

# Private hospital insurance status among a state-wide injured population

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## Abstract

Injury is a leading cause of inpatient hospital episodes. Over a 4-year period (1997–2000) the Australian Government introduced measures to support the private health insurance industry by providing incentives for people to take up private health insurance (PHI) in order to take the pressure off public hospitals. This study examined the levels of PHI for moderately and severely injured people in Victoria as a way of determining the effectiveness of government incentives. The method involved an analysis of all Victorian public and private hospital injury admissions between July 2000 and June 2003. We found that people with injuries, either unintentional or intentional, had lower levels of PHI than state norms. While numbers of injured patients occupying private hospital beds initially increased, levels then dropped below the levels before the introduction of the incentives. The burden of injury is substantial and suggests that incentives need to be targeted towards at-risk groups.

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**INJURY IS A LEADING CAUSE** of mortality in people under the age of forty-five and a significant public health issue in Australia.<sup>1,2</sup> For every death that occurs, many more people are seriously injured,<sup>2</sup> and premature mortality and lost productivity have a significant financial impact. In 2001, 7867 Australians died from injury and 2.25 million people reported being injured over a 4-week

## What is known about the topic?

There has been much debate as to whether federal government incentives to increase participation in private health insurance (PHI) have been successful in light of the costs involved in funding the incentives.

## What does this paper add?

State-wide data show that levels of private hospital insurance are lower than state norms for people at risk of being injured.

## What are the implications for practitioners?

Incentives have not relieved the pressure on the public hospital system for this group of people. Investing in injury prevention may decrease the demand on the public hospital system for this group of people. As well, containing the costs associated with PHI may result in persons in lower socioeconomic groups taking up insurance. ♦

period in the same year.<sup>2</sup> Injury was responsible for 7% of inpatient hospital episodes in 1999–2000.<sup>3</sup>

Australia has a health care system offering public and private health insurance. Medicare, the public system, provides substantial health cover (medical and hospital) for all Australian residents.<sup>4</sup> Private health insurance (PHI) is available in addition to Medicare. PHI is a major source of funding for private hospitals providing \$3221 million in 2002–2003.<sup>4,5</sup> Privately insured patients have earlier access to elective surgery and have choice with regard to specialist inpatient care.<sup>4</sup> During 2002–2003, 19% of private hospitalisations were people who paid for themselves.<sup>6</sup> In June 1998 30% of the population had private hospital cover.<sup>7</sup>

In the 1990s, the public hospital system came under financial pressure.<sup>8</sup> This led the government to introduce three measures designed to reverse the decline in private health insurance uptake and ease the burden on public health

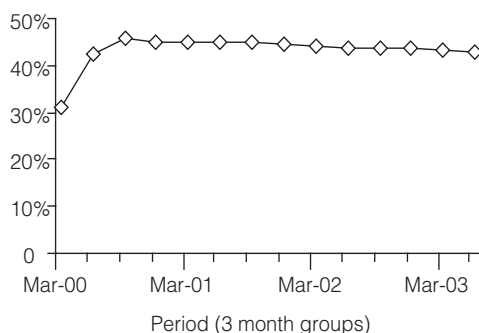
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### I Levels of private hospital insurance for the Victorian population, Mar 2000–Jun 2003



Source: Private Health Insurance Administration Council. ◆

services by increasing participation in private health insurance and consumer choice in health care.<sup>9</sup> In July 1997, tax penalties were introduced so that those without insurance paid an extra 1% Medicare levy if their income was above a certain level.<sup>10</sup> In addition to this levy, the federal government in January 1999 introduced a general rebate of 30% on all private health insurance premiums.<sup>4,10</sup> Lifetime health cover was introduced in July 2000<sup>11</sup> to reward people less than 30 years of age who retained private hospital insurance cover.<sup>10</sup> This increased premiums for those initially taking up private hospital insurance after the age of 30 by 2% for each year over 30, up to a maximum of 70%.<sup>12,13</sup> These three measures brought about an increase in insurance levels from around 32% at the start of 2000 to a high of around 45% at the end of 2000, although levels have since dropped slightly<sup>7</sup> (Box 1).

This study stems from a previous study of compensable injury in Victoria that identified a high number of injured working-age people without private hospital insurance. This study aims to extend that work by examining the level of hospital insurance cover for all ages of hospital-admitted injured persons in the state of Victoria. It will provide a measure of the burden of injury and will indicate the effectiveness of the government private

health insurance incentives for this group of people. Using data from the Victorian Admitted Episodes dataset, it is possible to provide an accurate pattern of hospital-admitted injury in Victoria.

## Method

### Data sources

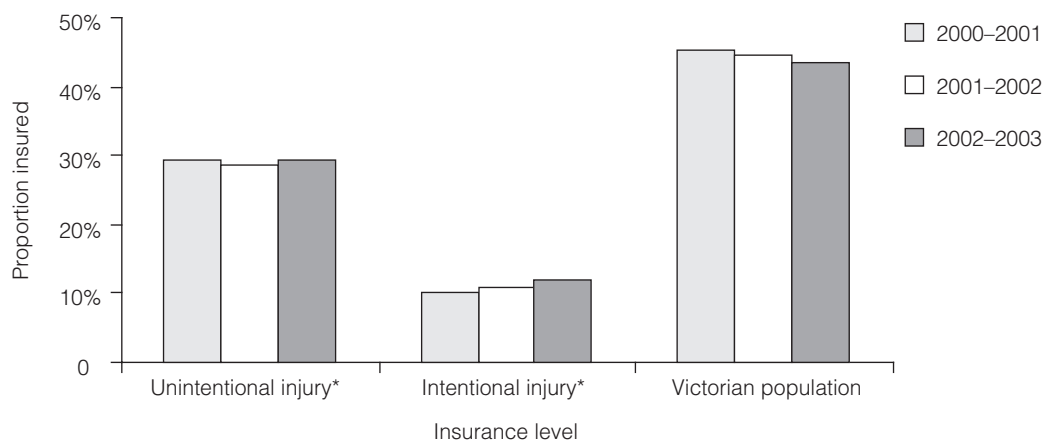
Injury data were extracted from the Victorian Admitted Episodes Dataset (VAED), a prevalence-based collection that records hospital admissions for all Victorian hospitals, both public and private. For the purpose of this study, deaths in hospital are included. A patient may be transferred between and within hospitals for various episodes of care and may therefore be represented by more than one record. This is estimated by the custodians of the data to account for 10% of the database. Re-admissions to the same hospital for the same injury within 30 days have been excluded<sup>14</sup> so that the database approximates an incidence database. Data on level of insurance were first introduced into the VAED in 2000, prohibiting comparison of levels of insurance pre and post the introduction of incentives. Data were extracted for unintentional and intentional injuries for the 3-year period July 2000 to June 2003. Transport and work claims which have alternative sources of compensation insurance are not considered separately.

The insurance category “persons who are insured but level unknown” is included in the analysis. This category includes those with no hospital insurance and only ancillary cover. The category “insurance status not known” comprises less than 0.5% of the data and has been excluded from the analysis. As a result, figures may represent a slight under- or over-estimate of the total level of insurance. Levels of insurance coverage for Australia and Victoria were obtained from the Australian Government Private Health Insurance Administration Council.<sup>7</sup>

## Results

Levels of private hospital insurance in the Victorian population ranged from a high of

## 2 Proportions of injured people (all ages) with private hospital insurance for the years July 2000 – June 2003



\*Hospital-admitted patients in this category. Source for state insurance levels: Private Health Insurance Administration Council.<sup>5</sup> Source for injuries: Victorian Admitted Episodes Dataset.

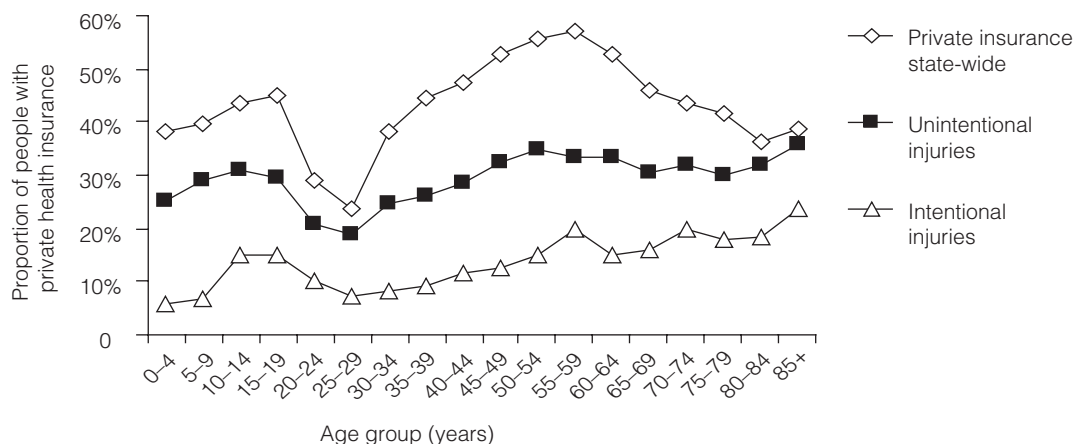
45.6% at the start of 2000 to a low of 43% at the end of June 2003.<sup>7</sup> Levels of insurance cover for hospital-admitted unintentional injury patients were similar over the three financial years of the study (Box 2). About 70.6% of injured patients had no private health insurance, 18.4% of patients had full hospital and ancillary insurance and about 2.7% had only hospital insurance. In 8.3% of cases people were insured, but the type of insurance was not known. Thirty-three percent of females with unintentional injuries had hospital insurance, compared with 26.7% of males. Moreover, of patients admitted to hospital with intentional injuries (eg, interpersonal violence and self-harm), only 10% of males and 12% of females reported private hospital insurance. Patients with unintentional and intentional injuries reported significantly lower proportions of insurance when compared with the state-wide private hospital insurance levels (Box 2).

The level and type of private health insurance coverage differed across age groups (Box 3). For patients admitted as a result of unintentional injuries, levels of coverage were highest in the middle and older age groups, with

36% of people aged 85 and over and 35% of people aged 50–54 years having some form of insurance. In contrast, levels were lowest among people aged 25–29 years (18%). Levels of coverage for patients with intentional injuries are significantly lower. Insurance levels ranged from a high of 25.6% in people with intentional injuries aged 85 and over, to a low of 5.8% in children aged 0–4 years (Box 3).

In order to assess whether government incentives led to a reduction in the number of injured patients in private hospitals, we carried out an analysis of the numbers of inpatients during a 5-year period that included the introduction of some of the government incentives. Over the period July 1998 to June 2003, there was a 22.7% increase in the number of injured people admitted to public hospitals. For the same period, there was an initial 10.0% increase in the number of injured people admitted to private hospitals with 16 441 patients admitted as a result of injuries in 1998 and 18 198 admitted in 2000–2001. However, admissions to private hospitals as a result of injuries subsequently decreased to below 1998 levels (Box 4).

### 3 Level of private health insurance cover by 5-year age groupings, July 2000 – June 2003



The insurance category includes persons categorised as insured but level unknown. Levels of private insurance state-wide were calculated using data from the Private Health Insurance Administration Council on population levels for 2003 obtained from the Australian Bureau of Statistics. Source: Victorian Admitted Episodes Dataset. ♦

## Discussion

During the study period July 2000 to June 2003, the levels of private hospital insurance in the Victorian population ranged from a high of 45.6% at the start of July 2000 to a low of 43% at June 2003.<sup>7</sup> During this time, the reported levels of private hospital insurance for people with unintentional injuries and intentional injuries ranged from 28.8% to 29.7%, and 10.4% to 12.2%, respectively. More females than males were privately insured.

Levels of hospital insurance for people with unintentional injuries ranged from a low of 18.7% in the 25–29 year age group to a high of 36% in the 85 year and above group. Private hospital insurance proportions were lower than those reported for Australia in the Health Insurance Survey of June 1998.<sup>15</sup> In this survey, levels were highest in the middle age groups, peaking at 49% of people aged 45–54 years and 45% of people aged 55–64 years.<sup>15</sup> In common with our findings, levels of insurance were lowest among young people, with 28% of those aged 25–34 years covered.<sup>14</sup>

One of the reasons for introducing lifetime health cover was to obtain a balance in the age groups who utilised private health insurance.<sup>10</sup>

The results from Box 2 suggest that the introduction of lifetime health cover has not been totally effective for those at risk of injury. This is further emphasised when considering intentional injuries; levels of insurance ranged from a low of 5.8% in the 0–4 years age group to a high of 25.4% in those aged 85 years and above.

### 4 Number of persons admitted to hospital for injuries (unintentional and intentional) July 1998 – June 2003

Financial year	Public hospital	Private hospital	Total no. public and private
1998–99	64 498 (79.7%)	16 441 (20.3%)	80 939
1999–00	67 396 (79.1%)	17 802 (20.9%)	85 198
2000–01	72 463 (79.9%)	18 198 (20.1%)	90 661
2001–02	78 053 (83.3%)	15 601 (16.7%)	93 654
2002–03	79 150 (83.2%)	15 914 (16.8%)	95 064

Source: Victorian Admitted Episodes Dataset

This report doesn't separate out injured patients who may receive compensation from other sources including Transport Accident Commission, Workers Compensation and Department of Veterans' Affairs. More than 80% of these patients reported no private hospital insurance. Despite this there are still substantial numbers of injured patients without private hospital insurance.

This is the first state-wide report in Australia on the levels of insurance for hospital-admitted injured people. Its strength lies in the fact that more than 98% of injuries were coded as either having no insurance or hospital insurance. While the insurance level was not known for 6% of those insured, the actual levels of hospital insurance most likely represent an overestimate because of the possibility that this category may include people with only ancillary cover.

The study has a number of limitations. First, the VAED collects data on hospital-admitted patients only. Some moderately severe injury cases may receive medical treatment but not be admitted to hospital. It is not known what levels of insurance these people have, and this may bias estimates of the levels of insurance. Secondly, there is a possibility that some misclassification may occur, as people who present to the emergency departments of public hospitals may not admit to having insurance because they may then face extra expenses due to out-of-pocket costs that arise if a person does not have full private hospital insurance. In order to determine whether misclassification occurred, we analysed the account payer class for public inpatients who declared no insurance. Less than 0.01% of public injury in-patients who said they had no hospital insurance had their accounts settled through private insurance, suggesting that misclassification is not significant in this study. However, it is possible that some of these patients may either not admit to having hospital insurance or not make a claim.

It is possible that the injured population differs in some way to other illness populations and that this influences whether they take up private insurance. Data for other illnesses are not readily available for comparison. Unlike cancer and car-

diovascular disease, injury disproportionately affects the young, being the highest cause of mortality under the age of 44 years.<sup>2</sup> Injury, like many chronic illnesses, is more likely to occur in low socioeconomic populations.<sup>16,17</sup>

A possible explanation for these results lies in an understanding of the influence of socioeconomic disadvantage on rates of injury. In a study of Victorian injury rates by Stokes et al, the lower socioeconomic groups were over-represented among the injured populations. Socioeconomic Status (SES) 1 and 2 were over-represented both for hospital admissions and emergency department presentations for both unintentional and intentional injury.<sup>15</sup> The individuals in these two quintiles are the least able to afford the rising cost of private insurance and also least likely to benefit from the Medicare levy exemption. According to Barrett and Conlon, those who are employed in white collar occupations and have some post-secondary education are more likely to purchase insurance,<sup>18</sup> and Hindle determined that they had less need for health care after controlling for other factors.<sup>9</sup>

Duckett and Jackson proposed that the economic cost to the government of funding the private health insurance incentives is over \$3.4 billion per year,<sup>19</sup> and Segal suggested that this is not met by an increase in activity.<sup>20</sup> Segal and others concluded that the funding of incentives has resulted in a health care system that is less equitable.<sup>9,19,20</sup> An alternative viewpoint is put forward by Harper. Harper claims that outlays on public hospital treatments stabilised at around 14 billion per year since the introduction of incentives. Had previous trends continued, the increase in expenditure on outlays would outweigh the cost of the rebate.<sup>21</sup> Access Economics takes a similar view, stating that the total cost of the rebate is nearly equivalent to the cost to the government had the arrangements remained at the time the incentives were introduced.<sup>22</sup>

Government incentives to take up private health insurance were based on the premise that an increased level of private health insurance would reduce pressures on public hospitals by switching people from the public to the private

health system.<sup>13,23</sup> Deeble analysed changes in hospital activity between 1998–99 and 2000–01 and found a small increase in public inpatients but a 16% increase in privately insured inpatients.<sup>24</sup> For injury patients in the current study this is not the case; there was an 18% increase in public inpatients with injury, but only a 10% increase in private hospital inpatients with injury over the same period of time. Four percent of public inpatients with injury had their accounts paid by private insurance. The results from Box 4 indicate that even though there was an initial increase in numbers of injured patients attending private hospitals, this increase was transitory and was not accompanied by a decrease in numbers being admitted to public hospitals for their injuries. Possibly this is because many private hospitals offer complementary services to public hospitals. Many do not have emergency departments, and Victorian ambulance policy is to transport the injured person to highest level trauma service within a 30-minute time-frame.<sup>25</sup> However, this policy does not preclude later transfer to private facilities. Encouraging more private hospitals to establish emergency department facilities in order to balance the numbers of injured patients warrants investigation.

This study found that large numbers of injured people did not have private health insurance and the majority of the injured required public hospital treatment. This suggests that investing in prevention activities may be the best means to decrease the disproportionate demand that injury places on the public hospital system.

## Conclusion

Clearly, even though there has been an increase in the overall numbers of people participating in private health insurance since the low levels at the start of 2000, government incentives have not resulted in an increase in private hospital insurance levels for those at risk of injury.<sup>7</sup> Lower socioeconomic groups who are less able to afford insurance may be over-represented in injury numbers. The main reason stated in the 2001 National Health Survey for not insuring was the

cost.<sup>11</sup> Targeting at-risk groups by investing in injury prevention to help relieve the pressure on the public health system may be the most effective way forward.

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## Competing interests

The authors declare that they have no competing interests.

## References

- 1 Australian Institute of Health and Welfare. Australia's Health 2002: the eighth biennial health report of the Australian Institute of Health and Welfare. AIHW: Canberra, 2003. (AIHW Cat. No. AUS 25.)
- 2 Australian Bureau of Statistics. Australian social trends, 2003. Mortality and morbidity: injuries. Canberra: ABS, 2003. (ABS Cat. No. 4102.0.) Available at: <<http://www.abs.gov.au/ausstats/abs@.nsf/2f762f95845417aeca25706c00834efa/1a0ecc988f5f1d50ca2570eb008398cd!OpenDocument>> (accessed Mar 06).
- 3 Helps Y, Cripps R, Harrison J. Hospital separations due to injury and poisoning, Australia 1999-00. Canberra: Australian Institute of Health and Welfare, 2002.
- 4 Doctors Reform Society of Australia. Medicare Fact Sheet 2. Private health insurance. *New Doctor* Winter 2001; 75. Available at: <[http://www.drs.org.au/new\\_doctor/75/fact\\_sheet\\_2.html](http://www.drs.org.au/new_doctor/75/fact_sheet_2.html)> (accessed Feb 06).
- 5 Australian Institute of Health and Welfare. Health Expenditure Australia, 2002-03. Health and Welfare Expenditure Series Number 20. Canberra: AIHW, 2004. (AIHW Cat. No. HWE 27.) Available at: <<http://www.aihw.gov.au/publications/index.cfm/title/10043>> (accessed Feb 06).
- 6 Australian Bureau of Statistics. Private Hospitals, Australia, 2002-03. Canberra: ABS, 2004. (ABS Cat. No. 4390.0.) Available at: <<http://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimary-mainfeatures/>>

- 04A2D804BFCF23E0CA25704C0078E8E9?open-document> (accessed Mar 06).
- 7 Australian Government Private Health Insurance Administration Council. Membership statistics. Canberra: PHIAC, last modified 2006. Available at: <<http://www.phiac.gov.au/statistics/membership-coverage/hosquar.htm>> (accessed Feb 06).
- 8 Doctors Reform Society of Australia. Medicare Fact Sheet 9. Lifetime health cover. *New Doctor* Winter 2001; 75 Available at: <[http://www.drs.org.au/new\\_doctor/75/fact\\_sheet\\_9.html](http://www.drs.org.au/new_doctor/75/fact_sheet_9.html)> (accessed Feb 06).
- 9 Hindle D, McAuley I. The effects of increased private health insurance: a review of the evidence. *Aust Health Rev* 2004; 28(1): 119-38. Available at: <[http://www.aushealthreview.com.au/publications/articles/issues/ahr\\_28\\_1\\_300904/ahr\\_28\\_1\\_119-138.asp](http://www.aushealthreview.com.au/publications/articles/issues/ahr_28_1_300904/ahr_28_1_119-138.asp)> (accessed Feb 06).
- 10 Australian Government Department of Health and Ageing. Private health insurance - for consumers. Lifetime health cover – what is it? Available at: <<http://www.health.gov.au/privatehealth/lhc/consumers/whatislhc.htm>> (accessed Feb 06).
- 11 Australian Bureau of Statistics. Private Health Insurance, 2001. Canberra: ABS, 2003. ABS Report No. 4815.0.55.001. Available at: <<http://www.abs.gov.au/Ausstats/abs@.nsf/0/BE010E1C499D3010CA256DB20000C99B?Open>> (accessed Feb 06).
- 12 Hanning BT. Impact in public hospitals if private health insurance rates in Victoria declined. *Aust Health Rev* 2004; 28(3): 330-9. Available at: <[http://www.aushealthreview.com.au/publications/articles/issues/ahr\\_28\\_3\\_131204/ahr\\_28\\_3\\_330-339.asp](http://www.aushealthreview.com.au/publications/articles/issues/ahr_28_3_131204/ahr_28_3_330-339.asp)> (accessed Feb 06).
- 13 Australian Government Private Health Insurance Administration Council. Lifetime health cover. Canberra: PHIAC, last modified 2005. Available at: <<http://www.phiac.gov.au/insurenotsure/sur-chargesincentives/lifetime.htm>> (accessed Feb 06).
- 14 State Government of Victoria, Department of Human Services. Victorian admitted episodes dataset manual, 12<sup>th</sup> Edition, July 2002. Available at: <<http://www.health.vic.gov.au/hdss/vaed/2002-03/manual/index.htm>> (accessed Feb 06).
- 15 Australian Bureau of Statistics. Health Insurance Survey, Australia, June 1998. Canberra: ABS, 1999. (ABS report no. 4335.0.) Available at: <<http://www.abs.gov.au/Ausstats/abs@.nsf/0/0D5938BA5AA08A1DCA2570D3007DF676?Open>> (accessed Feb 06).
- 16 Stokes M, Ashby K, Clapperton, A. Socio-economic status and injury. *Hazard* (Monash University Accident Research Centre) Summer 2001/2002; 49. Available at: <<http://www.monash.edu.au/muarc/VISU/hazard/>> (accessed Feb 06).
- 17 Davoren P. Why private health insurance initiatives don't help public hospitals. *New Doctor* Winter 2001; 75. Available at: <[http://www.drs.org.au/new\\_doctor/75/davoren\\_75.html](http://www.drs.org.au/new_doctor/75/davoren_75.html)> (accessed Feb 06).
- 18 Barrett GF, Conlon R. Adverse selection and the decline in private health insurance coverage in Australia: 1989-95. *The Economic Record* 2003; 79 No 246: 279-96.
- 19 Duckett SJ, Jackson TJ. The new health insurance debate: an inefficient way of assisting public hospitals. *Med J Aust* 2000; 172: 439-42.
- 20 Segal L. Why support private health insurance in Australia. *New Doctor* Winter 2002; 79. Available at: <[http://www.drs.org.au/new\\_doctor/79/segal.html](http://www.drs.org.au/new_doctor/79/segal.html)> (accessed Feb 06).
- 21 Harper IR. Health sense, when spending money saves money. *Policy* Spring 2003; 19(30).
- 22 Access Economics. Striking a balance: choice, access and affordability in Australian health care. A report prepared for the Australian Private Hospitals Association. Access Economics, October 2002. Available at: <<http://www.accesseconomics.com.au/prjcnsl/pckypubrep.htm>> (accessed Feb 06).
- 23 Vaithianathan R. Will subsidizing private health insurance help the public health system? *The Economic Record* 2002; 78 (242): 277-83.
- 24 Deeble J. Funding the essentials: the Australian Health Care Agreements, 2003-2008. *Aust Health Rev* 2002; 25(6): 1-7. Available at: <[http://www.aush-healthreview.com.au/publications/articles/issues/ahr\\_25\\_6\\_031202/ahr\\_25\\_6\\_01-07.asp](http://www.aush-healthreview.com.au/publications/articles/issues/ahr_25_6_031202/ahr_25_6_01-07.asp)> (accessed Feb 06).
- 25 State Government of Victoria, Department of Human Services. The Victorian State Trauma System. Metropolitan and Regional Paediatric and Adult Major Trauma Triage Guidelines. Melbourne: Government of Victoria. Available at: <<http://www.health.vic.gov.au/trauma/guidelines/index.htm>> (accessed Feb 06).

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