

Infection control personnel and implementation of infection control measures in Hungarian long-term care facilities: national results from a European-wide survey

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Abstract

Infections in long-term care facilities (LTCFs) are important public health concerns, but data are limited on how these facilities are working to prevent and control infections in Hungarian long-term care facilities (LTCFs). For this reason, in 2003, the National Centre for Epidemiology (NCE) joined a European-wide survey to determine the current infection control practices and education needs in LTCFs. Self-administered questionnaire was sent to all participating LTCFs. Local surveyor completed the paper-based questionnaire. Descriptive statistics were used to present the data. In total, 91 LTCFs took part in this voluntary and anonym survey. The average number of LTCF beds was 102 with a range of 50 to 690 beds. Only 8.8% of LTCFs had assigned an infection control practitioner. 96.7% of LTCFs did not have an institutional surveillance programme and/or guidelines in place related to infection prevention and control. The number of full-time equivalent infection control practitioner is low (0.07 per every 250 residents). Our results emphasise the need the trained infection control practitioners and the implementation of infection prevention guidelines and programmes in order to protect vulnerable residents from preventable infections.

Keywords: Infection and prevention and control; long-term care; homes for the aged and manpower; Infection control practitioners

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Introduction

In the last decades, as a result of changed healthcare system (e.g., early discharge from acute care hospital), more and more elderly people live in a long-term care facility (LTCF).¹ In Hungary, from 2000 to 2012, the number of institutionalised elders has increased from 39,847 to 51,736, corresponding to approximately 5% of the total population of those age 65 years and over.² Infections, exposure to excessive use of antimicrobial agents and the presence of multidrug resistant pathogens are common among residents of LTCFs due to institutional (e.g. overcrowding and lack of infection prevention and control measures) and resident characteristics (e.g. age-related anatomical and physical changes).³⁻⁷ Because of their morbidity, case-fatality and cost, these issues are a significant public health concern in LTCFs. Several studies have shown that infection prevention and control programmes can decrease infection and antimicrobial resistance rates, however implementation of infection control measures have been less than optimal in LTCFs.⁷⁻¹⁵

Background

Available information regarding infection, antimicrobial use and infection control and surveillance programmes in European LTCFs is limited. For this reason, the European Centre for Disease Prevention and Control (ECDC) funded the HALT (Healthcare Associated Infections in Long-Term Care Facilities) project with the purpose of estimating the burden of infections and antibiotic use and determining current infection control practices and education needs in European LTCFs. The HALT project was conducted in 2010. It included 25 countries with 722 LTCFs (42 Hungarian LTCFs).¹⁶

After the slightly improved methodology of the HALT project, a repeated survey (HALT-2) was set up in 2013 with 1,182 LTCFs from 19 countries (91 Hungarian LTCFs).

This article presents the Hungarian results from the HALT-2 survey, focusing on prevention and control practices in LTCFs

Methods

The HALT-2 was coordinated by the National Centre for Epidemiology (NCE). All LTCFs (e.g., general nursing care, residential care, psychiatric care, mixed

care) with over 50 beds (in total, 420 LTCFs; 24% of all Hungarian LTCFs) were invited to take part in this voluntary and anonymous survey.

According to the protocol, participating LTCFs had to complete a paper-based questionnaire between April and May 2013 after a mandatory training session for institutional representatives (LTCF surveyors) conducted by NCE.¹⁷ The survey solicited information about infection prevention and control related topics: a) institutional characteristics (e.g., ownership, presence of qualified nursing, total number of resident rooms and single residents room); b) resident characteristics (e.g., total number of resident with predisposing factors for infections); c) medical care organisation/coordination (e.g., type of provider of medical care, tasks of medical staff); d) infection control practices (e.g., number of infection control staff, tasks of infection control personnel, presence of infection control committee, presence of written protocols for prevention, presence of programme for surveillance of infections); e) antibiotic policy (e.g., elements of antibiotic policy, presence of written therapeutic guidelines).

Completed questionnaires were sent to the NCE by each LTCF and, after data cleaning, these data were inputted into a stand-alone software programme. An electronic copy of data from each LTCF was emailed securely to the HALT-2 database with a unique study number for each participating LTCF allotted by the NCE.

Results

Characteristics of eligible long-term care facilities

In total, 91 (22%) LTCFs with 11,823 residents participated in the survey. Sixty four participating LTCF were public institutions (70.3%). Most LTCFs (78.1%) had a qualified nurse. The median bed number was 102 (range: 50-690). Twenty percent of all available rooms were single rooms. Thirty three percent of LTCFs did not have single rooms (i.e., no possibility for isolation).

Characteristics of residents of long-term care facilities

A majority of residents were female (63.6%). On average, 20.8% of these residents were older than 85 years. The most common care load indicators were faecal and/or urinary incontinence (43.9%), followed

by impaired mobility (36.5%) and disorientation in time and/or space (29.9%). The presence of vascular (0.1%) and urinary catheters (1.4%) in Hungarian LTCFs were very uncommon.

Medical care and coordination

The greater part of the LTCFs (95%) reported that the medical care of their residents was exclusively provided by a general practitioner visiting the LTCF, while 5% of the LTCFs had designated this task to an employed medical staff. Regarding tasks of medical personnel, the development of an antibiotic policy was performed in only 14 LTCFs (15.4%), even though this task is an important element for having proper antibiotic stewardship.

Infection prevention and control practices

A minority of LTCFs (8.8%) had assigned an infection control practitioner. The number of full-time equivalent (FTE) infection control practitioners was 0.07 for every 250 residents in these settings. A majority of infection control practitioners (88.9%) had a nursing degree.

'Offer of annual immunisation for flu to all residents' (59.3%), 'development of care protocols' (53.8%) and 'supervision of disinfection and sterilization

of medical and care material' (49.5%) belonged to the most frequent tasks performed by the infection control practitioners. All LTCFs were lacking the task of 'appropriate training of general practitioners and medical staff in infection prevention and control'. A detailed summary of the frequencies of infection prevention and control tasks in participating LTCFs is shown in Figure 1.

Only 2 LTCFs (2.2%) reported to have an infection control committee. The majority of LTCFs (72.5%) had an official access to an expert infection control practitioner's advice (e.g. from an acute care hospitals in the same town).

The most common written protocols concerned hand hygiene (86%), followed by management of urinary catheters (55%), management of enteral feeding (37%) and the management of meticillin-resistant *Staphylococcus aureus* and/or other multidrug resistant microorganisms (33%).

Eighty eight LTCFs (96.7%) did not have an institutional programme of surveillance for infections (i.e., annual report of number of urinary tract infections, respiratory tract infections, etc.).

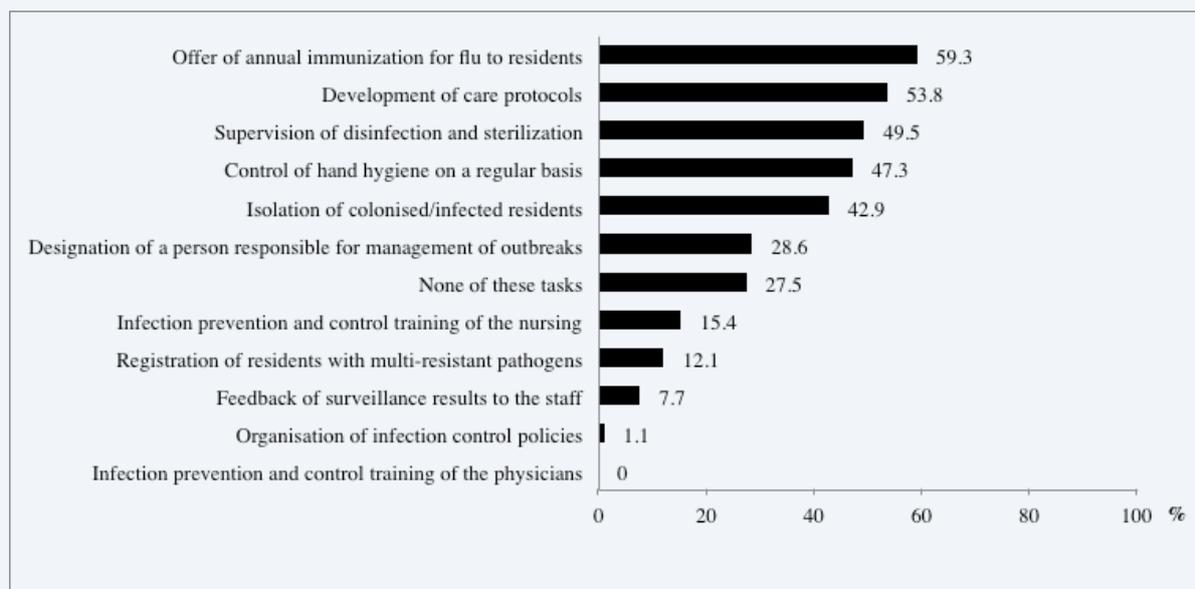


Figure 1. Proportion of infection prevention and control tasks in 91 participating LTCFs in Hungary, April - May 2013

Antibiotic policy

Tasks regarding evaluating antimicrobial consumption were not often reported. In total, 82 LTCFs (90.2%) were lacking the elements of an antibiotic policy. The most frequent written therapeutic guidelines concerned wound and soft tissue infections (35%), followed by urinary tract infections (21%) and respiratory tract infections (19%).

Discussion

It has become clear that without sufficient infection control practitioners it is not possible to effectively influence infection prevention and control practices. A higher proportion of infection control practitioners, including general practitioners and qualified nurses responsible for implementing, monitoring and evaluating infection control practices, are associated with decreased infection rates in LTCFs.⁸ Experts recommend that there be minimally one FTE infection control practitioner for every 250 residents in LTCFs.^{13,18} However, Hungarian findings were considerably lower (0.07 FTE infection control practitioner for every 250 residents) than reported in Canadian, American and German studies which found that there were 0.4 FTE infection control practitioner for every 250 residents.¹⁹⁻²²

The dissemination of infection prevention and control activities was low in participating LTCFs in Hungary. Out of these activities, 'offer of annual immunisation for flu to all residents' is the most common (59.3%), because, at national level, it is one of the two recommended immunisations for those over 60 years old.²³ Infection prevention and control training is a basic and important task, however, this activity was very low for the nursing (up to 15.4%) and was lacking for the general practitioners and medical staff.

Only 33% of surveyed LTCFs had guideline for management of meticillin-resistant *Staphylococcus aureus* and/or other multidrug resistant microorganisms.

Our survey has some limitations. Firstly, LTCFs were selected based on a convenience sample. Thus, the data cannot be considered representative for Hungary. Secondary, because our assessments relied on self-reported data, not allowing the respondent the opportunity to ask for clarification about terms on the assessment, it is possible that some of the questions may have been misinterpreted or answered incorrectly.

In conclusion, it has become clear that infection control activities are low in Hungarian LTCFs and the majority of participating LTCFs did not have an institutional programme of surveillance of infections and guidelines related to prevention and control of infections in place. Despite increasing evidence in the scientific literature, Hungarian LTCFs are a neglected field for infection prevention and control and few managers had given sufficient attention to these issues in their facility. Therefore, there is a great need for both increased numbers of infection control staff and infection control training based on standardised curriculum developed by NCE. Increased service from hospital infection control doctors and nurses, greater national support and enhanced laboratory resources would allow infection control practitioners to provide more successful infection prevention and control programming in LTCFs.

In addition, there is a need for developing and implementing national guidelines for infection control in LTCFs that includes prevention of infections, management of residents infected/colonized with multidrug resistant microorganisms, management of outbreaks, hand hygiene, environmental cleaning and disinfection. Recommendations on organisational and structural arrangements, diagnostic and therapeutic procedures (e.g., basic diagnostic requirements and antimicrobial stewardship), resource requirements and training should be included.

For future studies, we consider it requisite to also take in consideration other factors, e.g. perception, opinion and knowledge of managers about infection prevention and control, in order to explore which other characteristics play a role in the low priority of infection prevention and control practices in LTCFs.

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