

Acute Respiratory Infection Outbreaks in Residential Care Facilities

J. Gannon¹, L. Fennell¹, J. Woods¹, A. O'Connell¹, B. Murphy¹, T. Donnelly¹, M. Connolly¹,
C. Concannon¹, C. Mullaney¹, N. Conroy^{1,2}.

1. Department of Public Health HSE Dublin and South East, Dublin Rd., Lacken, Co. Kilkenny, Ireland.
2. School of Public Health, University College Cork, College Rd., Co. Cork, Ireland.

Abstract

Aim

To evaluate the burden and characteristics of acute respiratory infection (ARI) outbreaks in residential care facilities (RCFs) during January 2025 in one Irish health region.

Methods

A retrospective review of ARI outbreaks in the HSE Dublin and South East region was conducted, supplemented by survey feedback from affected RCFs.

Results

38 ARI outbreaks were reported. The mean outbreak duration was 16.1 days. Influenza A was the primary pathogen in 21 outbreaks. Overall, 329 (18.3%) of residents in affected facilities became symptomatic, and 14 (0.8%) of residents were hospitalised. Oseltamivir prophylaxis was recommended for 719 (40%) of residents. There were 291 bed closure days. 29 Survey responses highlighted logistical challenges with antiviral access and outbreak management.

Discussion

Outbreaks placed significant strain on RCFs and hospitals, with widespread prophylaxis and bed closures impacting care delivery. Improved preparedness, layered infection prevention and structured post-outbreak reviews are key to reducing system pressure and enhancing future responses.

Introduction

Within residential care facilities (RCFs), many residents may be at higher risk of morbidity from infectious diseases due to age and underlying health conditions. The congregate nature of care environments contributes to the frequent occurrence of acute respiratory infection (ARI) outbreaks during the winter season. These outbreaks are associated with high

morbidity, potential mortality and significant pressure on healthcare systems. In Ireland, ARI outbreaks can result in prolonged bed closures, multiple hospital transfers and widespread use of antiviral chemoprophylaxis. Updated national guidelines published by the Health Protection Surveillance Centre (HPSC) in late 2024 promote a more targeted approach to outbreak response.^{1,2} This includes permitting risk-assessed admissions during outbreaks and focusing oseltamivir prophylaxis on close contacts at highest risk of complications. This report evaluates the scope and impact of ARI outbreaks in one health region during January 2025 and explores implications for outbreak preparedness and future practice.

Methods

A retrospective analysis was conducted of all ARI outbreaks reported to the Department of Public Health in the HSE Dublin and South East region during January 2025. Data were extracted from public health outbreak records, including outbreak duration, pathogen identification, resident symptomatology, vaccination status, hospitalisation rates and oseltamivir prophylaxis recommendations. Additionally, all RCFs that experienced an ARI outbreak during the 2024/25 winter season (n=80) were invited to complete an anonymous online survey. This collected quantitative feedback on outbreak management as well as qualitative insights on challenges, support received and suggestions for improvement.

Results

A total of 38 ARI outbreaks were reported across the region, affecting facilities with a combined total of 1,796 residents. See Table 1.

Table 1: ARI outbreak characteristics

Duration	Mean: 16.1 days; Range: 5-33 days
Primary pathogen	Influenza A in 21 outbreaks; RSV in 8 outbreaks
Residents symptomatic	329 (18.3%)
Laboratory-confirmed infections	186 (10.4%)
Hospitalisations	14 (0.8%)
Oseltamivir prophylaxis recommendations	719 (40.0%)
Influenza vaccination rate in confirmed influenza cases	128/144 (89%)
Total bed closure days	291

Twenty-nine survey responses were received (36.3% response rate). Respondents generally rated public health support positively. However, 16 (55.2%) reported issues with ability to

acquire and administer oseltamivir within the required timeframe, also citing workload pressures, difficulty isolating residents and communication delays as key concerns. Several facilities recommended more structured winter preparedness training and timely post-outbreak reports to support learning and planning.

Discussion

This evaluation highlights the considerable operational and clinical impact of ARI outbreaks in RCFs. The average outbreak lasted over two weeks, and nearly one-fifth of residents in affected facilities became symptomatic. The recommendation of oseltamivir chemoprophylaxis for over 700 residents represents a significant pharmaceutical and logistical undertaking. While prophylaxis can reduce transmission, its widespread use—often extending to entire facilities—can place substantial strain on GPs and care staff. Moreover, delays in obtaining medications may limit its effectiveness. The actual number of residents who received oseltamivir is not known.

The 291 bed closure days observed in this short study period indicate a major system-level impact. Closed RCF beds limit step-down capacity for hospital discharges, leading to bed occupancy challenges and delayed care in acute settings. The findings support the importance of recently updated national guidance that promotes risk-based admission decisions and more selective use of antivirals based on resident vulnerability and confirmed exposure.^{1,2}

Encouragingly, high vaccination rates were observed among residents, though vaccine effectiveness in older populations may be limited, particularly in years with antigenic drift.³ This reinforces the need for layered infection prevention measures, including timely isolation, minimising staff crossover, and prompt outbreak notification. Feedback from facilities also highlighted the value of strong communication and outbreak support. To improve future responses, RCFs recommended pre-season training, simplified access to guidance, and routine post-outbreak reviews to facilitate continuous learning.

Given the persistent threat of winter ARIs and the vulnerability of long-term care residents, a standardised but flexible approach to outbreak response is essential. Local data, such as from this evaluation, can play a key role in refining and implementing national strategy.

Declarations of Conflicts of Interest:

None declared.

Corresponding author:

John Gannon,
Department of Public Health HSE Dublin and South East,
Dublin Rd.,
Lacken,
Co. Kilkenny,
Ireland.

E-Mail: john.gannon3@hse.ie

References:

1. Health Protection Surveillance Centre. *Guidance on the Use of Antiviral Agents for the Treatment and Prophylaxis of Influenza*. Published 03/12/2024. Available from: <https://www.hpsc.ie/a-z/respiratory/influenza/seasonalinfluenza/guidance/antiviraltreatmentandprophylaxisguidance/>
2. Health Protection Surveillance Centre. *Public Health and Infection Prevention and Control Guidance on Respiratory Viral Infections in Residential Care Facilities*. Published 05/12/2024. Available from: <https://www.hpsc.ie/a-z/microbiologyantimicrobialresistance/infectioncontrolandhai/guidelines>
3. Belongia EA, et al. Variable influenza vaccine effectiveness by subtype: A systematic review and meta-analysis. *Lancet Infect Dis*. 2016.