Still the doctor — by a country mile! Preferences for health services in two country towns in north-west New South Wales

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ABSTRACT

Objective: To evaluate whether rural consumer preferences for health services have changed over time or vary across communities with different models of health service delivery.

Design: Questionnaire survey replicating a 1989 study, with ranking of seven different healthcare services.

Participants and setting: Adult occupants from a 20% sample of private residences, in towns and on farms, in the rural shires of Bogan and Warren in north-west New South Wales. The survey was conducted in September 2002.

Main outcome measures: Rank order of preferences for different healthcare services; preference structure intervals showing relative "distance" between preferences.

Results: Response rates were 68% (Nyngan town), 78% (Nyngan farms) and 59% (Warren town). The doctor was the most valued health service in rural communities, followed by the hospital. These preferences occurred regardless of age, sex or place of residence, persisted over time, and were similar for residents of towns with different models of healthcare service provision.

Conclusions: Rural people, both in towns and on farms, rate acute primary healthcare services provided by the doctor and hospital as the two most important services. These preferences have not changed substantially after a decade of restructuring rural health services and reorienting them towards a primary healthcare approach. The stability of rural consumer preferences may reflect a bias towards the status quo.

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The relative importance people place on particular healthcare services is a significant factor in meeting their healthcare needs and influencing their health behaviour.[1] To date, little systematic research has been conducted in Australia on rural consumer preferences for healthcare services, even though it has been acknowledged that rural and remote healthcare services need to reflect better the preferences of the communities they serve.[2]

One of the few comprehensive investigations of rural healthcare preferences in Australia demonstrated that the services provided by the doctor were overwhelmingly the most highly valued of all healthcare services.[3] Over recent years, however, several changes affecting the availability and form of rural healthcare services have occurred.[4] These changes include the increasing difficulty of attracting medical practitioners to rural areas, increased roles for other health professionals, promotion of a primary health approach, centralisation and rationalisation of many health services in regional centres, and the introduction of alternative healthcare models.[4,5] These shifts in focus might be expected to change the values and predispositions of rural Australians towards healthcare services.

We report here the results of a survey conducted to examine whether rural consumer preferences for healthcare services have changed over time in response to changes in rural healthcare services during the 1990s.

METHODS

Survey area

Our survey was conducted in September 2002 in the Bogan and Warren shires in the Macquarie Area Health Service region of north-west New South Wales, about 150 kilometres from the regional centre of Dubbo (population, 31 000) (Box 1). The economy of the region is predominantly based on agricultural and pastoral activities, particularly wheat and cotton growing and sheep and cattle raising.

The population of Bogan Shire was 3087 in 2001, with 2067 residing in the town of Nyngan. Bogan Shire was selected to measure any changes in community preferences for healthcare services since 1989, when an earlier survey of the area was conducted. Between 1989 and the present time, the demographic structure of the area has not changed significantly.[6] Nearby Warren Shire (population, 3151 in 2001, with 1787 living in the town of Warren) was also surveyed. Warren Shire has a slightly younger demographic profile than Bogan Shire (Box 2).

Nyngan has a traditional model of health service comprising separate hospital, aged-care and community health services and private practices. In contrast, Warren has operated a multipurpose health service (MPS) since 1997.[8,9] The MPS model enables greater flexibility and better integration of healthcare services under the same management. It also places greater emphasis on aged care rather than acute care, as a result of pooled federal–state funding arrangements.

Questionnaire

The methods and questionnaire items employed in our 2002 survey replicated those used in the 1989 Nyngan study.[3] Out of 335 eligible adult residents, 285 respondents participated in the 1989 study (response rate, 86%). The results of the 1989 study were used as the baseline for monitoring attitudinal shifts. The data were obtained from a delivery-and-collection questionnaire survey designed to minimise inconvenience to potential participants (particularly farmers),

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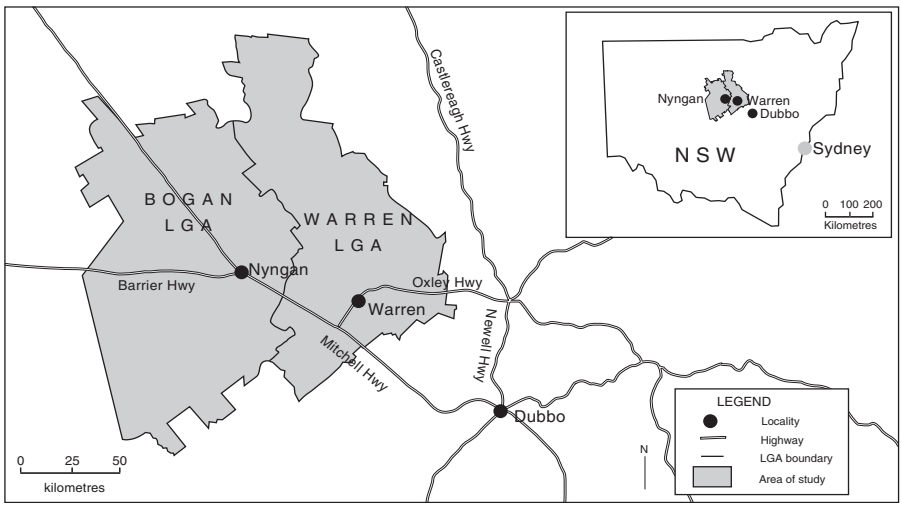
1 Location of Bogan and Warren local government areas (LGAs), north-west New South Wales



2 Comparison of 2002 sample with 2001 census data for Bogan and Warren local government areas (LGAs)[7]

	Bogan LGA		Warren LGA	
	2002 sample	2001 census data	2002 sample	2001 census data
Men	(*n* = 109)	(*n* = 1145)	(*n* = 74)	(*n* = 1237)
18–34 years	18%	27%	12%	33%
35–54 years	44%	37%	39%	40%
⩾ 55 years	38%	36%	48%	27%
Women	(*n* = 125)	(*n* = 1059)	(*n* = 105)	(*n* = 1091)
18–34 years	20%	26%	17%	30%
35–54 years	35%	33%	43%	38%
⩾ 55 years	45%	40%	40%	33%
Sex or age not stated	*n* = 2		*n* = 3	

3 Number of health services in Bogan and Warren local government areas (LGAs)

	Bogan LGA		Warren LGA
Service	1989	2002	2002
Ambulance service	1 ambulance; 4 officers	1 ambulance; 4 officers	1 ambulance; 3 officers
Chemist	1	1	1
Community nurse	1	1	2
Dentist	1	1	1
Doctors (all GPs)	2	2*	3*
Hospital	1	1	1†
Number of beds	31	31 (15 acute, 1 respite and 15 nursing-home beds)	42 (12 acute, 20 hostel and 10 nursing-home beds)
Social worker	Visiting as required‡	Phone counselling	Visiting as required‡

GP = general practitioner.
* Plus visiting GP (1 day a month in Nyngan and 1 day every 6 six weeks in Warren).
† Hospital functions are incorporated in the multipurpose health service.
‡ Dependent on funding availability from Area Health Service.

including the option of returning questionnaires via postage-paid mail.

We sought information about the relative importance that rural dwellers attach to seven different types of healthcare services: ambulance service, chemist, community nurse, dentist, doctor, hospital, and social worker. The numbers of these healthcare services currently available in both communities are shown in Box 3. These were the services surveyed in the 1989 study (the services were selected using the Delphi technique with a group of health professionals and academics).[3] Additional or new services were not included in the 2002 study because of the need to ensure consistency with the earlier study to enable comparison of preferences over time.

Consistent with the 1989 study, the method of paired comparisons[10] was used to elicit preferences. This requires respondents to evaluate healthcare services in all possible paired combinations, in each case choosing one over the other by answering the following question: "*Thinking about your own health and wellbeing and that of your household, which of the following services is more important?*". By forcing a choice on every possible pair, a measure is obtained that not only ranks preferences, but also quantifies how much one service is preferred over another.[3] In this way, a total of 21 pairs for the seven services listed above were created.

The services were arranged in an identical format in both studies. To reduce bias, the pairs of alternatives were presented in a way that ensured that each alternative appeared equally on the right and on the left, was alternated from right to left, and did not appear in consecutive pairs but rather was spaced as far apart as sequencing allowed.[3,11]

Sample

All dwellings included in the original survey of Nyngan and the Bogan Shire were revisited. These constituted a 20% sample of occupied private dwellings in Nyngan ("town" residents) and properties located in the Bogan Shire between 10 and 70 km from Nyngan ("farm" residents). A similar sampling procedure for town and farm residents was adopted in Warren.[6] The eligible survey sample comprised adult occupants of these dwellings, being 204 for Nyngan town, 125 for Nyngan farms, 209 for Warren town and an indeterminate number for Warren farms (owing to bad weather conditions that prevented in-person delivery and collection of questionnaires) (Box 4).

4 Comparison of survey response rates, by local government area, town/farm residence and date of survey

	Nyngan farms		Nyngan town		Warren farms	Warren town
	1989	2002	1989	2002	2002	2002
Number of eligible survey participants*	155	125	180	204	Unknown†	209
No response or incomplete data	18	21	21	58	Unknown†	69
Refused to participate	4	6	5	8	Unknown†	16
Number of completed questionnaires	133	98	154	138	58‡	124
Valid response rate	86%	78%	86%	68%§	Unknown†	59%§

* Numbers are approximate only. Questionnaires were left at dwellings where no-one was home after two visits. Hence, the exact number of people living at the dwellings could not be ascertained.

† Where bad weather conditions made roads impassable, two questionnaires were mailed to addresses rather than delivered and collected. Hence, the number of eligible survey participants was unknown.

‡ These 58 completed questionnaires came from the residents of 39 farms.

§ The lower response rate within towns reflects a higher number of people who were not at home on consecutive visits and failed to return the questionnaire by mail, and others who agreed to participate but failed to return a completed questionnaire (a trend that is consistent with increasing consumer disenchantment with household surveys).

Extensive advance publicity was undertaken through local newspapers, shire councils and local healthcare providers, and individual letters were sent to all sample dwellings before the survey visit.

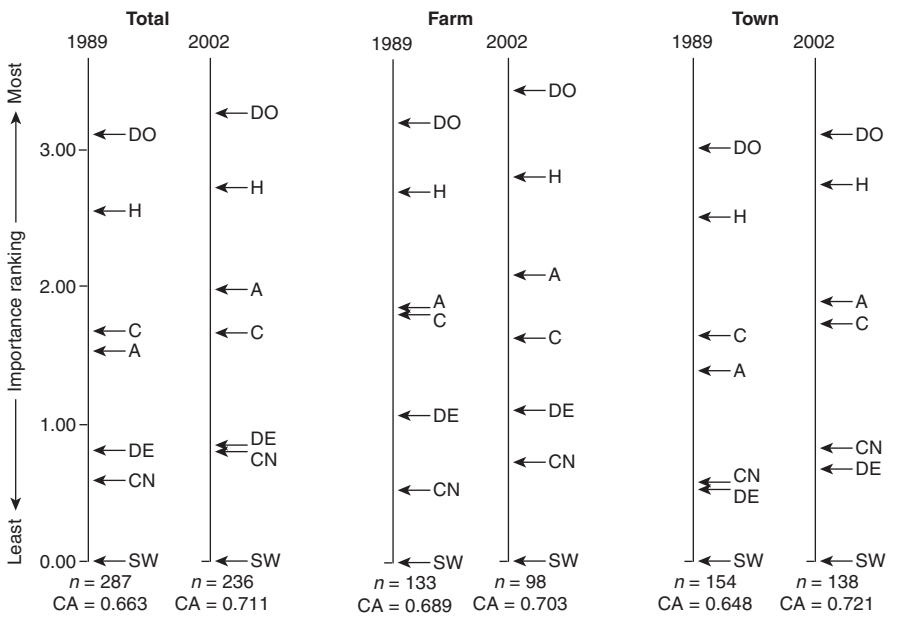
Statistical analysis

Analysis was based on the linear "Thurstone" model,[10] modified for both the 1989 and 2002 data by integrating approximation values for P values where proportions equalled 0 or 1. For $P = 0$ the formula $1/(2n)$ was used, and for $P = 1$ the value $1 - 1/(2n)$, where n = number of respondents. Mosteller's "test of fit" was used to investigate how well estimated values for each item predicted the observed values.[10] The coefficient of agreement was calculated to show the strength of the agreement among the n respondents.[10]

Ethics approval

Ethics approval for the project was obtained from the ethics committees of Monash University and the Far West and Macquarie area health services in New South Wales.

5 Bogan shire residents' preferences for health services in 1989 and 2002*



A = ambulance. C = chemist. CN = community nurse. DE = dentist. DO = doctor. H = hospital. SW = social worker.

* The coefficient of agreement (CA) is a measure of the strength of agreement among the n respondents.[10] For all groups presented here, the CA was significant at the 99% confidence level.

RESULTS

Response rates and age profile of sample

Survey response rates are shown in Box 4. We obtained 236 usable questionnaires from Bogan residents and 182 from Warren residents.

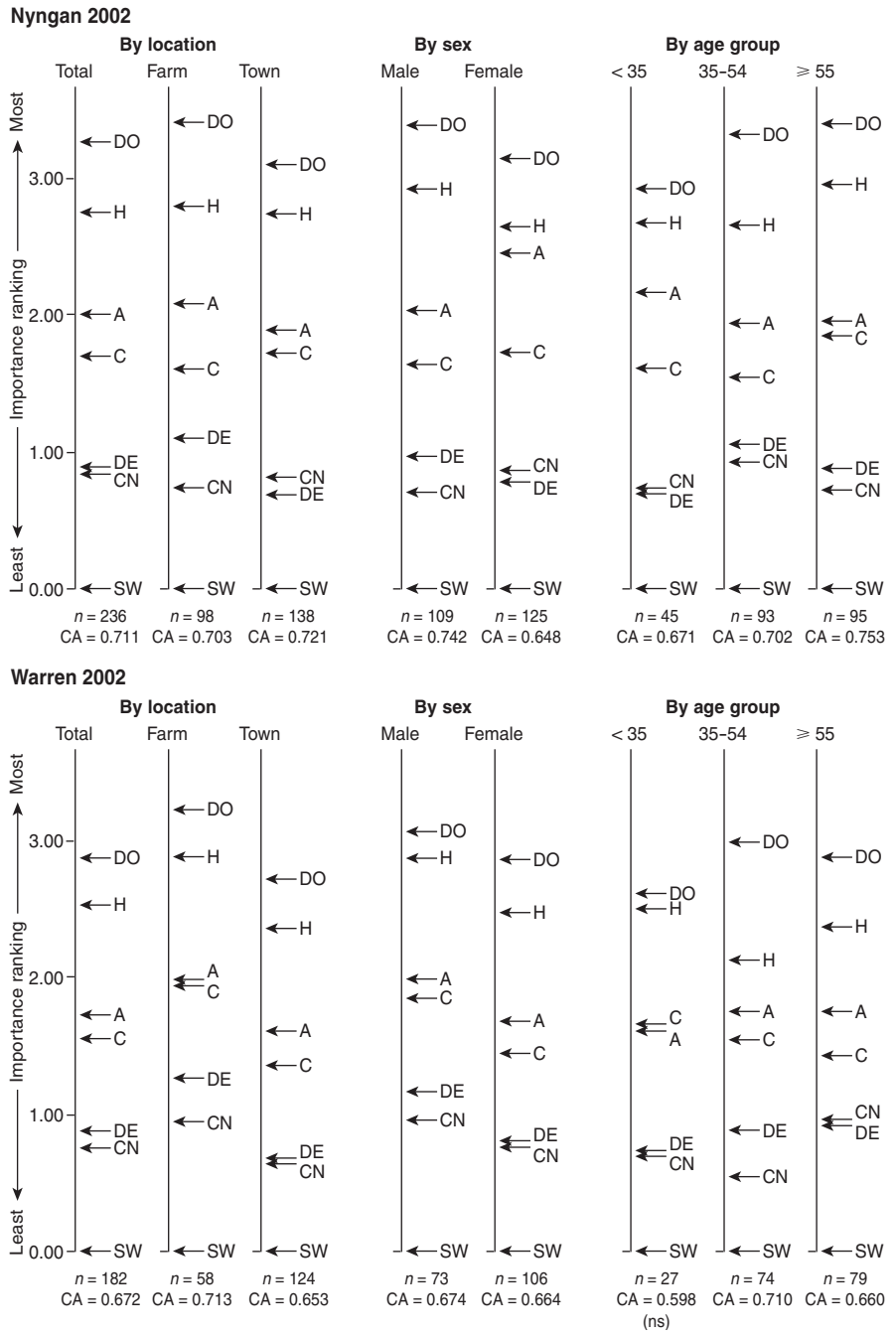
The demographic composition of our sample compared with that of the estimated matched population from the 2001 census is shown in Box 2. The sample under-represented younger people (especially in Warren), over-represented middle-aged men in Bogan and women in Warren, and over-represented older people in both communities (Box 2).

Comparison of healthcare service preferences over time and between communities

Results of the paired comparison analyses are shown in Boxes 5 and 6. The vertical axes represent an open-ended index of the perceived importance of each service relative to the others. The scale shows the rank order of importance attributed to each service and an estimate of the relative interval separating them. To facilitate comparison, the scaling is transformed to a base of zero by ranking the least important service as zero. Relative preferences were further analysed according to location, sex and age group (Box 6).

The most notable finding of our study was the consistency of the rankings over time

6 Residents' preferences for health services, by location, sex and age group



A = ambulance. C = chemist. CN = community nurse. DE = dentist. DO = doctor. H = hospital. SW = social worker.

* The coefficient of agreement (CA) is a measure of the strength of agreement among the *n* respondents.[10] Except where otherwise indicated ("ns"), the CA was significant at the 99% confidence level.

(Box 5). The doctor and hospital were ranked as by far the two most important services by all groups in each survey. Ambulance and chemist services were closely comparable in ranking, although in reverse order from the 1989 study. The overall values for doctor, hospital and ambulance services increased over time in each location. There was a high degree of uniformity in preferences across age group, sex and location in both surveys.

The pattern of preferences by age-group and sex was similar between Nyngan and Warren, despite the latter's different healthcare model. The only notable difference was that Nyngan residents generally showed slightly higher preference values for the doctor, hospital and ambulance (Box 6).

DISCUSSION

Access to primary care services is crucial for everyone, but especially in rural areas where health status is poorer and services are less readily available than in metropolitan or regional centres.[12,13]

The particular importance accorded by rural Australians to the doctor and hospital, a key finding in the original 1989 study, has persisted through an era of significant changes in the healthcare service environment. In fact, the values accorded to these services appear to have increased slightly, underscoring the centrality of these services for rural consumers. Although farm respondents accorded slightly higher values to all healthcare services than town respondents, in general the preference structures of rural residents are constant across age group, sex and location.

Apparently the provision of an alternative multipurpose service model is not enough to significantly erode the dominant place that GPs and hospitals have for residents of small rural communities. While the slightly lower importance attributed by Warren residents to the doctor and hospital suggests that some attitudinal shift may be occurring, a longitudinal study would be required to confirm such a change.

In extrapolating from these results, some caution is required. Firstly, people's preference for what they *know* can reflect a status quo bias, or "endowment effect", whereby they assign a higher value to goods or services they are familiar with through personal experience.[14,15] This bias raises questions as to who should be consulted about healthcare planning — experienced healthcare consumers, the inexperienced, or the general public, regardless of experience. Secondly, surveying a wider geographic distribution of more rural communities would help to validate these findings. Thirdly, attitudinal change to alternative healthcare models may require a longer period of time to elapse than our study allowed.

These limitations notwithstanding, it is clear that most rural Australians value highly the provision of adequate local "safety net" services that can deal with emergencies and acute-care needs as a priority.[16] Since GPs remain the preferred cornerstone of care for rural consumers, solving the current rural medical workforce shortage and implementing measures to ensure that

rural Australians can obtain effective primary healthcare at the local level must remain a national priority for government, particularly for small rural communities where sustaining a resident practitioner is most problematic. For rural communities whose population is too small to sustain a resident doctor, alternative models for providing medical care (such as visiting GPs, branch surgeries or regional "hub-and-spoke" arrangements[5]) are required.

COMPETING INTERESTS

None identified.

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