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ABN: 68 480 848 412

National Rural Health Conference
Australian Journal of Rural Health

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Australia's health system needs re-balancing:

a report on the shortage of primary care services in rural and remote areas

January 2011

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Executive summary

This document has been prepared by the NRHA (the Alliance) to complement the AIHW report, *Australian health expenditure by remoteness,* which was commissioned by the Alliance and published by the AIHW in January 2011.[1]

The AIHW report relates to the 56 per cent of Australia's recurrent expenditure on health services (ie not including capital costs) that is currently capable of being allocated to the remoteness area of the patient. Results in the AIHW report have been age standardised so as to account for the differences in the age and sex profiles of people in the five geographic areas. Analysis of that 56 per cent shows that in 2006-07 the residents of rural, regional and remote areas experienced major deficits in per capita expenditure through Medicare, the Pharmaceutical Benefits Scheme (PBS) and admitted patient services in private hospitals.

In this Alliance report we summarise the AIHW's findings, re-interpret some of its conclusions (particularly those relating to access to PBS and to aged care services), and make estimates of the geographical distribution of the 44 per cent of recurrent costs not included in the AIHW report.

The conclusions the Alliance reaches are therefore based on both its own work and that published in the AIHW report. It is to be hoped that in the near future Australia's data collections and systems of analysis will permit the AIHW to publish comprehensive evidence on the total situation regarding the geographical distribution of health and aged care expenditures within Australia.

Table 1 summarises the best estimates for 2006-07 of what the Alliance calls the rural and remote health and aged care deficit. In that year there was a total Medicare deficit of $811 million. This translates to a total of 12.6 million fewer services that year for the people of regional and remote areas. To this may be added a pharmacy deficit of $850 million and an 'other primary care' deficit of at least $800 million – this last largely attributable to less access for people from regional and remote areas to allied health and oral and dental care. The pharmacy deficit means that rural Australians had around 11 million fewer scripts that year than would have been the case if the Major Cities rate had applied.[2]

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[1] For the purposes of the AIHW's report, and throughout the discussion in this complementary document, remoteness is defined according to the Australian Standard Geographical Classification (Remoteness Areas) (ASGC-RA) system. That system sees all places in Australia allocated to one of five categories: Major Cities (MC), Inner Regional (IR), Outer Regional (OR), Remote (R) or Very Remote (VR) areas. Sometimes results are reported by just the two categories: regional areas (ASGC 2 and 3) and remote areas (ASGC 4 and 5).

[2] In relation to PBS, adjustments made by the Alliance to account for the much greater proportion of concession card holders in regional areas (45 per cent compared with 30 per cent in Major Cities) indicate that per capita expenditure by the Government on PBS is very substantially lower for concession card holders in regional and remote areas.

Adding the Medicare, PBS and 'other primary care' deficits results in a conservative estimate of $2.46 billion for the rural primary care deficit for the year 2006-07.. The lower levels of Medicare and PBS expenditure can be largely attributed to poorer access to health professionals.

Table 1: Summary of overall rural health deficit 2006-07

Item	$ million	Total
MBS – primary and related care deficit [1]	661	
MBS – in-hospital deficit [2]	150	
Total Medicare deficit		811
PBS deficit [3]	500	
Other pharmaceuticals deficit [4]	350	
Total pharmacy deficit		850
Oral/dental care deficit [5]	340-500	
Allied health services deficit [6]	260-345	
Aids and appliances deficit [7]	200	
Total other primary care deficit		800-1045
Total primary care and related deficit		**2,461-2,707**
Aged care deficit [8]	500	500
Public hospital 'overspend' [9]	1,381	
Private hospital 'underspend' [10]	552	
Net hospital 'overspend'		829
Estimated total 'rural health deficit'		**2,132-2,378**

[1] AIHW figure: includes services from GPs and specialists, diagnostic tests, pathology and radiology.
[2] AIHW figure: Medicare rebates for in-hospital services to private patients.
[3] Alliance estimate based on higher proportion of concessional cardholders outside Major cities.
[4] Alliance estimate of lower usage of scripts not eligible for PBS rebate.
[5] Alliance estimate based on total national cost (from AIHW) and mal-distribution of oral health workforce.
[6] Alliance estimate based on total national cost (from AIHW) and mal-distribution of allied health workforce.
[7] Alliance estimate assuming 20 per cent lower access to primary care and rehabilitation than in Major Cities.
[8] Alliance estimate, adjusted for aged care needs of Aboriginal and Torres Strait Islander people aged 50-69.
[9] AIHW figure: Note that this relates to services for people from rural and remote Australia, not necessarily in hospitals in rural and remote areas.
[10] AIHW figure. Attributable to lower rates of private health insurance and fewer private hospitals in rural and remote Australia.

The Alliance also estimates a rural and remote aged care deficit of some $500 million. For this, one of the key assumptions is that Aboriginal and Torres Strait Islander people over the age of 50 need equivalent 'ageing and aged care' services as non-Indigenous people over the age of 70.

The total rural primary and aged care deficit is therefore likely to be around $3.0 billion.

This results in a hospital overspend on people from rural and remote areas of some $829 million. The Alliance's case is that extra investment in primary care and aged care for rural areas would be offset by savings in expenditures on acute care episodes in hospital. Many of these extra acute care episodes and the longer hospital stays that characterise rural people would be avoidable with an improved focus in the rural health care system on primary, diagnostic and early intervention services. Ironically, it is for acute care services that rural people are most likely to have to travel to Inner Regional base hospitals or Major Cities, which adds to the burden of their acute care needs.

To put it simply, hospitals are providing rural people with the primary and aged care that is often not available in many of their home areas. The Alliance estimates that, overall, country people experienced an extra 60,000 episodes of acute care in 2006-2007 and about 190,000 more episodes of overnight hospital stay than would have been the case at Major Cities rates.[3]

Critically, the AIHW report shows that, for the 56 per cent of total health expenditure it analysed, between 2001-02 and 2006-07 the relative disadvantage of residents of regional and remote areas worsened by about 10 per cent.[4] Despite recent investments in rural health, the lack of overall improvement in the distribution of health care professionals and in the incidence of health risk factors in rural and remote areas suggests that this rural health deficit would now be at least as large in dollar terms today, particularly given the increased population and the change in prices.

Based on these findings, the NRHA concludes:

1. that Governments and their agencies should move to augment data collections on health services and costs to enable the complete picture of health and aged care provision in regional and remote Australia to be assessed;
2. that there is a very strong case for Federal and State governments to boost both proportionate and total expenditure on primary care, diagnostics, specialist care and access to PBS for residents of regional and remote areas[5];
3. that such an increased focus on rural and remote heath would provide strong support for governments' progress towards national health goals.[6] (The Government's COAG goals are very unlikely to be met without improvements in rural and remote areas, with the current status in those areas pulling down national figures. The stronger focus would require both better access in country areas to primary care as well as development of healthy economic, educational and physical environments.);

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[3] In addition to the poorer access to primary and aged care, higher hospital costs for rural and remote Australians can be linked to the greater proportion there of Indigenous people, greater exposure to risk factors such as poor socio-economic status, and higher prevalence of personal risk factors such as smoking and overweight.

[4] The AIHW report refers to the period 2001-02 to 2006-07. It is unclear what changes have occurred in the 4 year period since.

[5] Poorer health outcomes in regional and remote areas would suggest that expenditure on primary care should be higher for residents of these areas compared with Major Cities, not lower. Under the current model of providing primary care, a substantial number of additional doctors are required in regional and remote areas (especially, but not limited to, GPs). A broad range of measures is needed, including improving access to nurse practitioners and telemedicine.

[6] Rural Australians constitute 32 per cent of the national population and their poor health, coupled with poor progress in regional areas towards goals such as lower smoking rates, hold back progress towards these targets.

4. that the public hospital 'overspend' on people from regional and remote areas be further investigated[7];
5. that it is important to properly assess the magnitude of aged care under-servicing, especially taking into account the needs of Aboriginal peoples and the consequent need for regional and remote hospitals to fill the gap[8];
6. that there should be further investigation of the means by which people from regional and remote areas can be given better access to same-day acute care services[9];
7. that a better understanding of the geographic distribution of private hospitals be developed and how they can be made more accessible to residents of regional and remote areas;
8. that a more equitable distribution of all health professionals should be a key health policy objective of all governments;
9. that there should be a better understanding of the contribution of the health sector to the economic activity and sustainability of regional and remote communities; and
10. that, reflecting the importance of the broad determinants of health, a comprehensive analysis by region of government expenditures related to health would include expenditure on vital areas such as secondary and tertiary education, housing, employment support and infrastructure.

[7] For instance, what is the true extent of lower levels of access to aged care in these areas, and what are the other functions of regional and remote hospitals not addressed by Major Cities hospitals?

[8] There are fewer non-hospital services to care for the elderly in regional and especially remote areas. Further investigation is required of these needs and their impact on regional hospitals.

[9] Overnight separations are more expensive than same day separations. If rural people are not able to access day surgery, this places them at both a financial and health disadvantage.

Australian health expenditure by remoteness (AIHW 2011)

The key findings of the AIHW report include the following.

- Per capita expenditure on Medicare services is **lower** for residents of regional and remote areas than for those in Major Cities, and decreases by remoteness.
- Per capita public hospital expenditure is **higher** for residents of rural and remote areas than for those in Major Cities, and increases by remoteness.
- Per capita private hospital expenditure is **lower** for residents of rural and remote areas than for those in Major Cities, and decreases by remoteness.
- Per capita PBS expenditure per person is **lower** for residents of rural and remote areas than for those in Major Cities, and decreases by remoteness.
- The relatively small per capita expenditure on optometry is **lower** for residents of regional and remote areas than for those in Major Cities;

What is and isn't reported

The make-up of the 56 per cent of total health expenditure covered in the AIHW report is summarised in Figure 1 and falls into one of six categories:

1. admitted patient services in public hospitals;
2. admitted patient services in private hospitals;
3. the cost of in-hospital medical services for private patients attracting MBS rebates;
4. out-of-hospital medical services attracting MBS rebates;
5. 53 per cent of the cost of medications (being the PBS and section100 components of total pharmaceutical expenditure); and
6. what the AIHW Report describes as limited data on expenditure on Aboriginal Community Controlled Health Services, totalling some $296 million in 2006-2007.

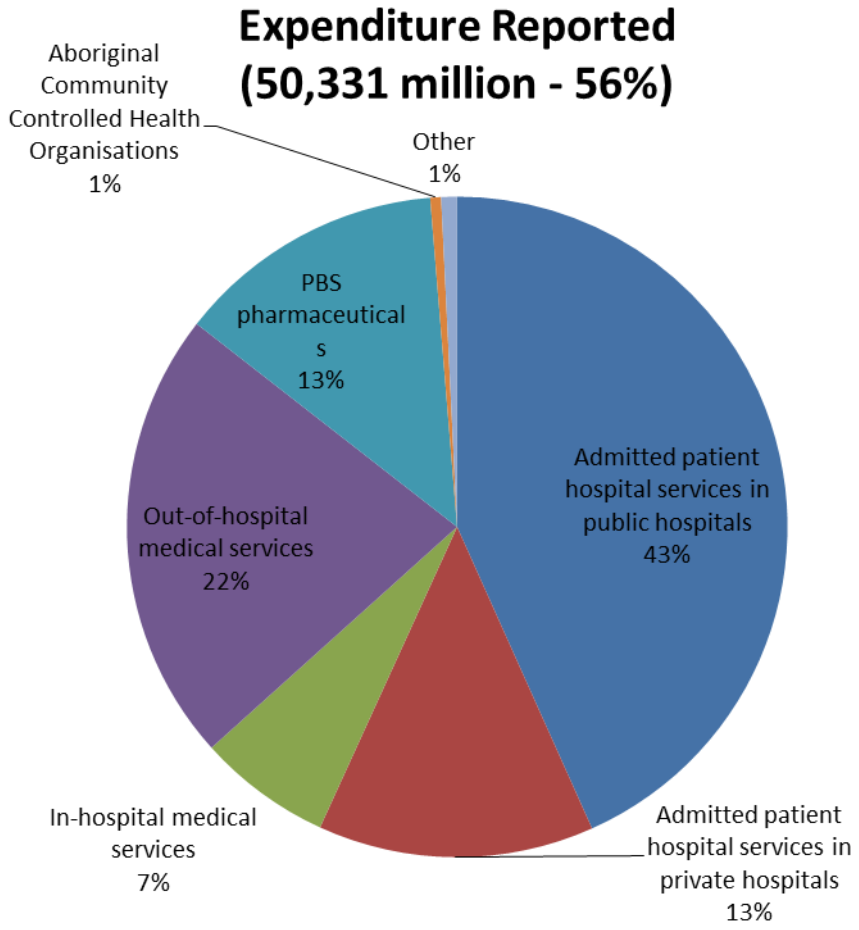

Figure 1: Expenditure reported by remoteness 2006–07
Source: NRHA derived from AIHW 2011

The AIHW report describes only recurrent expenditure on health services, and does not describe expenditure on infrastructure (capital expenditure).

Results have been age standardised so as to account for the differences in the age and sex profiles of each of the five populations.

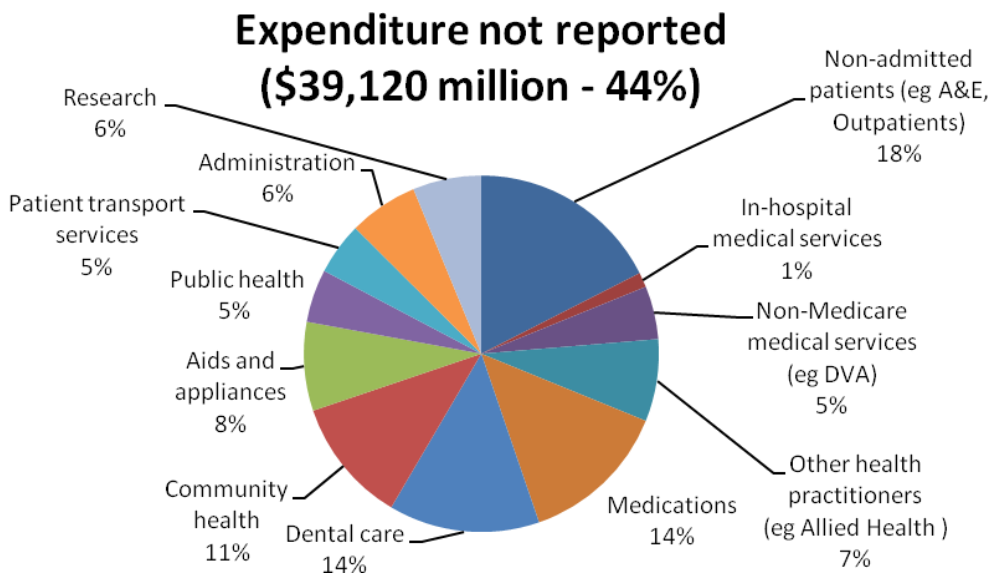

Figure 2: Expenditure not reported by remoteness 2006–07
Source: NRHA derived from AIHW 2011

Those areas for which reporting was not possible (Figure 2) include:

1. non-admitted patient services (ie all of A&E and outpatients);
2. non-PBS medication (ie 47% of all medications);
3. community health services;
4. aids and appliances;
5. the cost of other health practitioners (eg allied health);
6. administration and research;
7. public health expenditure;
8. patient transport services;
9. non-Medicare medical services (eg DVA); and
10. the cost of government outlays (especially by the Commonwealth Government) on support for the rural health workforce, such as the cost of GP attraction and retention grants, support to visiting specialists, workforce education and training programs)[10].

In addition, expenditure on aged care services was not included in the AIHW's report. Given the close interrelationships of some health services, especially hospital services, and aged care needs, future analyses of health expenditures by remoteness should include those on aged care.

The AIHW report notes that fifty seven per cent of people in Major Cities have private health insurance, compared with 48 per cent in Inner Regional and 41 per cent in Outer Regional areas. However it does not take this analysis further in terms of levels of government subsidy or the services accessed under these insurance arrangements.

Using the data in Table 2, Figure 3 shows the relatively high proportion of total measured health expenditure on admitted public hospital services, and its increase with increasing remoteness. Per

[10] Some of the impact of government programs of support for rural health workforce is taken into account indirectly, as they result in higher levels of access to health services than would otherwise be the case.

capita expenditure on all other categories declines with remoteness. Total per capita measured health expenditure was very slightly lower for residents of regional areas than for residents of Major Cities, but considerably higher for residents of remote areas.

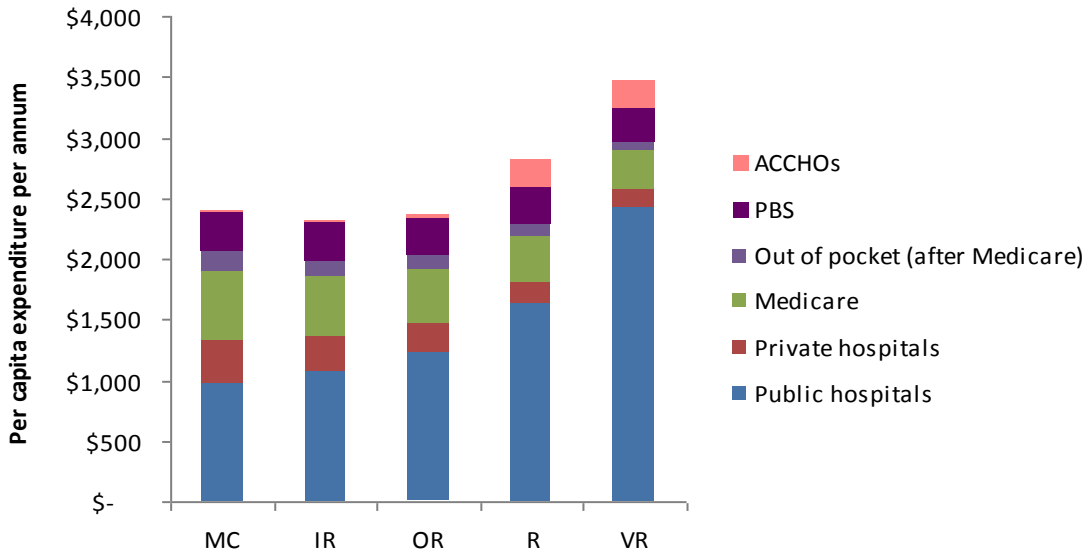

Figure 3: Per capita, hospital, Medicare, PBS and Aboriginal Community Controlled Health Organisation (ACCHO) expenditure 2006-07

Notes: Age standardised. Excludes non-admitted patients. 'Out of pocket' relates to out of pocket expenditure for occasions of Medicare service.

Source: Derived by NRHA from AIHW 2011

Figure 4 shows the relative overspends and underspends, assuming expenditure per capita had been the same for people from regional and remote areas as it was for those from Major Cities.

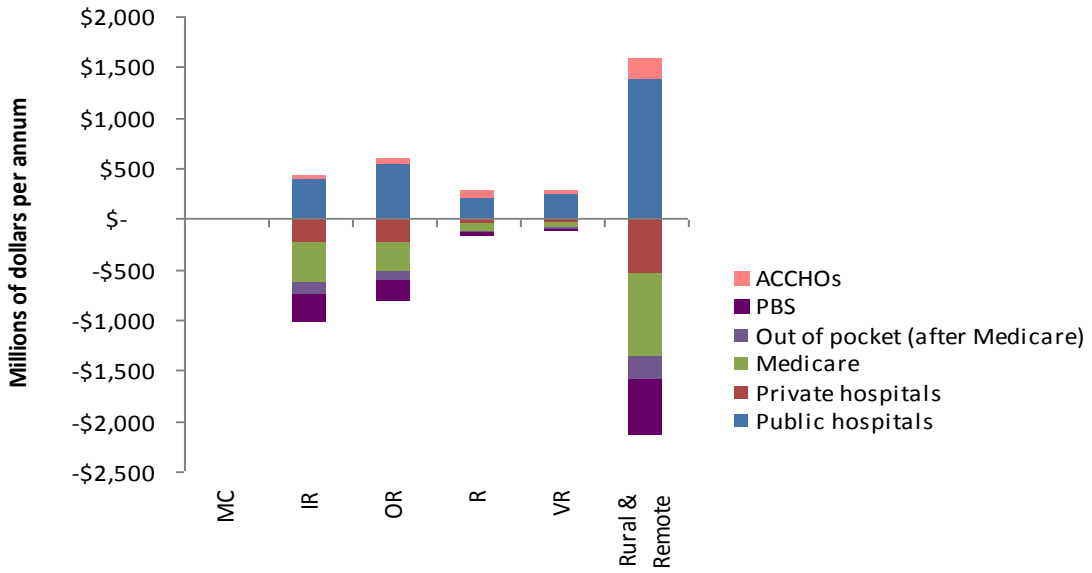

Figure 4: Overspend and underspend on hospital and Medicare, PBS and ACCHO expenditure, compared with Major Cities residents 2006-07

Notes: Age standardised. Excludes non-admitted patients. 'Out of pocket' relates to out of pocket expenditure for occasions of Medicare service.

Source: Derived by NRHA from AIHW 2011

Table 2: Average age standardised annual per capita recurrent expenditure on Medicare, PBS, public and private hospitals, out of pocket and ACCHOs, 2006-07

Expenditure area	MC	IR	OR	R	VR	Australia
	Per capital expenditure, Australian dollars, 2006-07					
Medicare	591	493	442	382	320	552
PBS	321	317	305	301	301	318
Public hospitals	970	1,066	1,240	1,628	2,432	1,043
Private hospitals	351	295	233	182	140	325
Out of pocket	158	132	115	91	61	147
ACCHOs[11]	3	9	35	238	211	13
Total	**2,394**	**2,313**	**2,369**	**2,822**	**3,465**	**2,399**

Source: Derived by NRHA from AIHW 2011.

Notes: Age standardised. Excludes non-admitted patients. 'Out of pocket' relates to out of pocket expenditure for occasions of Medicare service. Data in this table for the PBS are derived by NRHA from the AIHW report, estimated using the different prevalence of card holders and non card holders in regional areas compared with Major Cities.

[11] Note that this is expenditure on ACCHOs per total head of population in each area, not per head of the Indigenous population in each area.

Table 3: Total overspend/underspend in each area, millions of Australian dollars, 2006-07

Expenditure area	Total overspend/underspend in each region, millions of Australian dollars, 2006-07					
	MC	IR	OR	R	VR	Overall Rural Shortfall
Medicare (primary, specialists, diagnostics)	0	-337	-238	-52	-35	-661
Medicare (in-hospital)	0	-68	-57	-14	-10	-150
Medicare Total	0	-405	-295	-66	-45	-811
PBS (inc. patient co-payments)	0	-288	-202	-32	-17	-539
PBS (Government outlays)						-505
Public hospitals	0	396	533	208	243	1,381
Private hospitals	0	-229	-234	-53	-35	-552
Hospitals (total)		137	299	155	208	829
Total	0	-606	-221	109	164	-553

Source: Derived by NRHA from AIHW 2011.
Notes: Age standardised. Excludes non-admitted patients. 'Out of pocket' relates to out of pocket expenditure for occasions of Medicare service. Data in this table for the PBS are derived by NRHA from the AIHW report, estimated using the different prevalence of card holders and non card holders in regional areas compared with Major Cities. The total spend for residents of each area includes these reworked figures.

Medicare expenditure

Per capita Medicare expenditure declined sharply with remoteness, being respectively $603, $504, $453, $392, $276 per capita in MC, IR, OR, R and VR areas (Figure 5).

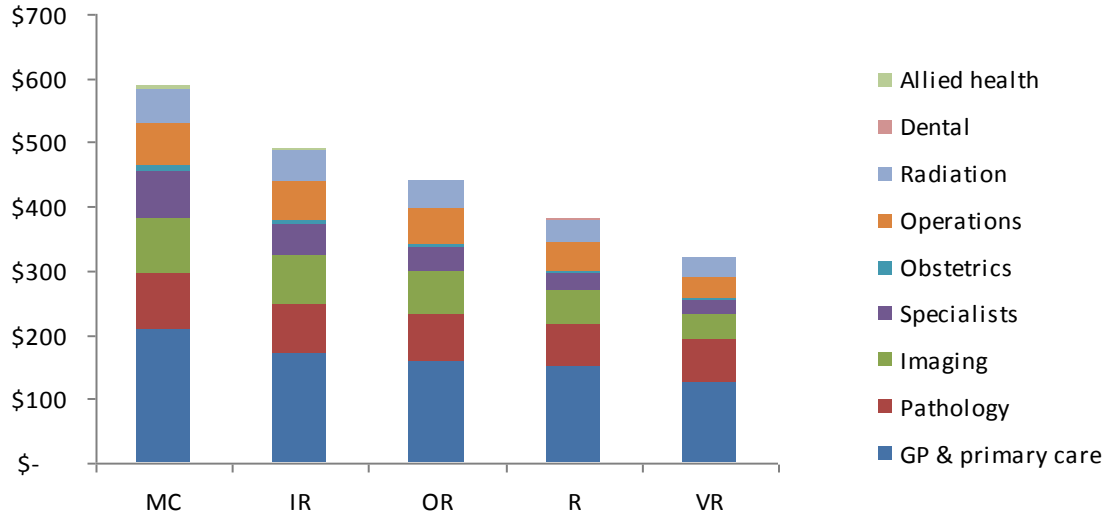

Figure 5: Per capita age standardised Medicare expenditure, by specialty, 2006-07
Source: Derived by NRHA from AIHW 2011.

Per capita expenditure declined not only for total Medicare expenditure, but for all of the individual specialties (Figure 6). Those specialties for which the decline was steepest included obstetrics and specialists. The decline in per capita Medicare expenditure was also steep for allied health and dental, but these Medicare expenditures are only a small part of total expenditure on these items.

Falls were least steep for pathology, and moderately steep for GPs and primary care, operations, radiation and imaging.

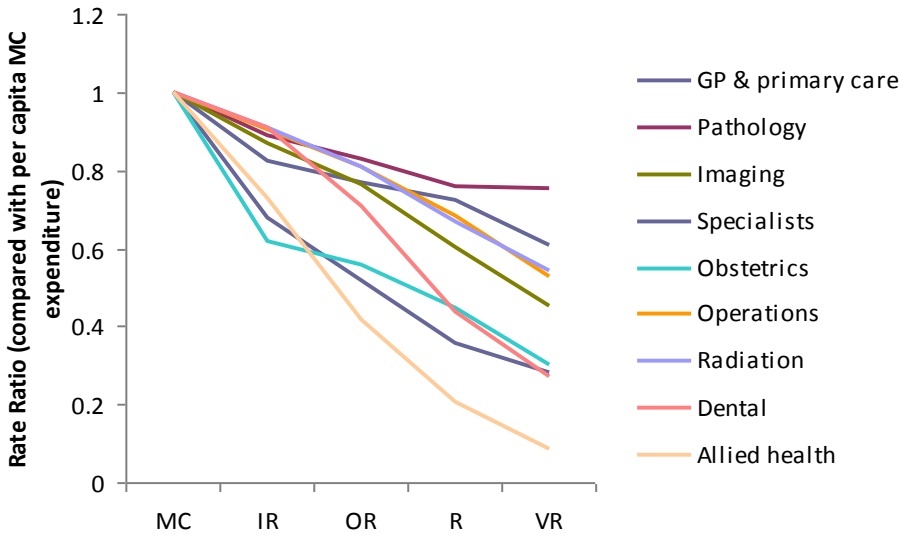

Figure 6: Rate ratio showing the decline with remoteness of per capita Medicare expenditure on each of the specialties considered in the AIHW report
Source: Derived by NRHA from AIHW 2011.

Lower levels of Medicare expenditure outside Major Cities represents an annual per capita underspend of $98, $149, $209 and $271 for IR, OR, R and VR residents respectively (Figure 7), with the largest per capita underspends relating to GPs and primary care, specialists, imaging and pathology.

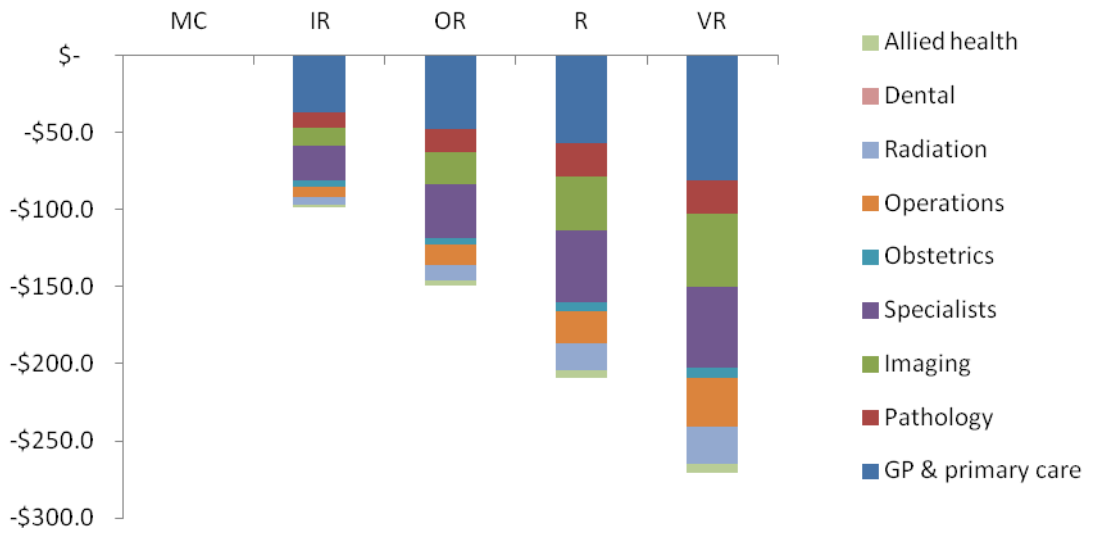

Figure 7: Per capita, age standardised, Medicare underspend, by specialty, 2006-07
Source: Derived by NRHA from AIHW 2011.

The total Medicare underspend in 2006-07 in regional and remote areas was $811 million: $405M, $295M, $66M and $45M in IR, OR, R and VR areas respectively (Figure 8 and Table 2).

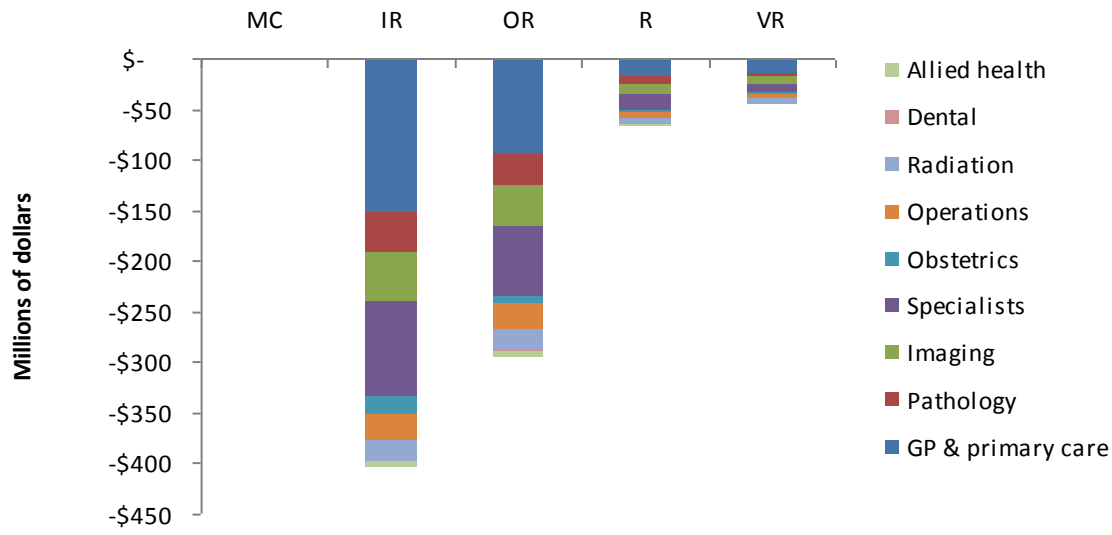

Figure 8: Total age standardised Medicare underspend, by specialty, 2006-07
Source: Derived by NRHA from AIHW 2011.

Table 4: Medicare underspend for residents of regional and remote areas, by specialty, 2006–07

	MC	IR	OR	R	VR	Australia
	Millions of dollars					
GP & primary care	0	-152	-95	-18	-13	-278
Pathology	0	-40	-30	-7	-4	-80
Imaging	0	-48	-41	-11	-8	-108
Specialists	0	-96	-69	-15	-9	-188
Obstetrics	0	-16	-9	-2	-1	-28
Operations	0	-27	-25	-7	-5	-64
Radiation	0	-20	-20	-5	-4	-49
Dental	0	-0	-0	-0	-0	-1
Allied health	0	-7	-7	-1	-1	-16
Total	**0**	**-405**	**-295**	**-66**	**-45**	**-811**

Source: Derived by NRHA from AIHW 2011.

PBS expenditure

The Pharmaceutical Benefits Scheme (PBS) provides subsidised medicines to all Australians.

Comparison between regions is complicated because of the difference in funding between concession card holders and non-card holders (the general population), coupled with the fact that there are proportionally more concession card holders in regional and (presumably) remote areas than in Major Cities. The AIHW expenditure report details these numbers: in 2007-08 44-45 per cent of those in regional areas were concession card holders compared with 30 per cent in Major Cities)[12]. Rates in remote areas are not available from the National Health Survey because of sampling difficulties for small and sparsely distributed populations.

While the AIHW report details these regional differences, the calculations for PBS expenditure in the report do not allow for them. In the AIHW report, the denominator used in the calculation of the concessional and general rate of PBS prescription and expenditure is the total population. Ideally the population of concession card holders should be used as the denominator in the calculation of rates of PBS prescription for concession card holders, and the population of people who are not concession card holders as the denominator in the calculation of rates of prescription for people who do not have a concession card.

As it stands, the AIHW report describes a rate of PBS prescription for non-card holders (the general population) that is lower (0.85 and 0.80 times) for residents of regional and remote areas compared with residents of Major Cities, while the rate of prescription for concession card holders in regional areas was slightly higher, but for remote area residents was lower than for Major Cities residents.

[12] This assumes that all of the 8.8 percent for whom concession card status is 'not known' do not have a concession card - ie if they don't know, or have not recorded the details, then they probably are not card holders. Proportionally distributing the ‘not knowns’ between card holders and non-card holders would slightly reduce the size of the ‘PBS underspend’ for regional and remote populations.

Calculating these rates separately for non-card holders and for the general population would require access to age and sex specific population data for card and non-card holders in each of the remoteness areas. This information is not available from the AIHW report. However, recalculation of an indicative rate using the total (as opposed to age specific) card holding and general population data indicates that:

- for the general population (ie non-card holders) of regional areas, **PBS prescription rates** are likely to be roughly 1.15 (rather than 0.85) times those for their counterparts in Major Cities;
- for the concession card carrying population of regional areas, **PBS prescription rates** are likely to be roughly 0.75-0.8 (rather than 1.05) times those for their counterparts in Major Cities.

Recalculation of rates of expenditure indicates that:

- for the general population of regional areas, **rates of PBS expenditure** are likely to be roughly 1.05-1.10 (rather than 0.80) times those for their counterparts in Major Cities;
- for the card carrying population of regional areas, **rates of PBS expenditure** are likely to be roughly 0.75-0.8 (rather than up to 1.05) times those for their counterparts in Major Cities.

These calculations show that, in 2006–07, while the non-card holding population in regional areas were overspent roughly $10 per capita, the concession card holders in regional areas (45 per cent of that population) experienced an underspend of between $140 and $190 per capita. This is a particularly disturbing finding given that concession card holders are those most likely to be in need of medication, being more likely to suffer poor health than those who are better off. This underspend is partially offset by the injection of $26.4 million in 2006–07 on Section 100 medicines for Aboriginal Health Services.

This means that the total annual PBS underspend for residents of regional areas (compared with that spent for residents of Major Cities) in 2006–07 was approximately $490 million. The size of the underspend for remote area residents is unclear because of the lack of sampling for the NHS in those areas, but may approximate $50 million.

In total, PBS expenditure for residents of regional and remote areas is therefore underspent by some $539 million per annum compared with what would be expected if expenditure was the same as for residents of Major Cities[13]. Net of consumer out-of-pocket costs, government PBS outlays for people in the regions are approximately $500 million less than if Major cities rates applied.

[13] This finding applies only to the 53 per cent of national expenditure on pharmaceuticals relating to the PBS; geographic distribution of the other 47 per cent of expenditure on pharmaceuticals (being out of pocket expenses unassociated with PBS co-payments) can only be estimated.

Table 5: Summary table of adjusted PBS expenditure to account for differences in the proportion of the population who are concession card holders in each of the remoteness areas, 2006-07

	MC	IR	OR	R	VR	Australia
General expenditure ($millions)	$1,210	$302	$142			$1,683
Card expenditure ($millions)	$3,256	$1,125	$ 487			$4,934
Population (millions) 2006-07	14.299	4.121	1.980	0.316	0.166	20,883
% of pop card holders	30%	45%	44%	44%	44%	35%
General population (millions)	9.952	2.283	1.111	0.177	0.934	13.532
Card holding population (millions)	4.347	1.838	0.869	0.139	0.731	7.351
Gen. per cap. expenditure (adjusted)	$122	$132	$128	$128	$128	$124
Card per cap. expenditure (adjusted)	$749	$612	$560	$560	$560	$671
Per capita overspend gen. pop	$0	$11	$7	$7	$7	$3
Per capita overspend card pop	$0	-$137	-$189	-$189	-$189	-$78
Total overspend gen. pop	$0	$25	$7	$1	$1	$34
Total overspend card pop	$0	-$312	-$210	-$33	-$18	-$573
Total overspend	**$0**	**-$288**	**-$202**	**-$32**	**-$17**	**-$539**

Notes: Assumes, in the absence of information from the ABS National Health Survey, that the percentage of the population in Remote and Very Remote areas who are concession card holders is the same as in Outer Regional areas. Estimates of underspend described in this table are indicative.
Source: Derived by NRHA from AIHW 2011.

Optometry services

Per capita expenditure on optometry services for residents of Inner Regional areas was similar to that for Major Cities, but lower for those in Outer Regional, Remote and Very Remote areas (respectively 0.94, 0.8 and 0.68 times rates for those in Major Cities). Per capita expenditure in 2006–07 averaged $11.64 for residents of Major Cities, but $7.88 for those in Very Remote areas. The total government underspend on optometry services for Australians living outside Major Cities was just over $3 million a year.

Radiation and Other

The AIHW reports (pages 143-144) serious levels of under-expenditure and lower service levels for people in regional and remote areas in out-of- hospital radiation.

Levels of service for primary, diagnostic and specialist care

Major shortfalls in expenditure in most categories of primary, diagnostic and specialist care translate into fewer services for people in rural and remote communities compared to Major Cities. These shortfalls, which occur despite all the incentives provided and measures taken by both Commonwealth and State governments to bring health professionals and health services to rural areas, are summarised in the following table.

In 2006-07 the people who live in regional and remote areas experienced a shortfall of 12.6 million MBS-funded services. This service shortfall would be repeated every year. This aggregate MBS service shortfall is comprised of 6.7 million services from GPs and others giving primary care - the point of first contact with the health care system (valued at $284 million per annum) - and shortfalls of 2.02 million specialist consultations, 0.75 million imaging services and 3.2 million pathology services.

PBS scripts

The estimated annual shortfall in Government-funded PBS benefits of the order of $500 million translates to around 11 million scripts a year. This means that the total shortfall in the health care that helps keep people out of hospital is 3.6 MBS/PBS services for each country person every year.

Table 6: Deficits by service number for various types of service

MBS services	Inner Regional	Outer Regional	Remote	Very Remote	Total 'rural'
GPs, other primary care	3,568,895	2,187,338	509,639	392,834	6,658,706
% shortfall cf MC rate	16%	20%	30%	44%	
Specialist services	992,779	747,330	179,072	106,618	2,025,800
% shortfall	26%	41%	62%	70%	
Pathology services	1,592,816	1,195,848	284,833	136,625	3,210,123
% shortfall	10%	15%	23%	21%	
Imaging services	341,641	266,734	81,946	64,027	754,348
% shortfall	11%	18%	35%	53%	
TOTAL	6,496,131	4,397,250	1,055,490	700,104	12,648,975
% shortfall	14%	21%	31%	41%	
PBS Scripts*	5,220,000	3,810,000	1,400,000	740,000	11,000,000

*Estimated, having adjusted for substantially higher levels of concession cardholders in rural Australia.

Hospital expenditure

Hospital expenditure for admitted patients (ie excluding the costs of services provided to patients not admitted, such as those who attend an Accident and Emergency department) increases with remoteness. An assessment of the overall level of access to health services and the balance between primary and acute care services for Major Cities and regional/remote people requires close examination.

Summary of AIHW findings regarding hospital services

The AIHW report provides information by remoteness on levels of service for patients admitted to hospitals (about 90 per cent of government hospital expenditures), but was not able to do so for hospital-based non admitted services.

Table 3 above shows that overall expenditures on hospital services for people in rural and remote Australia was about $829 million more than if major city rates applied ($1,381 million in public hospitals, offset partially by $552 million lower expenditures in private hospitals).

The rate of public hospital admission/separation increased with remoteness to twice the Major Cities rate in remote areas. The rate of separation from private hospitals decreased to 0.35 times the MC rate in VR areas. The net effect was for lower overall rates in inner regional areas but 2 per cent higher in outer regional areas, 12 per cent in remote, and 56 per cent in very remote.

Total expenditure on public hospital admissions was 10 per cent and 30 per cent higher for residents of Inner Regional and Outer Regional areas, and roughly twice as high for residents of remote areas.

Private hospital expenditure tailed off rapidly with remoteness

Total expenditure in hospitals was 5-10 per cent higher per head for regional residents, and 1.35 to 1.95 times higher in remote areas; ie the pattern for per capita expenditure largely followed that for the rate of separation.

A public hospital separation cost about the same for people in all areas, whereas a private hospital separation cost roughly 10 per cent more for residents outside MCs.

Length of stay

Overall, there were 7.6 million hospital separations in 2006–07. Of these more than half (4.2 million) were same-day separations, while 3.4 million involved staying in hospital one or more nights.

Same-day separations (3 million) were more common for Major Cities residents than overnight separations (2.2 million), whereas for people from regional and remote areas the numbers were about the same (1.3 million same-day separations and 1.2 million overnight separations).

Rates of overnight separation increased with remoteness to almost double the MC rate for residents of VR areas. As a result, rates of expenditure on overnight separation increased with remoteness - expenditure per VR person being double that of a MC resident. Overall, on the basis of the AIHW report, the Alliance estimates that people outside the Major Cities had about 190,000 more overnight services than if Major cities rates had applied.

Rates of same-day separation were lower for regional (0.86) and Remote (0.92) residents than for people in the Major Cities, whereas same-day separation rates for VR residents were 1.35 times higher than for MC residents. Expenditure followed the same pattern: it was similar in all areas except for VR residents for whom it was 30 per cent higher.

The average cost of an overnight stay in an Australian hospital was $8,043, while a same-day separation cost $1,311 – less than one-sixth the cost. These costs vary with location, with overnight separations being up to 15 per cent less expensive for regional and remote residents than for residents of the Major Cities. In contrast to this, same-day separations for the residents of regional and Remote (ASGC 4) areas were five to 10 per cent more expensive, but 15 per cent less expensive for the residents of Very Remote areas (ASGC 5).

Acuteness of separations

Of the 7.6 million hospital separations in 2006–07, 7.3 million were acute, while 0.3 million were not-acute.

Compared to Major city residents, rates of acute separation were lower for Inner Regional but higher for Outer Regional (4 per cent), rising to 60 per cent higher in remote areas.

Rates of not-acute separation for regional and remote residents were 0.65 times those for MC residents, but 25 per cent higher for VR residents.

Average per capita expenditure was $1,369 per person, of which $1,238 was for acute separation and $131 was for not-acute separation.

Rates of expenditure on acute separation increased with remoteness, with expenditure per Very Remote person being double that of a MC resident. Expenditure per person on not-acute separations was lower in regional areas, and 15-45 per cent higher for VR residents.

An average acute separation cost $4,332 compared with an average not-acute separation at $13,313 – three times the cost of an acute separation. Not-acute separations include rehabilitation, palliative care, geriatric assessment, and maintenance services. Their greater cost per admission/separation results from the longer hospital stay required. For example the AIHW Australian Hospital Statistics 2000-2001 reported that not acute services comprised 2.6% of separations but 11.6% of patient days[14].

An average acute separation costs about the same for residents of each area whereas, on average, not-acute separations cost 15-30 per cent more for the residents of regional and remote areas than for those in the Major Cities.

Case studies in hospital experience

Urban, Reg and Remy are three siblings who live, respectively, in (Major Cities) Sydney, (regional) Dubbo and (Very Remote) Bourke, all in NSW. Note that the terms ‘separation’ and ‘admission’ are synonymous.

Reg is just as likely to have a spell in hospital as his brother Urban, but in Reg’s case it is more likely to be in a public than a private hospital. Reg’s admissions are evenly split between overnight and same-day admissions, while Urban is more likely to experience same-day separations. Reg is less likely than Urban to have a not-acute separation, but they are equally likely to experience an acute separation.

The cost of Reg’s hospitalisation each year is 5-10 per cent higher than for Urban, even though their rate of hospitalisation is similar. This is because Reg is more likely than Urban to be admitted overnight, and more likely to be admitted to a public rather than private hospital. Overnight stays in hospital cost 6 times as much as same-day separations, and public hospital separations are up to twice as expensive as private hospital separations[15].

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[14] *www.aihw.gov.au/publications/hse/ahs00-01/ahs00-01-x04.pdf* -

[15] The seriousness of the condition and the complexity of care are likely to be greater in public hospitals.

Their brother Remy from Bourke will have a quite different experience. He is about one and a half times as likely to separate from hospital compared with brothers Urban and Reg, and over twice as likely to separate from a public hospital but about a third as likely to separate from a private hospital as Urban. Remy is almost twice as likely as Urban to separate from hospital after one or more nights in hospital, and only about 30 per cent as likely to separate from hospital on the same day. Compared with Urban, Remy is 1.2 times as likely to have a non-acute separation and 1.6 times as likely to have an acute separation

The annual cost of Remy's hospitalisations is twice as high as it is for Urban. This is because Remy separates from hospital about one and half times as frequently as Urban, and the bulk of these are from a public hospital, where the cost of separation is up to double that of private hospitals. Also, the cost of overnight separation is 6 times that of a same-day separation.

Admitted and non-admitted patient services in context

Australian hospitals provide both admitted patient services and non-admitted patient services.

In 2008/09, there were a total of 4.9 million admissions/separations from public hospitals and 3.25 million admissions/separations from private hospitals AIHW 2010. In 2006/07, expenditure on admitted patients was $21.8 billion in public hospitals and $6.8 billion in private hospitals (AIHW 2011). While not stated in the AIHW report, hospital revenues (ie income in addition to government funding (eg from health insurance companies)) in 2008/09 were $3 billion for public hospitals and $9 billion for private hospitals (AIHW 2010).
In 2008/09, there were 49.2 million non-admitted occasions of service provided by public hospitals and 2.0 million non-admitted occasions of service provided by private hospitals (AIHW 2011 page 12).

Non-admitted patient care

Expenditure on non-admitted patients ($6.6 billion nationally in 2006/07) has been excluded from the AIHW Rural Expenditure report. In an analysis of data from 2007/08, the Productivity Commission (Productivity Commission 2009, chapter 2, page 37) reports that of 48.8 million non-admitted occasions of service, there were:

- 7.1 million A&E services;
- 16.4 million occasions of outpatient care[16];
- 24.9 million other occasions of individual patient care; and
- 0.4 million group sessions.

It is clear that the bulk of hospital expenditure is on admitted patients, but the majority of services are for non-admitted patients.

In 2001-02, ratios of Accident and Emergency attendance to population were 236, 359, 413, 853, and 933 per 1000, in MCs, IR, OR, R and VR areas respectively (AIHW 2003 page 22).

Hospitals in rural and remote areas

In 2008–09, there were 1,317 hospitals in Australia. Of these:

[16] Outpatient-related care includes Allied health, Dental, Dialysis, Endoscopy and related procedures, and Other medical/surgical/obstetric occasions of service.

- 285 (22 per cent) were private free-standing day hospital facilities;
- 276 (21 per cent) were other private hospitals;
- 737 (56 per cent) were public acute hospitals; and
- 19 (1 per cent) were public psychiatric hospitals..

Of the 737 public acute hospitals,

- 23 principal referral hospitals were in regional areas and 1 was in a remote area.
- 17 large hospitals were in regional areas and 1 was in remote areas.
- 70 medium hospitals were in regional areas and none were in remote areas.
- 110 small acute hospitals were in regional areas and 40 were in remote areas.
- 2 rehabilitation hospitals were in regional areas.
- 62 small non-acute hospitals were in regional areas and 11 were in remote areas.
- 47 multipurpose services were in regional areas and 32 were in remote areas.
- 78 'other' hospitals were in regional areas and 77 were in remote areas.

Table 7: Public hospitals in Major Cities, regional and remote areas, by type

Hospital type	MC	Regional	Remote	Total	Average beds	Separations (average)	ALOS (days)	Non-acute care (patient days %)
Principal referral	50	23	1	74	411.8	42,058	3.4	8.1
Specialist women's and children's	11	0	0	11	200.8	20,634	3.1	0.5
Large acute	23	17	1	41	143.5	15,419	3	13.1
Medium acute	22	70	0	92	64.1	5,770	3.2	21.3
Small acute	0	110	40	151	21.6	1,205	3.2	10.6
Psychiatric	10	9	0	19	110.7	554	54.7	51.6
Rehabilitation	6	2	0	8	70.5	1,104	20.8	91.2
Mothercraft	8	0	0	8	26.5	1,683	3.6	0
Small non-acute	13	62	11	86	28.4	883	8.5	67.9
Multi-purpose services	0	47	32	79	12	345	4.3	29
Other	32	78	77	187	13.1	233	15	85.8
Total	**175**	**418**	**162**	**756**	**74.7**	**6,434**	**3.7**	**17.1**
Source: AIHW 2010 page 65								

Nationally, there were 56,478 beds in public hospitals and 27,466 in private hospitals, and while it is possible to describe how many beds are available in public hospitals in each remoteness area, we have been unable to locate the same for the 561 private hospitals.

Table 7 suggests smaller numbers of beds in regional and remote hospitals because of the greater prevalence in those areas of smaller hospitals. The average number of beds in each hospital in MC, IR, OR, R and VR areas is 190, 55, 30, 18 and 13.

Two other pieces of information from the AIHW report (AIHW 2011) may be useful in interpreting health expenditure in regional and remote areas:

- fifty seven per cent of people in Major Cities have private health insurance, compared with 48 per cent in IR areas and 41 per cent in OR areas; and
- approximately 30 per cent of the residents of Major Cities have a government concessional health card, compared with almost 45 per cent in regional areas.

Changes over time

The rural and remote health deficit appears to be increasing.

The new AIHW report also indicates slower growth in expenditure in regional and remote areas for all of the areas of expenditure for which time series were investigated (Figure 9).

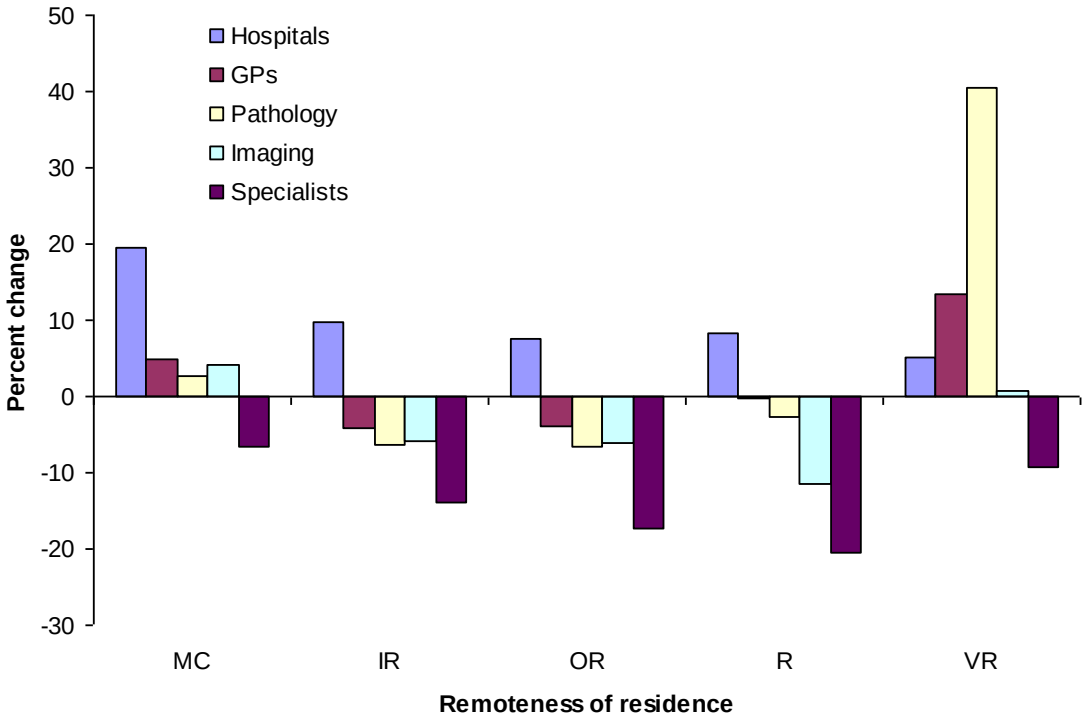

Figure 9: Percentage change in age standardised expenditure per person, adjusted to 2006-07 prices, 2001-02 to 2006-07
Source: AIHW 2011

Table 8: Percentage change in age standardised expenditure per person, adjusted to 2006-07 prices, 2001-02 to 2006-07

	MC	IR	OR	R	VR	Australia
	Percent change 2001-02 to 2006-07					
Hospitals	19.5	9.8	7.5	8.2	5.2	15.3
GPs	4.9	-4.1	-3.8	-0.3	13.5	2.5
Pathology	2.8	-6.3	-6.7	-2.8	40.4	0.2
Imaging	4.1	-5.8	-6.2	-11.5	0.7	1.1
Specialists	-6.6	-13.9	-17.3	-20.6	-9.3	-8.6
Source: AIHW 2011 Notes: This table describes the data illustrated in Figure 9 above.						

While per capita hospital expenditure increased over time at a lower rate for residents of regional and remote areas than for residents of Major Cities, Medicare benefits paid per capita on the four categories of Medicare expenditure examined in the report decreased for regional and Remote residents (but increased for Very Remote residents). Per capita Medicare benefits paid for residents of Major Cities increased (except for specialists).

The Alliance's comments and interpretations

Hospital expenditure for people from regional and remote Australia

Total admitted public hospital patient expenditure was $1.381 billion higher for the 7 million people living in regional and remote areas than would be expected if the per capita Major Cities rates applied. Net of lower levels of private patient services ($552 million less) the additional expenditures in admitted hospital services was an estimated $829 million.

These costs are explained by the proportionately higher levels of acute care and by the proportionately greater number of hospital overnight stays for people in regional, rural and remote Australia compared to rates of service applying in Major cities.

Based on AIHW data the Alliance calculates that people outside the major cities have about 60,000 additional episodes of acute care, costing an additional $890 million and about 190,000 more episodes of overnight care (this figure including probably the vast bulk of the acute care services) costing an additional $851 million. (These figures probably largely overlap because many of the additional acute care episodes would also result in overnight stays.)

People outside of major cities have about 30,000 fewer episodes of non-acute care, but the same levels of expenditure per head because of the greater cost of these non acute services for people outside the major cities.

Higher levels of acute care

The reasons for higher levels of acute care include the facts that:

- rates of separation for potentially preventable diseases are higher in regional and remote areas than in Major Cities, indicating lower access to primary care; and
- the population in regional and remote areas has lower socio-economic status and greater need for treatment.

The health needs of remote and very remote populations including the much higher proportion of Aboriginal people in those areas is especially crucial, as these regions constitute about 7.3 per cent of the population outside major cities, but over 40 per cent of additional acute care costs.

Higher hospital expenditure related to potentially preventable hospital admissions

Potentially preventable hospitalisations are those that are assessed as having been avoidable if timely and adequate non-hospital care had been provided.

Rates of separation for potentially preventable diseases are higher in regional and especially remote areas (AIHW 2008b). In *Australian Hospitals* 2006–07 (AIHW 2008b), AIHW reports that the rates of potentially preventable hospital separations[17] are 15 per cent to 35 per cent more likely for residents of regional areas, and over twice as likely for residents of remote areas.

[17] Eg vaccine preventable diseases, cellulitis, ear nose and throat infections, dehydration and gastro, angina, complications of diabetes, asthma, COPD etc.

Reducing the likelihood of these admissions for regional and remote areas residents to the rate found amongst residents of Major Cities reduces the crude separation rate from 370 to 330 per 1000 regional residents, 370 to 310 per 1000 Remote residents, and from 460 to 390 per 1000 Very Remote residents. These adjustments result in hospitalisation rates that are broadly similar for residents of MC, IR, OR and Remote areas, but still slightly higher for the residents of Very Remote areas.

Table 9: Potentially preventable hospitalisations, 2006-2007

	MC	IR	OR	R	VR
Sep rate per 1000 pop	30.18	34.42	40.35	65.08	70.54
Population	14,298,739	4,121,127	1,980,209	316,271	166,434
Total avoidable separations	431,536	141,849	79,901	20,583	11,740
Avoidable separations as a percentage of all separations	8%	9%	11%	18%	15%

Source: row 1 from page 71 Aus hosp stats 2006-07, row 2 from page 134 of AIHW health expenditure by remoteness report, row 3 calculated by NRHA
Note: this calculation of total avoidable separations is an estimate; the rate in the first row is age standardised.

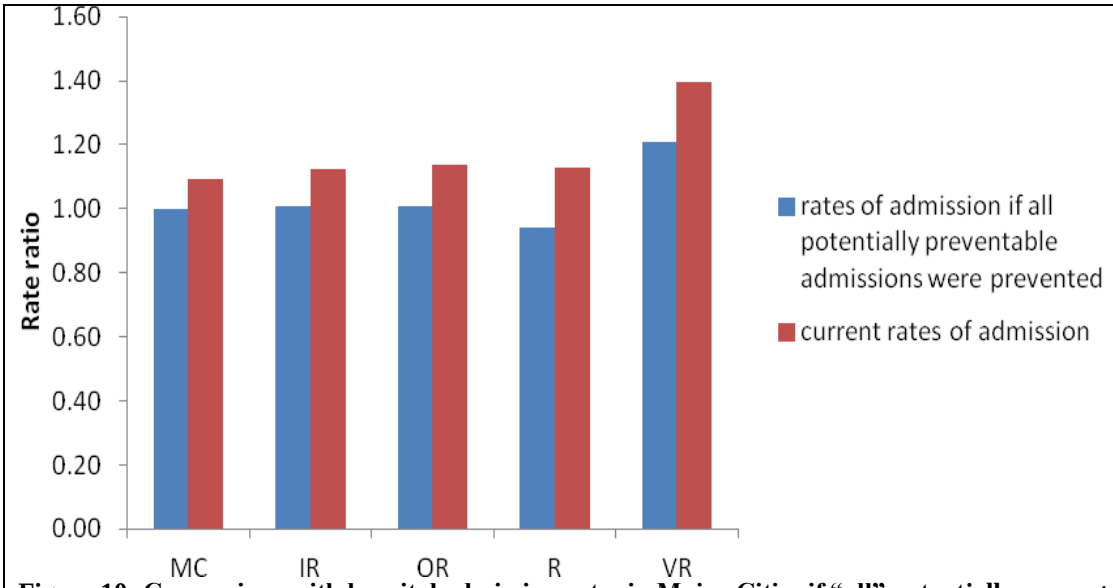

Figure 10: Comparison with hospital admission rates in Major Cities if "all" potentially preventable admissions were prevented, 2006-07
Source: row 1 from page 71 Australian Hospital Statistics 2006-07, row 2 from page 134 of AIHW health expenditure by remoteness report, row 3 calculated by NRHA.
Notes: derived by NRHA from Table A5.2 in Australia's Hospitals 2006–07 (AIHW 2008b).
Potentially preventable hospital admissions are defined as "...those conditions where hospitalisation is thought to be avoidable if timely and adequate non-hospital care had been provided." However, "...the list of PPHs is not comprehensive - there are other hospital admissions which may be preventable."

By way of example, rates of separation for diabetes complications potentially preventable through primary care were up to 1.5 times higher for residents of regional areas and between 3 and 4 times higher for residents of remote areas than for residents of Major Cities.

From Figure 10, it is clear that potentially preventable admissions are responsible for much of the difference in admission rates. Addressing primary care, illness prevention and health promotion would do much to reduce admissions to hospital by residents of Regional and Remote areas. Note that the admission rate in VR areas is still higher than in MCs, but appreciably lower than it would otherwise have been.

> "The selected potentially preventable hospitalisations (PPHs) are those conditions where hospitalisation is thought to be avoidable if timely and adequate non-hospital care had been provided. Separation rates for PPHs therefore have potential as indicators of the quality or effectiveness of non-hospital care. A high rate of potentially preventable hospitalisation may indicate an increased prevalence of the conditions in the community or poorer functioning of the non-hospital care system.

The definition does not include those admissions that could have been prevented by lifestyle modification (eg quitting smoking, better diet, active lifestyle) or by modification of the environment or society (eg safer roads and vehicles, cleaner air, more control over environment, better education, better access to reliable and high quality work, supportive and predictable climate, good governance, control of disease vectors, etc).

In other words, while better access to primary care would result in lower hospitalisation rates, and in more similar rates of admission in each of the areas, focus on true (broad) primary health care would deliver still further benefits in health and reduced need for high cost acute care. It is very likely that with good access to primary health care, and to a physical, social and built environment in regional and remote areas designed to promote health, hospital admissions in regional and remote areas would be no more than in Major Cities.

Poorer health of the population and greater need for treatment

Higher levels of hospital admission may also indicate an appropriate use of the hospital system to respond to greater need. People living in regional and remote Australia have, on average, poorer health and worse health outcomes than people in Major Cities. Rural people experience:

- less access to education and to higher level jobs;
- lower average incomes;
- lesser access to primary care;
- cultural issues (eg related to higher rates of smoking and drinking; less physical activity; overweight);
- occupational and environmental hazards (eg agricultural jobs and higher risk of high speed road accident); and
- poorer access to fresh and healthy food.

Examples of poorer health in regional and remote areas
In regional and remote areas, and compared with Major Cities:

- Death rates are 1.05–1.15, and 1.2–1.7 times as high;
- Asthma, bronchitis and arthritis are about 20 per cent more prevalent;
- Rates of infectious disease (for example Ross river virus, Salmonella, several STIs) are frequently several times higher;
- The prevalence of disability in males is at least 20 per cent higher;
- Death rates due to injury are 1.3–1.5, and 1.8–3.2 times higher.

(Phillips 2009)

> "In 2008–09, there were 869.8 separations per 1,000 population for Indigenous Australians, 2.5 times the separation rate for Other Australians. About four-fifths of the difference between these rates was due to higher separation rates for Indigenous Australians admitted for maintenance renal dialysis." (AIHW 2010 p 137).

Bearing in mind that Indigenous people make up 44 per cent of the population in Very Remote areas, it is likely that a substantial proportion of the inter-regional difference in the rate of separation is likely to be a consequence of higher rates of admission for dialysis. It is unclear to what extent the need to travel would require these admissions to be overnight and to what extent this adds to expenditure in remote hospitals.

One would expect higher rates of hospital admission so as to address poorer health. However, there would appear to be a range of options which could reduce this level of poor health, through greater access to primary care, better access to education and to higher socio-economic status work, better access to housing and healthy foods , and so on, which would be expected to result in lower rates of hospital admission.

Once again, a focus on both better access to primary care and on broad primary health care would assist to reduce rates of these diseases and the need for hospital admission.

Compounding their prospects, people from regional and remote areas have lower levels of access to many hospital procedures which have the capacity to reduce the odds of future poor health. Australian Hospital Statistics 2006–07 (AIHW 2008b) reports lower rates of separation for a range of procedures for residents of remote areas, and in some cases residents of regional areas. It is highly probable that other procedures are also less common for residents of regional and remote areas – but a comparison for the complete range of procedures, by remoteness area of the patient, has not been published.

Table 10: Standardised separation rate ratios for selected hospital procedures, by area of residence, 2006–07

	MC	IR	OR	R	VR
Cholecystectomy	0.98	1.09	1.01	0.83	0.73
Coronary angioplasty	1.06	0.92	0.84	0.81	0.62
Coronary artery bypass graft	1.00	0.99	1.05	0.88	0.88
Hip replacement	0.95	1.12	1.07	0.89	0.55
Knee replacement	0.94	1.15	1.08	0.83	0.70
Myringotomy	1.03	1.01	0.89	0.70	0.54
Prostatectomy	1.00	1.04	0.96	0.73	0.56
Tonsillectomy	0.96	1.19	1.01	0.86	0.43

Source: AIHW 2008b.

Higher levels of overnight stay

There are many likely causes of higher levels of overnight stay for people from rural and remote areas, including the higher levels of acute care described above.

In addition to this, presentation at hospital of someone from a Regional or Remote area is more likely to lead to their admission for reasons broadly associated with precaution. Where (as in the bulk of occasions) their presentation is to a hospital in their home area (ie in a regional or remote area), the lesser availability of specialists and advanced diagnostic equipment means there is a lower probability of a definitive diagnosis. This means there is more likely to be an overnight admission as a precautionary measure. Secondly, longer return travel distances for some patients may make precautionary admission more likely – given also local understanding of logistical challenges with returning home.

In addition to these precautionary admissions, hospitals in regional and remote areas cover for the lack of access to access to residential aged care, rehabilitation services and domiciliary support for patients who no longer require acute inpatient care.

It also appears likely that there are regional differences in the patterns of care because of the level of availability of specialist staff and infrastructure. For example, in rural regions where geriatric, rehabilitation and palliative care specialists are not as readily available as in metropolitan regions, patients may be more likely to be assigned to less ‘specific’ rehabilitation categories.

Higher hospital expenditure related to lower supply of aged care

One of the likely significant reasons for higher levels of longer stay hospital expenditure for people in regional and remote areas is the need for hospitals to accommodate frail aged people because of the lower supply of residential aged care places and aged care packages in those areas. It seems likely that older people often move to larger and less remote centres (eg regional hubs) to access aged care and hospital services, thereby reducing the apparent magnitude of the undersupply of aged care services in those (especially remote) places.

The under-supply of aged care places in regional and remote areas is likely to be more serious than is often assumed. Indigenous people over the age of 50 years and non-Indigenous people over 70 years are considered, on average, to have a similar need for aged care. While the

proportion of the population in Major Cities who are Indigenous is only 1 per cent, it rises in IR, OR, R and VR areas to 2, 5, 13 and 44 per cent respectively.

If the denominator for the calculation of rates is altered from the total population in each area older than 70 years, to the number of Indigenous people older than 50 years plus the number of non-Indigenous people older than 70 years, the rates of aged care provision are much poorer, as shown in Table 11.

Table 11: Actual residential aged care places, CACP and EACH packages available, per 1000 persons aged 70+ years (scenario a) and per thousand non-Indigenous 70+ and Indigenous 50+ years (scenario b), by ASGC Remoteness area, 30 June 2006

	MC	IR	OR	R	VR
	Rate per 1000 population				
Total aged care places per 1000, based on population aged 70 and over (a)	108	115.1	104.2	112.2	219.1
Total aged care places per 1000, inc. Aboriginal people aged 50-69 (b)	107	111	98	90	111

Source: Derived by NRHA from AIHW 2008.
Note: Rates reported have been recalculated using a modified denominator - the non-Indigenous population in each area aged 70+ plus the Indigenous population in each area aged 50+ based on 2001 figures (the most recent available).

An AIHW report on aged care 2008-2009 shows that country regions other than very remote have at least a 2 per cent shortfall in the provision of aged care, compared to Major Cities. It also notes that, if adjusted for Aboriginal aged care needs for people age 50-69, the provision of aged care services falls short nationally by an additional 2.9 per cent. Given that 70 per cent of Aboriginal people reside in rural and remote Australia, it can be concluded that most of this additional shortfall would also be in rural areas. With government aged care outlays of $10 billion in 2008-2009, the Alliance considers that aged care provision could be short by close to $500 million, even before considering the likely higher costs of providing aged care services in rural and remote areas.

Equitable provision of aged care services is crucial now, and will become increasingly so as the population ages and as the share of older people in regional areas (especially Inner Regional) increases. Information on the adequacy of aged care services is therefore vital to assess the adequacy of the health care system in rural areas.

Nursing home care units are more common in regional and remote hospitals than in Major Cities hospitals. For example, of the 261 nursing home care units in Australian hospitals, 13 are in Major Cities hospitals, while 191 are in regional hospitals and 57 are in Remote area hospitals (AIHW 2010 page 71). This equates to 7 per cent of Major Cities hospitals, 46 per cent of regional hospitals and 35 per cent of remote area hospitals.

Seventy nine regional and remote hospitals are classified as Multi-purpose Services (MPSs). These hospitals were generally combined with services for residential aged care, and mainly provide non-acute admitted patient care. The Alliance regards these as good models for service delivery in regional and remote areas, where the combination of a number of services provides some economies of scope and maintains essential services in these communities, including aged

care. It is unclear whether the aged care provided in these 79 MPSs is additional to that described for those hospitals in regional and remote areas which contain nursing home care units discussed in the point above.

Rates of separation for patients receiving maintenance and psychogeriatric care in regional areas were 1.05 to 1.35 times those in Major Cities, and in remote areas were twice those in Major Cities. Even more significant, per capita consumption of patient days in IR and OR areas were 1.9 to 4.4 times those in MCs, while in R and VR areas average per capita consumption was 9 and 5.8 times that in Major Cities (AIHW 2008 p 19).

This higher hospital admission rate can be explained by different patterns of separation from hospital into residential aged care with lower levels of admission and lower levels of permanent admission to residential aged care. Karmel et al (AIHW 2008. Karmel, Lloyd and Anderson p 72) note that:

> *'The most striking difference was the decreasing relative use of permanent admissions as the remoteness of the RAC facility increased: for facilities in Major Cities 75 per cent of people admitted from hospital went into permanent care compared with under 50 per cent for those in remote and very remote regions.... The models on discharge..., show.. that people from more remote regions were less likely than others to be discharged into RAC, and that the resulting admission into care was even less likely to be for permanent RAC as remoteness increased. This pattern could result from a number of factors, including the availability of residential care in a person's local region, the availability of community care and the need to ensure that a person can cope once they return to a home that may be a long way from emergency services.'*

Elderly rural and remote people in need of residential aged care also have to wait longer in hospital before they are transferred to Residential Aged Care (RAC).

Nationally in 2008–09, there were 1.065 million patient days used for maintenance and psychogeriatric care (AIHW 2010 p 287). There were 25.782 million patient days provided by combined public and private hospitals in Australia in 2008–09 (AIHW 2010 p 153).Therefore, nationally, about 1 in 25 (4 per cent) of patient days were used for maintenance and psychogeriatric care. From the previous paragraphs, it is clear that the rate of usage in Major Cities is lower than this, possibly around 2 per cent (or less) of bed days. On this basis, the percentage of patient days consumed by maintenance and psychogeriatric care would be approximately 4 per cent and 9 per cent in IR and OR areas, and closer to 18 and 12 per cent in remote and very remote areas respectively.

It appears likely that if the rate at which people were hospitalised and were accommodated in regional and remote hospitals was the same as in Major Cities, , the expenditure on not acute services would be between 2 and 7 per cent lower for people in regional areas, and between 10 and 16 per cent lower in remote areas. This would contribute substantially to removing the expenditure differential between MCs and the other areas.

Table 12 below shows that aged residents of IR, OR, R and VR areas have to stay in hospital 15, 40, 50 and 30 per cent longer than their MC counterparts before they enter RAC.

Table 12: Mean and 90th percentile of length of hospital stay in days, for patients 65+ moving to permanent residential aged care, 2001-2002

	MC	IR	OR	R	VR	Australia
Mean	35.8	41.0	51.1	54.3	46.7	38.2
90th percentile	69	79	97	104	n.p.	73
Bed day rate /1000 pop	1162	1173	1290	1464	2068	

Source: AIHW 2008. Karmel, Lloyd and Anderson.
Note: the difference in very remote areas described in this table does not factor in the influence of the large number of Indigenous people with earlier onset of aged care needs. An unknown percentage of the patient days described in this table are also described in the previous section on maintenance and psychogeriatric admissions (ie there is likely to be some overlap).

Elderly rural and remote people in need of residential aged care also wait longer in hospital before they die. Aged residents of IR, OR, R and VR areas stay in hospital 1.4, 2.2, 2.6 and 3.7 times longer than their MC counterparts before dying (Table 13).

Table 13: Mean and 90th percentile of length of stay in days, for patients 65+ who died in hospital, 2001-2002

	MC	IR	OR	R	VR	Australia
Mean	13.6	18.4	30.5	49.2	50.1	17.3
90th percentile	30	30	38	43	76	31
Bed day rate /1000 pop	1,162	1,173	1,290	1,464	2,068	
Waiting bed days as a percentage of total bed days	2.9%	4.8%	7.2%	7.1%	3.2%	3.8%

Source: AIHW 2008 Karmel, Lloyd and Anderson
Note: the difference in very remote areas described in this table does not factor in the influence of the large number of Indigenous people with earlier onset of aged care needs. It is significant that the 90th percentile for remote areas is lower than the mean; the median for most areas (including remote) is 8 days, which means that extreme outliers play a major part in determining the mean in remote areas (ie at least one person stayed in at least one remote hospital for a very long time before dying). An unknown percentage of the patient days described in this table are also described in the previous section on maintenance and psychogeriatric admissions (ie there is likely to be some overlap, but it is unclear how much).

The preponderance of smaller hospitals and lower economies of scale

This report does not address relative costs of similar services provided by regional and rural hospitals compared to like services provided by hospitals in major cities, as it focuses on services provided to rural people from all sources including major cities; further it is not able to break down services by complexity of care needs.

There are more than three times as many hospitals in regional and remote areas as in Major Cities, however, these tend to be substantially smaller than MC hospitals. Table 7 illustrates the substantially smaller size of regional and especially remote area hospitals. Some of these hospitals may be more efficient, while it is certain that many will cost more for equivalent types of service, because of their lack of economies of both scale and scope. Higher costs of staff with greater use of locums and temporary staff, and the need for some attraction costs such as provision of accommodation would also add to the costs of some rural hospitals.

Many rural hospitals also need to provide capacity for service provision eg for accident and emergency.

Even though these hospitals are smaller, the average cost per separation from public hospitals for patients in regional and remote areas is very similar, and 10 per cent higher for private hospitals, compared with costs for Major Cities residents.

Overall, in the view of the Alliance, the key issue for people in rural and remote Australia is to preserve their access to local hospitals as far as practicable, and to ensure that the range of hospital services is best designed to meet the needs of the local community. The continued development of multi-purpose services providing a combination of aged care, hospital and some community and primary care services acute represents the appropriate pathway.

Areas of health service not able to be addressed in AIHW report.

Table 1 and Table 14 (below) describe the Alliance's estimates of the regional and remote deficits for the 44 per cent of total health expenditure not reported by AIHW.

For these estimates, the total amounts spent nationally on each category for which information on remoteness of the recipient is unknown are taken from AIHW 2011. The deficits are gauged by comparing 32 per cent of those national amounts (32 per cent of Australians live in regional and remote areas) with estimates of the likely percentage underspend.

For the estimation of these percentage underspends, it was assumed that people in regional and remote areas:

- use non-admitted patient services at about the same rate as those in Major Cities (use of A&E rates are likely to be higher, but outpatient and other service rates may be lower) (ASEC 2001)[18];
- have about the same levels of access to the community health services that are provided by state governments;
- spend (out of pocket) 20 per cent less on medication than their Major Cities counterparts for the 47 per cent of expenditure on medication that was not reported by AIHW;
- based on the distribution of health professionals and other evidence, spend 40 per cent less on allied health and 30 per cent less on dentists and other oral health care;
- taking account of lesser access to many health care professionals and hospital services, have about 20 per cent less access to aids and appliances.

[18] The health section of the State of the Environment report 2001 - written by the AIHW - suggests that rates of non-admitted patient services outside metropolitan areas averaged about the same as in metropolitan areas. We have not been able to locate more recent data.

Table 14: Estimates of expenditure on residents of regional and remote areas for the 44 per cent of health expenditure not reported on by the AIHW, 2006–07

Item not reported	Underspend, overspend or unsure?	Potential underspend?
All non-admitted patient services (eg A&E, outpatients)	Similar	None
Community health services	Assume similar	Assume none
Non-PBS medication (i.e. 47% of all medications)	Underspend	Perhaps $0.35 billion (20% shortfall)
Aids and appliances	Underspend	Perhaps $0.20 billion (20%)
Other health practitioners (eg allied health)	Underspend	Perhaps $0.26-$0.345 billion (30-40%)
Oral/dental care	Underspend	Perhaps $0.34 -$0.5 billion (20-30%)
Overall	Underspend	At least $1 billion up to $1.4 billion
Aged care costs (residential aged care, CACP, EACH.	Underspend	Perhaps $500 m

Source: Derived by NRHA.
Notes: The middle column describes the NRHA's best estimate as to whether regional and remote residents experience an underspend or an overspend on these particular items.

Table 14 suggests an underspend in those areas against which AIHW reporting was not possible of $1.15-1.4 billion (not including aged care).

In previous reports the AIHW has estimated a shortfall in aged care expenditure in rural and remote areas, compared to the rates in Major cities, in the order of 2 per cent. The Alliance estimates that, if adjusted for the greater proportion of Aboriginal people in rural and remote Australia and their aged care needs between the ages of 50 and 69, the underspend in regional and remote areas would approximate $500 million per annum.

The AIHW Report does not deal with outlays across several categories of expenditure. The Alliance believes that for this 44 per cent of total expenditure there is sufficient evidence to indicate that – here too – there is a substantial net deficit in both services and outlays for country people compared to those in Major Cities.

Oral health

If rural residents had proportionate access to oral health care, rural expenditure on such care would be of the order of $1,750 million per annum.

However, the AIHW study, *Geographic Distribution of the Australian Dental Labour Force, 2003iv*, reported the distribution of practising dentists as 56.2 in Major Cities , falling away to 33.6 in Inner Regional, 26.6 in Outer Regional and 22.9 in Remote/Very remote areas while in Outer Regional there were only 1.1 dental hygienists, compared to 3.8 per 100,000 in Major Cities.

On that basis, and assuming 20 to 30% lesser access, the NHRA estimates that the shortfall in expenditures on oral health care, albeit largely consumer-funded, was of the order of $340-525 million per annum in 2006-2007.

Allied health

Providing rural residents with proportionate access as for major cities to allied health services would require rural expenditure in the order of $863 million per annum.

The allied health professions comprise about 18 per cent of the health workforce in Australia and are vital contributors to multidisciplinary health care. There is a dearth of information on access to allied health services and on the nature and the distribution of the allied health workforce in rural and remote Australia. The National Allied Health Workforce Report (2003) showed that only 20.5 per cent of practising psychologists were reported as working in rural and remote regions. This equates to 0.83 psychologists per 10,000 head of population in very remote areas and 3.44 in Inner Regional centres, compared to 5.92 per 10,000 head of population in major capital cities. Where MBS funding is available for those with chronic conditions and with mental health conditions, ratios of expenditure in regional and remote areas were only 70, 40, 19 and 8 per cent respectively of the Major Cities rate.

Overall, a service deficit for access to allied health services of 30-40 per cent is likely, with an annual expenditure deficit of $260-$345 million - again largely consumer-funded.

Non PBS-medicines

Proportionate use of non-PBS medicines in rural areas would result in expenditure in the order of $1,700 million per annum. The relatively poor access by rural people to PBS medicines is likely to mirror under access to non-PBS medicines and a 20 per cent shortfall would be valued at around $350 million.

Aids and appliances

Proportionate access to aids and appliances in rural areas would result in expenditure in the order of $1,000 million per annum. The poorer access to primary care, including to GPs other primary care professionals and to allied health is likely to be mirrored in lower access to aids and appliances and a 20 per cent shortfall would be valued at around $200 million.

Thus for these four vital categories of health services, rural Australia would face a further deficit in services costing an estimated $1.1 billion to $1.4 billion (much of which would be costs covered out-of-pocket by consumers although some such costs also coming from public sources (aids and appliances) and some from private health insurance. Conservatively, the alliance is confident of at least a billion dollar annual shortfall in rural access to these services.

Other

The report also noted expenditures on community health, public health and non-Medicare medical services such as those purchased by the Department of Veterans Affairs, as well as on and hospital non-admitted care.

The overall picture of access to health services by rural people - including in the new AIHW report - gives no reason to believe country people would fare any better in relation to these unallocated outlays. Additional information on these matters would be very useful.

The geographical basis of the AIHW and NRHA reports

Both reports compare health expenditure for the residents of five regions of Australia: Major Cities, Inner Regional areas, Outer Regional areas, Remote areas and Very Remote areas. These five regions are defined in the Remoteness structure of the Australian Standard Geographical Classification, sometimes known as ASGC-Remoteness Area, and sometimes (incorrectly) as ARIA+[19].

The report does not describe expenditure in the regions where the services were provided (e.g. where the doctor or the hospital was located). Rather, it provides a picture of the expenditure on or by people who live in these regions, irrespective of where the service was provided.

Remoteness areas are an index of the average road distance to the closest urban areas of five distinct types (ranging from small towns, to large metropolitan centres). However, this (average distance) is all that the index measures.

The following example illustrates why Remoteness areas should be used with caution. Urana is a small town in southern NSW roughly an hour and a half from Wagga and Albury, two hours from Griffith and four hours from Canberra. It is classified as an Outer Regional area, as is Darwin in the Northern Territory and Townsville in Queensland.

Photo courtesy Urana Shire Council with permission.

Figure 11: Urana, population 1,500, NSW, Outer Regional

[19] ARIA+ is the continuous variable (with a value between 0 and 15) upon which ASGC Remoteness areas are defined.

Figure 12: Townsville, population 181,743, Queensland, Outer Regional

Urana is very different from Townsville and Darwin, including in relation to access to work, doctors, hospitals, education and even medical schools. They therefore have quite distinct levels of attractiveness for health professionals, for example.

Figure 13 below maps the five remoteness areas.

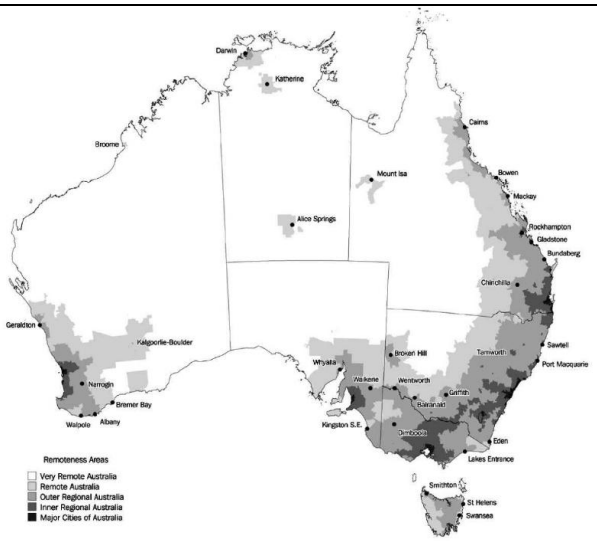

Figure 13: Remoteness areas of Australia
Source: ABS 2007

About one third of Australia's total population lives in regional and remote areas, with the vast majority of these in regional rather than remote areas. The proportion of people who are Indigenous increases with remoteness to almost 50 per cent in Very Remote areas. Primary production employs between 5 per cent and 20 per cent of the adult population, people are less likely to be wealthy and more likely to be poor, and young people are less likely to commence tertiary study.

Table 15: Selected population characteristics within Remoteness Areas, 2001

Factor	MC	IR	OR	R	VR	Australia
Percentage of:	Per cent					
• the national population living in each area	66	21	10	2	1	100
• the Indigenous population in each area	30	20	23	9	18	100
• the population in each area who are Indigenous	1	2	5	12	45	2
• adults employed in primary production and mining	<1	4	11	20	16	3
• adults employed in other industry sectors	58	50	46	45	44	55
• adults not employed in the workforce or unemployed	41	46	43	35	39	42
• People living in areas classified as being in						
- least disadvantaged national SEIFA quartile (a) – 1996	34	14	8	10	2	26
- most disadvantaged national SEIFA quartile (a) – 1996	20	28	33	26	53	24
• youth starting tertiary study	39	26	23	12	10	33
• non-Indigenous youth starting tertiary study	39	27	24	13	21	34
• reticulated water supplies adequately fluoridated	81	39	34	30	20	49
Costs (average)	**Dollars**					
Monthly mortgage	985	813	775	786	605	926
Weekly rent	206	155	154	148	122	189

Source: Phillips 2009.

Notes: Primary production includes agriculture, forestry and fishing. Costs are in 2001 dollars. The percentages for SEIFA (Socioeconomic Indexes for Areas) relate to the percentage of the population in each area who lived in Census collectors' districts that were among the 25 per cent least and the 25 per cent most disadvantaged in Australia, in 1996. The percentage commencing tertiary (university and TAFE) study is the apparent percentage of 17-20 year olds from each area that commenced tertiary study in 2001. Limited accuracy of the Indigenous Australian identifier cautions against regional reporting for Indigenous Australians. Nationally, 10 per cent of Indigenous Australians of this age commenced tertiary study. Fluoride data relate to a rolling survey. Some of the data may be up to 10 years old and do not relate specifically to 2001.

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