Service evaluation: "Identification of outbreak management and infection control strategies of the Long-Term Residential Care Facilities for older adults during the waves of the COVID- 19 pandemic"

Recommendation 6.6 of the COVID-19 Nursing Homes Expert Panel.

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Abstract

The overall aim of this service evaluation was to identify factors such as barriers and facilitators contributing to outbreak management in long-term residential care facilities in Ireland and to explore the international literature in this area. Key learnings gained during pandemic and the areas that need be prioritised to prevent or to better manage future outbreaks were also explored.

This service evaluation consisted of a qualitative study involving focus group discussions and a scoping review of relevant international literature. The qualitative study focused on views, perceptions and experiences of HSE COVID-19 Response Team (CRT) members as well as HSE staff who worked with CRTs, such as healthcare professionals who worked in frontline managerial roles during the pandemic. In total, 54 participants representing all CHOs and Public Health Areas in the HSE participated in 10 online focus groups. The scoping review identified 323 pieces of international literature.

An inductive reflexive thematic analysis was carried out resulting in developing five themes that covered topics related to (1) infection prevention and control, (2) social model of care and the built environment of nursing homes, (3) staffing, (4) leadership and resilience, commitment, and (5) support and guidance received by nursing homes during the pandemic. The extensive scoping review revealed many similarities between the Irish and international experiences and learnings.

Based on the findings, the following actions are recommended which can be owned/delivered at local level by targeting issues around contingency planning, IPC training and application of evidence-based practice, communication, staffing of rosters (including ensuring appropriate levels of staff, skill mix and resilience), work environment, addressing needs of residents, carers and visitors as well as local public health response to outbreaks. Actions which can be owned/delivered at national level by HSE should focus on the integration among the sector stakeholders, development of evidence-based guidance, ensuring appropriate procurement and provision of testing and PPE, and provision of surveillance/intelligence data to inform action at all levels (including dynamic public health risk assessments), development and delivery of training and education resources, setting standards, supporting inspections and audits. Finally, actions requiring action at policy level should address issues of integration of IPC into the social model of care, financial support to nursing homes in relation to staffing, renovation and new build programmes to improve the environment and facilities, and legislation to ensure care homes meet appropriate

standards of care and their responsibilities.

Introduction

This service evaluation sits within the remit of workstream 5 (Chief Clinical Officer and Public Health) to address the Recommendation 6.6 of the COVID-19 Nursing Homes Expert Panel Report. The overall aim of this service evaluation is to identify the factors associated with COVID-19 outbreaks in LTRCFs in Ireland to improve prevention and management of future outbreaks. The key questions of interest for this service evaluation were:

- *What were the factors that enabled long term residential care facilities (LTRCFs) to prevent or avoid COVID-19 outbreaks?*
- *In LTRCFs where outbreaks occurred what were the key learnings from practice/experience that improved outbreak management over the multiple waves?*
- *Are there priority areas for prevention and preparedness implementation, which could be harnessed to ensure more effective infection prevention and control processes in long term residential care facilities in Ireland?*
- *What barriers exist to effective outbreak management currently, in areas such as models of care, infrastructure, management processes and staffing, that could be addressed in either guidance, training, or regulatory/policy practice updates?*
- *Are there areas of international best practice that can be applied in the short or long term to the Irish context?*

Method of data gathering and analysis

This service evaluation consisted of two main pieces of work, the first of which was a comprehensive qualitative study involving focus group interviews of the CRT members and experts who worked with CRTs as well as healthcare professionals who worked in frontline managerial roles during the pandemic. Ten focus group interviews which involved 54 participants in total were conducted using an online platform between 18th of April and 8th of June 2023. The interviews had representation from all CHOs and Public Health Areas and provided very rich discussions about the participants' experiences and perspectives on the barriers, facilitators, key learnings, and priority areas for COVID-19 outbreak management in nursing homes in Ireland. A pre-prepared semi-structured topic guide comprised of open-ended questions was used by the researchers to direct the discussions. Data analysis was carried out using inductive reflexive thematic analysis on NVivo 20 software. Following the thematic analysis, five themes were developed. The second piece of work was synthesis of the evidence in the existing international literature on the barriers, facilitators, key learnings, and priority areas to COVID-19 outbreak management in LTRCFs. This work involved an extensive scoping review of the international literature on the topic, comparing the Irish experience with the published international evidence. For the scoping review, a robust search strategy was developed and five databases and Google Scholar were searched. In total, 323 pieces of international literature out of selected 3222 records were included in the scoping review.

Overview of the focus group interviews findings

The focus group interview findings led to development of five main themes: (1) Infection

prevention and control, (2) Social Model of Care and the built environment, (3)Nursing home staffing, (4)Leadership, resilience, commitment, and (5)Support and guidance. The barriers and facilitators to COVID-19 outbreak management in nursing home will be presented under these themes.

Barriers to Effective Outbreak Management

Barriers related to infection prevention and control

Shortage of PPE - Despite significant efforts to procure PPE, there was a discrepancy between PPE supplies and national recommendations for their use. Lack of sufficient amount of PPE resulted in staff being infected rapidly, which led to drastic decline in staff levels in nursing homes.

Challenges with testing for COVID-19 due to lack of rapid on-site testing and staff trained to perform swabs, and therefore extended or inconsistent waiting times for test results from external laboratories.

Delayed recognition of COVID-19 outbreaks due to over-reliance on checking the temperatures of residents and staff to detect the infection that led to nursing home-related outbreaks and atypical manifestation of COVID-19 in older people.

Different levels of IPC knowledge and competence in staff, particularly among health care assistants who were undertaking most care tasks due to drastically reduced nursing staff levels while having received only basic care training,

Unplanned hospital discharge of residents and transfers from hospitals to nursing homes, as well as the constant movement of residents within the nursing home building in order to cohort them, particularly if the IPC measures were not implemented properly.

Lack of cleaning standards and cleaning practices and staff facilities in nursing homes

Barriers related to social model and the built environment of nursing homes

- There were **conflicting outlooks between homeliness in nursing homes** as one of the main features of the social model of care and the need to stricter adherence to IPC measures during the pandemic.
- **Larger facilities with multiple room occupancy** tend to be less manageable for the implementation of IPC measures and appear to be more institutional.
- The nursing homes with **older buildings**, some of which were large houses converted into residential facilities, with narrow corridors, small rooms, and a lack of staff facilities, were more at risk than newer purpose-built buildings.
- Some building designs did not allow **safe visits of family members** while window visits were possible only on the ground floor and did not work for residents with dementia.
- Lack or absence of appropriate **staff facilities** such as small changing rooms and staff break rooms which created greater risk for infection transmission.
- The importance of good **ventilation** for infection control, specifically for airborne virus infections such as COVID-19.
- Challenges with **cohorting** residents due to lack of extra or unassigned space for isolating

residents with positive or suspected infection status, creating de-gowning areas, setting up PPE stations, and the placement of disposal bins were reported.

- Facilities with **narrow corridors and small resident rooms** posed challenges in separating cohorts and increased the risk of infection transmission during staff movement.
  - Cohorting and isolating residents with **dementia** was a particular challenge as residents could not adhere to restrictions and wandered in the nursing home.

Barriers related to staffing

- **Inadequate staffing levels** due to staff sickness and leaving the job; on the other hand, the staff perceived an obligation to work, resulting in "presenteeism", or work attendance despite illness, as the only way to try to cope with extremely low staff levels.

- **High turnover** of staff in nursing homes prior to and during the outbreak of the virus.

- **Staff crossover** due to movement of staff between the facilities.

- **Inadequate temporary accommodation for staff** during outbreaks which was practiced in an attempt to increase and maintain adequate staffing levels and reduce the risk of community-acquired infection.

- **Challenges with staffing in remote rural areas** where inadequate pre-pandemic staffing levels, have exacerbated staffing shortages in response to increased workloads associated with COVID-19 outbreaks. In addition, the difficulty of transferring staff to remote rural nursing homes further aggravated the staffing situation.

Barriers related to leadership, resilience, commitment

Given the nature of close relationships between caregivers and residents in LTRCFs there was significant level of **stress and emotional burden** among staff due to deaths occurred in nursing homes during the outbreaks.

Dealing with the unknown was a challenge and contributed to the fear among staff. Even though they had contingency plans in writing when there was a confirmed case, implementing the plan was a different experience.

The **senior staff worked under significant pressure** and were in frequent conference calls which reduced leadership availability to guide and support staff. Furthermore, low staffing levels put more strain on the remaining staff. Conversely, the psychological effects of working through the challenges of the pandemic impacted the staffing levels.

Media, at national and international levels, was seen as a contributing factor to some staff quitting or working under stress and fear. Confusing information broadcasted by media sometimes caused trust issues among staff who compared the national guidance with social media content. Often, media reports were viewed to be blaming or shaming staff members in nursing homes impacting the institutions' and staff members' reputations and affecting staff morale and had financial implications to private nursing homes.

Some **staff quit** due to concerns about their own health or fear of bringing infection home if they cared for vulnerable family members and challenges with finding childcare, because they worked in the healthcare sector, especially for international health care workers who did not have a family to help with childcare.

Barriers related to help, support, and guidance

Changing guidelines and information overload - Although frequent change in guidelines was necessitated by learning more about the virus and the disease over the new waves and updating the prevention and management strategies accordingly, this "constant change" in guidelines was difficult to follow and sometimes resulted in trust issues between line managers and ground staff. In addition, confusion was caused by inconsistencies in guidelines issued by different authorities.

Access to information and use of technology - Not having access to the most recent version of the guidelines was a barrier to receiving guidance since some nursing homes did not use electronic systems and relied on paper copies of the information. On the other hand, having access to and use of technology sometimes brought challenges, for example new staff relocated to nursing homes did not have access to electronic health system or simply did not know how to use that system.

Autonomy and decision-making - Sometimes, the guidance provided to healthcare professionals was limited, and staff members or managers were asked to make decisions based on the limited information that was available which resulting in lack of autonomy and hesitation with decision-making which was a barrier to effective outbreak management.

Governance - The role of CRTs was at a recommendation level only, since they did not have governance over the nursing homes. Lack of communication between authorities in some areas has been raised as an issue in multiple interviews. These communications usually happened when there was an outbreak. Monitoring the number of trained staff was sometimes difficult due to the high turnover of staff members.

Factors that Enabled Prevention or Effective Management of Outbreaks

Facilitators related to infection prevention and control

Rapid staff training and mutual support - In a surge response to the COVID-19 pandemic, rapid and intensive on-site training of all nursing home staff, including non-clinical staff, on PPE use and IPC measures, signs and symptoms of coronavirus infection, testing and other topics was carried out. In addition, public health and IPC teams provided information by phone and answered staff questions. Regular site visits were carried out in nursing homes to identify gaps in knowledge or practices and provide additional training. Due to the urgent need to train staff the IPC teams trained the link persons or PICs in nursing homes and the link persons then were able and had the resources to provide at least the basic IPC standards that were required. In addition, mutual support and information sharing was also very helpful in preventing or managing an outbreak. Better knowledge of IPC management led to significantly improved performance among nursing home staff, helping to prevent new outbreaks and better manage current outbreaks.

Staff commitment to IPC - Participants highlighted the staff's remarkable effort to comply with IPC guidelines and their support for each other in implementing the IPC measures.

Increased infection vigilance in nursing homes - As the pandemic progressed, everyone was learning to provide more effective IPC measures, became more aware of and vigilant to signs and symptoms of COVID-19 and were able to take prompt and proper actions to contain the source which significantly reduced the risk of major outbreaks.

Improved PPE supply in the second and third waves of the pandemic to both HSE and private nursing homes and the procedure of PPE provision was streamlined.

The protective impact of the COVID-19 **vaccination** reduced the probability of outbreaks in nursing homes and lessened their extent and impact when they did occur.

Facilitators related to social model and the built environment of nursing homes

Participants talked extensively about the role of **nursing home design and building size** in preventing the spread of infection and controlling outbreaks. In general, facilities' **size and occupancy type** affect both IPC and the quality of life of residents, **smaller facilities with single ensuite rooms** being more flexible in terms of responding to infection risk and often providing a better quality of life for residents,

Creative use of space in adapting the guidelines to their daily work and circumstances to overcome many challenges they faced in managing outbreaks despite the limitations of their built environments.

Staff behaviour is key in effective IPC - Participants were unanimous that the behaviour and practices of staff were the most important factors in ensuring that appropriate IPC measures are implemented regardless of nursing home conditions and available resources.

Facilitators related to staffing

COVID-19 Response Teams and other expert support in relation to staffing, PPE, communication, and other areas made significant differences.

Identifying gaps in knowledge and training of all staff - many participants highlighted the importance of mutual learning among staff and the sharing of any information that was helpful in preventing or managing an outbreak.

Compassion and kindness was shown by staff in reducing the negative effect of social isolation on residents and the staff showed significant resilience despite shortages to make sure the residents did not feel isolated.

Facilitators related to leadership, resilience, commitment

Effective leadership - Effective leadership was referred to as a factor that made a significant difference in both management and support of staff. Supporting staff, reassuring them about their practice, and maintaining good communication with them increased their confidence and motivation, which in turn was perceived as having a positive effect on outbreak control in a nursing home. Nursing homes that were part of a group were perceived to be more

advantageous, compared to single ones, in terms of having access to senior staff from other facilities.

Staff collegiality and commitment - There was a significant amount of sharing and support between nursing homes in terms of sharing not only learning but also PPE and other supplies. The networking and communication between institutions were clear examples of a "we are in this together" approach. They also supported families, informed them, and made video calls to maintain the residents' social connectedness. Despite the challenges they faced, staff remained committed to their responsibilities and showed an outstanding level of resilience.

Facilitators related to help, support, and guidance

COVID-19 Response Teams had their stakeholders and maintained well-attended regular multidisciplinary meetings and outbreak control team meetings where every nursing home that required support, irrespective of their public, private or voluntary status, was discussed at length. There were strong links between nursing staff, IPC, and Public Health. The work of CRTs was on a 24/7 basis.

GPs and Geriatricians or other expert teams' support to prevent acute hospital admissions was invaluable. Support from all levels was very accessible, and persons in senior leader roles were very approachable.

Good communication and building positive links and engagement - Regular communication and links with CRTs, having a named person, clear structure and an open line of communication helped work together, learn from each other and develop positive relationships. Conjoined effort in a team of multiple groups such as HSE, public health, occupational health, psychological support, and IPC was well received to support nursing homes over the multiple waves. The relationships were reported to have improved immensely as they went through different waves.

Overview of the scoping review results

In line with the aim and objectives of this service evaluation, the scoping review specifically focused on facilitators, barriers, key learnings, and priority areas for the future in relation to COVID-19 outbreaks in LTRCFs. Overall, the largest category of the included pieces of literature were non-primary research such as reviews, reports, editorials, commentaries, and others (n=128). 108 articles were reported from the United States of America, followed by Australia (n=31), Canada (n=26), United Kingdom (n=29), and other countries from Europe, Asia, South America and Middle East. This extensive scoping review found many similarities in experiences and learnings from the pandemic between Ireland and other countries.

In the international literature, **most of the reported IPC measures were about testing residents, staff, or visitors**. Other implementations of IPC were staff training about IPC measures and PPE use, vaccination, cleaning and disinfection, laundry and waste management, general hygiene measures such as hand washing, knowledge update, isolation, ensuring fresh air circulation, visitor bans, preventing staff from working in multiple facilities, and limitations to hospital visits of residents except in emergencies.

Building characteristics were sometimes reported as a facilitator, however sometimes they made managing infection spreading more complicated. Most of the barriers were related to larger facilities and staff movement between different sections of these facilities, facility location, availability of communal areas for residents, poor ventilation, inappropriate facilities for isolation, overcrowding, and residents with dementia and their wandering behaviour. In addition to natural ventilation, high-quality air filtration systems and CO2 control were also recommended to control COVID-19 outbreaks in LTRCFs.

Staffing issues were highlighted as a significant challenge in the literature in relation to coping with the COVID-19 pandemic. Most of the barriers to outbreak management in relation to staff issues were staff shortages, lack of paid home isolation periods for staff who tested positive, non-healthcare staff in the facility, issues with temporary staff, high turnover rates, lack of policies to support staff, and limited numbers of highly-skilled staff due to financial concerns. There were some solutions to address the staff related issues, such as supplying a budget for extra staff and support with extra staff from different service areas.

In the literature identified, 51 articles reported on **leadership and resilience of staff** during the COVID-19 pandemic. Especially during the earlier waves of the pandemic, LTRCF staff faced significant challenges, fear, and anxiety, mostly due to fighting against the unknown while protecting their vulnerable residents. Lack of training and support for LTRCF staff was found to be a barrier to outbreak prevention and management. To address these issues, having well trained staff and facilitating peer support, and addressing staff shortages were recommended.

A total of 100 articles reported on the **help, support, and guidance** that enabled cooperation between facilities and healthcare authorities. While the main barriers to outbreak management were a lack of government support for guidance and limitations in the knowledge and skills of LTRCF staff on responding to rapid deterioration of residents due to COVID-19, examples of facilitators were: collaboration between hospitals and LTRCFs, publishing best practice guidelines based on evidence, updating staff about new recommendations and guidelines, guiding staff on how to access accurate information on COVID-19 management, and providing mobile or virtual specialist teams to consult residents.

Recommendations: Key Learnings and Priority Areas

Future pandemic preparedness and contingency plans

- Comprehensive, detailed, and workable contingency plans must be developed to ensure pandemic preparedness at both organisational, local, and national levels.
- Contingency plans should be updated regularly to be realistic and in line with available resources and current circumstances.
- To ensure future pandemic preparedness, staff at all levels must be trained and equipped with the knowledge necessary to support their decision-making ability during a crisis.

Maintaining continuous IPC training of staff

- Staff awareness, knowledge, and competence in evidence-based IPC management need to be continuously upgraded and updated, and the IPC perspective should be embedded into everyday work culture.

- Nursing homes' providers and managerial staff should be trained in effective leadership and nursing home governance that considers the specifics of this type of service.

Support to nursing home staff, residents, and families

- Adequate staffing levels and staff-to-resident ratios as well as appropriate skill mix should be prioritised in relation to delivering safe care and avoiding staff burnout.
- Psychological support should be available to all nursing home staff with consideration of the following staff characteristics: 1) when planning and offering support, consideration of individual differences in personal background and family circumstances is needed; 2) making all staff, including managerial and auxiliary staff, aware of the available support mechanisms is important.
- Considerations for supporting staff, even simple changes in the work environment such as designated rooms to decompress and relax after a difficult situation, are important. To enable that, potential challenges with resources and physical space should be resolved in a planned and systematic manner.
- Suitable measures and mechanisms of psychological support to nursing home staff should be in place to prevent burnout rather than supporting staff after they suffer from burnout, distress, or trauma.
- Improved communication within the nursing home and between support teams should be ensured. Although good leadership and staff commitment helped in the short term, in the long term, there should be arrangements for out-of-hours cover for senior managers such as DON or PIC, and the grading of PIC should be revisited.

Better communication, collaboration, and integration among the sector stakeholders

- Strong links should be established between Community Support Teams and all nursing homes both in pandemic and non-pandemic scenarios.

- Communication and collaboration between different authorities, such as HSE, HIQA, and Public Health, and the network of medical, social care and other experts should be improved. This will result in effective and more efficient management and coordination of and equal access to various services, such as IPC, dieticians, physiotherapy, medical specialists, and similar, for nursing home residents in all HSE, private and voluntary nursing homes.

- Communication and integration between acute settings and nursing homes in terms of staff mobility and preparedness to work in different work environments should be improved.

- Closer communication between hospitals and nursing homes during the pandemic, as well as organised plans for the discharge of nursing home residents from hospitals are needed.

Development and dissemination of evidence-based guidance

- In a pandemic situation, a more structured approach to issuing guidelines is needed (for example, purchasing and providing necessary PPE before changing guidelines for their use to avoid staff anxiety and frustration; providing a summary of changes in a simple format if

recommendations change frequently).

Ensuring appropriate procurement and provision of testing and PPE

Development and delivery of training and education resources

- Maintaining the IPC Link practitioner programme is important to nationally standardise and guide the training and development of IPC Link practitioners across all nursing homes. IPC Link practitioners can implement effective infection prevention and control practices in their facility or service and act as a liaison for support provided by a wider network of IPC experts.
- The Train the Trainer programme in various IPC topics should be continued in the future to maintain awareness of infection prevention and control by all staff.
- Raising awareness and promoting open information resources such as HSELand among staff in public, private, and voluntary nursing homes is important for the continuous upgrading of staff professional knowledge.
- As health care assistants provide direct care to residents and are delegated complex tasks, additional training and a professional regulatory body should be considered to ensure the quality of their care by setting professional standards.

Better use of technology

- Provision of surveillance/intelligence data to inform action at all levels (including dynamic public health risk assessments).
- Various IT systems that are used for information sharing, surveillance, PPE procurement, testing, and coordination of other activities for outbreak prevention, early detection, and outbreak management need to be integrated for better and more efficient use. It is desirable to create a single integrated system that will be used simultaneously by all stakeholders.
- It is desirable to introduce different, more practical and useful IT devices for nursing home staff, rather than relying only on email, to communicate and coordinate activities in a dynamic nursing home environment.

Setting standards and supporting inspections and audits

Integration of IPC into the social model of care

- To achieve a balance between infection prevention and control and quality of life of nursing home residents.
- Designing and building smaller nursing homes with single ensuite rooms, provided with a good ventilation system and access to natural ventilation.
- When designing or retrofitting the buildings, incorporating sufficient multipurpose spaces that could be repurposed for IPC measures without affecting residential areas.
- Ensuring there are adequate places for staff to change and rest.

Resource allocation to nursing homes

- Funding and resources need to be redirected to long-term residential care facilities, which require significant support and resources to keep up with current demands for quality care for older adults.

- Support for staffing and renovation and new build programmes to improve the environment and facilities.
- Additional funds will help nursing homes to overcome the challenges with the development of effective outbreak contingency plans.
- At present, the private nursing home model is largely a business model, however, finances should not be an issue in terms of providing safe staffing, and making a profit should not affect the amount spent on providing safe care in nursing homes, therefore the nursing homes' financial issues need greater attention.

Stronger action in the form of legislation

- Legislation to overcome the current lack of financial resources allocated to the long-term residential care sector and to ensure care homes meet appropriate standards of care and their responsibilities.