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The frequency of and reasons for acute hospital transfers of older nursing home residents

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ABSTRACT

The purpose of the study was to examine the frequency of and reason for transfer from nursing homes to the emergency department (ED), whether these transfers led to admission to a hospital ward, and whether the transfer rate differs as a function of type of nursing home provider and to identify the frequency of avoidable hospitalizations as defined by the Swedish Association of Local Authorities and Regions (SALAR).

The design was retrospective, descriptive. Data were collected in a Swedish municipality where 30,000 inhabitants are 65 years or older. Structured reviews of the electronic healthcare records were performed. Included were residents living in a nursing home age 65+, with healthcare records including documented transfers to the ED during a 9-month period in 2010.

The transfer rate to the ED was 594 among a total of 431 residents (M = 1.37 each). 63% resulted in hospitalization (M = 7.12 days). Nursing home's transfer rate differed between 0.00 and 1.03 transfers/bed and was higher for the private for-profit providers than for public/private non-profit providers. One-fourth of the transfers were caused by falls and/or injuries, including fractures. The frequency of avoidable hospitalizations was 16% among the 375 hospitalizations. The proportion of transfers to the ED ranged widely between nursing homes. The reasons for this finding ought to be explored.

1. Introduction

It may be a physical and mentally stressful experience for the frail older person to visit a noisy, busy ED (Murray & Laditka, 2010), as it may result in acute confusion and potentially a decline in health (Kihlgren, Nilsson, Skovdahl, Palmblad, & Wimo, 2004; Shanley, Sutherland, Stott, Tumeth, & Whitmore, 2008). Hospitalization entails a risk for nosocomial infections, inadequate information exchange between care facilities and discontinuities in care for nursing home residents (Ong, Sabanathan, Potter, & Myint, 2011; Ouslander, Weinberg, & Phillips, 2000; Payne, Hardey, & Coleman, 2000). Moreover, high mortality has been reported among older persons from nursing homes who had been admitted to hospitals (Menec, MacWilliam, & Aoki, 2002). The avoidance of inappropriate and unnecessary transfers may potentially have an economic benefit to society (Ackermann, Kemle, Vogel, & Griffin, 1998; Briesacher, Field, Baril, & Gurwitz, 2008; Grabowski, O'Malley, & Barhydt, 2007; Ouslander et al., 2010). Despite this, several studies have reported a high proportion of hospitalization and use of the ED among older people in general and nursing home residents in particular (Ackermann et al., 1998; Callahan et al., 2012; Givens, Selby, Goldfeld, & Mitchell, 2012; Intrator, Castle, & Mor, 1999; Miller, Gozalo, & Mor, 2001).

Studies have also shown that transfers from nursing homes to EDs can be avoided (Naylor, Kurtzman, & Pauly, 2009; Ouslander et al., 2010, 2000; Saliba et al., 2000), for example by increasing the extent to which some symptoms are treated in the nursing home (Caplan et al., 1999; Lamb, Tappen, Diaz, Herndon, & Ouslander, 2011; Young, Barhydt, Broderick, Colello, & Hannan, 2010). However, the question has also been raised as to whether older people from nursing homes are transferred unnecessarily to EDs, or whether the high transfer rate reflects an actual need (Jensen, Fraser, Shankardass, Epstein, & Khera, 2009).

An aging population and the increasing requirement for a robust health and nursing home care system are becoming more evident globally (Knickman & Snell, 2002; WHO – World Health Organization, 2012). The current healthcare policy in Sweden favors older persons remaining in their homes as long as possible (SFS, 2001: 453 Social Services Act). Most older persons are about 80 years of age when they move to a nursing home, and the group of older nursing home residents tend to have multiple illnesses and medically complex situations (Akner, 2009). According to the SALAR, older people are a prioritized group within the system of care for older people in Sweden. To enable these persons to receive treatment for chronic conditions and at the same time avoid

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inappropriate, potentially harmful hospitalization, both cooperation and coordination of care information between primary care and nursing homes are needed (SALAR, 2012).

In Sweden, healthcare is financed primarily through taxation. It is mostly the municipalities that are responsible for long-term care of older people, for example home-based care and nursing homes (SALAR, 2010). Swedish nursing homes have traditionally been run by the local community and to some extent by private non-profit providers. During recent years, however, increasing numbers of private for-profit providers have established themselves on the market (Stolt & Winblad, 2009). Previous studies from the US have shown that nursing homes run by private for-profit providers are more likely to send residents to hospital than are public or private non-profit providers (Carter & Porell, 2005; Konetzka, Spector, & Limcangco, 2008). Whether such a pattern is also seen in Sweden remains to be investigated.

Decreasing the number of transfers to hospital from nursing homes has been an important policy goal for several decades (SALAR, 2012). From a health-promotion perspective, it is important to achieve high-quality care based on the needs of older people, and several established indicators are used to measure quality of care, for example identifying and preventing falls, avoiding unnecessary inpatient care and readmission to hospital within 30 days since last discharge (SALAR, 2010). According to SALAR, the number of unplanned transfers of older people to hospital varies in different regions of the country (SALAR, 2008). Older adults who live in nursing homes are more likely to be frail, and a hospital stay is more likely associated with negative health outcomes, therefore we wished to study a Swedish municipality with many transfers (SALAR, 2009) of older persons from nursing homes to the ED. In Sweden, there are very few studies describing this phenomenon, and we will closely examine the frequency of and especially the reasons for these transfers.

The aim of the present study was: (1) to examine the frequency of and reasons for transfer from nursing homes to the ED, whether these transfers led to admission to a hospital ward, and whether transfer rate differs as a function of type of nursing home provider, (2) to identify the frequency of avoidable hospitalizations as defined by SALAR and (3) the frequency of re-transfer to the ED, re-hospitalization and mortality within a 30-day period after transfer to the ED.

2. Design and method

A retrospective, descriptive design was used. The data were collected using a structured review of the electronic healthcare records.

2.1. Setting

The study took place in a city in central Sweden, where 30,000 inhabitants (15% of the population) were over 65 years of age (Statistics Sweden, 2011). At the time of the study, the community had 32 nursing homes, whereof 23 were classified as private for-profit providers, seven as public providers and two as private non-profit providers. The private for-profit provider nursing homes were run by five different private entrepreneurs that had been in business in Sweden for a number of years. The private non-profit providers were foundations located in the community. The total number of beds at the nursing homes at the time of the study was 1420 with a range of 16–90 beds per nursing home. According to unpublished data from the municipality, in year 2011, the RN to resident ratio varied between 1:13–40 per weekday during daytime hours.

The registered nurses (RNs) at the nursing homes work weekdays during daytime hours. During evenings, nights and weekends, on-call RNs are responsible for making emergency visits to nursing homes, each RN being responsible for several facilities. The general practitioner (GP), employed by the public primary care organization, visits the nursing home a few hours a week. The RNs are solely responsible for informing the GP about the status of all patients and about which patients are in need of medical assessment. The RNs are responsible for nursing care and for creating a medical care plan for each patient together with the GP and family members. According to municipal guidelines, a GP should be contacted before sending a patient to the ED. A written referral note should accompany the patient to the ED, together with the patient's medication list and medical history. The RN is to document the reason for transfer and the patient's symptoms on the referral note.

2.2. Study population

The inclusion criteria were: residents living in one of the 32 nursing homes in the Swedish community, age 65+, with healthcare records including documented transfers to the ED during the 9-month period, January to September, 2010. First, subjects were identified through the municipal administrative register, which documents care and services provided to each individual. Second, they were matched with the patient data in the ED to capture all individuals who had been transferred to the ED from their respective nursing homes.

2.3. Data collection and analysis

The data were collected by studying the electronic healthcare records of all residents transferred to the ED from their respective nursing homes. For each subject, the variables collected and written on a structured, study-specific form were: age at transfer, sex, nursing home, staff involved in decision to transfer, date and reason for transfer to hospital, admission to a hospital ward (yes/no), number of days spent in hospital, death at hospital or at the nursing home during a period of one month after referral/discharge from hospital and the patient International Classification of Diseases version 10 (ICD-10) code at discharge from hospital (ICD-10, 2011). Data on the reason for transfer were collected from the nursing home referral note and from the medical health record at the ED. Referral notes existed for 389 (65%) transfers and they were written by 335 RNs (56%), by 37 physicians (6%) and by 17 other staff (3%). The scanned nursing home referral notes were missing in 35% ($n = 205$) of the healthcare records. The reason for transfer is therefore based solely on the physician-documented complaint in the medical healthcare records at the ED.

The data were analysed using the statistical program IBM SPSS statistics version 20 and are presented using descriptive statistics and non-parametric analyses. The data were divided into: (1) all transfers from nursing home to the ED; (2) individual level data on transfers from nursing home to ED, as several individuals had been transferred more than once. All symptom descriptions, i.e. complaints according to the ED physician's report, were listed and grouped into categories in agreement with ICD-10 codes (ICD-10, 2011) (see Table 1). Avoidable hospitalizations, according to SALAR (2010), are: anemia, asthma, diabetes, congestive heart failure, hypertension, chronic obstructive lung disease (COLD), angina, bleeding ulcer, diarrhea, epileptic seizure, inflammatory diseases of the female genital organs, kidney infection and ear, nose and throat infection. SALAR specifies each of the above diagnoses using ICD codes; to read more about these see the SALAR reference. The rationale for avoidable hospitalization is that some chronic conditions can be treated with favorable results in primary care, as can some acute conditions if given adequate and timely treatment (SALAR, 2010). In the present study, avoidable