

A Log Analysis Exploring the Predictors of Electronic Health Record Access by Clinicians for Consumers Aged ≥ 65 Who Present to the Emergency Department

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Abstract. Electronic health records are widely implemented, yet little is understood around adoption and use in the ED setting. Older patients (≥ 65) are a cohort likely to benefit from use. The primary outcome (MHR access) was explored using logistic regression of 9 independent variables. 28.33% of patients had their MHR accessed within 3 days of presenting. Access is more likely when patients arrive via urgent ambulance and/or are triaged as critical.

Keywords. electronic health record, My Health Record, emergency department, medical system, hospital

1. Introduction

Older patients frequently present to the emergency department (ED), often presenting with many comorbidities that can complicate the delivery of care [1]. Solutions to support improved quality of care and patient outcomes in the ED are highly sought after, and present an opportunity to deliver great benefit to older patients. Electronic health records (EHRs), digital shared versions of a patient health record, are one of the proposed solutions [2]. In Australia, the national personally controlled EHR (known as My Health Record, MHR) was implemented as an opt-out system in 2019. Despite the potential, the impact, use and predictors of MHR use in the ED has not yet been explored [3]. Based on previous research [4], we hypothesize: increasingly age, greater triage urgency and arrival via ambulance would be associated with MHR access by ED clinicians for patients who present to the ED aged over 65.

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2. Methods

Secondary routinely-collected log data was explored retrospectively, linked to attendance data (of patients 65 years and older) and human resources data. The log encompassed all patients who presented to the ED between August 2019–2021 at Cabrini Health (Melbourne, Australia). The primary outcome was MHR access (or not) by an ED nurse, doctor or pharmacist within 3 days of ED presentation. Stata V6 facilitated logistic regression of 9 independent variables (age, gender, triage category, presentation time, arrival method, gender, referral type, length of stay (LOS) and admission).

3. Results

A total of 22,510 patients 65 years of age, or older, presented to the ED at the study site during the study period. Of these presentations, a total of 28.33% patients (n=6,377) had their MHR accessed within 3 days of presenting. Pharmacists, doctors, and nurses accessed 25.77%, 4.07% and 0.64% of patient MHRs (respectively).

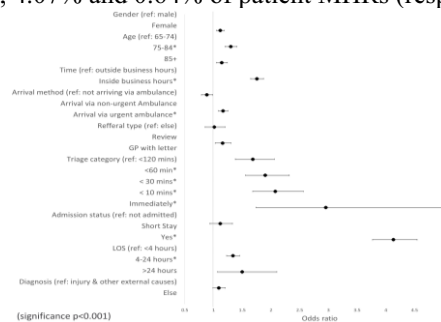


Figure 1. Forest plot, predictors of MHR access within 3 days of presentation to the ED.

4. Discussion

There is low prevalence of MHR access (for patients aged over 65) in the ED, particularly by doctors and nurses. Albeit, pharmacists appear to see benefit in accessing the MHR system – such as when patients arrive via urgent ambulance and/or are triaged as critical. The efficiency gain in this situation should be explored, and leveraged to promote use of the system if and where it makes sense. This research emphasizes the need for policy targeting MHR use by clinicians in the ED and across the healthcare system.

References

- [1] Samaras N, Chevalley T, Samaras D, Gold G. Older patients in the emergency department: a review. *Annals of emergency medicine*. 2010 Sep 1;56(3):261-9.
- [2] Esmaeilzadeh P, Mirzaei T. The potential of blockchain technology for health information exchange: experimental study from patients' perspectives. *J Med Internet Res*. 2019;21(6):e14184.
- [3] Rudin RS, Motala A, Goldzweig CL, Shekelle PG. Usage and effect of health information exchange: A systematic review. *Ann Intern Med*. 2014;161(11):803-11.
- [4] Mullins AK, et al. Predictors of Clinician Use of Australia's National Health Information Exchange in the Emergency Department: an Analysis of Log Data. *Inter J of Medical Informatics*. 2022 Feb 22:104725.