

The profiles and outcomes of people presenting to the emergency department based on country of birth: an observational study



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Background

Worldwide, about 50% of the migrant population resides in ten high-income countries, namely Australia, USA, Canada, several European and Middle Eastern countries [1]. In Australia, the migrant population increased from 7.3 to 7.5 million between 2018 and 2019 [2]. The emergency department (ED) use made by people from culturally and linguistically diverse (CALD) backgrounds is increasing. Despite the growing evidence describing ED use by people from CALD backgrounds, relatively little is from Australia. Studies in Australia mainly focus on patients from CALD backgrounds with chest pain [3, 4], language barrier impact on ED length of stay (LOS) [5] and CALD patient satisfaction [6].

Aim

This study describes demographics, clinical profiles, and health outcomes of patient presenting to the ED across groups of overseas born (English speaking country; OSE), overseas born (non-English speaking country; OSNE), and Australia born (AB).

Methods

Situated within a large research program, this retrospective cohort study was underpinned by the social ecological model in order to understand the impact of broader cultural and social factors on health service use and outcomes in a multicultural society.

A retrospective cohort study design is used. The sample comprised all patient presentations (all ages) made to two public tertiary hospital EDs between 01/01/2019 and 31/12/2021 in South-East Queensland, Australia.

In this study, the definition of CALD was based solely country of birth (COB) as captured in the hospital administrative system. Aboriginal and Torres Strait Islander (First Nations) people are considered separate from the CALD population predominantly because they were the first peoples of Australia (not born overseas) with their own distinct set of languages, histories and cultural traditions.

Findings

Over the three-year period, 688 231 ED presentations were made; 498 927 (72.5%) were AB, 109 488 (15.9%) were OSE, and 79 816 (11.6%) were OSNE. A slightly higher proportion of females presented to the ED across the three groups (AB: 50.8%; OSE: 51.5%; OSNE: 53.7%). Compared to the AB group, the OSE and OSNE groups were older (median age: AB 32 years vs OSE 50 years and OSNE 44 years). The top 5 preferred languages in the OSNE group were Mandarin, Spanish, Japanese, Korean, and Portuguese. Regions of COB for the OSE group were mostly Oceania (i.e., New Zealand) (46.8%) and North-West Europe (41.3%). Regions of COB for OSNE group were mostly Southern and Eastern Europe (20.5%), North-West Europe (14.0%), North-East Asia (15.0%), and South-East Asia (13.9%).

The OSNE group was more often triaged into less urgent categories (ATS 4 or 5) compared to the AB and OSE groups (OSNE 48.4%; OSE 42.4%; AB 43.4%) (Figure 1). With regards to mode of arrival, a higher proportion of OSE presentations arrived by Ambulance compared to OSNE and AB presentations (OSE: 30.0%; OSNE: 26.7%; AB: 26.9%) (Figure 2). The LOS and discharge disposition for patient presentations made to the ED is presented in Table 1. Table 2 describes services received and outcomes.

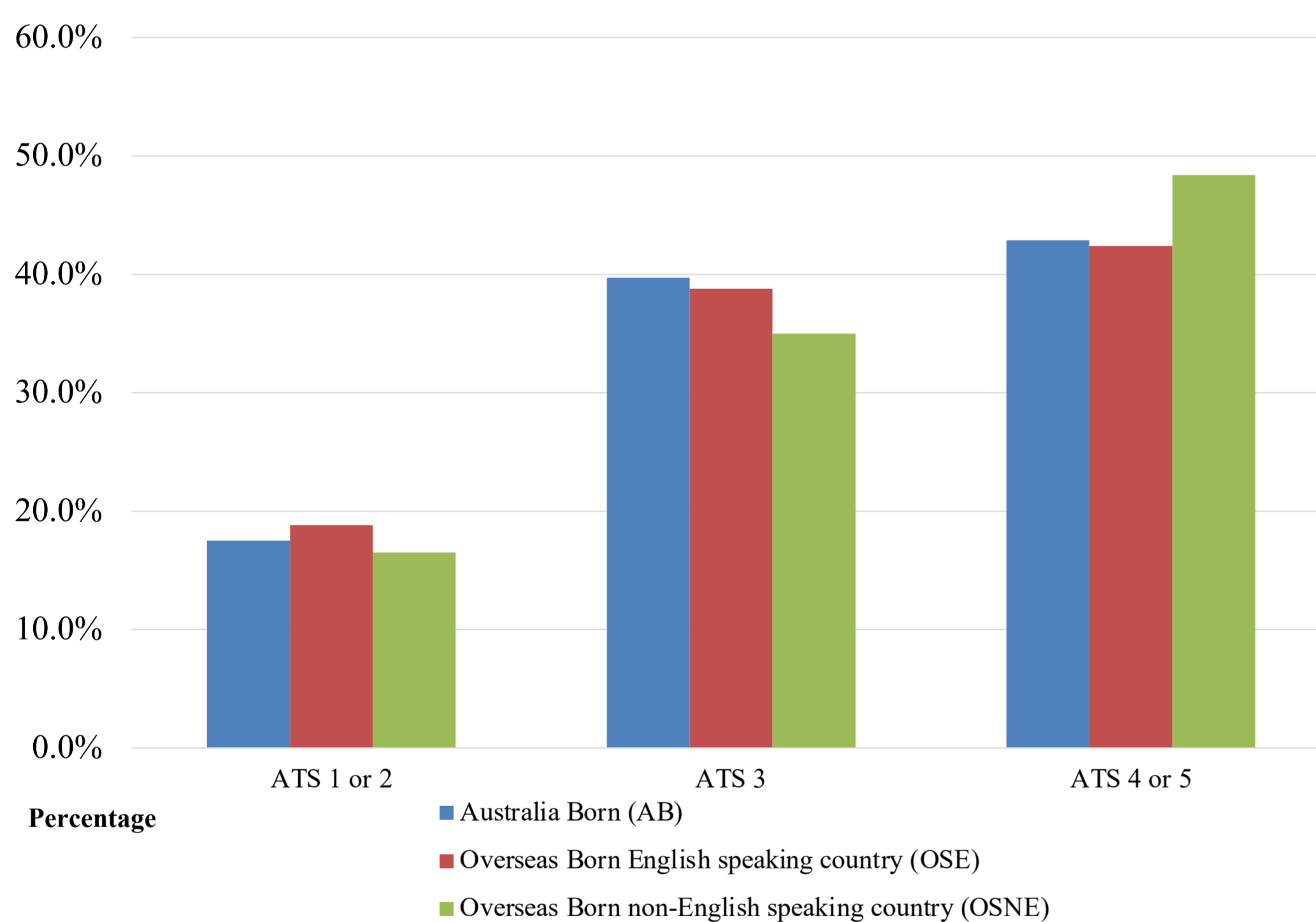


Figure 1. Australasian Triage Scale (ATS) Category by Country of Birth

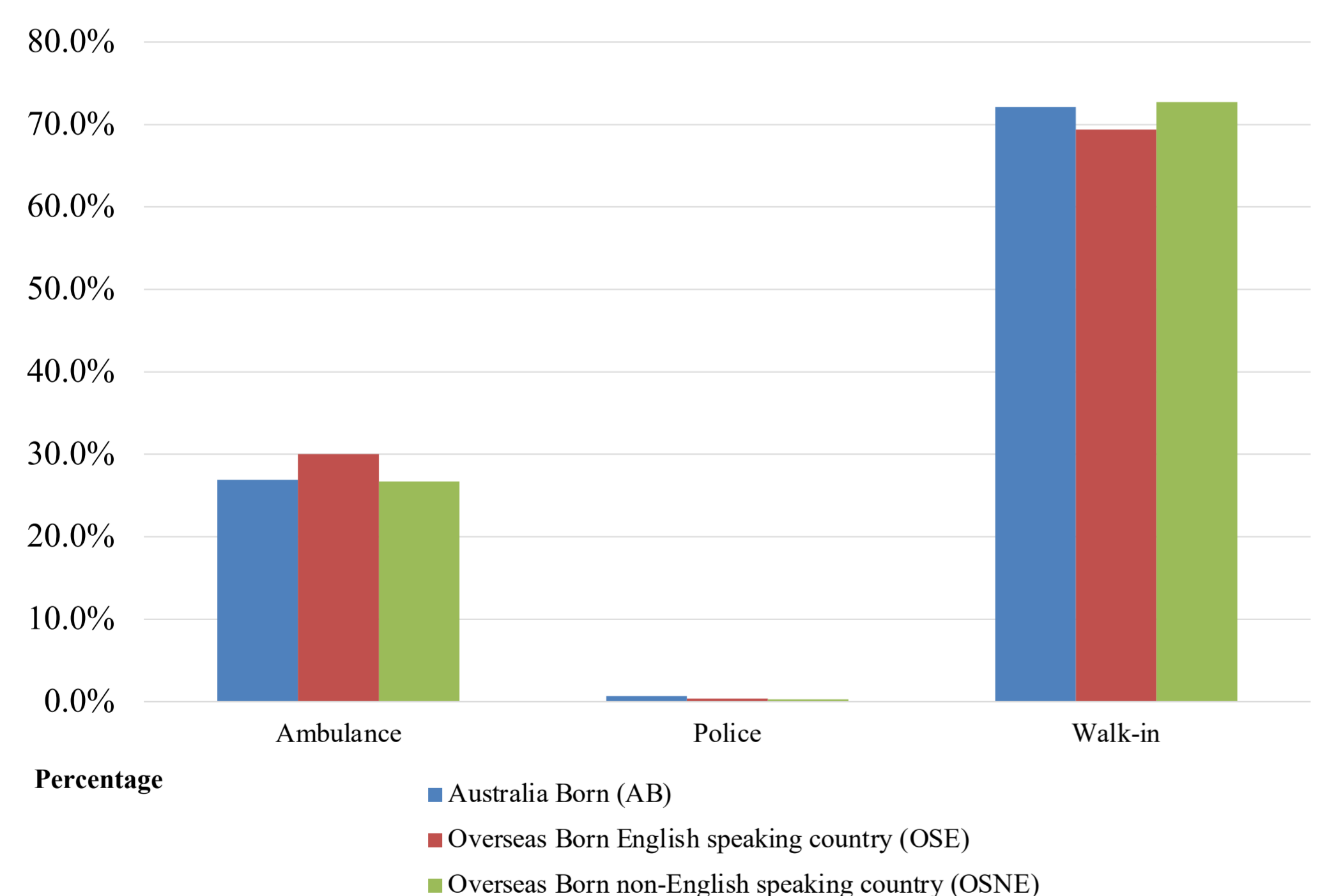


Figure 2. Mode of Arrival by Country of Birth

Table 1. Length of stay and discharge disposition for patient presentations made to the ED, by country of birth category, 2019-2021

Time metrics:	Valid N	All visits (n=688,231) [†]	AB (n=498,927)	OSE (n=109,488)	OSNE (n=79,816)	p-value AUS vs OSE	p-value AUS vs OSNE	p-value OSE vs OSNE
		Median and (interquartile range)						
Time to be seen (minutes)	677,644	11 (3-32)	11 (3-32)	11 (3-32)	9 (2-31)	<0.001	<0.001	<0.001
Time to first meaningful treatment (minutes) [‡]	672,458	17 (5-42)	17 (6-42)	17 (6-43)	15 (4-42)	0.063	<0.001	<0.001
ED LOS in minutes:								
Overall	687,116	163 (56-273)	162 (60-270)	174 (58-285)	159 (35-276)	<0.001	<0.001	<0.001
Ward admissions only	75,417	317 (220-448)	317 (219-448)	317 (221-448)	320 (222-452)	0.577	0.149	0.402
Short stay admissions only	132,820	210 (141-299)	208 (139-297)	213 (145-302)	218 (148-306)	<0.001	<0.001	0.001
Discharges only	432,134	119 (31-230)	123 (33-230)	117 (29-234)	87 (23-226)	<0.001	<0.001	<0.001

[†]Excludes 3,890 people with country of birth not stated; [‡]First meaningful treatment was the earliest of: nurse accepted patient, doctor accepted patient, pathology taken, radiology performed, or medication administered. AB: Australia-born; OSE: Born Overseas in an English-speaking Country; OSNE: Born Overseas in a Non-English Speaking Country.

Table 2. Services received and outcomes for patient presentations made to the ED by country of birth category, 2019-2021[†]

	All visits (n=688,231) [†]		AB (n=498,927)		OSE (n=109,488)		OSNE (n=79,816)		Risk ratio (95% CI): OSE vs AB	Risk ratio (95% CI): OSNE vs AB	
	n	%	n	%	n	%	n	%			
ED service received (Firstnet presentations only) [‡]											
Pathology	637,600	256,739	40.3%	176,814	38.3%	47,892	47.3%	32,033	43.1%	1.07 (1.07-1.07)	1.03 (1.03-1.03)
Diagnostic imaging	637,600	252,051	39.5%	176,223	38.2%	46,665	46.0%	29,163	39.2%	1.06 (1.06-1.06)	1.01 (1.00-1.01)
ECG	637,600	12,432	1.9%	8,296	1.8%	2,484	2.5%	1,652	2.2%	1.07 (1.06-1.08)	1.03 (1.02-1.04)
Medication	637,600	279,102	43.8%	201,252	43.6%	47,426	46.8%	30,424	40.9%	1.02 (1.02-1.03)	0.99 (0.98-0.99)
Visits ending in re-presentations to ED within 48 hours of ED discharge ^{§§}											
Yes	652,713	14,858	2.3%	11,818	2.5%	1,753	1.7%	1,287	1.7%	0.68 (0.64-0.71)	0.68 (0.64-0.72)
No	652,713	637,855	97.7%	460,954	97.5%	101,971	98.3%	74,930	98.3%	1.00 (reference)	1.00 (reference)

[†]All 3-way comparisons statistically significant at the p<0.001; [‡]Excludes 3,890 people with country of birth not stated; [§]Firstnet was one of two operating systems in use over the time period introduced in April and May, 2019 at both facilities and is the reporting system for 637,600 presentations (92.6% of all in this study); ^{§§}Numerator includes presentations with a discharge status directly home or home after a short stay visit; CI: Confidence Interval; ED: Emergency Department; ECG: Electrocardiograph; AB: Australia-born; OSE: Born Overseas in an English-speaking Country; OSNE: Born Overseas in a Non-English Speaking Country.

Conclusion

Around 1 in 4 ED presentations were made by overseas-born people. Overseas-born people were older and had higher rates of pathology and diagnostic imaging testing than the Australia-born ED presenters. The OSNE people had higher self-referral rate to the ED, less urgent triage categories, shorter ED wait times, a lower ED re-presentation rate, and a smaller proportion received medication warranting further research to understand the drivers of these outcomes.

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