

# Accessibility and quality of care received in emergency departments by Aboriginal and Torres Strait Islander people

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## Abstract

**Objectives:** To examine the accessibility and quality of care received in emergency departments by Aboriginal and Torres Strait Islander people compared with other Australians.

**Methods:** We examined 2004–05 data from the National Non-admitted Patient Emergency Department Care database from the Northern Territory and Western Australia, the only jurisdictions where Indigenous identification in the database was considered acceptable.

**Results:** In the NT, Indigenous people were 1.7 times as likely to present to an emergency department as non-Indigenous people. Indigenous patients in the NT and WA do not appear to use EDs for “primary care” problems more than non-Indigenous patients. More NT Indigenous patients walked out before being seen or before their treatment was completed. However, Indigenous patients generally waited a similar time, and often slightly shorter, to be seen as similar non-Indigenous patients in WA and the NT.

**Conclusions:** We recommend the regular monitoring of equity in the accessibility and quality of ED care for Indigenous people compared with other Australians. Indigenous identification in the database needs to improve so monitoring of ED performance can extend beyond WA and the NT.

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## What is known about the topic?

Indigenous people attend emergency departments (EDs) more often than other Australians, wait a similar length of time before being seen, but are more likely to leave before receiving treatment.

## What does this paper add?

The study confirmed what was known, and found that Indigenous patients in the Northern Territory and Western Australia did not appear to use EDs for “primary care” problems more than non-Indigenous patients.

## What are the implications for practitioners?

The study suggests that EDs may be performing more equitably for Indigenous people than other elements of the health system, but Indigenous identification in the database needs to improve so that monitoring of ED performance can extend beyond WA and the NT.

THE *National Strategic Framework for Aboriginal and Torres Strait Islander Health* committed all levels of government to making all elements of the health system more responsive to the needs of Aboriginal and Torres Strait Islander peoples.<sup>1</sup>

However, most Aboriginal and Torres Strait Islander health care policy and research has concentrated on the primary care rather than the hospital sector.<sup>2</sup> Most of the limited attention to hospital services has been on admitted patients rather than emergency departments (EDs), the focus of this paper.

The *Aboriginal and Torres Strait Islander Health Performance Framework*<sup>3</sup> reported that Indigenous Australians were twice as likely to have visited an ED or outpatients clinic in the last week as other Australians. In contrast, the same national surveys showed that Indigenous Australians were only 1.1 times as likely as other Australians to have used any health care services. It is not apparent from these results whether Indigenous patients were accessing ED services at appropriately higher rates than other Australians because of their greater morbidity or

because they were substituting ED services for other more appropriate primary care services.

In recent years, overcrowding in EDs led to assertions that some of this overcrowding was due to the inappropriate use of EDs for conditions that could be better managed in general practice. Some general practice research confirmed this view, which was then supported by plans to establish after-hours bulk-billing health centres near these EDs to reduce this inappropriate ED workload.<sup>4-7</sup> This link with ED overcrowding has been refuted by the Australasian College of Emergency Medicine and emergency medicine researchers.<sup>8-11</sup> This research used more precise definitions to identify patients with problems that could be managed in general practice or similar primary care settings. Unlike the early general practice research, these definitions did not only rely on the ED patient's triage category, but used different techniques to exclude ED patients referred by general practitioners, brought in by ambulance or who were subsequently admitted.

Since 2003-04 the Australian Institute of Health and Welfare has been able to provide a national report on ED care, based on data provided by all jurisdictions, in its annual report of Australian hospital statistics.<sup>12</sup> In 2004-05, its National Non-admitted Patient Emergency Department Care database included an estimated 76% of all public hospital ED occasions of service. Data were included from all principal referral, all specialist women's and children's hospitals and all large hospitals, but only 32 of the 494 smaller hospitals. The 2004-05 and the 2005-06 reports have provided only limited results about Indigenous use of EDs because of the poor quality of Indigenous status data except from Western Australia and the Northern Territory. They only report the number of Indigenous and non-Indigenous ED occasions of service for each jurisdiction. However, the better quality but unreported data from WA and the NT enables comparisons between Indigenous and non-Indigenous use of EDs and whether substitution of ED for general practice care is more or less common among Indigenous patients.

In this paper we use this limited data to assess equity in the accessibility and quality of care

received in EDs by Aboriginal and Torres Strait Islander people compared with other Australians. We also compare Indigenous and non-Indigenous use of EDs for problems that could be managed in primary care.

## Methods

We purchased analyses of 2004-05 data from the National Non-admitted Patient Emergency Department Care database to supplement the analyses in the published report. Our results only use data from the NT and WA, where Indigenous identification in the database was considered acceptable. All NT public hospitals were included (two principal referral, no large, three other hospitals). All nine larger WA hospitals were included (four principal referral and specialist women's and children's public hospitals, all five large hospitals), but only 4/79 other WA hospitals were included.<sup>12</sup> As data from most small WA hospitals were not included and there are no large hospitals in the NT, we only examined small hospitals and all hospitals combined in the NT, and large hospitals in WA. All principal referral and specialist women's and children's public hospitals from WA and the NT were included, so these were examined together. Arrival and departure information is only reported from the NT, where data were available from all hospitals.

Statistical significance and confidence intervals are not reported. As the numbers of ED presentations in the dataset are very large, confidence intervals are narrow and even small differences in proportions are statistically significant even if of no real significance to policy makers.

## Results

The NT was the only jurisdiction with data for ED presentations from all hospitals and with acceptable Indigenous identification. In the NT, 40.9% of all 111 884 ED presentations were Indigenous patients, and Indigenous status was not reported in 0.3% of presentations. As 28.8% of the estimated NT population in 2001 was Indigenous, the Indigenous NT population was 1.7 times more likely than the non-Indigenous population to present to an ED.<sup>13</sup>

### I Arrival in and departure from Northern Territory emergency departments (EDs), by Indigenous status, 2004–05

	Indigenous	Non-Indigenous
<b>Arrival mode (%)</b>		
Ambulance, air ambulance or helicopter rescue service	25.9	9.5
Police/correctional services vehicle	5.0	1.1
Other (includes walked in, taxi, private or public transport)	60.0	79.2
Not reported	9.1	10.2
<b>Departure status (%)</b>		
Admitted to this hospital	33.3	15.7
ED treatment completed without admission	55.9	76.5
Referred to another hospital for admission	0.1	0.2
Did not wait to be attended by a health care professional	9.2	7.0
Left at own risk before ED treatment completed	1.4	0.5
Dead on arrival or died in ED	0.1	0.1
<b>Total (n)</b>	45 371	66 513

A larger proportion of Indigenous (25.9%) than non-Indigenous (9.5%) patients arrived by ambulance, air ambulance or helicopter rescue in the NT (Box 1). Similarly, a larger proportion of Indigenous (5.0%) than non-Indigenous (1.1%) patients arrived at the ED in a police or correctional services vehicle.

A slightly larger proportion of Indigenous (9.2%) than non-Indigenous (7.0%) patients did not wait to be seen by a health professional in NT EDs (Box 1). The small proportion of NT Indigenous patients (1.4%) who left before their ED treatment was completed was more than 2.5 times that of non-Indigenous patients (0.5%).

The differences between Indigenous and non-Indigenous admission rates were not the same in WA and NT. In the NT, Indigenous ED patients were more than twice as likely to be admitted as non-Indigenous patients (Box 2). In WA there was a mixed picture: compared with non-Indigenous ED patients, Indigenous patients were slightly more likely to be admitted in principal referral and specialist hospitals and slightly less likely to be admitted in large hospitals (Box 2 and other data not shown).

All patients presenting to an ED should be assigned one of five categories from the Australasian Triage Scale by an experience registered

nurse. These categories describe the acuity or urgency of the presentation and the maximum time the patient should wait.<sup>14</sup> The acuity of presentations by Indigenous patients was very similar to that of non-Indigenous patients. Indigenous and non-Indigenous patients were assigned to triage categories in very similar proportions in each type of hospital (Box 2). The proportion of low acuity presentations increased as the size of hospital decreased (in both Indigenous and non-Indigenous patients).

For each triage category in each type of hospital, Indigenous patients generally waited a similar time to non-Indigenous patients (Box 2 and other data not shown). In contrast, there were marked differences in waiting times for both Indigenous and non-Indigenous patients in different triage categories, as these categories were assigned to determine patient flow in the ED according to the maximum time patients should wait. There were also longer waiting times for both Indigenous and non-Indigenous patients in principal referral and specialist hospitals than in smaller hospitals.

## Discussion

These new WA and NT results from 2004–05 develop the findings from our recent literature

## 2 Triage categories, waiting times and admission rates, by Indigenous status and hospital type, 2004–05

	All hospitals (NT)		Principal referral and specialist hospitals (WA and NT)		Large hospitals (WA)		Small hospitals (NT)	
	Indig	Non-Indig	Indig	Non-Indig	Indig	Non-Indig	Indig	Non-Indig
<b>Proportion in each triage category (%)</b>								
Resuscitation	0.8	1.0	1.3	1.4	0.4	0.5	0.2	0.1
Emergency	5.6	5.8	8.6	12.1	7.1	7.4	1.6	1.3
Urgent	29.3	25.6	34.7	32.1	29.9	29.6	15.3	12.1
Semi-urgent	50.1	53.8	51.3	50.0	54.6	53.0	46.7	43.5
Non-urgent	14.1	13.8	4.1	4.4	7.5	9.3	36.3	43.1
<i>Total presentations</i>	<i>42 807</i>	<i>61 908</i>	<i>38 259</i>	<i>216 211</i>	<i>9 929</i>	<i>104 899</i>	<i>13 748</i>	<i>47 416</i>
<b>Proportion seen on time (%)</b>								
Resuscitation	100.0	100.0	98.8	98.4	100.0	98.6	100.0	100.0
Emergency	61.9	60.8	65.1	68.5	91.5	87.8	58.5	61.5
Urgent	63.4	58.7	62.8	58.5	84.7	77.4	63.6	64.9
Semi-urgent	56.5	53.9	50.0	51.8	81.0	74.1	72.0	72.8
Non-urgent	86.2	85.5	74.5	72.9	88.4	90.9	88.0	87.1
<i>Proportion all presentations seen on time</i>	<i>63.3%</i>	<i>60.3%</i>	<i>57.7%</i>	<i>57.6%</i>	<i>83.1%</i>	<i>77.7%</i>	<i>75.4%</i>	<i>77.3%</i>
<b>Proportion admitted (%)</b>								
Resuscitation	73.5	47.5	76.6	72.7	11.9	31.0	56.5	54.5
Emergency	73.8	54.9	69.9	57.1	22.2	30.4	63.1	60.7
Urgent	56.1	30.7	55.3	43.4	13.2	20.3	53.8	29.2
Semi-urgent	23.0	8.0	22.4	17.2	4.7	6.7	24.4	8.1
Non-urgent	10.6	2.6	7.3	6.1	1.3	1.1	11.4	2.9
<i>Proportion all presentations admitted</i>	<i>34.2%</i>	<i>16.2%</i>	<i>38.0%</i>	<i>30.7%</i>	<i>8.2%</i>	<i>12.1%</i>	<i>24.8%</i>	<i>9.1%</i>

review of Indigenous use of EDs.<sup>15</sup> However, it is not clear how generalisable the results from WA and NT are to other jurisdictions. The under-identification of Indigenous patients in routine ED datasets in other jurisdictions remains a great impediment to providing useful information for policy makers. Indigenous identification was claimed to be only acceptable in WA and NT. Our dataset was further constrained as ED data were not available from all small WA hospitals, many of which are in more remote parts of the state with greater Indigenous proportions of the population, so some analyses were only based on NT data.

It was not possible to age-standardise our comparisons. The Indigenous population and Indigenous ED patients are younger than the corresponding non-Indigenous population and patients.<sup>15,16</sup> As age is variously associated with the indicators we measured, age-standardised comparisons may have differed from those reported here.

There was a small drop in the reported proportion of presentations to NT EDs by Indigenous patients from 47% in 1996–2001<sup>16</sup> to 41% in this study. Consequently, the ratio of NT Indigenous to non-Indigenous use of EDs fell from 2.1 to 1.7.

There was a 15% increase in total NT ED presentations from 96 966 in 2000–01<sup>17</sup> to 111 884 in 2004–05, when there was a less than 4% increase in the total estimated resident NT population.<sup>18</sup> Apart from this increase in total ED presentations, there were no other obvious structural changes to the NT health system that could help explain the change in Indigenous ED use. In the latest report from 2005–06, there has been a further small drop in the reported proportion of presentations to NT EDs by Indigenous patients to 39.9% and a further increase in the total number of NT ED presentations to 119 677.<sup>19</sup> In this climate of increasing ED presentations in the NT, it is not clear why Indigenous presentations have not increased as fast as non-Indigenous ED presentations.

The ratio of NT Indigenous to non-Indigenous use of EDs is lower than might be expected either by the standardised mortality ratio (2.5)<sup>3</sup> or the ratio of disability-adjusted life-years lost (2.1).<sup>20</sup> Such comparisons are overly simplistic<sup>15</sup> but suggest that greater Indigenous use of NT EDs is reasonable after accounting for greater health need: there may still be greater Indigenous problems with ED access, however.

The literature review identified conflicting results from different studies comparing Indigenous and non-Indigenous triage categories.<sup>15</sup> In contrast, we have now demonstrated very similar proportions in each triage category for Indigenous and non-Indigenous patients in each type of hospital. Some of the conflicting results from earlier studies may be due to the very different proportions in each triage category for different types of hospital, well demonstrated in Box 2.

We demonstrated much higher admission rates for Indigenous than non-Indigenous patients in the NT, but similar admission rates in WA. Similarly, our literature review showed conflicting results from different studies comparing Indigenous and non-Indigenous admission rates.<sup>15</sup> The reasons for these different findings in different contexts are not yet apparent.

The comparison of Indigenous and non-Indigenous patients' triage categories combined with information about admission rates and ambulance arrivals provide policy makers with some

indication of whether Indigenous patients are more likely than non-Indigenous patients to present to EDs with problems that could be managed in general practice or primary health care services.<sup>8,9,21</sup> Unfortunately, the National Non-admitted Patient Emergency Department Care database does not report whether ED patients had been referred by a general practitioner, which would have also been useful in assessing primary care substitution by the ED.

Indigenous patients in the NT and WA do not appear to use EDs for "primary care" problems more than non-Indigenous patients. In the NT, Indigenous patients had similar triage categories but much higher admission rates and arrivals by ambulance, indicating that these patients were less likely than non-Indigenous patients to be presenting with "primary care" problems. In WA, Indigenous patients had similar triage categories, admission rates and arrivals by ambulance, indicating that these patients were presenting with "primary care" problems similarly to non-Indigenous patients. With these different results in WA and NT, policy makers should be very cautious about generalising these findings to other jurisdictions. Nevertheless, it does appear that in WA and NT, at least, excessive primary care substitution is unlikely to be the reason for the greater use of EDs by Indigenous than non-Indigenous patients.

Policy makers should be cautioned from examining the numbers of such "primary care" problems in EDs as an indirect measure of how well the primary care system is or is not performing. Research of the perceptions of ED patients presenting with "primary care problems" found that the most important reason for attending the ED rather than a general practice was the perceived urgency or complexity of their problem, with cost and accessibility of primary care mentioned much less often.<sup>22</sup> Combined with research that shows no link between numbers of these patients and ED overcrowding and workload,<sup>8–11</sup> such research evidence indicates that policies to improve the accessibility of general practice are unlikely to have any impact on ED care and ED overcrowding. It should also provide warning against using these ED presentations to assess the

accessibility of primary care services, for Indigenous patients in the case of our research.

Our study, consistent with those in the literature review,<sup>15</sup> identified indirect evidence of greater Indigenous than non-Indigenous dissatisfaction with their care received in EDs. More Indigenous patients walked out of the ED before being seen or before their treatment was completed. The reasons for this discontent are not clear. Admitted Indigenous patients were 19 times as likely as admitted non-Indigenous patients to be discharged from the wards against medical advice, suggesting walk-outs by Indigenous people are less of a problem in the ED than in the wards.<sup>3</sup>

The most common reason for walking out before being seen in EDs in other contexts is dissatisfaction with the waiting time.<sup>23</sup> However, Indigenous patients generally waited a similar time, and often slightly shorter, to be seen as similar non-Indigenous patients. This confirms the findings of the literature review.<sup>15</sup> It is reassuring that these comparisons of waiting times consistently reveal no apparent discrimination against Indigenous ED patients. In spite of this evidence, greater Indigenous discontent and walk-outs may still be due to patients' perceptions that they wait too long.

The usefulness of routinely collected ED data to Indigenous health policy makers is limited by the poor quality of the identification of patients in all jurisdictions except the NT and WA. As other jurisdictions improve Indigenous identification in their data, this ED data will become more useful to Indigenous health policy makers as they will have more generalisable information about this important element of the Australian health care system. The utility of this routine dataset for Indigenous health policy would also be improved if data were provided from all small hospitals, as these are often in rural and remote regions with a higher Indigenous proportion of the population.

## Conclusion

When we examined the available data from the NT, we found greater Indigenous than non-Indi-

genous use of EDs, reflecting greater health need. We found no evidence that this is due to greater Indigenous use of EDs for problems that could have been managed by general practice or primary health care services. Of concern, we noted a decline in Indigenous use of EDs relative to non-Indigenous use in the NT: the reasons for this are not certain. This trend warrants monitoring in regularly published reports, such as the *Aboriginal and Torres Strait Islander Health Performance Framework*, to monitor equity in the accessibility of EDs for Indigenous people.

The quality of care received in EDs by Aboriginal and Torres Strait Islander people compared with other Australians should also be regularly monitored and reported. Such reports need to be expanded from currently available information about waiting times and walk-outs to new information about important clinical procedures in the ED, for example time to thrombolysis for ischaemic chest pain.<sup>24</sup> Policy makers and ED staff may be concerned by our finding of greater apparent Indigenous dissatisfaction with ED care: more NT Indigenous than non-Indigenous patients walk out from the ED before they are seen or before treatment is completed. However, this appears to be less of a problem in the ED than among admitted Indigenous patients. In contrast, in WA and the NT, there is little difference in the waiting times of Indigenous and non-Indigenous patients. New qualitative research of Indigenous perceptions of ED care may help our understanding of the reasons for people leaving before receiving treatment.

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## Competing interests

The authors declare that they have no competing interests.

## References

- 1 National Aboriginal and Torres Strait Islander Health Council. National Strategic Framework for Aboriginal and Torres Strait Islander Health: Framework for action by governments. Canberra: National Aboriginal and Torres Strait Islander Health Council, 2003.
- 2 Anderson I, Clarke A, Renhard R, et al. Linking acute care to a strategy for improving Aboriginal health. *Aust Health Rev* 2002; 25(5): 118-29. Available at: [http://www.aushealthreview.com.au/publications/articles/issues/ahr\\_25\\_5\\_171002/ahr\\_25\\_5\\_118-129.asp](http://www.aushealthreview.com.au/publications/articles/issues/ahr_25_5_171002/ahr_25_5_118-129.asp) (accessed Aug 2008).
- 3 Australian Health Ministers' Advisory Council. Aboriginal and Torres Strait Islander Health Performance Framework Report 2006. Canberra: AHMAC, 2006.
- 4 Bolton P, Mira M. A comparison of morbidity and services provided in three primary care settings. *Aust Health Rev* 2003; 26(3): 26-30. Available at: [http://www.aushealthreview.com.au/publications/articles/issues/ahr\\_26\\_3\\_151203/ahr\\_26\\_3\\_26-30.asp](http://www.aushealthreview.com.au/publications/articles/issues/ahr_26_3_151203/ahr_26_3_26-30.asp) (accessed Aug 2008).
- 5 Bolton P, Mira M. A comparison of patient satisfaction in three primary care settings. *Aust J Primary Health* 2004; 10: 16-20.
- 6 Department of Health and Ageing. Federal Government funding boost for after-hours GP services [media release ABB135/04]. 13 Aug 2004. Available at: <http://www.health.gov.au/internet/ministers/publishing.nsf/Content/health-mediarel-yr2004-ta-abb135.htm?OpenDocument&yr=2004&mth=8> (accessed Nov 2004).
- 7 Department of Health and Ageing. New medical centres to ease pressure on emergency departments [media release ABB040/04]. 5 Apr 2004. Available at: <http://www.health.gov.au/internet/ministers/publishing.nsf/Content/health-mediarel-yr2004-ta-abb040.htm> (accessed 10 Nov 2004).
- 8 Australasian College for Emergency Medicine. The relationship between emergency department overcrowding and alternative after-hours GP services. Melbourne: ACEM, 2004. Available at: [http://www.medeserv.com.au/acem/open/documents/after\\_hoursgrp.pdf](http://www.medeserv.com.au/acem/open/documents/after_hoursgrp.pdf) (accessed Oct 2004).
- 9 Sprivulis P. Estimation of the general practice workload of a metropolitan teaching hospital emergency department. *Emerg Med* 2003; 15: 32-7.
- 10 Dent AW, Phillips GA, Chenhall AJ, McGregor LR. The heaviest repeat users of an inner city emergency department are not general practice patients. *Emerg Med* 2003; 15: 322-9.
- 11 Sprivulis P, Grainger S, Nagree Y. Ambulance diversion is not associated with low acuity patients attending Perth metropolitan emergency departments. *Emerg Med* 2005; 17: 11-15.
- 12 Australian Institute of Health and Welfare. Australian hospital statistics 2004-05. Canberra: Australian Institute of Health and Welfare, 2006. (AIHW Cat. No. HSE 41.)
- 13 Australian Bureau of Statistics and Australian Institute of Health and Welfare. The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples 2005. ABS and AIHW, 2005. (ABS Cat. No. 4704.0; AIHW Cat. No. IHW 11.)
- 14 Australasian College for Emergency Medicine. Policy on the Australasian Triage Scale. Revised November 2000. (Policy Document P06). Available at: <http://www.acem.org.au/infocentre.aspx?docId=59> (accessed Oct 2004).
- 15 Thomas DP, Anderson IP. Use of emergency departments by Aboriginal and Torres Strait Islander people. *Emerg Med* 2006; 18: 68-76.
- 16 Lee A, Meuleners L, Zhao Y, et al. Demographic patterns of emergency presentations to Northern Territory public hospitals. *Aust Health Rev* 2004; 27(2): 61-67. Available at: [http://www.aushealthreview.com.au/publications/articles/issues/ahr\\_27\\_2\\_300604/ahr\\_27\\_2\\_61-67.asp](http://www.aushealthreview.com.au/publications/articles/issues/ahr_27_2_300604/ahr_27_2_61-67.asp) (accessed Aug 2008).
- 17 Australian Institute of Health and Welfare. Australian hospital statistics 2000-01. Canberra: Australian Institute of Health and Welfare, 2002. (AIHW Cat. No. HSE 20.)
- 18 Australian Bureau of Statistics. Australian demographic statistics: time series spreadsheets. Canberra: ABS, 2007. (ABS Cat. No. 3101.0.) Available at: [http://www.ausstats.abs.gov.au/Ausstats/ABS@Archive.nsf/0/484D61925BB8C6C6CA25747100122B0B/\\$File/310104.xls](http://www.ausstats.abs.gov.au/Ausstats/ABS@Archive.nsf/0/484D61925BB8C6C6CA25747100122B0B/$File/310104.xls) (accessed Aug 2008).
- 19 Australian Institute of Health and Welfare. Australian hospital statistics 2005-06. Canberra: AIHW, 2007. (AIHW Cat. No. HSE 50.)
- 20 Zhao Y, Guthridge S, Magnus A, Vos T. Burden of disease and injury in Aboriginal and non-Aboriginal populations in the Northern Territory. *Med J Aust* 2004; 180: 498-502.
- 21 Bezzina AJ, Smith PB, Cromwell D, Eager K. Primary care patients in the emergency department: Who are they? A review of the definition of the "primary care patient" in the emergency department. *Emerg Med* 2005; 17: 472-9.
- 22 Masso M, Bezzina AJ, Siminski P, et al. Why patients attend emergency departments for conditions potentially appropriate for primary care: Reasons given by patients and clinicians differ. *Emerg Med* 2007; 19: 333-40.
- 23 Mohsin M, Young L, Ieraci S, Bauman AE. Factors associated with walkout of patients from New South Wales hospital emergency departments, Australia. *Emerg Med* 2005; 17: 434-42.
- 24 Australasian College of Emergency Medicine. Quality management in emergency medicine. Jul 2002. (Policy document 28.) Available at: <http://www.acem.org.au/infocentre.aspx?docId=59> (accessed Oct 2004).

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