IMJ Official Journal of the Irish Medical Organisation

Ir Med J; January 2025; Vol 118; No. 1; P4
January 27th, 2025

Consequences of the Crisis in Social Care for Older Hospital Inpatients with Frailty

R. Ahmed,[1, 2] J. Cloonan,[1,2] E. May,[1,2] H. Chambers,[1,2] R. Madden,[1,2] J. Doyle,[1,4] R. Briggs [1,2,3]

1. Mercer's Institute for Successful Ageing, St James's Hospital, Dublin 8, Ireland.
2. School of Medicine, Trinity College Dublin, Dublin 2, Ireland.
3. Discipline of Medical Gerontology, Trinity College Dublin, Dublin 2, Ireland.
4. Department of Medical Social Work, St James's Hospital, Dublin 8, Ireland.

Abstract

Aims

The social care system is currently under enormous pressure leading to delays in home care provision and unnecessarily prolonged hospital stays for frail, older people.

This study examines the rate of hospital-associated complications (HAC) amongst older inpatients who are medically optimised but awaiting home care to facilitate discharge home.

Methods

Electronic records of patients ≥65 years with delayed transfer of care (DTOC) awaiting home care provision were examined for incidence of delirium, falls and infection (n=100).

A smaller cohort of current inpatients (n=14) awaiting home care were interviewed with focus on quality-of-life (CASP-19), loneliness (UCLA Scale) and depressive symptoms (CES-D).

Results

59% (57/97) (median 82 years) developed a HAC while medically optimised for discharge.

For every additional day awaiting home care, the likelihood of HAC increased by 4% (Adjusted Odds Ratio 1.04 (1.00–1.08; p=0.027).

Almost half of interview respondents reported quality-of-life had declined while discharge home was delayed (6/14, 43%), while over one third reported significant depressive symptoms (5/14, 36%).

Discussion

Almost 60% of frail, older inpatients have a HAC while awaiting home care provision, with the likelihood increasing significantly for every additional day in hospital awaiting care.

Interventions to address this deficit in home care are required urgently.

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Background

Just over 8% of older people in Ireland utilise publicly financed community-based social or home care, while a significant additional proportion privately finance care[1]. Older people utilising home care tend to have a higher prevalence of frailty, are more likely to have functional impairment and to live alone and are more frequently admitted to hospital. [2,3]

Systems providing home care are currently under enormous pressure across Europe, with demand greatly surpassing availability, in what has been widely termed a social care crisis.[4] Across many healthcare systems this crisis in social care has led to significant gaps in provision of home care for older people.[5,6] As a result, older people admitted to hospital and who need home care to facilitate discharge home often have prolonged wait times for this care, termed 'delayed transfer of care' (DTOC), and are essentially stuck in hospital with unnecessarily prolonged length of hospital stay.[7]

In England alone it is estimated almost 3 million bed days per year are occupied by patients with DTOC at an estimated cost of £820 million.[7] While this figure is of course striking, it does not capture the health-related effects delays in discharge home may have on frail, older patients, the cohort most likely to experience DTOC. The harm caused by an unnecessarily prolonged hospital admission on an older person, particularly those with frailty or cognitive impairment, can be considerable.[8,9] Hospital-associated complications (HAC) include delirium, falls and hospital-acquired infections.[10] Further, prolonged hospital admission in patients medially optimised for discharge home may have important negative effects on mood and well-being.[11]

The aim of this study therefore was to examine the rate of HACs, specifically delirium, falls and hospital-acquired infection in a cohort of older inpatients who are otherwise optimised for discharge but are awaiting home care to facilitate this, as well as assessing the impact delays in home care provision may have on mood and general well-being amongst frail, older patients with DTOC.

Methods

Study Site

The study site is a 900-bed urban university teaching hospital, admitting undifferentiated acutely unwell patients via the emergency department, and providing on-site rehabilitation in specialist geriatric wards for patients who require it.

The hospital bed management team maintains an electronic list of all patients with DTOC for reporting purposes. This is populated when a patient is deemed medically optimised for discharge home but this is delayed as essential ongoing care is not yet in place. This can include nursing home care or home care.

In this study, DTOC was defined as the number of days a patient's discharge home from hospital was delayed (from the point they were deemed to be medically optimised for discharge by their treating consultant) as they could not access a home care package. This information was collected retrospectively using the hospitals DTOC list, and cross-referenced with the patient's electronic medical records.

Patients were included in the study if they were aged ≥65 years with DTOC while awaiting provision of home care only, i.e. patients awaiting transfer for nursing home or other residential care were not included.

The records of n=100 consecutive patients listed as DTOC in 2022 were examined retrospectively from the hospital DTOC list.

Hospital-Associated Complications

HACs were defined as complications arising while an inpatient in hospital. Delirium, hospital-associated infection and falls were chosen as they are consistently identified as important HACs affecting older people, and contributing to increased length of stay and healthcare costs.[11,12]

Electronic medical records were examined for the following information: Numbers of days awaiting home care in hospital, i.e. number of days in hospital since deemed medically optimised for discharged; episodes of delirium (either screening positive for delirium with 4AT[13] or documentation of 'delirium' in medical notes) while awaiting home care; hospital-acquired infection (defined as documentation of 'infection' in medical notes) while awaiting home care; COVID-19 infection (defined as positive swab for COVID-19) while awaiting home care; falls (defined as notation of 'fall' in medical records) while awaiting home care.

Frailty was measured with the Clinical Frailty Scale (CFS). The CFS is an inclusive 9-point scale that uses clinical judgement to summarise the baseline level of fitness or frailty of an older person.[14]

Patient Surveys

A smaller cohort of current inpatients (n=14) with DTOC while awaiting home care were identified and interviewed in a 4-week period in October 2022. As for the retrospective study, these patients were identified from the hospital DTOC list.

Patients who were able to provide informed consent were approached on the ward and provided with information on the study, and requested to participate. If they agreed, they completed the survey, which took on average 15 minutes. A trained medical student or medical doctor assisted with survey completion.

The survey examined the following: Number of days awaiting home care in hospital (cross-checked with medical notes), quality of life, depressive symptoms and loneliness.

Quality of life was assessed with the Control, Autonomy, Pleasure and Self-Realisation Scale (CASP-19), a likert scale validated for use in older people, scored from 0 to 57, with higher scores indicating a better quality of life.[15]

Loneliness assessed by the 8-item UCLA Loneliness Scale, a likert scale, with a score ≥24 indicating high levels of loneliness.[16]

Depressive symptoms assessed by the short-form 10-item Centre for Epidemiological Studies Depression Scale (CES-D), a likert scale with a score of ≥10 indicating significant depressive symptoms.[17]

Patients were also specifically asked if mood, quality of life, confidence, loneliness was 'much better', 'better', 'no change', 'worse' or 'much worse' since they were deemed medically fit for discharge.

Data Analysis

Data was presented descriptively and analysed using Stata 14 (Statacorp).

Logistic regression models, reporting odds ratios with 95% confidence intervals, were used to examine the association between days with DTOC and hospital-associated complications.

Models were adjusted for age, sex and CFS≥6 (suggesting moderate frailty) and adjusted odds ratios were presented.

Results

Hospital-Associated Complications

97 patients were included (3 patient records were incomplete and could not be included in the study), with a median age of 82.0 years (95% CI 80.5– 83.4). Almost one third of the patients were aged ≥85 years. Sixty percent were female (58/97).

Median CFS was 6.2 (95% CI 6.0– 6.3). Just under half of patients had a CFS =6 (47/97), while 16% had CFS=5 and 35% had a CFS=7.

44% (43/97) spent at least part of their admission on a specialist geriatric unit to undergo multidisciplinary rehabilitation.

Median length of stay was 48.0 (95% CI 39.0 – 62.0), for patients who were not admitted to a rehabilitation ward and 71.0 (95% CI 63.0 – 79.9) days for those who were, with overall a median of 15.0 (95% CI 12.3 – 20.0) days of the full length of stay identified as DTOC. One quarter of total bed day use was therefore related to DTOC due to delays in accessing home care.

59% (57/97) of patients (median 82 years, 60% female, median Clinical Frailty Scale 6) developed a HAC (delirium, fall or infection) while considered medically optimised for discharge, i.e. while they were regarded as having DTOC.

Logistic regression models, adjusted for age, sex and CFS, demonstrated that for every additional day spent in hospital awaiting home care (i.e. with DTOC), the likelihood of a HAC increased by 4% (Adjusted Odds Ratio 1.04 (95% CI 1.00 – 1.08; p = 0.027; z = 2.21).

As shown in Figure 1, the incidence of HACs increased significantly when the length of stay awaiting home care was over 10 days.

Delirium

41% of patients (40/97) developed delirium while in hospital with DTOC.

The likelihood of developing delirium increased by 4% for every additional day spent in hospital medically optimised while awaiting home care (Adjusted Odds Ratio 1.04 (95% CI 1.00 – 1.07; p = 0.019; z = 2.36)).

Falls

1 in 7 patients had a fall while in hospital while regarded as having DTOC (14/97), with an increase of the likelihood of falls by 3% for every additional day spent awaiting home care while medically optimised for discharge home (Adjusted Odds Ratio 1.03 (95% CI 1.00 – 1.07; p = 0.039; z = 2.06).

Hospital-Associated Infection

One third of patients developed a hospital-associated infection while regarded to have DTOC (33/97), while 1 in 12 developed COVID-19 (8/97).

The likelihood of infection was not associated with time spent with DTOC, but the odds of developing COVID-19 increased by 5% for every additional day spent awaiting home care while medically optimised for discharge (Adjusted Odds Ratio 1.05 (95% CI 1.01 – 1.09; p = 0.011; z = 2.53)).

Inpatient Survey

A sub-cohort of 14 current hospital inpatients with DTOC due to delays accessing home care completed the survey.

The median age of this cohort was 83.4 (95% CI 80.6 – 86.1) years, and 50% were female. The median number of days with DTOC up to the time of survey completion was 20.0 (95% CI 12.8 – 30.0) days.

Almost 43% (6/14) of respondents reported that their quality of life had declined while their discharge home was delayed, with over one third (5/14) reporting that their confidence had decreased.

Over one third of respondents (5/14) met criteria for clinically significant depressive symptoms (CES-D-10 Score ≥10), while 36% (5/14) reported that their mood had declined while they were awaiting social care to facilitate discharge home.

Almost 43% (6/14) participants met criteria for high levels of loneliness on the 8-item UCLA scale (≥24/32), with over one fifth (3/14) reporting that their levels of loneliness had increased since their discharge home was delayed.

Discussion

This study examines the rate of HAC amongst older people with frailty in hospital who are medically optimised but are awaiting home care provision to facilitate discharge home.

We found that on average the number of days spent awaiting home care provision comprised one quarter of the total number of days this cohort spent in hospital, with median wait time of over 15 days. Almost 60% of patients with DTOC while awaiting home care developed a HAC during this time period and for every additional day spent awaiting social care, the likelihood of developing a HAC increased by 4%. Interviews with current inpatients awaiting home care provision demonstrated high burden of depressive symptoms, social disconnectedness and a poorer sense of well-being and confidence.

The risks involved in unnecessarily prolonged hospital admission for frail, older people are well-recognised [9,10] and the rates of delirium, falls and hospital-acquired infection we demonstrate are broadly comparable with previously-reported rates for these complications amongst frail, hospitalised older people.[18-20] Further, prolonged LOS is an independent predictor of hospital readmission for older people.[21] However, this is the first study to our knowledge to demonstrate the incidence of HACs while discharge was delayed due to lack of home care in older people otherwise medically optimised for discharge to the community.

Planning discharge home of frail, older patients after an unscheduled admission is complex and nuanced, and delays to access home care have added additional layers of complexity.[22] While prolonged wait times increase the risk of complications such as delirium and falls which can lead to further cognitive or functional decline, in turn increasing the amount of support an older patient may ultimately require once home again, with possible further delays while awaiting this additional care.[23-25] Prolonged wait times for home care are also likely to increase the chances that a frail, older person recovering from acute illness may ultimately require long-term residential care and miss the window of opportunity for discharge back home.[26]

There are some limitations to this study that should be noted. It is a single centre study, though the issue of delayed discharge due to inadequate home care provision is widespread.[27] The numbers involved are relatively small, particularly in the smaller cohort who were interviewed directly, but this group of patients are generally under-studied with little real world clinical data in this context published to date.

It must also be noted that while these findings are significant, they likely under-estimate the true effect of inadequate home care provision on frail, older patients. We do not capture other hospital-associated complications such as deconditioning, decline in mobility, incontinence and pressure injuries.[28-30] We also do not capture the opportunity costs associated with DTOC, including prolonged emergency department stays for frail, older people awaiting ward transfers [31] and cancellation of elective procedures.[32] We must also be cognizant that many frail, older people admitted to hospital are in their final 1,000 days and it should be unacceptable that any portion of this is spent in an acute hospital solely due to lack of available home care.[33]

In conclusion, this study demonstrates that 2 in 3 older inpatients with frailty who are medically optimised have a HAC while awaiting home care provision, with the likelihood of HACs increasing by 4% for every additional day they stay awaiting care. Further, delayed discharge home appears to have a significant impact on mood, well-being, confidence and loneliness. While addressing the crisis in social care is challenging, interventions to address this deficit in home care provision are required urgently.

Declarations of Conflicts of Interest:

None declared.

Corresponding author:

Robert Briggs,
Mercer's Institute for Successful Ageing,
St James's Hospital,
Dublin 8,
Ireland.
E-Mail: briggsr@tcd.ie.

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Table 1: Baseline Characteristics of Patients Awaiting Home Care

Median Age (years) Age Breakdown (years) - 65 – 75 - 76 – 85 - ≥85	82.0 years (95% CI 80– 84) 19%, 18/97 47%, 46/97 33%, 34/97
Female Sex	60%, 58/97
Median Clinical Frailty Scale Score	6 (95% CI 6– 6).
Most Frequent Reasons for Admission: - Falls - Respiratory Illness - Stroke - Generally Unwell - Delirium	 43% (42/97) 21% (20/97) 16% (16/97) 10% (10/97) 6% (6/97)
Geriatric Unit Rehabilitation Stay	44% (43/97)
Median Time Awaiting HCP (Days)	15 (15 (95% CI 12 – 20)

Notes:

Abbreviations: HCP = Home Care Package; CI = Confidence Interval.

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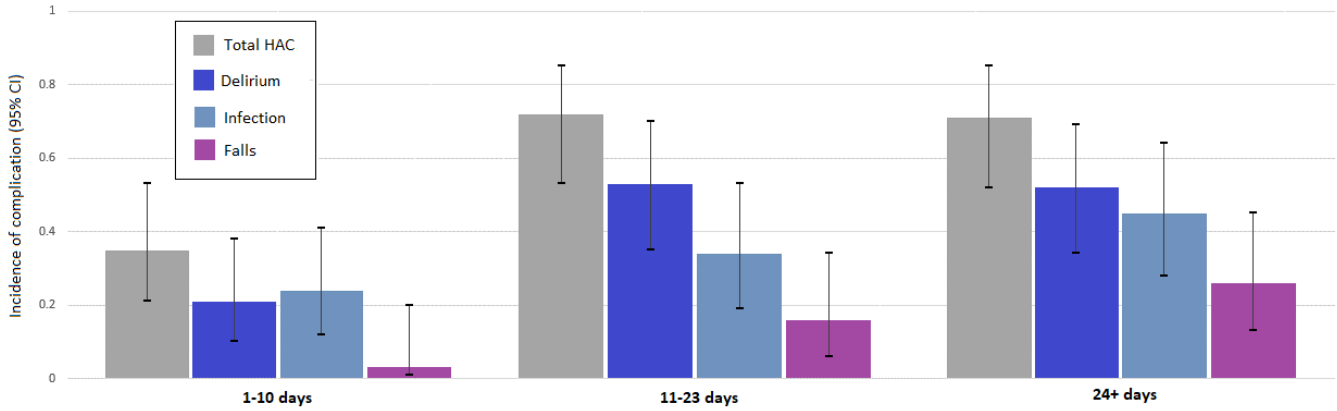
Figure 1: Hospital-Associated Complications by Number of Days with Delayed Transfer of Care



Notes:

Abbreviations: HAC = hospital-associated complications; CI = confidence interval.