



ROYAL COLLEGE OF  
PHYSICIANS OF IRELAND

Policy Group on Healthcare-Associated Infection (HCAI)

## **Healthcare-Associated Infections (HCAI) and Nursing Homes or Extended Care Settings**



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## Executive Summary

Older people requiring nursing home care will increase in the next decade. This group is particularly vulnerable to developing HCAIs. Preventing HCAIs by establishing good practice and by the implementation of national standards are essential. HCAIs must be monitored, audited and reported through a systematic surveillance programme with close links between primary and secondary care settings. Ongoing research to guide interventions on infection prevention and control and to evaluate their effectiveness in this environment is needed.

This document is intended to provide guidelines on ensuring the safety and quality of care for older people in nursing homes or extended care settings who are at risk of developing HCAIs.

# Healthcare-Associated Infections and Nursing Homes or Extended Care Settings: The Challenge of Ensuring the Safety and Quality of Care of an Ageing Population

## Background

According to the most recent Census in 2006<sup>1</sup> there were 467,926 people aged 65 and over living in Ireland. This equates to 11% of the Irish population and this ageing population will increase over the coming decades, rising to 16% in 2026.

That older population is the largest group of patients in public and private nursing homes. However, the majority of older people in Ireland are active, fit, healthy and live independently in their own homes. Just under 5% of this population live in long-stay residential care, while a further 15-20% receives varying levels of care in the community.<sup>2</sup>

In Ireland the numbers of older persons in nursing homes is growing and the elderly are more at risk of contracting HCAIs. There are pressures within the acute hospital service to reduce the length of stay with the consequent early discharge of elderly patients to the community. This change has taken place without due consideration for the provision of adequate resources and sufficient staffing levels (medical, nursing and other), backed up by professional support with appropriate education and training.

1. The statutory<sup>3</sup> requirement for quality and standards of care in nursing homes means that there is a great need for infection prevention and control policies and guidelines to be implemented. The publication earlier this year of the HIQA National Standards for the Prevention and Control of HCAIs is a welcome advance in addressing these issues.
2. In the acute hospital setting HCAIs are more common in vulnerable and frail older patients. Facilities to isolate individuals and groups of patients are often limited. HCAIs such as *methicillin-resistant Staphylococcus aureus* (MRSA) and *Clostridium difficile* (CDI) contributes significantly to lengthened stays in hospital. Delays to hospital discharge (to the community and to nursing homes) place vulnerable older patients at risk of developing a HCAI. Addressing this issue will contribute to better patient care and prevent avoidable HCAIs.
3. The interface between the hospital and the community setting is extremely important. Managing HCAIs in nursing homes is a particular challenge because most of the guidelines for the control and prevention of HCAIs have been generated in the acute health care setting. Applying them to the nursing home setting, which serves both as a health care setting and a home, is not always possible or appropriate. Closer links and liaison between different components of the health system, with the allocation of appropriate resources, is required. RCPI is committed to participating in the process that will improve the welfare of all patients, including the residents of nursing homes.

<sup>1</sup> CSO (2006a). Census 2006. Dublin: CSO.

<sup>2</sup> Mercer Limited (2002) Study to examine the Future of Long Term Care in Ireland. The Stationery Office, Dublin.

<sup>3</sup> National Standards for the Prevention and Control of Healthcare Associated Infections, May 2009. Health Information and Quality Authority (HIQA).

## The Challenges of HCAIs in Nursing Homes

Infections are common amongst the residents of long-term care facilities, such as nursing homes.<sup>4, 5</sup> Surveys show that 5-16% of residents have an infection at any one time.<sup>6,7</sup> A number of factors contribute to this:

There is a frail, dependent population of residents who are at higher risk of infections and colonisation with multi-resistant microorganisms, due to impaired defences. Basic hygiene precautions may not be followed especially by residents with cognitive impairment.

Some residents have chronic skin ulcers, pressure sores and medical devices such as urinary catheters and feeding tubes, which are all risk factors for HCAIs.

It is more difficult to recognise and diagnose infections in the elderly and access to diagnostic laboratory and radiology services may not be adequate. Treatment is therefore often empirical and broad-spectrum antibiotics are widely prescribed, e.g. urine specimens are often not collected or handled appropriately before delivery to the laboratory, therefore resulting in a contaminated specimen and potentially a false positive result.

There are fewer registered nurses than in hospitals and there is often a higher turnover of non-trained staff. A stable and educated workforce is necessary to build up knowledge and good practice over time. Also, the knowledge and training on infection prevention and control amongst carers may be sub-optimal.

The isolation of residents, which may occasionally be necessary, is often not possible because of the unavailability of single rooms and isolation may have adverse psychological and other effects in this setting.

The current prevalence of HCAIs is unknown in Irish nursing homes in Ireland, unlike for acute hospitals.<sup>8, 9,10</sup> The Health Protection Surveillance Centre will participate in the Healthcare Associated Infections in European Long Term Care Facilities project in 2010, which will provide much needed data.

<sup>4</sup> Eriksen HM, Koch AM, Elstrøm P, Nilsen RM, Harthug S, Aavitsland P. Healthcare-associated infection among residents of long-term care facilities: a cohort and nested case-control study. *J Hosp Infect* 2007;65:334-340.

<sup>5</sup> Matheï C, Niclaes L, Suetens C, Jans B, Buntinx F. Infections in residents of nursing homes. *Infect Dis Clin Nam* 2007;21:761-772.

<sup>6</sup> Richards C. Infections in residents of long-term care facilities: an agenda for research. Report of an expert panel. *JAGS* 2002; 50:570-576.

<sup>7</sup> Health Protection Surveillance Centre; Clostridium difficile Sub-Committee. Surveillance, Diagnosis and Management of Clostridium difficile-associated disease in Ireland 2008.

<sup>8</sup> Health Protection Surveillance Centre; Clostridium difficile Sub-Committee. Surveillance, Diagnosis and Management of Clostridium difficile-associated disease in Ireland 2008.

<sup>9</sup> Fletcher KR, Cinnalli M. Identification, optimal management and infection control measures for Clostridium difficile-associated disease in long-term care. *GeriatrNurs* 2007; 28:171-181.

<sup>10</sup> Sullivan NP, Keane CT. The prevalence of Methicillin-resistant Staphylococcus aureus among the residents of six nursing homes for the elderly. *J Hosp Infect* 2000; 45:322-329.

The extent and significance of antibiotic resistance in nursing homes in Ireland is also unknown. The inappropriate use of antibiotics, which is associated with the emergence of antimicrobial resistance, can be controlled with an effective antimicrobial stewardship programme. However, the clinical impact of HCAIs and antibiotic resistance on residents in terms of suffering and death and the consequences for acute hospitals when providing care for nursing home patients when admitted to the acute health sector with preventable HCAIs, emphasise the necessity for greater focus on this issue.

## Preventing and Controlling HCAI in Nursing Homes

The implementation of the National Standards for the Prevention and Control of Healthcare Associated Infections, published by the Health and Information Quality Authority (HIQA) earlier this year in long-term care settings is a priority.<sup>11</sup> Furthermore, these should be audited and accompanied by quality improvement measures to enhance the care of residents. The set of standards emphasise the importance of preventing and reducing rates of HCAIs.

*“A sustainable reduction in HCAI rates is one of the most important challenges facing health and social care services. This is not only vital for the quality and safety of care for people receiving the services, but also has an associated cost-benefit from reducing the associated additional care for people who acquire HCAIs.”*

The policy statement produced by this group on antibiotic use and the HIQA Infection Prevention and Control Standards will contribute to ensuring the quality and safety of the care provided to all residents and patients in nursing homes in Ireland. A key component in preventing HCAIs is the implementation of Standard Precautions which apply to all patients/residents, whether they are or are not known to have an infection. The key components of Standard precautions are outlined in Table 1 and further details are provided in the Appendix.

1. Hand hygiene which includes hand washing and the use of antiseptic hand gels.
2. Appropriate use of personal protective equipment, which includes gloves, aprons, gowns, face and eye protection.
3. Appropriate handling and disposal of waste and disposal of sharps.
4. Appropriate handling and management of clean and used linen.
5. Appropriate decontamination of the environment and healthcare equipment.
6. Suitable placement of patients.
7. Respiratory hygiene and cough etiquette.
8. Occupational Health.

Table 1 Standard precautions (*further details in Appendix*)

<sup>11</sup> National Standards for the Prevention and Control of Healthcare Associated Infections, May 2009. Health Information and Quality Authority (HIQA).

## Recommendations

1. HCAIs must be monitored, audited and reported through a systematic surveillance programme as is required for acute hospitals. The same principles of infection prevention and control and the same necessity for high standards of care apply to nursing homes.<sup>12</sup>
2. Close links and liaison between hospitals and the community must occur. Hospital outreach teams linking primary and secondary care would ensure a seamless model of patient-centred care that would include nursing homes and other extended care settings. This model would encompass infection prevention and control expertise, multidisciplinary teams and other specialist liaison that would enhance the quality of care and patient safety. It would also facilitate the transfer of patients/residents between acute hospitals and nursing homes.
3. HCAIs in nursing homes must be included in undergraduate and postgraduate medical training programmes and in other educational activities for non-medical staff.
4. There is a need to enhance antibiotic stewardship in the nursing home setting in accordance with best practice.
5. The measures to prevent HCAIs in nursing homes are not supported by a sound scientific evidence base, and we advocate research to specifically guide interventions on infection prevention and control in this environment, and to evaluate their effectiveness.
6. The challenges associated with HCAIs in long-term care settings in Ireland are now clear. The key principles of good professional practice, structured communication with regard to patient care, continuing staff education and a seamless interface between each care setting will provide safe patient care and must be underpinned by robust surveillance data collection methods, audit and research.

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<sup>12</sup> National Quality Standards for Residential Care Settings for Older People in Ireland, 2008. Health Information and Quality Authority (HIQA).

## Appendix - Standard Precautions

Standard precautions are measures that must be used in caring for all persons within every healthcare setting. They are designed to prevent the transmissions of microorganisms and blood borne viruses between patients/clients, staff and visitors, irrespective of whether it is known that the person/patient has or does not have a communicable infection.

Standard precautions include:

**1. Hand hygiene which includes hand washing and the use of antiseptic hand gels**

This includes hand washing, when the hands are visibly dirty, and the use of antiseptic hand gels. Hand hygiene must be carried out correctly before and after direct contact with patients/clients, contact with their immediate environment and contaminated items e.g. (commodes or dirty laundry). Hand hygiene must be carried out following removal of personal protective clothing, especially after the removal of gloves.

**2. Appropriate use of personal protective equipment, which includes gloves, aprons, gowns, face and eye protection**

Gloves and aprons must be used when in contact with blood or body fluids, secretions, excretions and contaminated items e.g. the commode, soiled linen or dressings. Gloves must be discarded immediately following use, be changed between patients, and hand hygiene is essential after the discarding of gloves. If there is a risk of blood or body fluid splashes, masks and eye protection should be used.

**3. Appropriate handling and disposal of waste and disposal of sharps**

Waste must always be disposed of into the appropriate bag or container. Sharps must be disposed of directly into a sharps box and infected or blood stained waste into clinical waste bin or bag. Incontinence waste such as nappies and empty urine bags not contaminated with blood should be disposed of as household waste. Disposable gloves must be worn when handling waste. Gloves must be disposed of and hand hygiene performed following the handling of waste.

**4. Appropriate handling and management of clean and used linen**

Clean linen should be stored in a clean dry area. Dirty linen should be handled with care and disposed of in the appropriate linen bags. Infected or fouled linen should be placed in an alginate bag and disposed of into a red linen bag. Used linen, not infected or fouled, should be disposed of in a white linen bag and then stored in a clean dry area to await collection for transfer to the laundry.

**5. Appropriate decontamination of the environment and healthcare equipment**

The healthcare environment must be visibly clean, free from dust, spills and spillages and be acceptable to the clients/patients, their visitors and staff. Reusable equipment must not be used for the care of another patient/client until it has been decontaminated and reprocessed appropriately. Single use items must not be reused and must be discarded appropriately.

## **6. Suitable placement of patients**

The isolation of a nursing home resident to prevent the spread of HCAIs is uncommon and should not be routine as the risk of spreading serious infection is much less than in acute hospitals. However, when a single room is not available, an infected patient/client may sometimes be placed with patients or clients infected by the same microorganism, provided they are not infected with other potentially transmissible microorganisms. Such sharing of rooms, also referred to as cohorting, is useful especially during out-breaks or when there is a shortage of single rooms. However, the overall needs of the patient or resident must take precedence when attempting to limit the spread of infection through isolation or cohorting, e.g. the complete separation of a patient/resident may have adverse psychological consequences.

## **7. Respiratory hygiene and cough etiquette**

Measures should be taken to contain respiratory secretions. Advise patients to cover their mouth and nose with a disposable tissue when coughing or sneezing which should be disposed of promptly into the waste bin. Hand hygiene after contact with respiratory secretions is essential to prevent infection spreading. Staff should ensure that supplies of tissues, waste bins and hand hygiene facilities are available.

## **8. Occupational Health**

All healthcare workers who may be in contact with blood or body fluids should be immunised with Hepatitis B vaccine.

## RCPI Policy Group on Healthcare-Associated Infection (HCAI)

As part of The Royal College of Physicians of Ireland's (RCPI) aim to play a proactive role in the development of healthcare policy, it is convening a number of issue-focused policy groups that will allow medical experts to meet and discuss healthcare matters of concern to health professionals, healthcare providers and the general public. These policy groups will produce evidence-based position papers that outline the issue and propose specific steps to address the issue.

The RCPI Policy Group on Healthcare-Associated Infection was established in 2008. It intends to publish individual position papers on contributory factors and other topics related to HCAI.

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