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Review Article

Unplanned Transfer to Emergency Departments for Frail Elderly Residents of Aged Care Facilities: A Review of Patient and Organizational Factors

Rosamond Dwyer MBBS [a,*], Just Stoelwinder MD [a], Belinda Gabbe PhD [a,b], Judy Lowthian PhD [a]

[a] School of Public Health and Preventive Medicine, Monash University, Melbourne, Victoria, Australia
[b] Farr Institute, Center for Improvement in Population Health through E-Records Research (CIPHER), College of Medicine, Swansea University, Swansea, Wales, United Kingdom

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A B S T R A C T

Background: With an aging population, a growing number of older adults experience physical or cognitive decline that necessitates admission to residential aged care facilities (RACF). Each year a considerable proportion of these residents has at least 1 emergency transfer to hospital, which may result in a number of adverse outcomes. Rates of transfer from RACF to hospital can vary considerably between different RACFs suggesting the presence of potentially modifiable risk factors for emergency department (ED) transfer.

Methods: A systematic and comprehensive search of the peer-reviewed literature using 4 electronic databases was conducted. Included papers were those reporting on determinants of unplanned transfer to hospital for elderly people (aged 65 years and above) living in RACFs. Studies were assessed for quality and key concepts and themes extracted.

Results: There are both individual patient factors and health system factors, which influence rates of transfer to hospital for elderly RACF residents. For individuals, increased risk of ED transfer has been associated with presence of particular comorbidities such as chronic airways disease, congestive cardiac failure, and diabetes; presence of indwelling devices; absence of an advance care plan; and reduced functional ability. For organizations, "for profit" facilities and those with poorer staff to patient ratios also have higher rates of transfer to hospital, compared with those owned by not-for-profit organizations and those with improved registered nurse and medical practitioner staffing.

Conclusions: This review has identified a number of potentially modifiable patient and organizational factors that should reduce the need for burdensome transfer to the ED and improve the quality of both acute care and end-of-life care for this population of frail, elderly individuals. A number of these determinants, including facility staffing, the role of specialist geriatricians, and advance directives, should be further examined, ideally through interventional trials to evaluate their impact on the pre-hospital and emergency management of these patients.

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Increasing numbers of frail, elderly people require care in residential aged care facilities (RACFs). These residents frequently have cognitive or functional impairment in addition to considerable medical comorbidity and are, therefore, vulnerable to episodes of acute deterioration in health.

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* Address correspondence to Rosamond Dwyer, School of Public Health and Preventive Medicine, Monash University, Melbourne, Victoria, Australia.

E-mail address: rosamond.dwyer@monash.edu (R. Dwyer).

Each year, up to 75% of residents experience an unplanned transfer to hospital emergency departments (ED) for care.[1–4] The outcomes of these transfers include a number of adverse sequelae.[5] In hospital, elderly residents have a high rate of potentially invasive interventions and may experience delirium, pressure ulcers, and hospital-acquired infections.[6–8] Many experience further functional decline post admission[9]; and short-term mortality rates post-transfer are high, even after specialist inpatient treatment.[4,10–12] For a proportion of residents these transfers may disrupt and inhibit appropriate palliative and end-of-life care. Gozalo et al[13] identified that 19% of RACF residents with advanced cognitive impairment were transferred within the last 90 days of life, 12% had a transition within the last 3

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days of life, and 8.1% had multiple hospitalizations in the last 90 days of life. In this study, the rate of these burdensome transfers at the end of life increased from 17% to 20% of RACF residents between 2000 and 2007.

Unplanned transfers to hospital may occur for a variety of reasons such as deterioration in physical health, falls, complications relating to indwelling devices or medications, and difficulty in managing complex behaviors. They frequently include transfers for ambulatory care sensitive (ACS) conditions and end-of-life care.[5] These transfers usually result in a patient being assessed or managed in the ED with a high likelihood of admission to hospital. They do not include planned admissions for elective procedures or operations. Given the considerable potential for negative outcomes, it is important to understand the individual patient and health system factors that place a resident at increased risk of emergency hospital transfer. This would enable those modifiable risk factors to be addressed and inform development of appropriately targeted interventions to reduce the frequency of burdensome transfers. Therefore, the aim of this review was to synthesize current evidence regarding clinical and organizational determinants of unplanned emergency transfer to hospital for acute illness or injury among frail, elderly people living in RACFs.

Methods

Search Strategy

This review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.[14] Four electronic databases Medline, Embase, CINAHL, and Informit were searched systematically in August 2014. The search strategy for Medline (OVID) is outlined in Figure 1. Strategies for other databases were adjusted for database-specific indexed terms. Reference lists of selected articles were hand-searched for additional peer-reviewed papers, however, gray literature was not included. The search was not restricted by year of publication. The search results are outlined in Figure 2.

Inclusion Criteria

Studies of participants aged at least 65 years, living in RACF, that reported determinants of unplanned transfer to ED and hospital admission, and published in English were included. All included studies were from peer-reviewed sources and included quantitative analysis of primary data. Studies had to include specific analysis of the population of RACF residents aged 65 years and older. Unplanned transfers included those for acute deteriorations in health, ACS conditions, and end-of-life care. Qualitative studies and systematic reviews were not included. Studies referring to elective hospital admissions, such as for preplanned procedures were not included. A RACF was defined as a nursing home, care-home, or long-term care, skilled nursing, or residential care facility. These criteria were broad to ensure a comprehensive review. Studies that did not refer to ED or hospital transitions were excluded. Reasons for exclusion of studies after review of full-test articles are presented in Figure 2.

Assessment of Validity and Synthesis of Findings

Study quality was assessed using the Newcastle-Ottawa Scale (NOS).[15] The NOS is a checklist scale developed for observational studies which assesses 3 domains of study methodology: selection and representativeness of participants, comparability of different participant groups, and assessment of outcome or exposure.[15] There are a set number of points awarded to each domain with the maximum achievable score being 9 points for cohort and case-control studies and 10 points for cross-sectional studies.[15] Previously, the total NOS score has been used to rate quality of studies as follows:

1. exp Nursing homes/ OR nursing hom*.mp. OR exp Residential Facilities/ OR residential facilit*.mp. OR exp Long-Term Care/ OR long-term care .mp. OR exp Skilled Nursing Facilities/ OR skilled nursing facilit*.mp.
2. exp Geriatrics/ OR geriatri*.mp. OR exp Aged/ OR aged .mp. OR elderly .mp. OR exp Frail Elderly OR frail elderly .mp. OR exp “Aged, 80 and over”/ OR “Aged, 80 and over” .mp. OR gerontolo .mp.
3. 1 AND 2
4. exp Housing for the Elderly/ OR housing for the elderly .mp. OR exp Homes for the Aged/ OR homes for the ages .mp. OR residential aged care .mp. OR exp Geriatric Nursing/ OR geriatric nurs*.mp.
5. 3 OR 4
6. exp Emergency Medical Services/ OR emergency medical servic* .mp. OR exp Emergencies/ OR emergenc*.mp. OR exp Emergency Treatment/ OR emergency treatmen*.mp. OR exp Emergency Service, Hospital/ OR emergency servic* .mp. OR exp Trauma Centers/ OR trauma servic* .mp. OR trauma cent* .mp. OR exp Emergency Nursing/ OR emergency nurs*.mp. OR exp Emergency Medicine/ OR emergency medicine.mp. OR “accident and emergency”.mp. OR emergency department.mp. OR exp Ambulances/ OR ambulanc*.mp. OR paramedi*.mp. OR prehospital.mp. OR prehospital care.mp. OR pre-hospital.mp.
7. 5 AND 6

Fig. 1. Search Strategy (Medline)

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