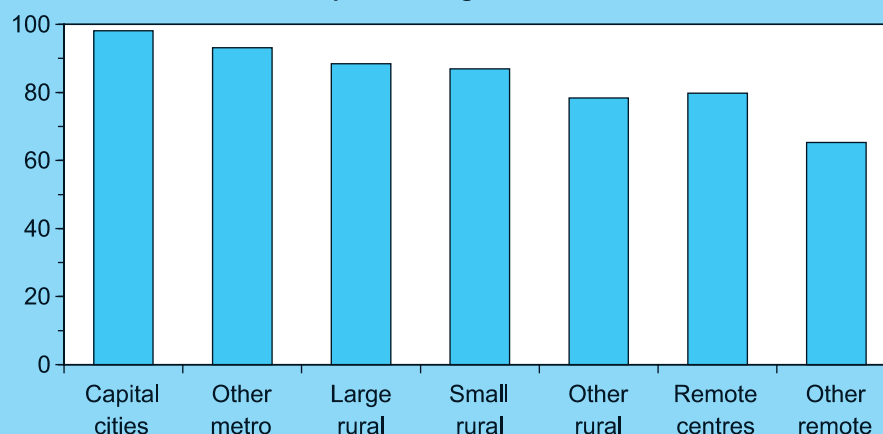


General practice consultations 1995–96: a matrix of provider region versus patient’s region

Per cent of consultations in patient's region of residence



| Patient's region | Provider region | | | | | | | Total |
|---------------------|-----------------|-------|---------------|---------------|-------|---------|-------|-------|
| | Metropolitan | | Rural | | | Remote | | |
| | Capital cities | Other | Large centres | Small centres | Other | Centres | Other | |
| Capital cities | 98.1 | 0.6 | 0.3 | 0.4 | 0.6 | 0.1 | 0.1 | 100.0 |
| Other metropolitan | 4.7 | 93.1 | 0.4 | 0.7 | 0.9 | 0.1 | 0.1 | 100.0 |
| Large rural centres | 5.1 | 1.0 | 88.4 | 1.9 | 3.1 | 0.2 | 0.2 | 100.0 |
| Small rural centres | 6.2 | 1.5 | 1.6 | 86.9 | 3.2 | 0.2 | 0.3 | 100.0 |
| Other rural areas | 9.5 | 1.7 | 5.4 | 4.4 | 78.4 | 0.3 | 0.3 | 100.0 |
| Remote centres | 8.9 | 1.1 | 2.6 | 1.0 | 3.8 | 79.8 | 2.6 | 100.0 |
| Other remote areas | 11.7 | 1.3 | 3.0 | 5.0 | 8.5 | 5.4 | 65.2 | 100.0 |
| Total | 70.4 | 7.8 | 5.6 | 5.8 | 9.0 | 0.7 | 0.7 | 100.0 |

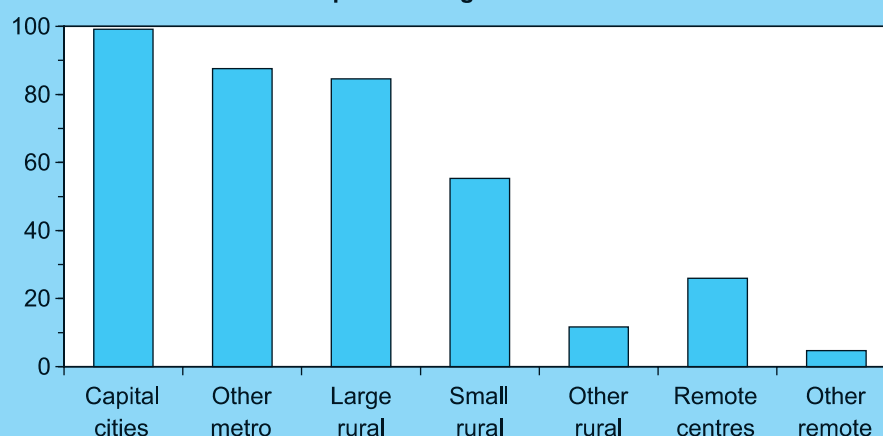
Source: Unpublished Medicare data from DHFS.

GP consultations

- The degree to which patients travel outside their region of residence to visit a general practitioner (GP) provides a measure of the mobility required to overcome access problems.
- Although the data given above include only private practice consultations, they illustrate the higher mobility required of rural and remote patients in visiting GPs, when compared with metropolitan patients. Compared with 'capital cities', where more than 98% of patient visits are to doctors in 'capital cities', only 88% of patient visits for those living in 'large rural centres' are to doctors in the same region. This proportion progressively declines with increasing rurality to a level of 65% in 'other remote areas'.
- GPs in 'capital cities' provide more than 5% of visits by people living in rural and remote Australia. They provide some of these services as locums travelling to rural areas. People visiting the city make up the remainder of rural and remote patients treated by 'capital city' GPs. This proportion is around 10% for people living in 'other rural areas' and the remote zone.

Specialist consultations 1995–96: provider region versus patient's region

Per cent of consultations in patient's region of residence



| Patient's region | Provider region | | | | | | | Total |
|---------------------|-----------------|-------|---------------|---------------|-------|---------|-------|-------|
| | Metropolitan | | Rural | | | Remote | | |
| | Capital cities | Other | Large centres | Small centres | Other | Centres | Other | |
| Capital cities | 99.2 | 0.4 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 100.0 |
| Other metropolitan | 11.4 | 87.6 | 0.3 | 0.5 | 0.2 | 0.0 | 0.0 | 100.0 |
| Large rural centres | 12.2 | 1.1 | 84.6 | 1.6 | 0.4 | 0.0 | 0.0 | 100.0 |
| Small rural centres | 23.2 | 6.8 | 12.7 | 55.3 | 1.9 | 0.0 | 0.0 | 100.0 |
| Other rural areas | 40.4 | 5.9 | 29.9 | 12.1 | 11.7 | 0.1 | 0.1 | 100.0 |
| Remote centres | 32.9 | 11.0 | 24.7 | 1.4 | 2.7 | 26.0 | 2.7 | 100.0 |
| Other remote areas | 47.2 | 1.9 | 21.7 | 16.0 | 1.9 | 6.6 | 4.7 | 100.0 |
| Total | 78.1 | 7.9 | 8.1 | 4.4 | 1.3 | 0.2 | 0.0 | 100.0 |

Note: Specialist consultations include Commonwealth Medicare Benefits Scheme Item Groups A3 specialist attendances, A6 psychiatric group therapy attendances and A8 consultant psychiatrist attendances.

Source: Unpublished Medicare data from DHFS.

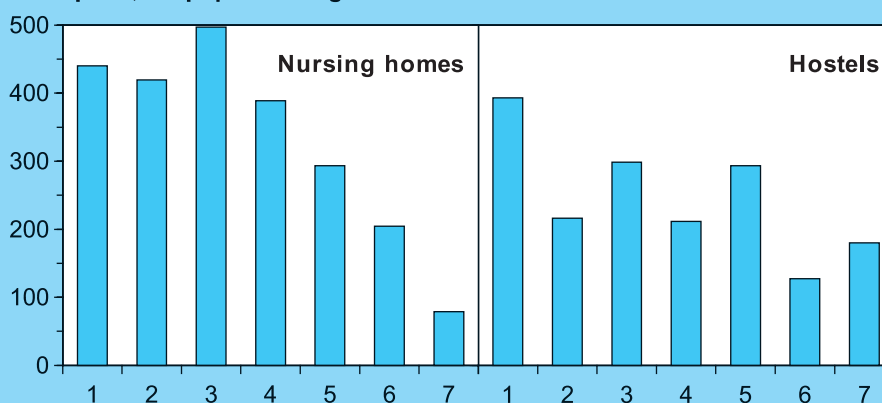
Specialist consultations

- While the distribution of specialists across RRMA categories provides information on the availability in each region, the effectiveness of this availability can be determined by examining the extent to which patients travel outside their region of residence to consult specialists.
- Only private practice specialist consultations are included in this analysis, but they show that rural and remote patients require an even higher level of mobility to visit specialists, compared with that required to visit general practitioners.
- Whereas the proportion of visits for patients living in 'large rural centres' to specialists from the same region is 85%, in 'small rural centres' and 'other rural areas' the corresponding proportions are only 55% and 12% respectively. For people living in the remote zone these proportions are also very low, being 26% for people living in 'remote centres' and 5% for people living in 'other remote areas'.

- Most of the visits to specialists outside a patient's area of residence are to 'capital cities'. For patients living in 'other rural areas', more than 40% of visits to specialists in 1995-96 were to those based in 'capital cities'. This percentage was even higher at 47% for people living in 'other remote areas'.

Nursing home places and hostel beds, 1996

Beds per 1,000 population aged 70 and over



RRMA categories: 1 Capital cities; 2 Other metropolitan centres; 3 Large rural centres; 4 Small rural centres; 5 Other rural areas; 6 Remote centres; 7 Other remote areas.

| Type of accommodation | Metropolitan | | Rural | | | Remote | | Total |
|-----------------------|----------------|-------|---------------|---------------|-------|---------|-------|-------|
| | Capital cities | Other | Large centres | Small centres | Other | Centres | Other | |
| Nursing home | 440.3 | 419.5 | 497.0 | 388.8 | 293.3 | 204.7 | 78.8 | 409.7 |
| Hostel | 393.3 | 216.5 | 298.6 | 211.5 | 293.7 | 127.3 | 180.0 | 342.1 |

Source: Commonwealth Department of Health and Family Services databases on approved nursing homes and hostels for the aged.

Aged care

- Since the mid-1980s there has been a shift away from the resource-intensive nursing home aged care services to the less resource-intensive hostel care system (AIHW 1997f). These changes are a part of government policy to achieve a level of provision of 400 nursing home beds, 500 hostel places and 100 community aged care packages (per 100,000 people aged 70 and over) by the year 2011.
- 'Capital cities', 'other metropolitan centres' and 'large rural centres' have supplies of nursing home beds which exceed 400 per 100,000 persons aged 70 and over as at 30 June 1996. However, in the other rural and remote RRMA categories there is a sharp drop in the supply of nursing home beds. 'Other rural areas' have one-third fewer beds per head of population aged 70 and over than 'capital cities', and 'remote centres' have less than half the rate of nursing home beds of 'capital cities'. Acute care hospital beds are used to compensate for the lower supply of nursing

home beds in rural and remote zones, with nursing-home-type patients (NHTP) occupying around 20% of hospital beds (Reid & Solomon 1992).

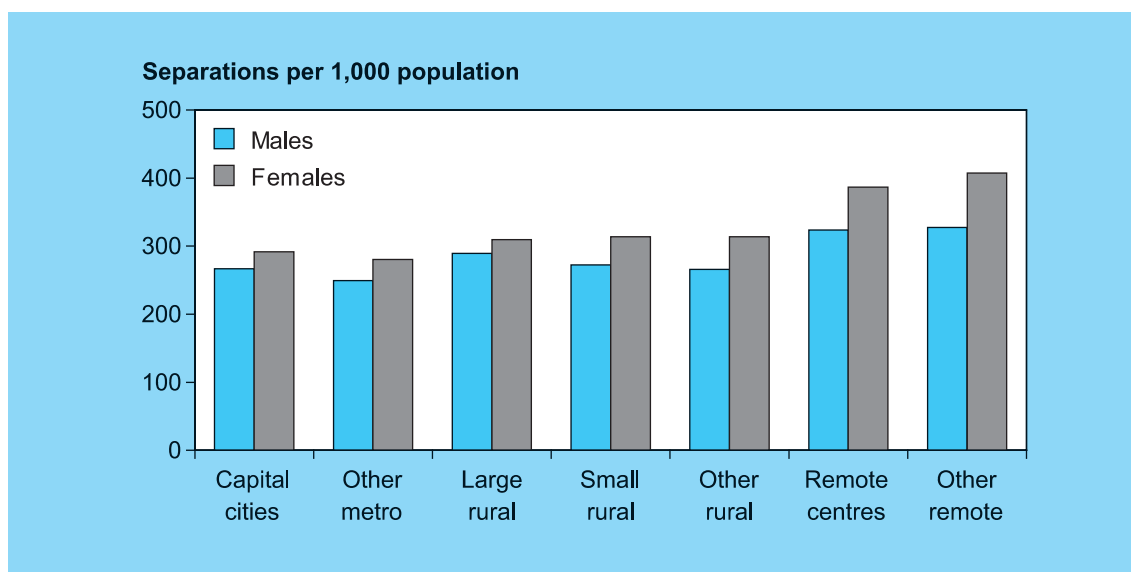
- 'Capital cities' also have the highest rate of hostel places of all areas, with a rate more than 30% higher than that for the rural zone, and more than three times the rate for 'remote centres'.

For more information, see:

Australian Institute of Health and Welfare 1997. Hostels in Australia 1995-96: a statistical overview. Aged Care Statistics Series No. 2. AIHW Cat. No. AGE 7. Canberra: AIHW & DHFS.

Australian Institute of Health and Welfare 1997. Nursing homes in Australia 1995-96: a statistical overview. Aged Care Statistics Series No. 1. AIHW Cat. No. AGE 6. Canberra: AIHW & DHFS.

Hospital separation rates, 1995–96



| Sex | Metropolitan | | Rural | | | Remote | | Total |
|---------|----------------|-------|---------------|---------------|-------|---------|-------|-------|
| | Capital cities | Other | Large centres | Small centres | Other | Centres | Other | |
| Males | 266.8 | 249.5 | 289.4 | 272.6 | 265.9 | 323.7 | 327.4 | 269.0 |
| Females | 291.8 | 280.3 | 309.7 | 313.8 | 313.7 | 386.5 | 407.4 | 298.5 |

Note: Age-standardised to the Australian population at 30 June 1991.

Source: AIHW National Hospital Morbidity Database.

Hospital utilisation

- Hospital separation rates provide a measure of the number of hospital care episodes per person and may include same-day episodes when the patient is admitted (Abraham et al. 1995). There were 5.2 million hospital separations (excluding public psychiatric hospitals) in 1995–96 (AIHW 1997a).
- The rate of hospitalisation increases from metropolitan to remote zones. ‘Other remote areas’ have the highest rates of hospitalisation of any area for males and females.
- For males, hospital separation rates in ‘large rural centres’ and ‘remote centres’ are respectively 8% and 21% higher than in ‘capital cities’.
- The separation rates for females are higher than for males. This difference in separation rates is a result of females being hospitalised for childbirth.
- Factors that could contribute to higher admission rates in rural and remote zones include higher morbidity and rural patients being more likely to be admitted to hospital than treated as out-patients because of travel distances (Harvey & Mathers 1988).

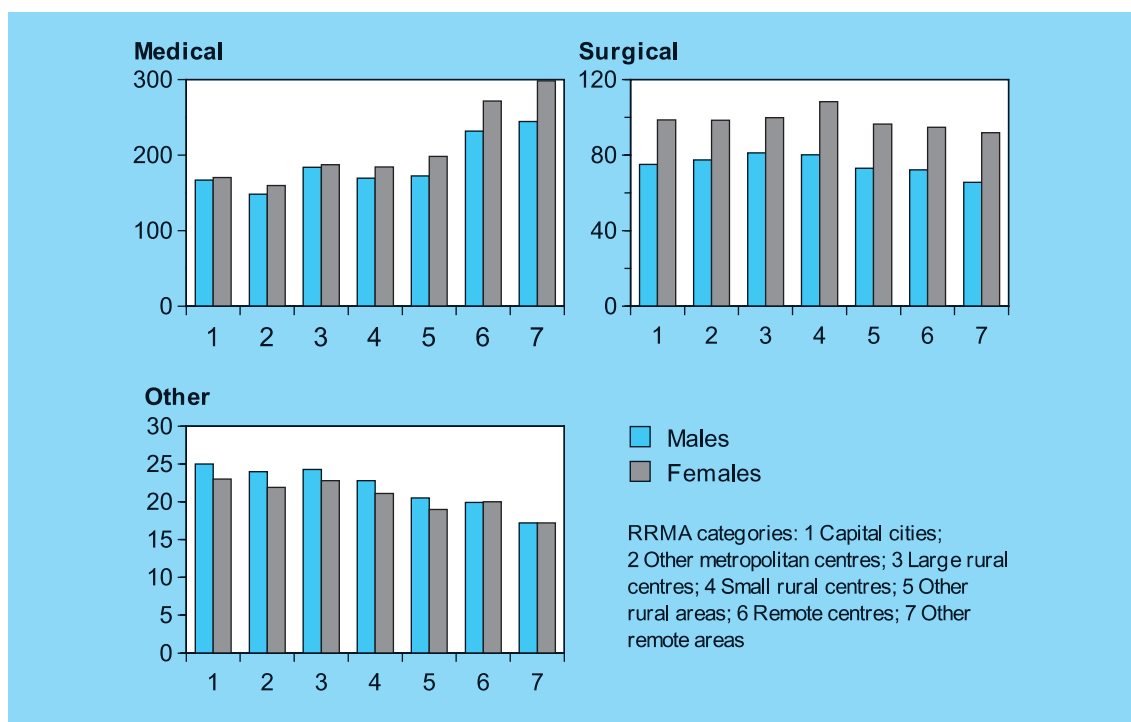
For more information, see:

Australian Institute of Health and Welfare 1997. Australian hospital statistics 1995–96. Health Services Series No. 10. AIHW Cat. No. HSE 3. Canberra: AIHW.

Harvey R & Mathers C 1988. Hospital utilisation and costs study. Volume 1: commentary. Canberra: AIHW.

Abraham B, d’Espaignet ET & Stevenson C 1995. Australian health trends 1995. Canberra: AIHW.

Hospital separation rates by procedure, 1995–96



| Type of procedure | Metropolitan | | Rural | | | Remote | | Total |
|-------------------|----------------|-------|---------------|---------------|-------|---------|-------|-------|
| | Capital cities | Other | Large centres | Small centres | Other | Centres | Other | |
| Medical | | | | | | | | |
| Males | 166.8 | 148.2 | 183.9 | 169.6 | 172.4 | 231.6 | 244.5 | 169.6 |
| Females | 170.2 | 159.8 | 187.2 | 184.5 | 198.1 | 271.7 | 298.4 | 177.7 |
| Surgical | | | | | | | | |
| Males | 75.1 | 77.4 | 81.2 | 80.2 | 73.0 | 72.2 | 65.6 | 75.5 |
| Females | 98.6 | 98.5 | 99.8 | 108.3 | 96.5 | 94.8 | 91.9 | 98.7 |
| Other | | | | | | | | |
| Males | 25.0 | 24.0 | 24.3 | 22.8 | 20.5 | 19.9 | 17.2 | 23.9 |
| Females | 23.0 | 21.9 | 22.8 | 21.1 | 19.0 | 20.0 | 17.2 | 22.1 |

Note: Age-standardised to the Australian population at 30 June 1991.

Source: AIHW National Hospital Morbidity Database.

Hospital separations

- All episodes of care are assigned to a surgical, medical or 'other' category on the basis of the Australian National Diagnosis Related Group (AN-DRG) classification. The AN-DRG is a patient classification system that organises illnesses into similar clinical categories with similar costs. Medical DRGs are assigned from principal diagnosis, whereas surgical DRGs are defined as operating room procedures. 'Other' DRGs include those that are defined as procedures not requiring surgery but using some invasive technique (i.e. endoscopy). AN-DRGs are used to compare hospitals by relating the number and type of patients treated by a hospital to the resources required by that hospital (AIHW 1997a).
- Compared with the rate for 'capital cities', medical separation rates are slightly lower for 'other metropolitan centres' but then increase across rural and remote zones. This increase is

greater for females than for males. In 'capital cities' the rates for males and females are fairly similar, but in 'other remote areas', the female rates are 22% higher than the male rates.

- Surgical separations are lower for both males and females in the remote zone than in rural or metropolitan zones. This suggests that people in the remote zone may have less access to surgical care than do people in rural and metropolitan zones. 'Large rural centres' and 'small rural centres' have slightly higher rates for surgical separations than the metropolitan zone.
- The separations for 'other' procedures have the highest rates in 'capital cities'. The rates in 'other metropolitan centres' and 'large rural centres' are similar to the rates in 'capital cities'. However, the rates then drop with increasing rurality. In 'other remote areas', the male and female rates are 69% and 75% respectively of the corresponding 'capital cities' rates. 'Other' separations represent procedures that require specialised medical equipment and skills that may not be available to medical practitioners in the remote zone.
- Medical separations could be higher in rural and remote zones for a number of reasons. The higher ratio of acute beds in rural and remote zones may contribute to the greater use of these beds as predicted by Roemer's Law: 'a bed built is a bed filled'.

- Rural acute hospitals function in a broader role than metropolitan acute hospitals and use beds for long-stay nursing-home-type patients (NHTPs) (Harvey & Mathers 1988; Reid & Solomon 1992). As a result, in rural and remote zones, NHTPs often occupy approximately 20% of acute care hospital beds (Reid & Solomon 1992). These patients would be accommodated in nursing homes or hostels in the metropolitan zone. The use of acute beds by NHTPs makes it appear that the rural zone has more acute care hospital beds available than actually exist.

For more information, see:

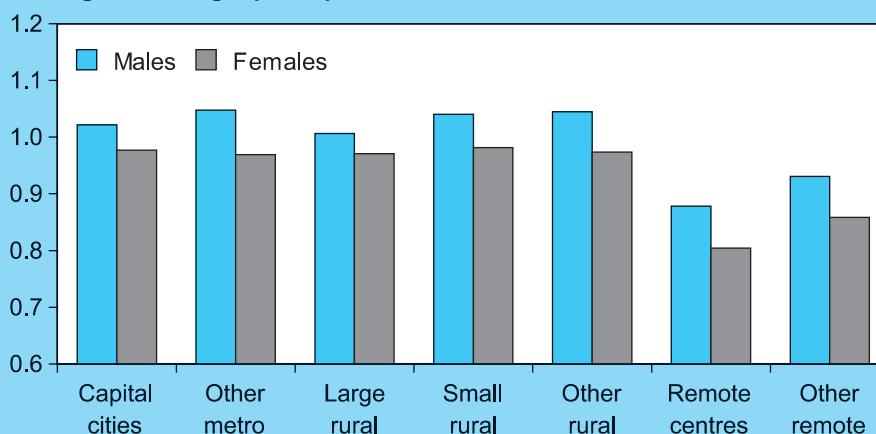
Australian Institute of Health and Welfare 1997. Australian hospital statistics 1995-96. Health Services Series No. 10. AIHW Cat. No. HSE 3. Canberra: AIHW.

Harvey R & Mathers C 1988. Hospital utilisation and costs study. Volume 1: commentary. Canberra: AIHW.

Reid M & Solomon S 1992. Improving Australia's rural health and aged care services. National Health Strategy Background Paper No. 11. Canberra: Department of Health, Housing and Community Services.

Diagnosis Related Group (DRG) cost weights for hospital separations, 1995–96

Average cost weight per separation



| Sex | Metropolitan | | Rural | | | Remote | | Total |
|---------|----------------|-------|---------------|---------------|-------|---------|-------|-------|
| | Capital cities | Other | Large centres | Small centres | Other | Centres | Other | |
| Males | 1.02 | 1.05 | 1.01 | 1.04 | 1.04 | 0.88 | 0.93 | 1.02 |
| Females | 0.98 | 0.97 | 0.97 | 0.98 | 0.97 | 0.80 | 0.86 | 0.97 |

Note: Cost weights are also known as average caseweights.

Source: AIHW National Hospital Morbidity Database.

Cost weights for hospital separations

- Cost weights identify the relative cost of hospitalisation for patients in each diagnosis group (Kliwer & Butler 1995). The average cost weight of a group of individuals is a measure of the cost of their care when admitted and it serves as a substitute for the severity of illnesses treated by a hospital. The cost weight is derived at a national level and is based on national averages.
- There is very little difference in the cost of hospital care for people from rural and metropolitan zones. The cost of hospital care for people in the remote zone is relatively low. This could be a consequence of less complex surgical procedures being performed in the remote zone.
- The lower cost weights for females compared with males from the same area indicate that the hospital treatment for females is less complex than for males. The average national cost weight per male in 1995–96 was 1.01 for public hospitals and 0.99 for private hospitals excluding free-standing day facilities (DHFS 1997). This compares with average

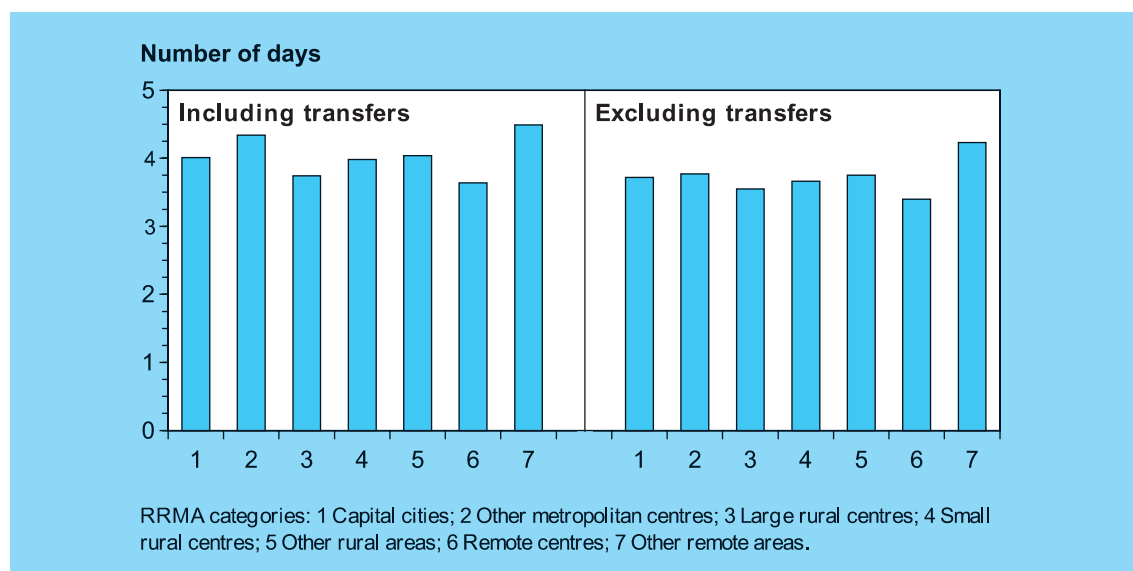
national cost weights per woman of 0.95 for public as well as private hospitals, indicating that hospital treatment for women are on average less expensive (DHFS 1997a).

- Cost weights derived at a national level may not reflect the entire cost of medical care in rural and remote zones because there may be differences in the length of stay between rural and remote zones. If the length of stay is longer for the rural zone, then the relative costs may in fact be higher in rural and remote zones than expected.

For more information, see:

Kliwer EV & Butler JRG 1995. Hospital morbidity patterns and costs of immigrants in Australia. Canberra: National Centre for Epidemiology and Population Health.
Commonwealth Department of Health and Family Services 1997. Australian casemix report on hospital activity 1995–96. Canberra: DHFS.

Casemix-adjusted average length of stay in hospitals, 1995–96



| Type of hospital stay | Metropolitan | | Rural | | | Remote | | Total |
|------------------------------|----------------|-------|---------------|---------------|-------|---------|-------|-------|
| | Capital cities | Other | Large centres | Small centres | Other | Centres | Other | |
| Including hospital transfers | | | | | | | | |
| Observed | 4.01 | 4.34 | 3.74 | 3.98 | 4.04 | 3.64 | 4.49 | 4.36 |
| Expected ^(a) | 4.04 | 4.19 | 3.97 | 4.09 | 3.97 | 3.68 | 3.97 | 4.31 |
| Excluding transfers | | | | | | | | |
| Observed | 3.72 | 3.77 | 3.55 | 3.66 | 3.75 | 3.40 | 4.23 | 4.07 |
| Expected ^(a) | 3.72 | 3.73 | 3.75 | 3.79 | 3.68 | 3.44 | 3.70 | 4.03 |

(a) The expected length of stay is based on the average length of stay for the DRG across Australia for the year.

Source: AIHW National Hospital Morbidity Database.

Length of hospital stays

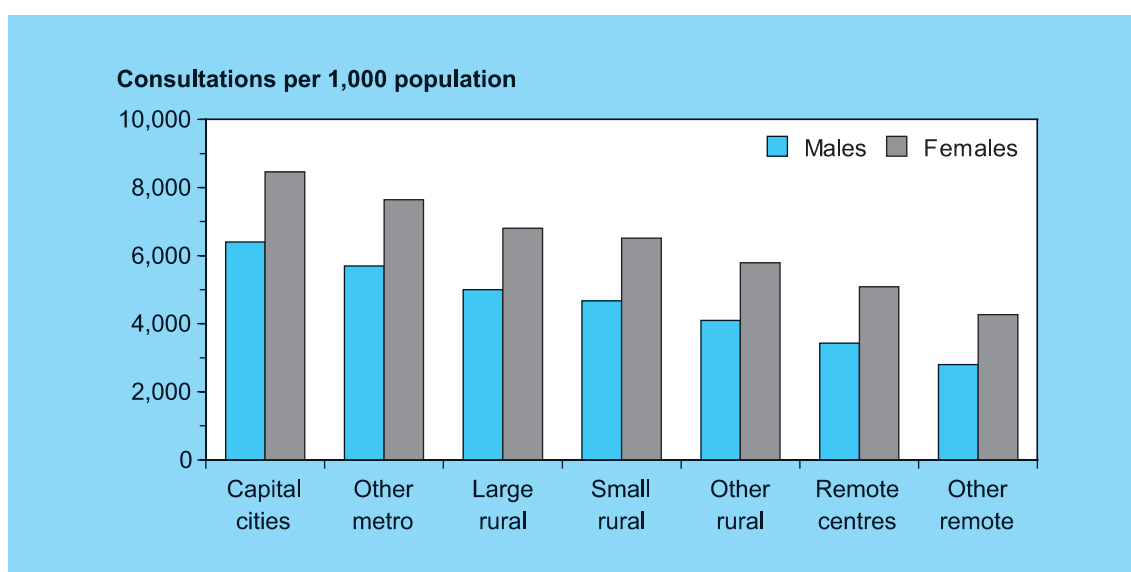
- Previous reports have noted a 26% decline in length of stay in hospital from the period 1985–86 to 1991–92 (Abraham et al. 1995). This decline has been attributed to better use of antibiotics and anaesthetics, use of less invasive surgical techniques and the expansion of early discharge programs that allow patients to return home to receive follow-up care.
- Hospitals are mainly concentrated in the metropolitan zone, rural centres and remote centres. There is little difference between observed and expected lengths of stay at these centres. The largest difference between observed and expected stays occurs in 'other

remote areas' for both males and females. This difference may be explained by the extra distance that people in the remote zones may have to travel to hospital. Diagnosis of illness may take place in hospital to avoid the patient having to travel great distances for repeat visits. Likewise, patients may remain in hospital for follow-up care because of travel distance to hospital.

For more information, see:

Abraham B d'Espaignet ET & Stevenson C 1995. Australian health trends 1995. Canberra: AIHW.

Medicare utilisation rates for GP consultations, 1995–96



| Sex | Metropolitan | | Rural | | | Remote | | Total |
|---------|----------------|-------|---------------|---------------|-------|---------|-------|-------|
| | Capital cities | Other | Large centres | Small centres | Other | Centres | Other | |
| Males | 6,404 | 5,699 | 5,003 | 4,667 | 4,095 | 3,425 | 2,798 | 5,719 |
| Females | 8,466 | 7,646 | 6,805 | 6,516 | 5,787 | 5,082 | 4,265 | 7,711 |

Note: Age-standardised to the Australian population at 30 June 1991.

Source: Unpublished Medicare data from DHFS.

Medicare usage for GP consultations

- Data on the operation of Medicare provide information on the use of private medical services. These include services provided outside of hospital as well as medical services for private admitted patients in public and private hospitals. Excluded are services for public patients in hospital, for eligible veterans, and for those who are covered by compensation for which interim benefits have not been paid (AIHW 1998a).
- Those living in rural and remote zones use less Medicare for GP consultations compared with those living in metropolitan areas. Males and females from 'capital cities' have 90% and 67% greater use of Medicare for GP visits compared with their counterparts in 'remote centres'. An explanation for this higher usage in 'capital cities' may be that the greater availability of GPs in the metropolitan zone encourages more frequent use of their

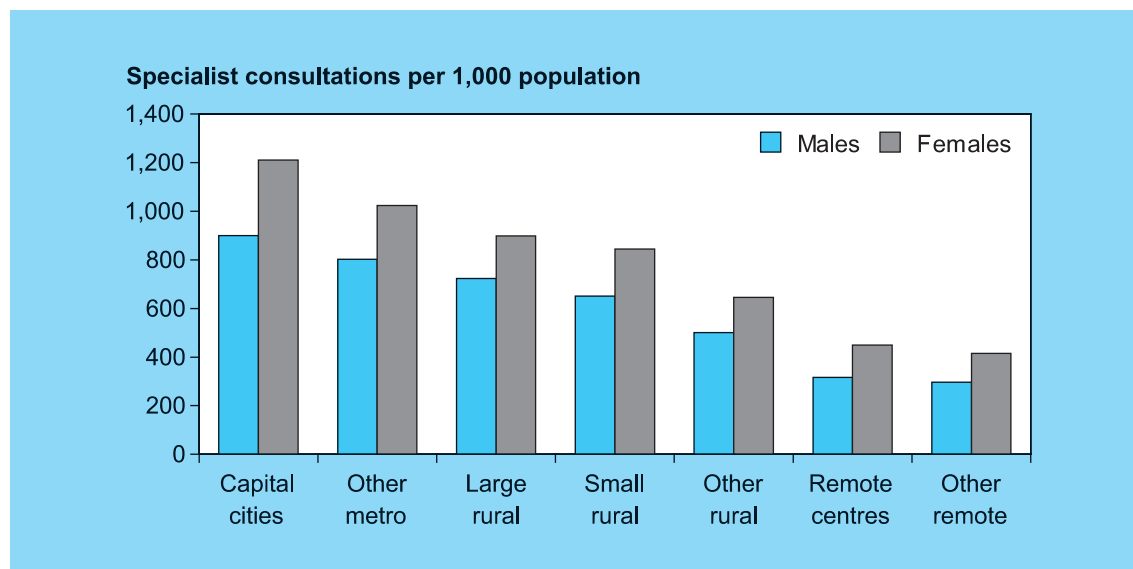
services. Also, in rural and remote zones where there are fewer GPs, the distance travelled for a visit may be greater, making frequent visits to the GP more difficult.

- Females from all zones have higher use of Medicare for GP services when compared with their male counterparts, with females in the remote zone having almost twice as much use of Medicare for GP services compared to males in the remote zone. These differences reflect the increased use of GPs by females for antenatal check-ups. Children may also be on their mother's Medicare card and this would increase the rate of Medicare usage for GP consultations for females relative to males.

For more information, see:

Australian Institute of Health and Welfare 1998. Australia's health 1998: the sixth biennial health report of the Australian Institute of Health and Welfare. Canberra: AIHW.

Medicare utilisation rates for specialist, psychiatric and consultant visits, 1995–96



| Sex | Metropolitan | | Rural | | | Remote | | Total |
|---------|----------------|-------|---------------|---------------|-------|---------|-------|-------|
| | Capital cities | Other | Large centres | Small centres | Other | Centres | Other | |
| Males | 900 | 802 | 723 | 651 | 501 | 317 | 297 | 790 |
| Females | 1,211 | 1,023 | 899 | 844 | 645 | 449 | 415 | 1,059 |

Notes

1. Includes Medicare Item Groups A3 special conditions, A4 consultant, A6 group therapy and A8 psychiatrists.
2. Age-standardised to the Australian population at 30 June 1991.

Source: Unpublished Medicare data from DHFS.

Medicare usage for specialist consultations

- Medicare is Australia’s universal system of health insurance, and provides benefits for services provided by qualified medical practitioners, consultations by participating optometrists, and certain services performed by eligible dental practitioners (AIHW 1998a). This indicator provides a measure of the usage of private specialist services across RRMA categories.
- The usage of specialist services is strongly associated with rurality. People living in ‘large rural centres’ use around 20% less specialist services than those living in ‘capital cities’, whereas for ‘other rural areas’ the difference is almost 50%. Those living in ‘remote centres’ use around 65% less specialist services than those living in ‘capital cities’.
- The lower usage of specialists in rural and remote zones probably reflects the lower numbers per head of population practising in

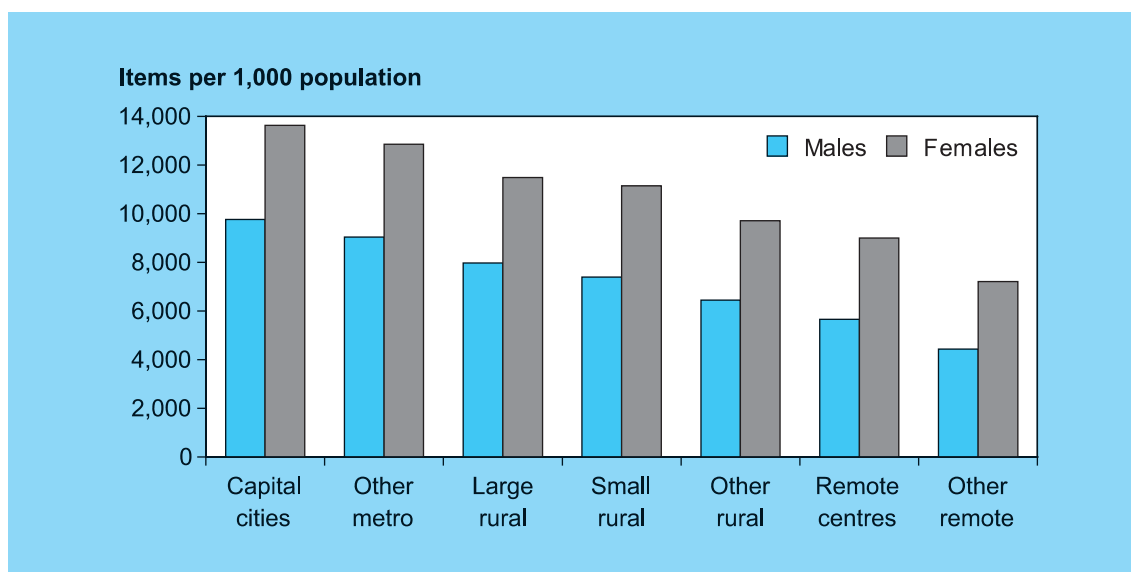
these zones. This may mean that those living in rural and remote zones rely more on the public system than those living in the metropolitan zone.

- Across all RRMA categories, females use more Medicare for specialist services than do males, reflecting their use of specialist consultations for ante- and postnatal care. For females in the remote zone, the difference in Medicare use for specialist services is almost 50% higher than that of men in these areas, and is the highest of all RRMA categories.

For more information, see:

Australian Institute of Health and Welfare 1998. Australia’s health 1998: the sixth biennial health report of the Australian Institute of Health and Welfare. Canberra: AIHW.

Medicare utilisation rates for all services, 1995–96



| Sex | Metropolitan | | Rural | | | Remote | | Total |
|---------|----------------|--------|---------------|---------------|-------|---------|-------|--------|
| | Capital cities | Other | Large centres | Small centres | Other | Centres | Other | |
| Males | 9,769 | 9,045 | 7,971 | 7,391 | 6,443 | 5,660 | 4,436 | 8,828 |
| Females | 13,633 | 12,855 | 11,495 | 11,145 | 9,711 | 9,007 | 7,210 | 12,605 |

Note: Age-standardised to the Australian population at 30 June 1991.

Source: Unpublished Medicare data from DHFS.

Medicare utilisation for all services

- Medicare pays providers directly for services on a fee-for-service basis or reimburses patients for expenses at a set schedule fee.
- Those living in rural and remote zones use fewer Medicare services per person. Males in the remote zone use 40% to 50% less Medicare for all services compared to males in 'capital cities'. Males in the rural zone use 20% to 30% less Medicare for all services compared with those in 'capital cities'.
- Females in 'capital cities' have the highest usage of Medicare for all services, and usage declines as areas become more remote, similar to the picture for males.
- Across all RRMA categories, females use more Medicare services compared with males in all areas. Females in the remote zone use

Medicare services at almost twice the rate of males in the same zones.

- Medicare data seriously underestimate the usage of services in rural and remote areas because State-provided clinics and Aboriginal Medical Services are not reimbursed by Medicare. Consequently, the use of these services is not reported in the Medicare system.

For more information, see:

Australian Institute of Health and Welfare 1998. Australia's health 1998: the sixth biennial health report of the Australian Institute of Health and Welfare. Canberra: AIHW.