



Local trends in older people presenting at an emergency department



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ABSTRACT

Background: Emergency Departments are increasingly reporting difficulties in managing their patient load within the available resources. Older people contribute significantly to the number of presentations seen in Emergency Departments. Understanding the nature of presentations can help to appreciate how they might be best managed to assist in effective resource utilisation and patient care.

Aim: This study aimed to explore presentations to an outer metropolitan Emergency Department by older people.

Design: Retrospective review of all Emergency Department presentations of individuals aged over 65 years.

Participants: 8469 older individuals who presented to an outer metropolitan Emergency Department between July 2013 and September 2014.

Methods: Medical record data items included demographics, triage category, presenting problem(s), disposition and length of stay.

Findings: 14,976 Emergency Department presentations were made by 8469 older people. High attenders (n = 405 older individuals) accounted for 18.7% (n = 2798) of the total presentations. Almost half of the presentations (48.9%) were triaged as Category 3 presentations, with a further 29% triaged as Category 4. Whilst overall the most frequent discharge diagnoses were chest pain (3.8%), fall (3.0%) or COPD (2.9%), for the high attenders the most frequent discharge diagnoses were COPD (6.4%), chest pain (4.0%) and fall (3.1%). Only 54.2% (n = 8124) of all presentations led to a hospital admission.

Conclusion: Our data demonstrated that a proportion of presentations to the Emergency Department by older people could be reduced as many individuals did not require hospital admission. This would alleviate burden on the Emergency Department and potentially improve continuity of care and outcomes. Further research needs to explore the reasons that older people present to Emergency Departments rather than using other services and explore how primary care services can better meet these health needs. Additionally, educational strategies need to be implemented to improve consumer decision making about which health services they access and empower consumers to better manage their health.

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1. Introduction

The age composition of Australia's population is projected to change considerably in coming years as a result of population ageing. In 2011, people aged 65 years and over comprised 13.7% of Australia's population (Australian Bureau of Statistics, 2011a). By 2056 this proportion is projected to increase to between 23 and

25% and to 25–28% by 2101 (Australian Bureau of Statistics, 2008). In addition to being an increasing proportion of the population, those aged over 65 years will also increase in absolute numbers in the coming years (Chu, Brown, & Lukin, 2009).

As the proportion of older people increases and the prevalence of chronic and complex disease rises, there will be a growing demand for health services. Older individuals use disproportionately more health resources than younger individuals (Chu et al., 2009). This phenomenon is, perhaps, apparent nowhere more obvious than in the Emergency Department (ED) (Ballabio et al., 2008). The ED is a major portal of entry to the acute health system, with access

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facilitated by the department being always open and the financial affordability of attendance. Whilst the ED provides ready access to health providers, all EDs are under constant time pressures and manage a variety of complex problems, as well as being faced with many presentations which could potentially be managed in primary care settings (Fatovich & Hirsch, 2003). Elderly patients discharged from the ED are at higher risk of short term negative outcomes including, hospitalisation, functional decline, remission to the ED and death than younger patients (Ballabio et al., 2008). Therefore, there is a need to promote a model whereby individuals seek the right provider in the right circumstances to optimise their treatment and continuity of care whilst at the same time appropriately using finite health resources.

The number of ED presentations in older people is predicted to increase sharply in the near future as the numbers of older people grows (Siminski, Bezzina, Lago, & Eager, 2008). However, ED utilisation has already increased over the past decade, with the issue of ED overcrowding becoming commonplace and frequently reported in the mainstream media (Asplin et al., 2003; Bernstein et al., 2009; Richardson, 2009). ED crowding results in delays in treatment, longer stays, worse patient outcomes, and higher mortality rates (Asplin et al., 2003; Bernstein et al., 2009; Richardson, 2009). As a strategy to manage this potentially increasing burden on EDs, there is growing interest in investigating less urgent attendances at the ED. Siminski et al. (2008) have identified that primary care presentations or less urgent attendances by the elderly to ED have increased more rapidly than in other age groups in recent years. This paper explores the patterns of attendance of older persons at one outer metropolitan ED in South Western Sydney. In particular, it explores the differences between those who were admitted to hospital with those who were discharged from the ED.

2. Methods

2.1. Design and setting

A retrospective medical record audit was conducted at a major public teaching hospital located in outer Metropolitan Sydney, New South Wales Australia. At the time of this study this Hospital had between 200 and 500 beds and served a local population of some 150,000 (Australian Bureau of Statistics, 2011b; National Health Performance Authority, 2015). The ED had 40 beds and on average had 159 ED presentations per day (New South Wales Ministry of Health, 2013).

2.2. Patients

This study involved all ED attendances of older people who presented between July 2013 to September 2014. This time period was selected to minimise the impact of seasonal variation in admission rates/ED attendances. Attendances were identified from the FirstNet clinical information system.

2.3. Data collection

Electronic data was provided by the hospitals' clinical information department via the ED Data Manager. Retrieved data fields included; gender, age, residential postcode, country of birth, presenting problem, admission status, mode of separation, referrals provided and length of stay. To facilitate linking of presentations to particular individuals the medical record numbers were retained in the dataset during analysis. All data were de-identified once this matching was undertaken. As all data is reported in an aggregated format individual consumers cannot be identified.

2.4. Data analysis

Data were imported from the Microsoft Excel spreadsheet into the Statistical Package for the Social Sciences Version 20 for analysis. Descriptive statistics were calculated and are presented as percentages. Chi-square tests and z-score tests for two sample proportions were performed to determine significant differences in proportions among categorical variables such as triage categories (1–5) and gender (male and female). Mean differences in average length of stay between triage categories were calculated using Analysis of Variance (ANOVA) test with post-hoc Tukey's test. Age and gender adjusted odds of an ED presentation leading to an admission to a hospital ward as well as adjusted odds of a patient's length of stay in the hospital being greater than or equal to 24 h, were calculated using binary logistic regression tests for all triage categories and are presented as adjusted odds ratios (with 95% confidence intervals).

2.5. Ethics

Approval for the conduct of the study was gained from the South Western Sydney Local Health District Human Research Ethics Committee (Approval No. 14/269).

3. Results

3.1. Demographics

14,976 ED presentations were made by 8469 older people during the study period. 53.7% presentations were made by female patients ($n=8042$). The mean age of presenting patients was 75.9 years (Oldest 105yrs, $SD=8.932$). Female patients (Mean = 76.98, $SD=9.3$) had a significantly higher mean age than male patients (Mean = 74.6, $SD=8.32$, $p < 0.001$). The 65–74 year old age group had the highest proportion of presentations within the study period, comprising 39.6% of total presentations.

3.2. Triage category

Almost half of the presentations (48.9%) were triaged as category 3 presentations using the Australasian Triage Scale (Commonwealth Department of Health and Family Services and the Australasian College for Emergency Medicine, 1997), meaning that assessment and treatment should be undertaken within thirty minutes in a target of 75% of cases (Australasian College for Emergency Medicine, 2013). A further 29% triaged as category 4, meaning that assessment and treatment should be undertaken within sixty minutes in a target of 70% of cases (Australasian College for Emergency Medicine, 2013) (Table 1). Triage 3 category presentations were the predominant triage category for all age groups. The presentations were evenly split between after-hours presentations (50.1%) and normal business hours presentations (49.9%).

There was a statistically significant difference in the triage specific presentation proportions between males and females ($\chi^2 = 35.186$, $df = 4$, $p < 0.001$). There was a significantly higher proportion of male presentations in triage categories 2 and 5 compared to the proportion of female presentations of triage category 2 ($z = 2.649$, $p = 0.0081$) and triage category 5 ($z = 4.607$, $p < 0.001$). However, in triage category 4 there was a significantly higher proportion of female presentations than male triage 4 presentations ($z = 3.415$, $p = 0.0006$).

There was a statistically significant difference in the triage specific presentation proportions between after-hours presentations and normal business hours presentations ($\chi^2 = 24.092$, $df = 4$, $p < 0.001$). The proportion of after-hours triage category 2 presentations was significantly higher than the triage category 2

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