Hospital utilisation among people born in refugee-source countries: an analysis of hospital admissions, Victoria, 1998–2004

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ABSTRACT

Objective: To investigate whether hospital utilisation and health outcomes in Victoria differ between people born in refugee-source countries and those born in Australia.

Design and setting: Analysis of a statewide hospital discharge dataset for the 6 financial years from 1 July 1998 to 30 June 2004. Hospital admissions of people born in eight countries for which the majority of entrants to Australia arrived as refugees were included in the analysis.

Main outcome measures: Age-standardised rates and rate ratios for: total hospital admissions; emergency admissions; surgical admissions; total days in hospital; discharge at own risk; hospital deaths; admissions due to infectious and parasitic diseases; and admissions due to mental and behavioural disorders.

Results: In 2003–04, compared with the Australia-born Victorian population, people born in refugee-source countries had lower rates of surgical admission (rate ratio [RR], 0.85; 95% CI, 0.81–0.88), total days in hospital (RR, 0.74; 95% CI, 0.73–0.75), and admission due to mental and behavioural disorders (RR, 0.70; 95% CI, 0.65–0.76). Over the 6-year period, rates of total days in hospital and rates of admission due to mental and behavioural disorders for people born in refugee-source countries increased towards Australian-born averages, while rates of total admissions, emergency admissions, and admissions due to infectious and parasitic diseases increased above the Australian-born averages.

Conclusions: Use of hospital services among people born in refugee-source countries is not higher than that of the Australian-born population and shows a trend towards Australian-born averages. Our findings indicate that the Refugee and Humanitarian Program does not currently place a burden on the Australian hospital system.

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Australia is one of 16 nations that resettle refugees under the United Nations High Commissioner for Refugees program,[1] and has the second largest intake in proportion to its population, accepting about 13 000 humanitarian entrants annually.[2] All humanitarian visa holders have immediate access to Medicare, Australia's publicly funded universal health care scheme.

Variations in patterns of hospital utilisation among migrant populations have been documented in a number of countries.[3-6] These studies have shown that, overall, immigrants do not have higher rates of hospital utilisation compared with those born in the country of hospitalisation. However, there is a dearth of research on the use of health services by people from refugee backgrounds who have resettled in industrialised nations. This lack of evidence is of particular significance, not only because of the vulnerability and disadvantage of refugee populations,[7,8] but also because of the need to inform policies and services that aim to improve the health of these communities.

We analysed a 6-year statewide hospital discharge dataset to investigate whether inequalities in hospital use and health outcomes exist among people born in refugee-source countries compared with the Australian-born population in Victoria.

METHODS

Admissions data source

The Victorian Admitted Episodes Dataset (VAED) was used to analyse hospital admissions for the 6 financial years from 1 July 1998 to 30 June 2004. The VAED contains morbidity data on all patients admitted to public and private hospitals in Victoria. Clinical data are stored as ICD-10-AM[9] (International classification of diseases, 10th revision, Australian modification) codes in 25 diagnosis and procedures fields for 1998–99 to 2002–03, increasing to 40 fields in 2003–04. Permission to use de-identified data was obtained from the Victorian Department of Human Services.

Refugee-source countries

Two major shortcomings of the VAED are a lack of data on immigration status and a lack of indicators for ethnicity (with the exception of Indigenous status) beyond country of birth of the patient. Hence, we used country of birth as a proxy indicator of refugee status. Refugee-source countries are defined as those countries where significant numbers of people have been forcibly displaced due to persecution, violence, and war.[8] Here, we focus on the eight source countries from which most entrants to Victoria from 1980 onwards arrived under the Refugee and Humanitarian Program; this cut-off date was chosen to differentiate entrants from recent refugee-source countries from those from former refugee-source countries who have entered more recently under the family and general migration programs (eg, Vietnamese and Cambodians).[2,10] The recent refugee-source countries included are Afghanistan, Bosnia–Herzegovina, Burma, Eritrea, Ethiopia, Iraq, Somalia and Sudan. Data for recent refugee arrival numbers were obtained from the Australian Government Department of Immigration and Multicultural Affairs Settlement Database.[2]

Admission rates

Hospital admission rates were age-standardised using the direct method.[11] As Victorian population estimates by country of birth and age category were not readily available from the Australian Bureau of Statistics for all individual refugee-source countries, population figures for people born in these countries were estimated by adding the number of arrivals to Victoria born in each country[2] to the number of individuals recorded at the previous census as being born in each country.[12] Figures from the 1996 and 2001 censuses were used to estimate the Australian-born population.[12] The estimated resident population of Victoria was used as the standard population.

A random sample of 100 000 admissions of Australian-born people was taken for each year and compared with the total number of admissions for people

1 Estimated population in Victoria, and number of arrivals and proportion of humanitarian arrivals in Victoria, by refugee-source country of birth

Refugee-source country of birth	Estimated population in Victoria (2004)*	Arrivals in Victoria (1996–2004)†	
		No. of arrivals	Proportion arriving on humanitarian visas
Afghanistan	4061	2743	87.1%
Bosnia–Herzegovina	8861	2043	92.4%
Burma	1295	304	68.8%
Eritrea	1190	552	69.4%
Ethiopia	2796	1639	59.2%
Iraq	7701	4163	81.7%
Somalia	2685	1525	77.4%
Sudan	3740	3544	97.5%
Total	**32 329**	**16 513**	**79.2%**

*Data sources: 1996 and 2001 censuses[12] and Settlement Database.[2] †Data source: Settlement Database.[2] ◆

2 Total hospital admissions by refugee-source country of birth and financial year of analysis, Victoria, 1998–99 to 2003–04

Refugee-source country of birth	1998–99	1999–2000	2000–01	2001–02	2002–03	2003–04
Afghanistan	600	650	834	1142	1312	1440
Bosnia–Herzegovina	1062	1450	2310	2641	3298	3266
Burma	298	348	491	547	550	675
Eritrea	337	345	414	404	528	497
Ethiopia	458	553	639	736	1021	1206
Iraq	1313	1556	1778	1884	2350	2835
Somalia	794	863	860	1127	1117	1266
Sudan	121	172	192	300	477	778
Total	**4983**	**5937**	**7518**	**8781**	**10 653**	**11 963**

born in refugee-source countries in the same year. Rate ratios are used to illustrate these comparisons.[11] The Australian-born population was used as the reference group, so a rate ratio greater than 1.00 indicates that admissions were higher for people born in refugee-source countries than for Australian-born people. Admission rates and rate ratios are presented with 95% confidence levels. Confidence intervals for age-adjusted rates were calculated with the method based on the γ distribution.[13]

The following indicators were assessed for people born in refugee-source countries and compared with those born in Australia over the 6-year period:

- total hospital admissions;
- emergency admissions;
- surgical admissions;
- total days in hospital;
- discharge at own risk;
- hospital deaths;
- admissions due to infectious and parasitic diseases (ICD-10-AM[9] codes A00–A99 and B00–B99); and
- admissions due to mental and behavioural disorders (F00–F99 codes[9]).

A conservative approach was used in comparing rate ratios for refugee-source-country-born and Australian-born populations. When confidence intervals of rate ratios for people born in refugee-source countries overlapped with those of the Australian-born population, rate ratios were defined as similar. Rate ratios for people born in refugee-source countries were defined as higher or lower than for the Australian-born population if they were higher or lower in at least 4 of the 6 years analysed.

Data were analysed using SAS, version 8.2 (SAS Institute Inc, Cary, NC, USA).

RESULTS

Our estimates indicate that about 80% of arrivals in Victoria from the eight refugee-source countries between 1996 and 2004 entered Australia under the humanitarian program (Box 1). A total of 49 835 hospital admissions of people born in these countries were recorded between 1998–99 and 2003–04 (Box 2).

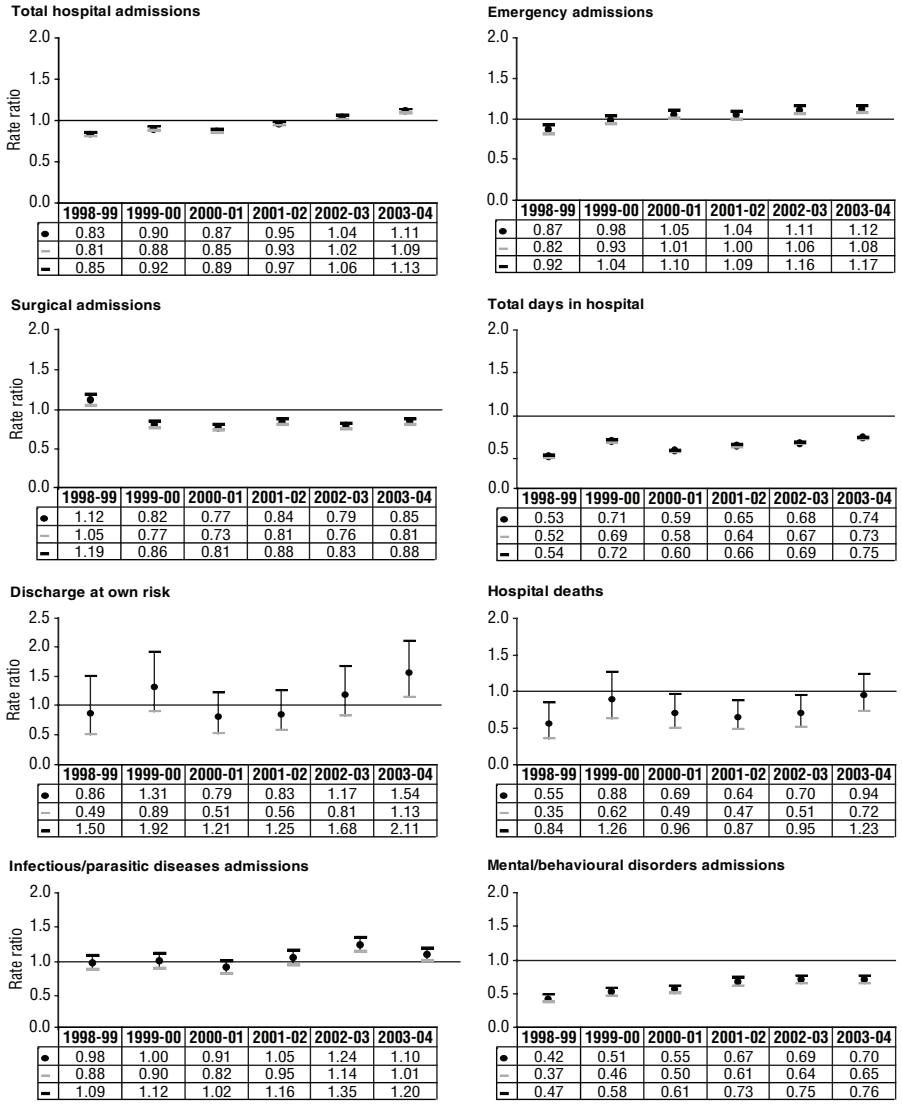
Box 3 compares age-standardised rates between people born in refugee-source countries and Australian-born people for the last year of analysis (2003–04). People born in refugee-source countries had statistically significantly ($P < 0.05$) higher rates of total hospital admissions and emergency admissions, and lower rates of surgical admissions, total days in hospital, and admissions due to mental and behavioural disorders.

Rates for all outcomes increased between 1998–99 and 2003–04 for both Australian-born people and people born in refugee-source countries (except for infectious/para-

3 Comparison of age-standardised hospital admission rates (per 1000 persons) (95% CI) between people born in refugee-source countries and Australian-born people, Victoria, 2003–04

Outcome	Born in a refugee-source country	Born in Australia
Total hospital admissions	495.2 (484.7–505.9)	444.8 (442.0–447.6)
Emergency admissions	113.2 (108.2–118.4)	100.9 (99.6–102.2)
Surgical admissions	96.7 (92.4–101.3)	114.3 (112.9–115.7)
Total days in hospital	1102.7 (1085.9–1119.8)	1493.2 (1488.0–1498.4)
Discharge at own risk	1.7 (1.1–2.4)	1.1 (0.9–1.2)
Hospital deaths	4.1 (3.1–5.5)	4.4 (4.1–4.7)
Admissions due to infectious/parasitic diseases	22.4 (20.3–24.6)	20.3 (19.7–20.9)
Admissions due to mental/behavioural disorders	24.0 (21.9–26.4)	34.2 (33.5–35.0)

4 Rate ratios and 95% CIs* for outcomes assessed — people born in refugee-source countries compared with Australian-born people,† 1998–99 to 2003–04



* Circles represent rate ratios, with corresponding figures shown in the first line of each table. Bars represent lower and upper 95% CIs, with corresponding figures shown in the second and third lines of each table, respectively. † Reference group = Australian-born people (rate ratio, 1.00). ◆

sitic diseases admissions, which remained steady for Australian-born people).

Comparisons of the 6-year rate ratios for the outcomes assessed are presented in Box 4. When compared with the Australian-born population, people born in refugee-source countries have lower overall rates of total hospital admission, surgical admission, total days in hospital, deaths in hospital, and admission due to mental/behavioural disorders. Rates for discharge at own risk and admission due to infectious/parasitic diseases are similar between the two populations.

The data are indicative of a change towards Australian-born averages (eg, for total days in hospital and admissions due to mental/behavioural disorders) and above them (eg, for total admissions, emergency admissions, and admissions due to infectious/parasitic diseases).

DISCUSSION

We found that people born in refugee-source countries have lower or similar rates of hospital utilisation in Victoria, compared with the Australian-born population. These findings agree with a number of other studies that have compared hospital utilisation between immigrants and those born in the country of hospitalisation, which also found that, overall, immigrants have lower[3,14] or similar[6,15] rates of hospital utilisation. The few previous studies that have compared refugees with people born in the country of hospitalisation have involved small samples drawn from individual hospitals.[16,17] These studies reported no significant differences in hospitalisation rates.

A key strength of our study, when compared with self-reported health surveys,[14,15] is the use of a hospital discharge dataset that provides objective characteristics of health care utilisation. To our knowledge, this is the first study that has used a statewide hospital discharge database to compare, over a considerable period of time, hospital admissions between people born in refugee-source countries and those born in the country of hospitalisation. A study of hospital discharges conducted in Canada[4] used broader birthplace categories, without focusing specifically on refugee-source countries, and found that only those born in the Middle East and Central and West Africa recorded higher hospitalisation rates in the first year of arrival than the Canadian-born population.

Our study was not able to clarify whether low levels of use reflect reduced levels of need or unidentified barriers to hospital utilisation. The health screening process that refugee applicants must undergo before entering Australia[18] may be filtering out those with poor health, thereby reflecting a "healthy refugee" effect.[7] There is, however, increasing evidence of poorer health status and high prevalence of a range of health problems among recently arrived refugees in Australia.[19-21]

Although there is some evidence of the multiple barriers that prevent refugees from adequately accessing health care services, much of the existing research is based on small samples or on anecdotal data provided by health care workers.[22,23] One way to measure whether people born in refugee-source countries face difficulties in accessing hospitals would be to assess utilisation rates by length of time in Australia. It can be argued that recent arrivals would have less knowledge about the availability of hospital services than those who had been in the country longer. Unfortunately, length of time in Australia was not available in the hospital dataset used here. Nevertheless, the increases seen in admission rates among

people born in refugee-source countries over the 6-year period may indicate that the use of hospital services among this population increased the longer they were in Australia, as they became more familiar with the health system and the availability of services. Alternatively, it might be that admission rates increased due to poorer health status and specific health care needs of those arriving in Victoria over the last 2–3 years of our analysis.

Our study has a number of limitations. First, as we used de-identified admissions data from a cross-sectional hospital dataset, the unit of measurement is an episode of hospitalisation rather than an individual patient. Nevertheless, de-identified hospital admissions data can be a helpful indicator of the disease burden to populations and health services.[24] Second, our findings are influenced by the quality of ICD-10-AM coding in the hospital dataset. However, a recent study assessing the quality of this dataset found high levels of reliability and adherence to coding standards.[25] Third, the lack of information on immigration status prevented the analysis of those arriving exclusively on refugee visas. However, most arrivals born in the countries selected have entered Australia under the humanitarian program.[2,10] Fourth, studying all refugee-source-country groups together may mask differences among specific subgroups. However, using a broad definition of refugee-source countries makes our findings more generalisable than if a single group had been compared with the Australian-born population.[26]

In conclusion, we found that the use of hospital services among people born in refugee-source countries is no higher than that of people born in Australia, and shows a trend towards Australian-born averages. Our findings indicate that the Refugee and Humanitarian Program does not currently place a burden on the Australian hospital system.

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COMPETING INTERESTS

None identified.

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