KEY POINT SUMMARY

OBJECTIVES

The goal of this project was to develop and implement a protocol for HAI surveillance, antimicrobial use, and resistance in European LTCFs to establish baseline rates and identify priorities for improvement.

Prevalence and Determinants Associated With Healthcare-Associated Infections in Long-Term Care Facilities (HALT) in the Netherlands, May to June 2010

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Key Concepts/Context

Healthcare-associated infections (HAIs) are infections that patients get while receiving treatment for medical or surgical conditions. They are a major problem in the United States and elsewhere. In Europe, they increase morbidity and mortality and are the leading reason for residents of long-term-care facilities (LTCFs) to be hospitalized. HAIs may also affect the quality of life of the residents in LTCFs, but additional studies are needed to investigate the link.

Methods

A total of 10 nursing homes of the 325 nursing homes in The Netherlands participated in this study. The authors collected data at one point in time in each home between May and June 2010 and initiated the healthcare-associated infections in long-term care facilities (HALT) protocol. All patients staying longer than 24 hours in the nursing home were included for data collection. Two questionnaires were employed. The first, which was completed by nursing staff, asked about the characteristics of the home. The second, which was completed by the researchers and nursing staff together, focused on characteristics of residents who had signs of an infection and/or used antibiotics.

Using data from the resident and institutional questionnaires, the prevalence of infection and the use of antibiotics were also determined. They were also used to identify resident characteristics as possible determinants. Data from the

institutional questionnaire were used to identify nursing home characteristics as possible determinants.

For the purposes of data analysis, a resident was considered as having an infection or not (i.e., the type or number of infections was not taken into account). The authors of the study performed multivariate Poisson regression with a multilevel analysis, including a nursing home identifier variable to take into account any differences that may have been present in the different nursing homes besides the variables they included to consider these differences.

Findings

- A total of 40 residents showed signs of an HAI, giving an overall prevalence of 2.8% (range between the homes: 0.10–5.6%). Urinary tract infection was the most prevalent diagnosed infection, with 10 cases, giving an overall prevalence of 0.7%. On average, 50 residents used antibiotics and, of the 40 residents who showed signs of an HAI, 24 did not use antibiotics.
- Of the 40 residents who had an infection, 31 were women and 9 were men. Of the 50 residents who used antibiotics, 32 were women and 18 were men. Female residents used significantly more antibiotics than men (p = 0.003) but did not show significantly more signs of infections (p = 0.50).
- Individual determinants: Sex, with male being a protective factor (RR: 0.43, 95%, CI: 0.21–0.91), the presence of pressure wounds (RR: 2.58, 95%, CI: 1.04–6.39), and the presence of other wounds (RR: 5.70, 95%, CI 2.99–10.86) were statistically significantly associated with having an HAI.
- Nursing home determinants: The multivariate model for the nursing home characteristics showed that residents in nursing homes who had 32% or more shared rooms were less at risk of acquiring an HAI (RR: 0.49; 95%, CI: 0.39–0.62). Also, residents in nursing homes where 63% or more of the residents were incontinent were at less risk of acquiring an HAI (RR: 0.72; 95%, CI: 0.61–0.85).

Limitations

The authors identified the limited number of patient characteristics investigated in this study as a limitation of the study. The finding that the amount of shared rooms (≥ 32%) was associated with less risk of acquiring an HAI was unexpected. The authors hypothesized that residents who live in a single room possess certain characteristics other than those investigated in this study (e.g., presence of comorbidities) that make them more vulnerable to infection than residents who live in shared rooms. Therefore, further studies are needed to investigate additional characteristics that were not investigated in this study.

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Design Implications

Most studies have suggested that providing single rooms rather shared rooms can reduce the risk of acquiring HAIs because they enable separation or isolation of patients and are associated with less risk of cross-contamination. However, this study provides conflicting evidence. Residents in nursing homes that had 32% or more shared rooms were less at risk of acquiring an HAI. Therefore, the association between shared rooms and HAIs is inconclusive. It also means that design recommendations are not yet to be made regarding which type of patient room (e.g., private versus shared rooms) may reduce the risk of acquiring HAIs.