditional clinical role², but how much of this growth is in rural areas is unknown.⁵

A range of factors identified as potential barriers or facilitators to the development of a best practice dietetic service in rural areas have been identified and a theoretical model proposed.¹⁰ Contributing factors include funding and management, whilst direct influences are based on the number of positions, recruitment and retention issues, service organisation and delivery methods and overall resourcing.¹⁰ It is acknowledged the number of dietitians is not solely responsible for the provision of best practice dietetic services, however, it is a direct influence and will be the focus of this paper.

Issues with dietetic workforce data

Dietetic workforce data is complicated by a lack of consistent reporting, due to voluntary membership of the Accredited Practising Dietitian (APD) program and variable terminology being used to describe the work undertaken by members of the profession.² Census data reports the number of 'practising dietitians' and the number of people with a 'highest qualification in nutrition and dietetics'.^{11,12,13,14} Individuals who report their occupation as a 'dietitian' or 'nutritionist' are recorded as a 'dietitian' by the Australian Standard Classification of Occupations (ASCO).¹⁵ This classification is not equivalent to DAA requirements for a dietitian to have recognised qualifications or APD status. The inclusion of nutritionists in this group may lead to an over-estimation of the actual number of 'practising dietitians' reported by ABS data. The data provided by the ABS are altered to protect the privacy of individuals resulting in inaccuracies for smaller rural and remote sites where sole practitioners exist.¹⁶ This leads to discrepancies with the totals for some of the data.

Quality dietetic services

Adequate and appropriate nutrition and dietary advice is crucial to the prevention and treatment of numerous nutrition-related health conditions, including diabetes, obesity, cardiovascular disease and some types of cancers. Poor nutrition contributes significantly to the burden of disease and cost of health care in Australia.^{17,18} Dietitians are the nutrition experts who are able to provide a range of services in the public and private sector at tertiary, secondary and primary levels of health care.^{19,20} Given the higher prevalence of conditions amenable to dietary prevention or requiring dietary management such as diabetes, cerebrovascular disease and obesity in rural and remote Australia²¹ there is an important role for dietitians in the management of these chronic diseases. There is also evidence that the cost of healthy food choices is greater in rural areas, with 20-40% of a welfare income required for the cost of a Healthy Food Basket.²² A lack of dietetic services and healthy food options is likely to contribute to the ongoing poorer health outcomes experienced in rural areas, particularly in relation to chronic diseases.

A quality dietetics service has been defined as one that provides consistent treatment with identical standards of care or as a service that meets or exceeds the expectations of customers.²³ While adequate staffing is needed for a quality service, high staffing ratios are not necessarily an indicator of a quality dietetic service as the actual service provided is not defined by the number of staff.²⁴ Conversely, understaffing may lead to a high quality service if delivered to a limited client base, or lower quality service, if delivered to a broad client base.²⁴ A certain, as yet undetermined, amount of adequate staffing is required in order to provide a quality service to a specific population, based on population characteristics. These include: distances travelled to provide services, demography of the client base (for example high Aboriginal or multi-cultural populations) and other factors that contribute to increased demands on a practitioner's time. The processes of nutrition screening and referral are an important part of a quality nutrition and dietetic service.^{25,26} Failure to detect nutritional problems, a lack of nutritional data, lack of appropriate referrals, fragmented work practices and failures in education and training compromise service delivery. Adequate processes need to be in place to ensure dietitians and other health professionals are using appropriate systems for nutritional screening and diagnosis and that referral systems work.²⁷ Up-to-date best practice dietetic education and interventions with clients relies on rural practitioners having access to the latest information. A lack of access to adequate continuing professional development (CPD) and the internet means out-dated practices or advice may be used with clients in rural areas.^{28,29}

Benchmarks for the dietetics profession

Dietitians may practice in a range of areas including clinical (acute hospital and ambulatory care), food service, management, community, public health and nutrition promotion, food industry, private practice and consultancy, education and research.^{30,31} Dietitians who work in areas other than frontline health service delivery also contribute to the overall nutritional health of Australians through the education of future dietitians, influencing policy and practice across the food system and research into dietetic practice. Dietitians in all of these work areas can be included in benchmarks aimed at a population level.

Benchmarking figures for the dietetics profession have been suggested in the literature.^{32,33} These figures are based on the number of dietitians per head of population or as a ratio of dietitians per-patient bed numbers in institutional settings. These benchmarking figures are usually based on comparisons to other countries or institutional settings, without considering best practice dietetic service models. Despite flaws in the way these benchmarks are determined they have been summarised in the following literature review to provide an overview of what is documented. In Australia there has been at least one attempt to suggest an appropriate benchmark for the number of dietitians per head of population. The Better Health Commission in 1986 suggested a figure of 14 dietitians per 100 000 population, however this figure appears to be based on comparisons to numbers of dietitians per 100 000 population in other countries at the time, with no justification for why the figure was chosen. The number of dietitians per 100 000 population in 1986, as outlined in the Better Health Commission document

reported a high of 22 dietitians per 100 000 population in the United States and a low of 6.5 per 100 000 in Australia, with Canada at 14 dietitians per 100 000.³² The suggested benchmark figure, which is often quoted, appears to be based on 1986 Canadian rates, but this was not justified. Some 20 years later, this figure has even less relevance given the higher rates of obesity and diabetes in Australia.² The most recent Census data reported a national average of 12.5 practising dietitians per 100 000 population.³⁴

Table 1 Number of practising dietitians per 100 000 population for states and territories from Census data

State or Territory	1991	1996	2001	2006
New South Wales	8.1	10.3	12.2	13.1
Victoria	8.1	9.5	10.5	13.1
Queensland	5.5	8	8.5	12.2
South Australia	7.6	10	10.3	11.5
Western Australia	6.1	7.5	8.6	9.5
Tasmania	4.7	5.1	6.3	7.3
Northern Territory	7.3	8.8	13.3	12.3
Australian Capital Territory	15.9	19.8	22.6	23.3
Australian total	7.7	9.4	10.6	12.5

Source: Australian Institute of Health and Welfare^{11,12,13,14,34}

The use of national averages per head of population as a benchmark for health professionals does not take into account different service needs, skill requirements or issues of distance and travel time in rural and remote areas.³⁵ This crude form of benchmarking also assumes that the current number of dietitians in those countries is adequate, without any measure of actual full-time equivalent (FTE) staffing.

Background

The Hunter New England Local Health District (HNELHD) is located in northern NSW and was the location for the case study sites in this study. The HNELHD is one of the largest Health Districts in NSW covering an area the size of 130 000 square kilometres (km²) and provides health services to 844 765 people, eight per cent of the population of NSW, and employs 15 500 staff. The HNELHD covers a vast geographical area and includes metropolitan, regional, rural and remote communities.³⁶ The HNELHD has a high proportion of disadvantaged groups, including Aboriginal people (approximately 8 per cent of the population) and low socioeconomic groups. Health issues for these groups are compounded by the location of many in rural and remote areas with limited access to health services. The ageing population increases demand on health services, particularly for chronic care services, with some local government areas in the HNELHD comprising of a high proportion of retirees compared to the State average.³⁶ There are local trends for higher levels of overweight and obesity in the community, low levels of physical activity, poor diet and high levels of smoking and excessive alcohol intake.³⁶

The rural and remote sections of the HNELHD are located in the northern section of the geographical area with remote areas located up to six hours drive from the metropolitan hub of Newcastle.³⁶ The northern regional centres of Armidale, Tamworth and Taree have Rural Referral Hospitals, which service the outlying rural and remote centres.³⁷ A description of the sites under study has been reported elsewhere.^{1,38} Sites ranged from 130km to 520km from the nearest major city, with populations from 8674 to 48 000 people.^{1,38} The six sites have been ranked by the Index of Relative Socioeconomic Disadvantage in NSW as ranging from 22 to 109, with three of the sites below the NSW average rank of 76. The Indigenous proportion of the population ranged from 4.3 to 19.4 per cent with an average of

8.5 per cent, higher than the state average of 2.1 per cent.¹⁰ Dietetic staffing in the HNELHD has been reported previously with the most recent data from 2006.^{1,3, 38} The aim of this study was to determine the dietetic workforce changes across six rural sites in NSW between 1991 and 2012.

Method

A multiple-case design study focused on six rural sites in the HNELHD of NSW. The sites selected represented different models of dietetic service delivery within the same geographical and health service region. Models of dietetic service delivery included a mix of public hospital and community based services with variable private services and Divisions of General Practice (now known as Medicare Locals). An analysis of human resource records from 1991 to 2006 was conducted. Positions in the health service, Divisions of General Practice and private practice settings were included. Multiple sources of information were utilised, including written records where available and information compared across the interview transcripts to obtain valid data. Document searches were conducted on de-identified human resource records at each of the six sites, to collect data on demographic data, position descriptions, start and end dates of employment, salary classifications, position titles, location of employment and periods of position vacancies. Quantitative human resource data were tabulated and counts and proportions were used to summarise developments over a 15 year period. Sites were classified as inner regional, outer regional or remote according to the Australian Standard Geographical Classification (ASGC).

Publicly available staffing data was reviewed in 2012 and findings compared with 2006 data. Dietetic staffing data was compared per 10,000 head of population. A review of census data from 2006 provided a comparison of case study data with national trends. Student placement numbers in each site are reported and compared with staffing increases. Counts and proportions were used to summarise findings and trends over the past six years reported. Key data has been provided as an average and range.

Ethics approval for the original study was granted by the Hunter New England Human Research Ethics Committee and the University of Newcastle Human Research Ethics Committee. Publicly available data was reviewed in 2012.

Results

In 2012 staffing numbers at the six sites ranged from a minimum of 0.5 FTE for a population of 8674, to a maximum of 12.2 FTE with population of 48 000 in 2012, equivalent to an average of 17.9 dietitians (range 10.8 to 25.4) per 100 000 population across the six sites. An average growth of 8.5 FTE occurred across the six sites from 2006-2012, although not all sites experienced an increase. Australian census data on the number of dietitians or nutritionists in 2006, reported an average of 12.5 dietitians (range 7.3 to 23.3) per 100 000 population across states and territories. Figure 1 shows the increases in FTE across the six sites in four time periods from 1991 to 2012.

Table 2 provides a summary of the service delivery characteristics for each of the six sites and the data on the number of dietitians as FTEs and per head of 100 000 population.

Dietetic staffing across the six sites showed small increases in staffing at three of the six sites between 2006 and 2012. These sites were the largest in population and were classified as 'Inner Regional' or 'Outer Regional' by the ASGC. Figure 2 shows the staffing FTE across the six sites in 2006 and 2012.

All three locations who had high dietetic student placement throughput between 2006 and 2012 experienced increases in staffing, mainly through non-traditional options such as the development of private practice and short-term project positions within the public health sector. Figure 2 shows student numbers and staffing FTE across the six sites in 2006 and 2012.

Figure 1 Increase in staffing FTE for six sites between 1991 and 2012

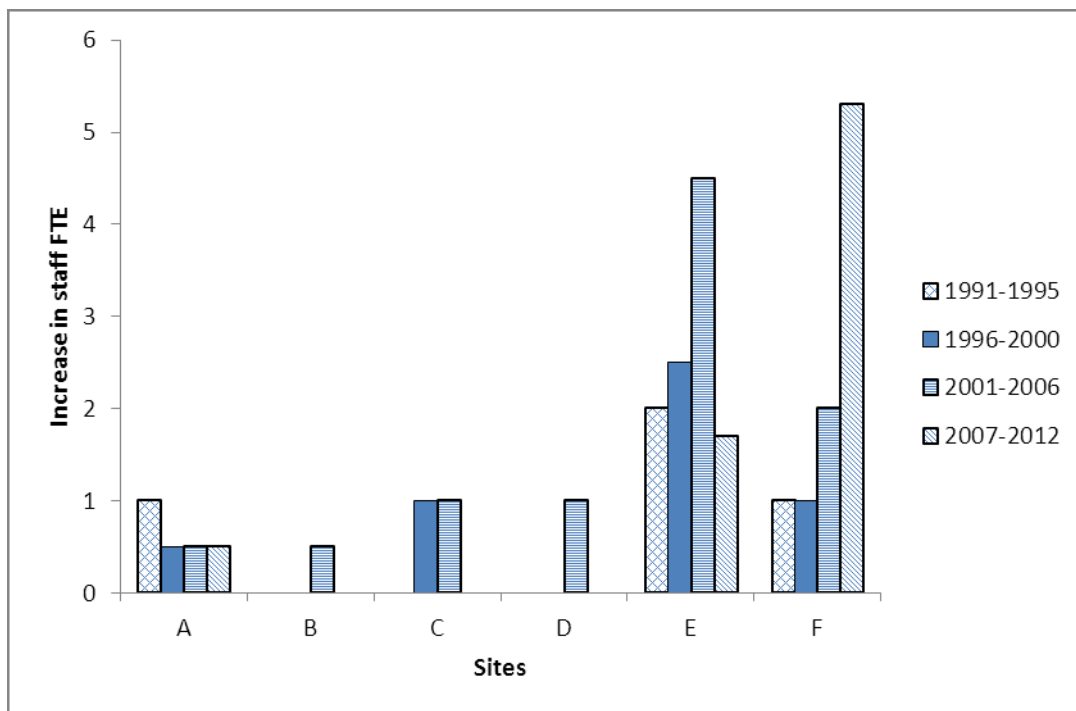


Figure 2 Change in dietetic staffing across the six sites 2006 and 2012

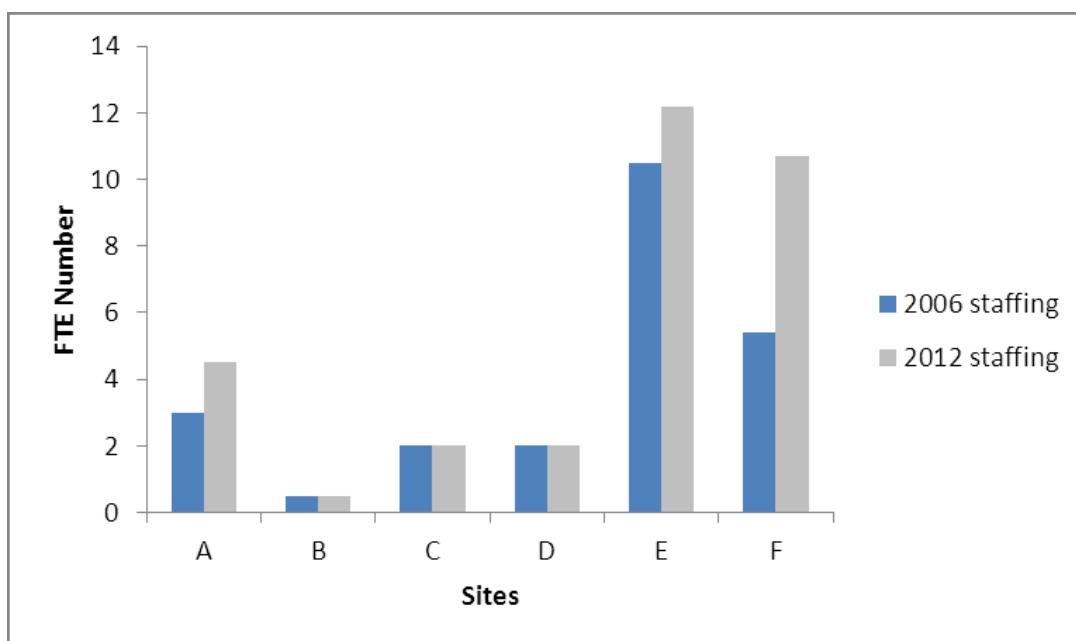
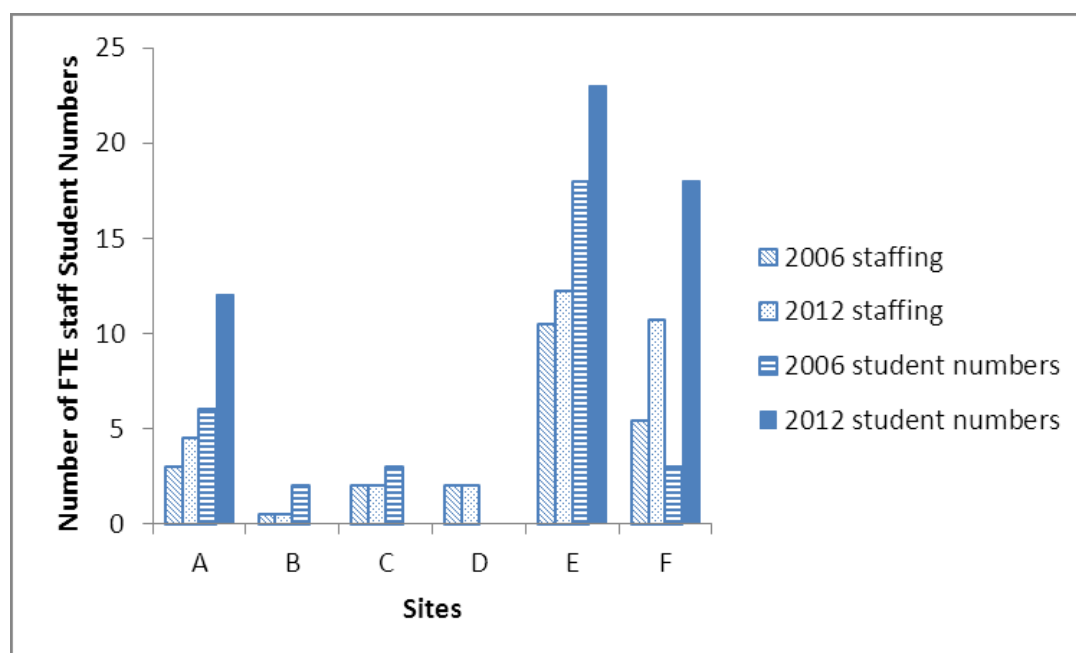


Table 2 Summary of six rural sites of dietetic service delivery

Site	Dietetic service description	Site details number of hospital beds, outreach sites (number, distance)	ASGC	Population	Dietitians per head 10 ⁶ population in 2006, 2012	FTE in 2006	FTE in 2012
A	Small public community/hospital service, plus private practice	86 4 sites 25-90	Outer Regional	24 302	12.3, 18.5	4	4.5
B	Sole position with minimal outreach services	43 1 site 40	Outer Regional	8 674	11.5, 11.5	0.5	0.5
C	Sole position with community health focus and extensive outreach service Temporary non-government funded position	48 7 sites 86-196	Remote	11 700	17.0, 17.0	2	2
D	Sole position with community health focus and outreach services Temporary project position with outreach services	63 4 sites 26-67	Inner Regional	18 508	10.8, 10.8	2	2
E	Public hospital based department with additional community based positions. Additional private practice services	270 5 sites 42-92	Outer Regional	48 000	21.5, 25.4	10.5	12.2
F	Public hospital based service with community based positions. Services based in two localities Private practice services	166 3 sites 12-72	Inner Regional	43 984	12.2, 24.3	5.4	10.7

ASGC—Australian Standard Geographical Classification, FTE—full-time equivalent. Adapted from sources: ^{1,38} with additional data from 2012

Figure 3 Student numbers and staffing FTE across the six sites in 2006 and 2012



Discussion

The uneven distribution and growth of dietetic staffing levels across rural sites remains evident in the rural sites under study in rural NSW. The findings from this study have important implications for the ongoing development of dietetic staffing in rural areas. The positions in these sites have developed in an *ad hoc* and opportunistic way with some areas developing higher staffing ratios than others, as reported previously.¹ This current study found that average dietetic staffing level across the six sites in 2012 was 17.9 per 100 000, up from 14.2 in 2006, which is higher than the Australian average of 12.5 from the 2006 Census data. However, much of the increase can be attributed to short-term and private practice positions, which may lack stability as a long-term option for service provision. While the dietetics workforce in Australia has gained on previous proposed benchmarks, it is still behind levels found in the United States from 1986.³² It is difficult to know the true nature of the dietetic workforce due to the issues with accessing up-to-date, accurate national data in a timely fashion.

While the number of dietitians is not solely responsible for the provision of best practice dietetic services, it is a direct influence on the service provided. Growth in dietetic staffing is likely to remain *ad hoc* unless there is a strong commitment to the development of opportunities to meet the workforce shortage in rural areas and provide a consistent rural workforce. In order to ensure more equitable access to dietetic services in rural and remote Australia, a range of strategies are required. Consideration of various models of service delivery to meet service shortfalls should be a key target for workforce reform given the uneven distribution of the workforce across the country. Given the relatively low levels of private practice services in rural areas⁵, there is potential for expansion where public services are not meeting the needs of the population and the use of internet based options are feasible. In this study over the last six years growth in private practice and project based positions, contributed to the workforce development across the six rural sites studied.

Given current health budget constraints and spiralling health costs, there is a real need to review the work practices and priorities of health professionals to improve service delivery. Health Workforce Australia is driving change to influence the planning and future development of the health workforce with an emphasis on building a sustainable health workforce and clinical training reform.³⁹ Innovations in the way services are delivered and who delivers them is considered necessary to create a sustainable

workforce. HWA has prioritised building the capacity and improving the productivity of the existing workforce while improving distribution.³⁹

This study adds to the limited data on the dietetics workforce in rural Australia and provides a snapshot of the ongoing changes occurring in specific rural NSW sites. While these sites may not be representative of rural communities elsewhere, the varied sites selection covers a range of service delivery models. Future research is required to assess the effectiveness of the current dietetic workforce in rural areas and to investigate innovations utilising the existing workforce that may achieve improvements in service delivery with current staffing levels. Future health workforce policies should be focused toward achieving greater equity and sustainability for health service provision in rural and remote areas to ensure a bright future.

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