Safefood

Food Safety Advice for Vulnerable Patients and Residents in Healthcare Settings on the Island of Ireland

Foods brought into, or bought for,
vulnerable patients in healthcare settings

Food safety advice for vulnerable patients and residents in healthcare settings on the island of Ireland

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Foreword

This research explores the functioning of food safety advice relating to foods brought into or bought in healthcare settings (hospitals and residential care/nursing homes) on the island of Ireland. It also offers recommendations that could support healthcare settings in developing practical food safety guidance for staff and visitors.

The study employed a qualitative approach including focus groups and interviews.

- Firstly, focus groups with visitors and carers of vulnerable patients and residents produced data on the awareness of food safety advice associated with the healthcare setting they regularly visited, their level of knowledge and understanding of food safety advice and their general attitudes and beliefs that surround it.
- Secondly, interviews with healthcare staff including managers and healthcare professionals explored their awareness, practices and adherence to food safety advice within their healthcare setting.

These data also allowed a comparison of differences between healthcare settings and geographical areas (urban/rural). The results from Stage 2 and 3 of this study were presented to visitors (who had taken part in Stage 2) along with some proposed recommendations which helped to further develop and refine final recommendations stemming from this study.

Glossary of abbreviations

FSAI – Food Safety Authority of Ireland

FSA – Food Standards Agency

HACCP – Hazard Assessment and Critical Control Points

HP – healthcare professionals

IOI – the island of Ireland

NI – Northern Ireland

NIRMS – Northern Ireland Retail Movement Scheme (NIRMS)

RA – Research Associate

REA – Rapid Evidence Assessment

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Executive summary

The desire to make healthcare settings feel more like home has led to patients eating food that is prepared outside the healthcare setting. Subsequently, foodborne illness outbreaks due to contaminated food prepared outside the healthcare setting are becoming a cause for concern. They place a strain on the healthcare provider through the need for additional medical care, the need for the implementation of procedures to limit the spread of infection to other patients and staff, and general disruption to healthcare providers.

Ensuring the safe management of food brought into healthcare settings is essential to reducing the risk of an outbreak among vulnerable patients/residents. For most of the population, an infectious foodborne illness is self-limiting, of short duration and generally does not require medical treatment. However, some people are more at risk of a more severe illness, which may require hospitalisation. These vulnerable groups include very young children, pregnant women, older people and those who are immunocompromised. People who are more vulnerable to foodborne illness, including listeriosis, may suffer a more prolonged illness with a greater risk of severe outcomes and complications.

This project aimed to explore the perceptions and practices relating to the availability, storage, handling and consumption of high-risk foods brought into vulnerable patients/residents in healthcare settings (hospitals and residential care homes/nursing homes) on the island of Ireland (IOI). To achieve the project objectives, the study was divided into 4 stages:

- Stage 1: Rapid evidence assessment: Literature Review and Policy Scoping
- Stage 2: Focus group discussions with visitors
- Stage 3: Interviews with managers and healthcare professionals

- Stage 4: Follow-up focus group discussion

Stage 1: Rapid evidence assessment: Literature Review and Policy Scoping

The rapid review of available academic studies yielded 13 studies which were primarily conducted in hospital settings. No studies relating to foods brought in from external sources to healthcare settings were identified across any of the searches. Studies focusing on catering services (for example, canteens) where visitors had the opportunity to purchase foods for patients were included within the review.

Two key themes emerged from the academic review findings:

- Theme 1: The importance of training and education related to food safety in healthcare settings
- Theme 2: The need for management or supervision of food provision in healthcare settings

A rapid review of the grey literature (n=79 documents) reinforced that healthcare settings – including hospitals and care homes/nursing homes – are deemed food businesses and are governed by EU/UK Food Law. Searches revealed little evidence on advice to visitors relating to food brought into healthcare settings from external sources. A review of 52 hospitals' and 22 care/nursing homes' websites for food policies across the IOI found that there was no formal, consistent policy used across these settings. The variability in approach across hospitals, care/nursing homes and overarching policies/reports, together with the omission of specific details, may cause confusion for visitors around what is and is not permitted. However, the majority of settings did highlight some general guidance to visitors on bringing in food from external sources.

Stage 2: Focus group discussions with visitors

Seven focus groups from across IOI were conducted during the study, involving a total of 26 participants (17 from NI and 9 from Ireland). Results indicated a good

general knowledge of food safety but a lack of awareness of food safety policies or advice relating to food brought into or bought in healthcare settings for patient consumption. The following five themes emerged:

- Theme 1: Food safety knowledge and understanding
- Theme 2: Awareness and effectiveness of food policy guidance
- Theme 3: Awareness and effectiveness of food policy communication
- Theme 4: Drivers of bringing food into healthcare settings
- Theme 5: Food safety practices and concerns

The majority of participants highlighted a lack of clear and consistent food safety guidance. A minority indicated that they had never been given any guidance or encountered any information regarding which food items could be safely brought in by visitors.

Stage 3: Interviews with managers and healthcare professionals

A total of 36 managers and healthcare professionals (21 from IRELAND and 15 from NI) participated in the interviews. Interviewees were asked to discuss food safety policies/practices within their workplace, how policies are implemented, and determine if any improvements could or should be made. Six main themes emerged:

- Theme 1: Food safety practices
- Theme 2: Determining the level of food safety risk
- Theme 3: Challenges of food safety
- Theme 4: Difficulty adhering to professional advice and guidance
- Theme 5: Food safety guidance and communication
- Theme 6: Suggestions to improve food safety

Overall, results showed that most managers had a lack of awareness and implementation of a food safety and hygiene policy within their care setting. The majority (20 of the 36 participants) could not recall if their setting had a policy or what it stipulated. Many healthcare managers described having a duty of care to the keep patients safe, which includes asking visitors and relatives not to provide food that may harm the patient.

Stage 4: Follow-up focus group discussion

Visitors who had participated in Stage 2 were contacted again and invited to join a follow-up discussion. Five participants joined the discussion and recommendations to improve food safety within healthcare settings centred around 4 key themes:

- Theme 1: Awareness raising of high-risk foods
- Theme 2: Food safety policy
- Theme 3: Communication
- Theme 4: Staff training

Recommendations

The project offered recommendations that address the critical gaps identified in current food safety advice for visitors and healthcare professionals across the IOI. Recognising the significant role that proper food handling and storage play in safeguarding patients' health, the recommendations are structured around key interventions aimed at enhancing food safety through targeted awareness, education, improved facilities and consistent policy implementation.

Recommendation 1: Development of a food policy across all healthcare settings

Based on the results of this study it must be noted that a no-food policy would not be accepted, which is why a clear strategy is needed. Guidance should consider:

- Establishing clear simple guidance for visitors across all healthcare settings through a co-design approach, where those at whom the guidance is aimed are included in the design
- Clear descriptions of high-risk foods including perishable items, and temperature-controlled foods
- A visitor protocol for selecting and transporting foods into healthcare settings (for example, low-risk foods, cool bags for transport, sign-in of food)
- A visitor protocol for storage of foods within healthcare settings, where storage is available
- A visitor protocol for the safe disposal of food items upon exiting the premises
- A staff protocol for monitoring of food brought into healthcare settings (where feasible and when storage facilities are available)
- A dedicated member of staff for the monitoring of food policy implementation

Recommendation 2: Development of a visitor awareness-raising campaign to support healthcare professionals

Key messages should emphasise the importance of choosing appropriate foods to bring vulnerable patients when visiting them. The messages should consider:

- Defining both high-risk foods and nutritious low-risk foods in clear and accessible language
- Encouraging visitors to choose food and drink items wisely and store safely with easy-to-follow steps or a decision tree to guide their choices

- Information support on high-risk food and potential consequences for patients/residents should they consume these foods
- Identifying other ways to connect and show care for patients/residents beyond bringing gift foods (for example, puzzles, magazines, games, photographs)
- Encouraging visitors to consult directly with the appropriate staff if they are concerned about a patient's food intake
- Safefood as an information source for visitor advice
- Communication materials should use leaflets, signage, information packs and social media

Recommendation 3: Development of support and training for healthcare professionals to improve their understanding of food safety and hygiene practices

Support and training should focus on the following:

- Encouraging the introduction of a dedicated food safety committee in hospitals to establish and enforce food safety protocols, monitor and evaluate staff performance and update training.
- Encouraging managers to identify whether a food policy exists within their setting, to determine its appropriateness and to promote it among staff.
- Making available online level 1 food hygiene training.
- Promoting level 2+ food safety and hygiene courses among staff.
- Promoting information sources, for "healthcare professional" advice and policy templates, particularly for smaller care/nursing home settings.

- Introducing regular food safety training for nursing and managerial staff to refresh their knowledge of food safety practices – tailored to foods brought in from external sources.

Recommendation 4: Further research on food brought into healthcare settings from external sources

Proposed research should consider:

- The design, development and implementation of a baseline consumer survey of people visiting vulnerable patients/residents to determine their knowledge of food safety, awareness of food policy and practices related to food from external sources brought into healthcare settings
- An updated scoping review and full evaluation of food policies across healthcare settings
- The design, development and implementation of a training intervention within healthcare professionals to improve their understanding of food safety and the associated risks of food brought in from external sources by visitors
- An investigation into patients' lived experiences of food access within a healthcare setting and the associated food safety risks

Recommendation 5: Reduce the need for food to be brought in by visitors

Healthcare settings should consider:

- Appropriateness of in-patient catering services
- Appropriateness of hospital canteen menu offerings
- How to encourage greater communication between dietitians and nursing staff on the appropriateness of food brought into healthcare settings

1 Introduction

Foodborne illness caused by consuming contaminated foods or beverages with microbes or pathogens remains a public health concern. An estimated 2.4 million cases occur each year in the UK and 7,200 cases are reported in Ireland (FSA, 2022a; HPSC, 2021). Foodborne pathogens commonly cause gastrointestinal symptoms (vomiting/diarrhoea) in healthy individuals. However, among vulnerable patients/residents, foodborne illness is more likely to result in serious medical consequences such as prolonged illness, hospitalisation or even death (Lund, 2015; FDA, 2024). Therefore, it is important that appropriate measures are implemented within healthcare settings in order to minimise such food safety risk. This report investigates current perceptions and practices relating to the storage, handling and food safety of high-risk food brought in to the vulnerable patients/residents in healthcare settings on the island of Ireland (IOI).

In this report, the vulnerable patients/residents under consideration are people who have an increased risk of contracting a foodborne illness, including elderly people, pregnant women, chemotherapy and transplant patient, person with an underlying medical condition or autoimmune patients (FSA, 2016a). Consumption of high-risk foods by vulnerable patients/residents, inadequate time-temperature control, and insufficient food hygiene have been reported as the main reasons for foodborne outbreaks in healthcare settings (Boone et al, 2021). Furthermore, specific food items may pose a significant risk to the health of patients/residents with specific dietary requirements due to allergy or medical conditions (for example, dementia, diabetes or dysphagia). Within Ireland, the Food Safety Authority of Ireland (FSAI) has identified chilled, ready-to-eat foods such as sandwiches, salads and deli meats as foods which are more likely to be contaminated with listeria (FSAI, 2024a). Additional food pathogens such as

Campylobacter, Salmonella and *E. coli* are also common and can be acquired from raw meat or poultry and eggs (FSA, 2024a). Measures to prevent foodborne illness include preparation of foods based on Hazard Analysis and Critical Control Point (HACCP) principles and consumption of lower-risk foods as alternatives to higher-risk products (Lund, 2015).

The IOI follows EU food safety laws which aim to protect public health by ensuring that food is safe to eat, appropriately labelled and produced under hygienic conditions. This is outlined in Regulation (EC) No 178/2002 of the European Parliament and of the Council (EU, 2002). Under the Windsor Framework, EU food law, including marketing standards, continues to apply to all food produced in Northern Ireland. EU food laws also continue to apply to food sold in Northern Ireland that has not been transported from Great Britain to Northern Ireland through the NI Retail Movement Scheme (NIRMS) (Government UK, 2025).

The Food Standards Agency in Northern Ireland (FSA NI) and the Food Safety Authority of Ireland (FSAI) are responsible for enforcing such laws in their respective jurisdictions. Nevertheless, at present, specific regulations on foods brought into vulnerable patients/residents within healthcare settings are not covered by legislation. HACCP is used across both NI and Ireland to produce safe food. Although this is a legal requirement within food businesses, visitors and relatives producing home-cooked meals for vulnerable patients are not held to the same standards (FSAI, 2024b).

It is important to determine current policies and guidance for food brought into healthcare settings (hospitals and residential care/nursing homes) by visitors to ensure that it meets safety standards. Little is known regarding the content and implementation of these food safety policies, the management of food brought in from external sources and whether healthcare settings distinguish between high-risk and low-risk foods. This lack of clarity may increase the likelihood of high-risk foods being brought in to vulnerable patients/residents by visitors, which, if contaminated with food poisoning bacteria could cause harm to the health of vulnerable people.

Furthermore, where a food safety policy on the management of external foods exists, implementation may be inconsistent across healthcare settings due to insufficient staffing and time constraints (Li et al, 2018).

The safety of foods brought in by visitors and relatives is challenging for staff to monitor. This may be due to staff not having the capacity to take on the responsibility for the safety of food from external sources or lacking appropriate food safety and hygiene knowledge/training (Buccheri et al, 2007).

Project aims and objectives

The main aim of this study is to investigate current perceptions, policies and practices relating to the storage, handling and food safety of high-risk foods brought into vulnerable patients/residents in healthcare settings on the island of Ireland (IOI).

The project objectives were to:

- Review the academic and grey literature to identify current food safety advice and guidance relating to food brought into healthcare settings from external sources.
- Explore the current practices (handling and storage) and visitors' understanding of food safety advice when bringing food to vulnerable patients/residents.
- Investigate the current food policies, procedures and facilities relating to food brought in from external sources to healthcare settings across IOI from a healthcare professional perspective.
- Recommend ways to address gaps relating to the facilities available, the advice currently being provided and visitors' and healthcare professionals' understanding of the risks involved with bringing food from external sources into healthcare settings.

Project overview

The project was divided into the following four stages:

- **Stage 1:** Rapid evidence assessment
  a) Academic literature review
  b) Grey literature review and policy scoping study
- **Stage 2:** Focus group discussions with visitors
- **Stage 3:** Interviews with managers and healthcare professionals
- **Stage 4:** Follow-up focus group discussion

Stage 1: Rapid evidence assessment: Literature Review and Policy Scoping

Aim: Systematically and rapidly review a) the academic literature and b) the grey literature to identify evidence to date on food safety advice in relation to foods brought into healthcare settings.

Key tasks included:

- Identify the scope of Rapid Evidence Assessment (REA) and academic/grey literature to be reviewed
- Search the literature
- Analyse and write up findings
- Conduct an initial scoping of policies in healthcare settings across the IOI

Stage 2: Focus group discussions with visitors

Aim: Understand current practices (handling and storage) and visitors' understanding of food safety advice when bringing food to vulnerable patient/residents. Key tasks included:

- Develop a protocol and discussion plans, in light of the REA findings

- Recruit visitors of vulnerable patients/residents from a range of healthcare settings
- Transcribe discussions, identify themes and write up findings

Stage 3: Interviews with managers and healthcare professionals

Aim: Investigate food safety policies and practices within healthcare settings across IOI, and determine if any improvements could or should be made.

Key tasks:

- Develop protocols and discussion plans, in light of the REA findings
- Recruit healthcare professionals and managers from a range of healthcare settings
- Transcribe discussions, analyse the findings and write a report

Stage 4: Follow-up focus group discussion

Aim: Better understanding of the relevance of the findings from stages 2 and 3 through a follow-up discussion with visitors, involving one-hour focus group discussions with 5 participants.

In this discussion, we:

- Showed key findings from stages 2 and 3 and discussed them in more depth with visitors
- Used these findings to better understand the appropriateness of the proposed recommendations – and to shape the development of further recommendations

2 Stage 1a: Rapid evidence assessment – Literature review

Introduction and study aim

Consistent food safety practices are essential to prevent foodborne illness and therefore are important for public health. Food safety in hospitals is particularly important to protect patients/residents. People receiving healthcare are more vulnerable and their immunity may be compromised by their illness (Al Banna et al, 2022). Therefore, it is important that the foods they consume are safe and not contaminated. Food safety knowledge, attitudes and practices among hospital food service staff are crucial in the prevention of foodborne disease outbreaks.

Food contamination can occur at any point from the production of the raw material to it being served to the patient (Dudeja and Singh, 2017). It is important that the safety of food is considered at all points of handling – from acquisition of raw food items to preparation, packaging and distribution (Oludare et al, 2016). In addition, food brought into the healthcare setting from external sources must also be considered and appropriately managed in terms of level of risk, preparation, handling and storage. Foodborne outbreaks due to contaminated food prepared outside the healthcare setting are becoming a cause for concern and place a strain on the healthcare provider through the need for additional medical care, the need for the implementation of procedures to limit the spread of infection to other patients and staff, and general disruption to healthcare providers (Lund and O'Brien, 2009, PHA, 2009).

Safety of food can be ensured through the application of available standard guidelines – namely, good hygiene practices, good manufacturing practices, International Organisation for Standardisation 22000 certification, adaption of HACCP principles, and regular inspections (FSA, 2025a).

There are legal requirements governing the healthcare setting – primarily through in-house catering services or food business operating within the healthcare setting. However, visitors and relatives producing home-cooked meals for vulnerable patients are not held to the same standards (FSAI, 2024b). Thus, ensuring the safe management of food brought into healthcare settings is essential to reduce the risk of an outbreak among vulnerable patients or residents. This review aimed to examine foods brought into or bought in a healthcare setting for consumption by patients/residents.

Method

To conduct the review, a search strategy was developed including key search terms, identification of databases for searching, and inclusion/exclusion criteria. The review followed the Covidence PRISMA format (Covidence, 2024).

In order to develop key search terms, 3 main concepts of interest to the study were identified: “Food safety”, “Healthcare setting” and “Practice or policy”.

Search terms related to these 3 concepts were defined and truncation was used to maximise relevant searches. The 3 concepts are presented in Table 1.

Table 1: Key search terms

Concept 1: ***Food safety***	**Concept 2:** ***Healthcare setting***	**Concept 3:** ***Practice or policy***
S1: food n4 (safety or handl* or stor* or hygiene)	S2: hospital or hospitals or “nursing home*” or “residential home”* or “care home*” or “healthcare setting*” or “health care setting*”	S3: guid* or policy or policies or advice or procedure* or information or intervention* S4: S1 AND S2 AND S3

To identify peer-reviewed journal articles, searches were conducted across 4 appropriate databases: Ovid (Medline), EBSCO Host (Business Source Ultimate), EBSCO Host (CINAHL Ultimate), and Ovid (Embase).

Inclusion criteria specified that papers would be published during the timeframe January 2010 to July 2024, in English.

Academic studies resulting from the database searches (n=1174) were imported to the Covidence platform for title screening, where duplicates (n=275) were removed before initial screening by members of the research team (SM, LH and EB). Initial screening involved reading the title of the study to assess suitability in relation to the aim and scope of the study. To proceed to abstract review, studies needed to mention one of the broad concepts of food safety or food hygiene, food safety in a health setting, or food safety advice or policy. Studies which were considered within scope, or potentially within scope, proceeded to abstract review (n=899). All other studies were excluded.

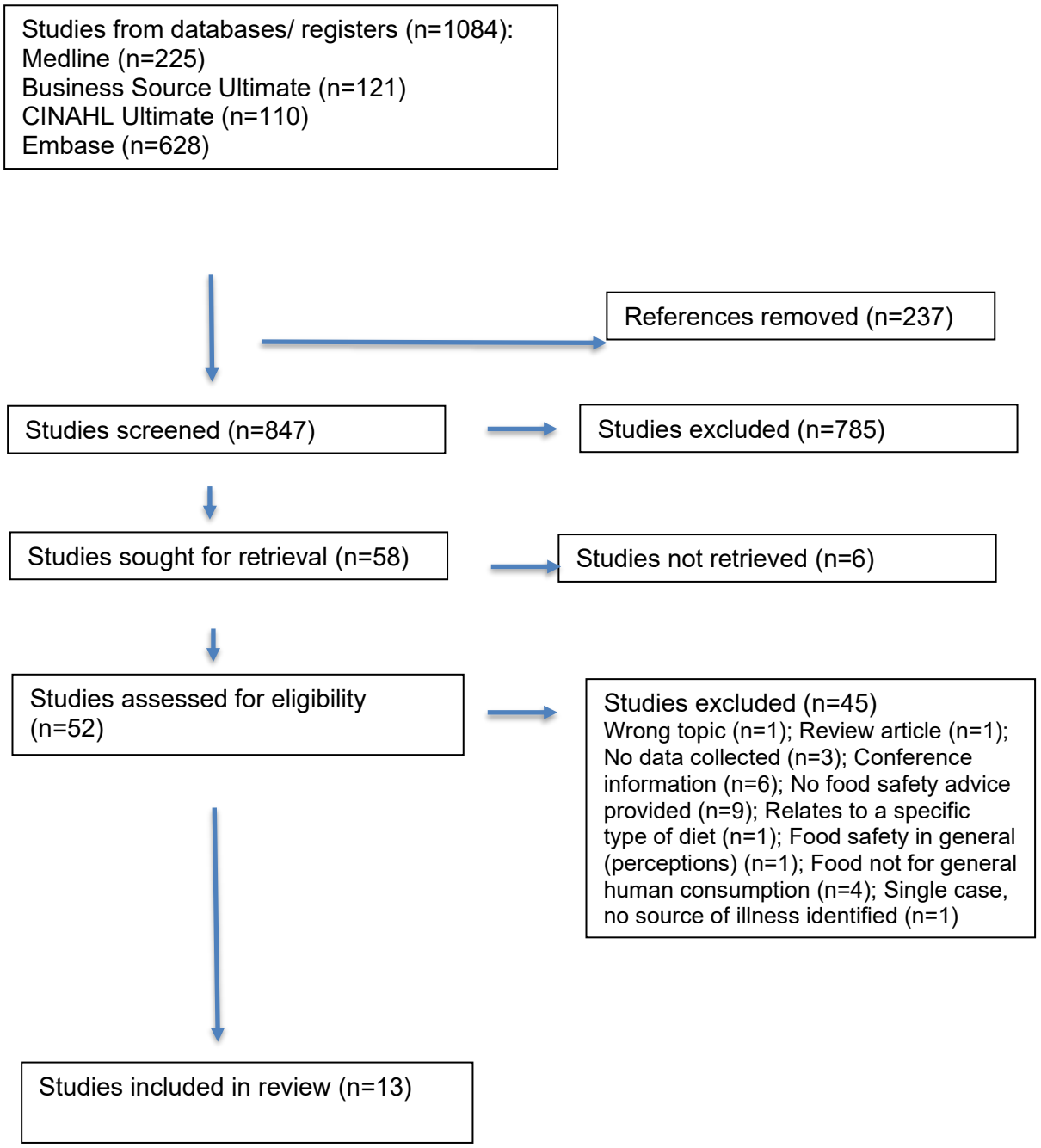
Titles and abstracts were reviewed by 2 reviewers of the research team (SM and LH), using the Covidence system whereby each reviewer voted whether the paper was a “Yes”, “No”, or “Maybe” to continue to the next stage of screening. Inclusion and exclusion criteria were defined for abstract review (see Table 2). Papers meeting the inclusion/exclusion criteria (n=13) proceeded to full paper review. Papers designated as a “Maybe” were discussed among the research team to reach consensus about whether the paper would proceed. This process assured inter-rater reliability.

Table 2: Inclusion and exclusion criteria for abstract screening

Inclusion criteria	Exclusion criteria
• All geographies • Healthcare settings (hospitals/care or nursing homes) • Food safety/ food hygiene • Food safety policies, practices, advice, guidelines • Addressing a particular foodborne infection/bacterium (for example, listeria) • Food for general human consumption	• Specialised diet, Nutrition, Healthy eating studies • Food allergens

See the PRISMA diagram in Figure 1 for a full overview of the systematic review process.

Figure 1: Diagram showing the systematic review process



Findings

A total of 13 studies from between January 2010 and July 2024 met the inclusion/exclusion criteria and were included within the final review. It must be noted that no studies specifically addressing food “brought in” from external sources by visitors to healthcare settings were identified during the “title or abstract screening”. Therefore, it was agreed by the research team that studies which addressed food “bought in” a healthcare setting and brought to a vulnerable patient/resident would also be included and screened against the inclusion/exclusion criteria.

Study location

Studies within this review came from a range of countries:

- India (4) (Bhattacharya et al, 2019; Dudeja et al, 2017; Dudeja and Singh, 2017; Sivasankari et al, 2020)
- Nigeria (n=1) (Oludare et al, 2016)
- USA (n=1) (Feldman et al, 2011)
- Thailand (n=1) (Rattanasena and Somboonwatthanakul, 2010)
- Indonesia (n=1) (Palupi et al, 2020)
- Vietnam (n=1) (Luu-Thi and Michiels, 2021)
- Bangladesh (n=1) (Al Banna et al, 2022)
- Brazil (n=1) (Draeger et al, 2019)
- Italy (n=1) (Vincenti et al, 2018)
- Lebanon (n=1) (Mallah et al, 2023)

Results highlight that little research on this topic comes from Europe. No UK- or Ireland-based studies were identified within the review.

Study methods

A range of data collection methods was used in the studies. The majority used single method approaches and one used a mixed-method approach (Palupi et al, 2020). Most studies involved data collection at one point in time: 3 studies took an intervention approach with data being collected at baseline and at time points following intervention (Bhattacharya et al, 2019; Dudeja and Singh, 2017; Dudeja et al, 2017).

The most popular data collection methods were as follows:

- Questionnaires (n=5) (Al Banna et al, 2022; Dudeja and Singh, 2017; Mallah et al, 2023; Oludare et al, 2016; Palupi et al, 2020)
- Microbial analysis of food samples (n=3) (Rattanasena and Somboonwatthanakul, 2010; Feldman et al, 2011; Luu-Thi and Michiels, 2021)
- Observations (n=3) (Palupi et al, 2020; Vincenti et al, 2018) Observations of hygiene equipment and customers (Draeger et al, 2019).
- Physical examination / samples from food handlers (n=2) (Sivasankari et al, 2020; Bhattacharya et al, 2019)
- Interviews with food handlers and supervisors (n=1) (Palupi et al, 2020)
- Educational intervention package (Dudeja et al, 2017) (n=1)

These results show that no study used focus-group discussions with visitors. Observations of customers were noted in one study.

Study location within the healthcare setting

Study site location within the healthcare setting varied by study.

In those studies conducted in hospitals (n=12), the following locations were investigated:

- 4 were concerned solely with food safety in hospital canteens (Luu-Thi and Michiels, 2021; Rattanasena and Somboonwatthanakul, 2010; Draeger et al, 2019; Vincenti et al, 2018)
- 2 were concerned solely with food safety in hospital kitchens (Bhattacharya et al, 2019; Palupi et al, 2020)
- 4 investigated food safety in all hospital eating establishments (i.e. both canteens and hospital kitchens) (Al Banna et al, 2022; Dudeja and Singh, 2017; Dudeja et al, 2017; Sivasankari et al, 2020)
- 2 hospital studies (Mallah et al, 2023; Oludare et al, 2016) focused on food safety as food was served on wards

The non-hospital study in the sample was conducted in a nursing and assisted living residence (Feldman et al, 2011).

Results show that while most studies were conducted in hospital settings, no studies took place in a care home setting or addressed food brought into healthcare settings.

Study focus and aim

In terms of topic, the most common focus across the studies was as follows:

- 6 studies (n=6) assessed food safety knowledge attitudes and practices of food service staff, nurses and food-handlers in hospitals (Al Banna et al, 2022; Bhattacharya et al, 2019; Dudeja et al, 2017; Mallah et al, 2023; Oludare et al, 2016; Palupi et al, 2020)
- Of these studies, 2 took the form of an intervention (n=2) (Dudeja et al, 2017; Palupi et al, 2020)

- The next most common type of study (n=4) involved collecting food samples to assess incidence of contamination (Feldman et al, 2011; Luu-Thi and Michiels, 2021; Rattanasena and Somboonwatthanakul, 2010; Vincenti et al, 2018)

Other study topics involved:

- Observing practices and equipment (Draeger et al, 2019)
- Examining the role of inspections in improving food safety (Dudeja and Singh, 2017)
- Assessing the personal hygiene of handlers (using hand swabs and stool samples) to investigate the incidence of entry bacterial infection (Sivasankari et al, 2020)

Results showed a general trend for understanding food safety knowledge and attitudes in hospital settings. However, no study investigated the food safety policies/guidance or advice given to visitors when visiting healthcare settings.

See the Appendix for an overview of each study included in the review including study aim, method and key findings/recommendations related to food safety in healthcare settings.

Key findings, recommendations and identification of research gaps

Two key themes emerged from the academic review findings:

- Theme 1: The importance of training and education related to food safety in healthcare settings
- Theme 2: The need for management or supervision of food provision in healthcare settings

Theme 1: The importance of training and education related to food safety in healthcare settings

There was an identified need for educational programmes on food safety among hospital food handlers. Topics which can help to reduce foodborne disease outbreaks include: the causes of foodborne illnesses occurrence, pathogens associated with those illnesses, proper control measures and correct food handling practices. Since gaps have been identified between food safety knowledge and practice (Palupi et al, 2020), training programmes could help close these gaps and improve food handlers' practice.

Findings indicate that both knowledge and practice decrease over time. Therefore, regular training to maintain and improve both food safety knowledge and practice is recommended (Oludare et al, 2016). It was suggested that training to raise awareness about the HACCP system would be particularly beneficial (Al Banna et al, 2022). In addition to training on food safety generally, the review highlighted the need for regular formal training on food handlers' personal hygiene and sanitation to improve their food safety practice (Palupi et al, 2020). Proper personal hygiene and an effective means of educating and training all existing and new staff with regards to personal hygiene is considered important for the control of intestinal infections (Sivasankari et al, 2020).

These education and training programmes can take various forms. For example, written or audio-visual resources, direct verbal instruction/teaching, or a combination of methods (Dudeja et al, 2017; Dudeja and Singh, 2017; Bhattacharya et al, 2019). Bhattacharya et al (2019) found that video-based interactive training coupled with administrative measures significantly increased personal hygiene among food handlers at no extra cost or minimal cost =.

Review findings indicate the importance of all food handlers in healthcare settings, including nurses, having appropriate food safety training. Nurses should be trained in the HACCP process specific to their assignments. Periodic in-service refresher training should also be mainstreamed into their training curriculum (Oludare et al, 2016). Regular training is particularly important due to the rapid turnover of nurses

in hospital wards. Nurses' knowledge could be improved through standardised food safety training courses. This knowledge could provide them with more confidence in handling food on wards and increase the reliability of any food safety information they provide to patients (Mallah et al, 2023).

Ensuring that nurses can provide accurate food safety information to patients may be particularly important for nurses working with vulnerable patients, such as cancer patients. Educating vulnerable patients, where possible, will decrease their risk of foodborne infection (Mallah et al, 2023).

In addition to education and training for food handlers employed by the hospital, a food safety awareness programme targeted at customers of hospital restaurants (both visitors and staff) has also been suggested. This would aim to reduce unhygienic practices and thereby minimise risk of spreading foodborne infection in healthcare settings (Draeger et al, 2019).

Theme 2: Need for management or supervision of food provision in healthcare settings

To reduce foodborne diseases and outbreaks in hospitals, appropriate management and supervision of food handlers and ward staff would ensure appropriate training and supervision with regards to food safety knowledge and practices. Healthcare authorities and managers can take the lead on developing food safety interventions and on implementing training, infection control policies and daily monitoring of eating establishments in order to improve food safety standards and reduce the risk of infection (Luu-Thi and Michiels, 2021; Sivasankari et al, 2020). Those with knowledge in management and food safety – such as food service supervisors – can be appointed to oversee and advise on the development and implementation of training programmes, as well as providing direct oversight and supervision of food handlers' practice (Al Banna et al, 2022). Managers themselves should have adequate capacity (time and knowledge) to enforce compliance and inspection of food hygiene and sanitation (Palupi et al, 2020).

It has been indicated that in addition to person-related factors, cases of poor hygiene and sanitation practice can be linked with human resource management – in particular to managers' capacity to impose regulations and monitor staff compliance with Standard Operating Procedures (Palupi et al, 2020).

In addition to directly managing people and their food safety practices, managers can oversee and assess general processes with regards to food safety. For example, managers can take a leading role on establishing and implementing HACCP processes to identify principal hazards and control points (Oludare et al, 2016). They can also ensure that the strict infection control policies are followed and that periodic surveillance of the food handling areas is conducted (Sivasankari et al, 2020; Luu-Thi and Michiels, 2021). Managers can also stay aware of, and promote, new policies for proper hygiene practices (Draeger et al, 2019). Regular inspections by authorities can also be a useful method to improve the food safety standards in eating establishments in hospitals (Dudeja and Singh, 2017).

Establishing a dedicated food safety committee in hospitals to enforce food safety protocols, monitor and evaluate staff performance and update training may also be useful (Mallah et al, 2023).

Conclusion and implications for future research

To conclude, this review highlighted the importance of educating and training food handlers in food service settings to improve both knowledge and practices relating to food safety. It is considered beneficial for food handlers at all food contact points in healthcare settings to have relevant training. This includes both those employed to work directly with food and those working elsewhere who have contact with patient food and influence how patients/residents consume and store food (for example, nurses on wards). Management and supervision of food handlers is important to ensure adequate training has been conducted and that food safety practices are being followed. Managers should take the lead on developing and implementing appropriate policies and procedures relating to food safety, and on conducting and complying with regular internal or external inspections. All studies in this review examined foods prepared within a healthcare

setting. No studies were identified relating to practices and food safety of foods brought into healthcare settings from external sources for patient consumption – for example, storage practices and assessment of pathogenic bacterial contaminations in these foods. Therefore, this review is the first of its kind exploring this topic, highlighting the need for further research on this issue.

3 Stage 1b: Rapid evidence assessment - Policy scoping study

Introduction

This chapter will address the grey literature search and the policy scoping exercise. The purpose of the review was to capture any additional and valuable information that may not be available through academic publishing channels – for example, in reports and publications for government agencies. The aim of this chapter is to identify and report on cases or examples of food safety advice given to visitors and/or vulnerable patients/residents in healthcare settings.

Firstly, the chapter will discuss the results of the **grey literature search** and secondly, the results of the **policy scoping study**.

1. Grey literature search

A grey literature search was conducted using the OHSIS Knowledge Workspace database, specifically their Food and Drink database (Ulster University, 2024). Searches were limited to those published between 2010 and 2024, in English. Knowledge Workspace was deemed the most appropriate database for the grey literature search since it provides full text access to documents covering health, food safety and environmental issues, as well as specifications[11]..

[1] This database covers current regulations, standards, guidance and best practice documents from many providers including the Health Service Executive (HSE), UK Cabinet Office and government departments across the UK and Ireland (University of Bath, 2024)

Search strategy

Collaboration between the subject librarian at Ulster University and the research team identified the following search terms: (food <AND> (safety <OR> handle <OR> storage <OR> hygiene)) <AND> (hospital <OR> hospitals <OR> nursing home <OR> residential home <OR> care home <OR> health care settings). These search terms addressed the same concepts used for the academic review. Results were filtered using the following criteria: (1) Food and Safety and (2) English language only. Results were further limited by date from 2010. An initial search was conducted on 11.01.23 resulting in 1,117 items and then updated again 11.08.24 resulting in a total of 1,135 items to be screened. Within this search 1,068 items related to food and drink safety in general, 56 items related to Irish food and drink safety and 11 items related to British food and drink safety.

Screening

All items were screened using the same inclusion and exclusion criteria listed in Table 2. From the total of 1,117 items, 1,038 items were removed leaving a final sample of 79 items. Items were removed due to the content relating to the following topics: veterinary science, nutritional supplementation and additives, toxins, raw meat handling, food allergens, chemical contaminates and pesticides, general legislation, health and safety, food waste, radioactivity in food, agriculture and exports, nanotechnology, food crime, foreign legislation.

Results

The 79 items s identified were analysed using the following categories:

a. General food safety law, legislation and advice

b. Food safety law, legislation for vulnerable patients/residents in healthcare settings

c. Research and food safety and vulnerable patients/residents in healthcare settings

a. General food safety law, legislation and advice

A total of 44 documents were identified relating to general food law, legislation and advice, with most of this information focusing on UK FSA Food Hygiene Rating Scheme (FHRS) (n=16) (FSA, 2022b). In the documents related to general food law and other food safety related legislation/regulations, healthcare settings such as care homes and hospitals were only mentioned in a general context. For example, documents relating directly to the Food Hygiene Information Scheme (FHIS) noted that:

> *"Inspection results are also given to schools, hospitals and residential care homes." (FSA, 2013a)*

However, one consultation document was identified that directly discussed food safety within healthcare settings. This consultation was Ready-To-Eat (RTE) Food Supplied to Health Care Settings: Cost of Proposal for Stricter Criteria for Listeria (FSA, 2013b). This consultation document sought to determine steps to reduce the risk of L. monocytogenes in foodstuffs. The consultation highlighted that:

> *"Two main options are being considered: (i) advice that RTE food should not be supplied to healthcare settings unless the level of L. monocytogenes contamination is a very low level (for example, reduce current level of <100cfu/g to <20cfu/g or <10cfu/g); and (ii) advice that RTE food supplied to hospitals and similar healthcare settings should be absent from L. monocytogenes" (FSA, 2013b).*

While listeriosis is relatively rare this can be a very serious for vulnerable groups leading to hospitalisation and fatality compared with other bacterial pathogens therefore, *"L. monocytogenes is a hazard that must be considered and controlled in any healthcare/social care organisation that provides food for vulnerable groups."* (FSA, 2016a).

Two documents discussed the importance of food storage in healthcare settings (FSAI, 2018, HM Government, 2013). Guidance Note 15: Cook-Chill Systems in the Food Service Sector (FSAI, 2018) advised that cook-chill foods sampled prior

to regeneration should generally achieve a certain microbiological criterion, with particular attention to food in healthcare settings. Addressing food storage from a security perspective the Elliot Review (HM Government, 2013) recommended that measures are taken to ensure foods or goods cannot be tampered with during storage.

A range of documents referred generally to healthcare settings (for example, hospitals and care homes) as one of several types of businesses or organisations required to adhere to the general food law principles and requirements to ensure that the food they provide is safe, hygienic, and meets the specific needs of patients/residents. Documents referred to the following legislation and guidance, indicating either the high-risk nature of foods (i.e. ready-to-eat foods that can support the growth of harmful bacteria), their handling and storage, or identified 'at risk' groups or vulnerable populations:

- EU General Food Law (Regulation 178/2002/EC) (FSAI, 2014)
- The Calorie Labelling (Out of Home Sector) (England) Regulations 2021 (Legislation SI, 2021)
- Food Hygiene Delivery Programme: *E. coli* O157 Cross-Contamination Guidance (FSA, 2010)
- Guide to Food Safety Training level 1 (FSAI, 2016a)
- Covid-19 and Food Safety: Guidance for Food Businesses: Interim Guidance (FAO, 2020)
- Scottish Food Enforcement Liaison Committee: Guidance on Article 5 Compliance (FSA, 2012b)
- Feed and Food Official Controls (Smith, M., 2013)
- Food Information Regulations 2013 (DEFRA, 2013)

In summarising this theme, one briefing document discussed the important role of healthcare professionals in relation to safeguarding vulnerable patients/residents stating, "*Healthcare workers have a responsibility to protect the health of the public and are well positioned to address vulnerable populations and the emerging health threats*" (IHS Markit, 2011).

b. Food safety legislation/advice for vulnerable patients/residents in healthcare settings

Eighteen documents highlighted legislation and advice directly relating to healthcare settings including hospitals and residential care homes. A total of 7 documents reported on food safety or health and safety incidents or investigations (although full details of each case could not be accessed).

The Department of Health Social Services and Public Safety NI (2010) Controls Assurance Standards: Food Hygiene and Safety recognised that food hygiene within hospitals could pose particular problems, especially with those deemed most vulnerable to infection. In January 2012, an FSA sub-group on Vulnerable Groups was set up to investigate the increased incidence of listeriosis in the UK at the time. It was recommended that the FSA referred the report to its Social Science Research Committee to consider the food behaviour, storage and handling practices of elderly people in the home (FSA, 2012c). Also, in 2012 IHS f reported that, "*The foods most likely to cause food poisoning are poultry (29% – this is the highest as proportionally more people eat chicken), red meat (17%) and seafood (7%).*"

Three documents by FSA (2013c, 2016band 2022c) on preventing listeriosis in hospitals and nursing/care homes highlighted that hospitals, nursing homes, residential homes or care homes are all classed as a food business as they provide food on a regular basis to people in care, and are legally responsible for ensuring that the food they supply is safe. In 2013, the FSA made a summary of the changes to their Safer Food, Better Business for Residential Care Homes Supplement (FSA, 2013d). The most recent version of this supplement (2025b) provides advice to visitors when visiting residential care homes. The tips are

summarised in Table 3 and highlight general advice about what types of food to bring, food allergens, use-by dates and storage. The advice does not cover the preparation or disposal of food on site.

Table 3: Advice to visitors to residential care homes in NI

General advice to visitors
• It is best to bring low-risk food such as washed fruit, biscuits and chocolate. • Avoid bringing hot food. • Only use eggs that are British Lion code (or equivalent assurance scheme) in foods that will not be cooked thoroughly, such as mousse, icing and desserts. • Store and transport homemade or unpackaged foods in a clean, sealable container. • Check to make sure your family member or friend does not have an allergy to any of the ingredients. • Make sure that any foods with a use-by date, cooked food or cakes, and desserts containing cream are kept in the fridge. It is a good idea to transport these types of food in a cool bag or box, especially in hot weather. • Gift and donated food should be limited to food with a best-before date that does not require refrigeration.
Storage advice to visitors
• Storing food: If family or friends bring food that needs to be kept chilled, make sure it is put in the fridge if it is not eaten straight away. • Ideally, gift food should be kept separately from the care home's main fridge. It is a good idea to label chilled, ready-to-eat food with the date and time it is placed in refrigerated storage, and add the resident's name. • Foods should be stored in a clean container with a lid. Food past its use-by date should not be used. • Chilled foods need to be kept cold and used within shelf life to keep them safe and stop harmful bacteria growing. This will help staff to keep track of when the food was brought in and who for. This helps to protect the food from harmful bacteria and prevent pests.

Source: FSA (2025b)

One document noted that, in line with the UK Food Hygiene Regulations 2006, food inspections should be limited to areas where food is prepared (Application of Food Hygiene Legislation to Domiciliary Care, Assisted Living and Care Homes: Comment (revision 2) (FSA, 2014a)). However, in care homes, the inspections should not cover private areas that may also contain shared facilities. Another document highlighted the need to promote advice to vulnerable groups on foods (Letter to Heads of Environmental Health Services (England, Wales, Northern Ireland and Scotland): Update on FSA Listeria Risk Management Programme and Questionnaire for Small Ready-to-Eat Food Manufacturers (2014b)). This was to avoid reducing the risk of contracting listeriosis and indicated that efforts needed to be addressed "*to drive up standards in the procurement and provision of food in hospitals, care homes and similar setting*."

More recently, in May 2022, the Food Standards Scotland launched its new five-year strategy to encourage healthier eating and sustainability, aiming to promote a food system that consumers can trust, defining this as, "*food that is safe, is what it says it is, and is healthier and more sustainable*" (FSS, 2022).

c. Research and food safety and vulnerable patients/residents in healthcare settings

Finally, 10 documents discussed research or general advice relating to food safety and hygiene practices. Documents were sorted in ascending chronological order to track progress and identify patterns or trends over time. Three documents were published in 2011 and discussed:

- An advice pack for care homes on meat hygiene controls (FSA, 2011a)
- Larger scale applications (for example, hospitals) of nanotechnology to prevent food spoilage (FSA, 2011b)
- The Good Food on the Public Plate project, which found that 93% of consumers rated food safety to be an important consideration within their food choice. This project aimed to improve the healthiness and

sustainability of the food served by hospitals, care homes and schools in London and the Southeast of England (Scottish Government, 2011).

Two documents from 2012 reported on recommendations from the NI Strategic Committee on Food Surveillance, which highlighted the need to conduct a survey "*of chilled RTE food supplied by commercial sandwich manufacturers to institutional establishments serving vulnerable groups of people for example, cancer wards, residential care homes, maternity wards etc for the presence of listeria species*" to inform guidance and advice to *"food business operators regarding the handling, storage and preparation of high-risk foods that support the growth of pathogens"* (FSA, 2012d). The other document reported on norovirus and how the majority of cases in Northern Ireland (at the time of reporting) were *"believed to be foodborne, from foods where the counts are very high because of contamination or poor storage"* (FSA, 2012e). In 2014, the FSAI reported on a Survey on Verification of Compliance with Commission Regulation (EC) No 2073/2005 collecting samples from food establishments including hospitals and nursing homes (FSAI, 2014b). Despite good results they reported that, *"three of the samples (0.6%) did not comply with the Regulation: Salmonella Dublin was detected in one minced meat sample and listeria monocytogenes was detected in one cooked ham sample and one coleslaw sample"* indicating foods that have the potential to be high risk.

In 2015, the UK Advisory Committee on the Microbiological Safety of Food highlighted that the number of institutional outbreaks of foodborne transmission, specifically in nursing homes and schools, may be underestimated due to investigations not being carried out (FSA, 2015). In 2016, the FSAI published a report entitled Reduce the Risk of Food Poisoning: Information for People Who are Particularly Vulnerable which contains a guide to identifying higher-risk foods and safer options for consumers (FSAI, 2016b). In 2021, the FSA published a consumer report exploring Communications on Food Safety Messaging highlighting that some consumers cited they had learned about food safety through formal training, for example, a compulsory food hygiene course at their

place of work (for example, hospital). No documents from 2022 to 2024 were identified from the search and screening process.

Summary of grey literature review

While 79 documents were included within the review, most of this evidence discussed healthcare settings more generally, as examples of food businesses, highlighting that these facilities are governed by the same food law and legislation as retailers, schools, etc. Only one document directly discussed food safety advice and tips for visitors bringing food from external sources into care homes, highlighting that further consideration of current legislation and guidance on this issue is required.

2. Scoping review of policies in Northern Ireland and Ireland

The aim of the scoping review was to determine the availability and nature of food safety advice for visitors wishing to bring food from external sources to vulnerable patients/residents in healthcare settings across IOI.

Search strategy

A list of hospitals across NI and Ireland was identified, based on results from a local search engine (NI Direct, 2023; Health Service Executive, 2023). Care homes were identified using the Nursing Homes Ireland (NHI) website and one home was identified within each county (NHI, 2023). All searches were conducted in January 2023. A total of 74 healthcare settings (n=52 hospitals and n=22 care/nursing homes) were included within the scoping review. The website of each setting was searched to determine if a food policy and/or food safety advice was made available to visitors online. This policy scoping review summarises the evidence found across each healthcare setting.

Results

A review of healthcare setting websites revealed significant gaps in the food-related policies and guidelines across hospitals and care homes. Across the 52 hospital websites reviewed (29 NI, 23 Ireland), only one formal food-related policy was available which covered 8 of the hospitals (15%) in one NI Trust. An

additional 5 (10%) websites in Ireland referred to a policy which was not publicly available, and the remaining hospital websites had no food-related policy (n=39, 75%). However, almost 70% of the hospitals (n=36) had online food-related guidelines for visitors to refer to. Eight of these guidelines (all in Ireland) asked visitors not to bring any food into the premises, or not to bring foods without prior approval with staff. The remaining either did not mention food being brought in, or placed restrictions on the type of food, referring to "perishable" (n=12) or "high-risk" (n=17) foods. However, examples of these types of food were only given in the one available policy (sandwiches, salad boxes and ready-to-eat foods) and not in any of the visitor guidelines. Of those hospitals which provided guidelines or a policy, 58% of hospitals (n=21) had a point of contact for queries regarding food (ward staff, n=9; ward manager, n=4; with the policy covering 8 hospitals specifying the Head of Supply Services).

Over a third of available hospital guidelines (n=13) highlighted a procedure for bringing food into the hospital, which all involved consulting with staff, 16 referred to storage (44%), 2 food preparation (5%), and no guideline addressed food disposal.

In contrast, none of the 22 care homes (10 NI and 12 Ireland) had a formal food-related policy or guidance available online, meaning any further analysis of their policy/guidance in terms of storage, handling and disposal could not be undertaken.

Within the scoping review, a number of overarching food-related policies/reports were identified and are outlined below (Table 4). It was interesting that while policies in NI advised for the need for procedures and protocols around food hygiene, policies in Ireland provided much more specific guidelines.

Table 4: Policies and reports across the IOI governing food-related activities in healthcare

Policy/report	Source/URL	Key food-related points
The Nursing Homes Regulations (Northern	Legislation UK (2005)	Must ensure foods and fluids:

Policy/report	Source/URL	Key food-related points
Ireland) 2005, Part III, Regulation 12 (4)	https://www.legislation.gov.uk/nisr/2005/160/regulation/12/made	• provided in appropriate quantities and intervals • properly prepared, wholesome, meets nutritional requirements • suitable for patients' needs • varied menu providing choice
UK Government on Northern Ireland Statutory rules	NI Assembly (2022) https://www.niassembly.gov.uk	No direct mention of food from outside premises.
Department of Health, Social Services and Public Safety Northern Ireland (DHSSPS NI): Minimum Care Standards for Independent Healthcare Establishments 2014: (page 145)	DHSSPS (2014) https://www.rqia.org.uk/RQIA/files/cb/cb02747d-3b82-4404-bbce-f3db87acd36b.pdf	Independent healthcare providers must develop policies, procedures and protocols for food hygiene. No direct mention of food from outside premises.
DHSSPS NI: Residential Care Homes Minimum Standards 2021: (Standard 12, pages 32–33)	DHSSPSNI (2021) https://www.rqia.org.uk/RQIA/files/ea/ea 7c184c-8bb5-41e3- a270-db34fc2fad9a.pdf	Standards regarding varied and nutritional menu options for patients. Care homes should have policies on food hygiene and takeaway foods. No direct mention of food from outside premises.
National Healthcare Charter: You and Your Health Service (Ireland) (pages 10, 14)	https://www.hse.ie/eng/about/who/complaints/ncglt/toolkit/complaintsofficerstoolkit/national-healthcare-charter.pdf	Visitors: ask ward staff for advice before bringing patients food or drinks. Patients: wash hands before preparing and eating food.

Policy/report	Source/URL	Key food-related points
Health Service Executive: Food Nutrition and Hydration Policy for Adult Patients in Acute Hospital (Ireland) (page 83)	Health Service Executive (2018) https://www.hse.ie/eng/services/publications/hospitals/food-nutrition-and- hydration-policy-for-adult-patients-in-acute-hospital.pdf	Advised that only food prepared in hospital should be consumed by patients. Reduces risk of foodborne illness and prevents complications with patients under specialised diets. Assessed on individual basis to ensure patients' nutritional needs are still met.
Health Information and Quality Authority: Report of the review of nutrition and hydration care in public acute hospitals, 2017 (Ireland) (pages 34, 43)	Health Information and Quality Authority (2017) https://www.hiqa.ie/sites/default/files/2017-02/Review- nutrition-hydration- hospitals.pdf	Hospitals must review systems in place to ensure all patients have available fresh drinking water and should not need to be supplied by visitors. Identified potential risks of malnutrition and checked with hospitals that the concerns were addressed. No direct mention of food from outside premises.
Health Information and Quality Authority: Regulatory Guidance for Residential Services for Older People, 2017 (Ireland) (pages 2, 3)	Health information and Quality Authority (2017) https://www.hiqa.ie/sites/default/files/2017-01/National-Standards-for-Older-People-Guide.pdf	Mandatory training on safe food practices for staff to reduce the risk of food contamination. Must provide nutritious and varied food options for residents that meet their personal nutritional needs. No direct mention of food from outside premises.

Summary of healthcare policies

In summary, the review identified that although food-related guidelines were present for the majority of hospitals across the IOI (70%), many of these guidelines lacked specific details that would support their implementation (such as examples of food permitted or disposal guidance). No care/nursing homes had

food-related guidance available online. Although this does not mean that such policies and guidance do not exist it, should be noted that the online availability of such guidance may support its implementation, particularly for those outside the next of kin and not receiving the information directly. The variability in approach across hospitals, care/nursing homes and overarching policies/reports, together with the omission of specific details, may also cause confusion for visitors around what is and is not permitted. While it is accepted that each patient has individual needs which should be determined on a one-to-one basis, the agreement of a singular approach to foods brought into healthcare settings may promote visitor acceptance and compliance while not compromising patient care.

4 Stage 2: Focus group discussions with visitors

Introduction

Seven focus group discussions were carried out to gain insights into food safety perspectives of visitors to healthcare settings in Northern Ireland (NI) and Ireland, covering both urban and rural areas. A total of 26 participants from various demographics and locations participated (see Table 5). This approach facilitated an environment for constructive dialogue, enabling participants to exchange their experiences and concerns, and offer solutions regarding food safety in healthcare settings. The inclusion of both urban and rural areas permitted a comparative examination of food safety challenges across areas.

Methods

Table 5: Demographics of focus group participants

Demographics	Participants % (n)
Focus groups (n=7)	100% (26)
Locations	
Ireland	35% (9)
Northern Ireland (NI)	65% (17)
Area	
Urban	42% (11)
Rural	58% (15)
Gender	
Male	12% (3)
Female	88% (23)

Demographics	Participants % (n)
Age (years)	
25–34	12% (3)
35–44	23% (6)
45–54	27% (7)
55–64	31% (8)
65 or older	8% (2)
Prefer not to say	0% (0)
Demographics	**Participants % (n)**
Education Status	
Secondary	0% (0)
GCSE/Junior Cert	0% (0)
A/Level/Leaving Cert	4% (1)
College	12% (3)
Professional qualification	23% (6)
University degree	19% (5)
Post-graduate education	42% (11)
Length of current employment experience (years)	
<1	77% (20)
1–2	15% (4)
3–4	4% (1)
5–6	4% (1)
7–8	0% (0)
9–10	0% (0)
10+	0% (0)
Employment status	
Employed full time	62% (16)
Employed part time	27% (7)
Self-employed	8% (2)
Retired	4% (1)

Procedures and measures

The literature reviews informed the development of the focus group topic guide. Please refer to the Appendix for the full topic guide. Key topics covered within the guide included:

- Food brought into healthcare settings by visitors
- Food safety practices and perceptions

- Awareness, understanding and implementation of food safety guidance/policies

During the focus groups, participants were asked about the food safety guidance provided by hospitals or care homes – specifically, if it included advice relating to food brought in by visitors. They were also asked how and by whom this guidance was communicated and whether they were aware of any existing food safety policies. Participants were also asked about their adherence to these guidelines, the importance of following recommended food safety practices, and the reasons for their compliance or non-compliance.

For locations lacking such policies, participants were asked if they believed that food safety guidelines should be provided and for any suggestions on how such guidelines could be implemented. Additionally, they were queried about any concerns regarding food safety practices in healthcare settings, potential risks associated with food brought in, and suggestions for improvement. Finally, the participants were asked about their role and responsibility in reducing the risk of foodborne infections in these environments.

Each focus group lasted between 50 and 60 minutes and were video and audio recorded using Microsoft Teams. At the end of each group, participants were thanked and paid an honorarium of (£25/€25) for their participation.

Ethical approval

Ethical approval for the focus groups was granted by the Ulster University Business School Ethics sub-committee. As part of the review process, an overview of the study, screening questions for participant recruitment, participant information, consent forms for focus group participants and the focus group protocol were reviewed.

Analysis

All discussions were digitally recorded, professionally transcribed and uploaded to NVivo 10 (QSR International Pty Ltd Victoria, Australia) software for analysis. All data were coded and grouped to establish themes relating to the overarching aim

of the project. Verbatim quotes are displayed, followed in parentheses by focus group number (FG1-7), area (Urban/Rural) and Location (NI/Ireland) (Braun et al, 2016).

Results

Five themes emerged from the focus group discussions. These are as follows:

- Theme 1: Food safety knowledge and understanding
- Theme 2: Awareness and effectiveness of food policy guidance
- Theme 3: Awareness and effectiveness of food policy communication
- Theme 4: Drivers of bringing food into healthcare settings
- Theme 5: Food safety practices and concerns

Theme 1: Food safety knowledge and understanding

Overall, the majority of focus group participants exhibited a good general knowledge of food safety. All participants identified individuals, animals/pets, and raw food as primary sources of contamination, highlighting the importance of regular handwashing to avoid cross-contamination. They accurately distinguished 5°C or lower as the correct temperature for storing refrigerated food. While there were some differences in responses regarding cooking temperatures, the participants as a whole demonstrated a thorough understanding of key food safety measures, illustrating their capacity to effectively prevent foodborne illnesses in healthcare environments.

High-risk foods were consistently identified by participants as those that could support bacterial growth and cause foodborne illnesses if not managed properly. These foods often require specific storage and handling practices to remain safe for consumption. Participants identified sandwiches and takeaways as high-risk foods due to their perishable nature and the need for refrigeration. As noted by FG2 Rural NI participants, hospital food that is left sitting out posed a similar risk

to brought-in takeaways. They also emphasised that the type of food and how long it was left out were crucial factors in determining its safety.

The risk level of soup was also discussed, with participants from FG1 Urban NI and FG3 Rural Ireland pointing out that ingredients such as meat stock or cream could elevate its risk. This point was echoed by another participant from FG2 Rural NI, who noted the potential danger if soup contained dairy or meat products:

> *"…soup depends on what is in it. Could be high risk as it probably wouldn't be hot by the time it got in. I would bring soup in a flask. Homemade. For safety reasons I will take it home if she didn't eat it." (FG3 Rural Ireland)*

Dairy products, such as milk and yoghurts, were highlighted by majority of the participants as high risk, especially if not stored properly. Another participant (FG3 Rural Ireland) shared that she brought in homemade custard and yoghurt-based trifles for her father, recognising their high-risk nature but prioritising his preferences and appetite. Cooked meats and fish, such as the salmon that one participant brought in for her father, were also mentioned as high-risk foods, requiring careful storage to avoid spoilage. Similarly, another participant noted the high risk associated with prawn cocktails, emphasising the need for careful management.

Conversely, low-risk foods generally did not require refrigeration and had a lower chance of causing foodborne illnesses. Participants discussed how they more frequently brought these types of foods to provide comfort and nutrition while mitigating risks. Biscuits and sweets were most commonly mentioned, with a participant sharing "*that her granny enjoyed these low-risk treats due to her sweet tooth"* (FG1 Urban NI). Other participants (FG1 Urban NI and FG7 Rural Ireland) also noted bringing in sweet items such as traybakes, recognising their lower risk and caloric benefits for patients/residents with reduced appetites. Fresh fruits, while generally low-risk, required prompt consumption, as observed by the participants, who brought cut-up strawberries and grapes for her grandmother. Nuts and seeds, such as the flaxseeds a participant brought in for his

grandmother, were considered low risk due to their stable nature. Pre-packaged foods, such as yoghurts, still need refrigeration. Snacks such as crisps, crackers and sweets were perceived as safer options. A participant for instance, brought pre-packaged food for her dad, ensuring it was something he could safely consume even when hospital food was not appealing.

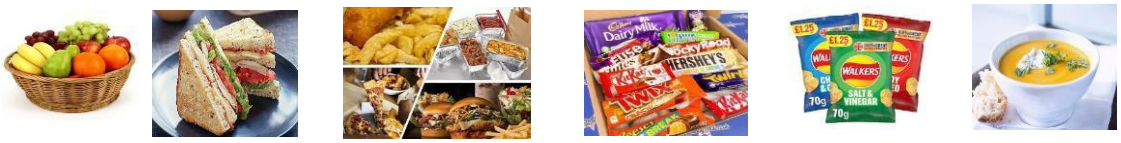
Table 6 categorises the types of foods brought into healthcare facilities, distinguishing between those considered high risk and those considered low risk based on participants' observations and experiences.

Table 6: High-and low-risk foods brought into healthcare settings

High-risk foods	Low-risk foods
Sandwiches	Biscuits
Takeaways	Chocolate
Soup	Crisps
Hot meal from home or delis	Fruit (whole, uncut)
Foods with cream (for example, pastries)	Sweets (for example, candy, wine gums)
Prawn cocktail	Crackers
Yoghurt	Cereal bars
Milk or dairy	Dried fruit and nuts
Meat	Packaged snacks at ambient temperature

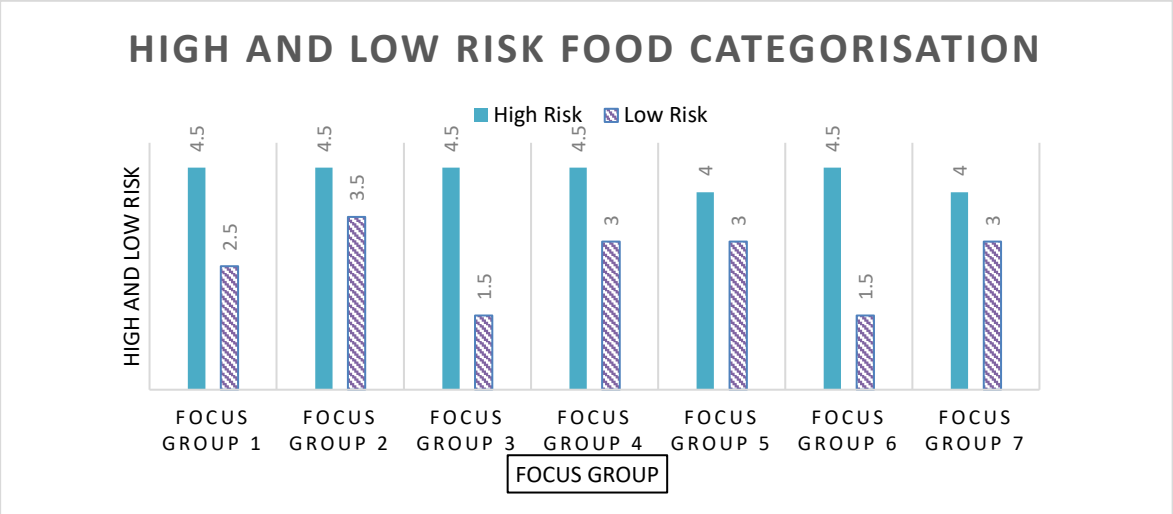
Figure 2 shows a number of high-risk and low-risk foods. Participants were asked to identify high-risk and low-risk foods during a short activity on food safety knowledge.

Figure 2: High-risk and low-risk food categorisation activity



Results from the food safety knowledge activity (Figure 3) revealed that across the 7 focus groups, participants demonstrated a strong understanding of high-risk foods, with an average score of 4.36 out of 5. In contrast, their understanding of low-risk foods was less consistent, reflected in a lower average score of 2.64. This suggests that while the overall food safety knowledge is relatively strong, there are noticeable gaps in accurately identifying low-risk foods. These results highlight areas where additional education for visitors may be beneficial.

Figure 3. Results from high and low risk food categorisation activity



In discussing the variety of experiences and viewpoints concerning food safety guidance in hospitals and care facilities, the majority of participants highlighted a lack of clear and consistent food safety guidance. A minority indicated that they had never been given any guidance or encountered any informative materials regarding which food items could be safely brought in by visitors. No differences between urban and rural settings or hospital and care homes regarding the lack of clear and consistent food safety guidance were noted.

Results indicated that communication regarding food safety was often inconsistent. In cases where guidelines were in place, they were not effectively communicated by healthcare staff.

Participants generally expressed a strong sense of personal responsibility for adhering to food safety practices, highlighting the importance of following recommended guidelines to safeguard vulnerable patients/residents. Nevertheless, they also emphasised the need for enhanced support and clearer guidance from healthcare centres to help them effectively manage these responsibilities. Concerns about potential food safety risk (such as cross-contamination and inadequate storage) were widespread and participants proposed various solutions (including more thorough education, improved storage facilities and consistent policies across all healthcare settings). The breakdown of the findings is discussed in the following sections.

Theme 2: Awareness and effectiveness of food policy guidance

Most focus group participants noted that they were unaware of any food safety policies in the facilities they visited. As one noted: *"I have never asked if it's safe. I would be worried about things not being put in the fridge if it wasn't eaten there and then"* (FG7 Rural Ireland). This lack of enquiry and awareness about food safety indicates a gap in communication from the healthcare providers. The inconsistency in food safety guidance across healthcare facilities emerged prominently in the discussions. Participants highlighted the disparities and contrasting experiences in different hospitals and care homes in the availability and communication of food safety policies, leading to confusion and potential risks.

One participant pointed out the lack of clear guidance, despite noticing a poster in her mother's room: *"there was a poster highlighting some foods that you could bring... But that was never a conversation had with us*" (FG1 Urban NI). This suggests that while some form of guidance may exist, it is not effectively communicated to the families and visitors. The discussion also revealed that facilities might have different standards and practices. As one participant noted:

> *"I feel that every hospital and care home is different. I've been in lots of hospitals the cancer hospital has a much higher risk and are much stricter. They are really on top of everything – they're all over bringing*

things in, but some other hospitals don't bat an eyelid to the stuff you bring in." (FG7 Urban Ireland)

This inconsistency can lead to confusion and potentially unsafe practices if visitors are unsure of what is permissible in each healthcare setting. This is especially relevant to vulnerable patients/residents that might have to go between a residential and a hospital facility for care. A minority of participants emphasised the need for better communication and education on policies of food safety (FG1 Urban NI and FG5 Rural Ireland*).*

"I've never seen any leaflets or posters. Nobody has ever stopped me and said 'Oh you're not allowed to bring those in.' Leaflets and advice would be great. I would hate if bringing in food would be eliminated." (FG1 Urban NI)

Participants' narrative stresses the critical role that food quality and staff communication play in patient/resident care. The contrast between the 2 healthcare centres mentioned – one providing high-quality, culturally diverse food and the other offering low standard meals – illustrates how food services can impact patient satisfaction and health conditions. The ability to cater to specific food needs and preferences, including ethnic tastes, is an essential component of patient-centred care.

" They even catered for ethnic people who wanted different tastes. Whereas in other centres, there was none of it, it was take it or leave it." (FG7 Urban Ireland)

Moreover, the lack of consistency regarding the permission to bring in external food and the lack of encouragement to bring in homemade meals or even certain types of food reflects the underlying challenges in healthcare centre policies and communication. While some healthcare facilities strictly enforce their rules "*staff said food was not allowed to be brought in"* (FG2 Urban NI) while others exhibit a more flexible approach as narrated by another participant:

> *"Yes, we did ask, and they said 'This is like her home and we would welcome you to bring in anything you'd like.' The quality is better in this nursing home. However, Dad's isn't as good. It's not individual food. The difference in the 2 homes is quite alarming, and they're both owned by the same company.* (FG5 Rural Ireland)"

The different experiences of participants (FG7 Urban Ireland, FG1 Urban NI and FG5 Rural Ireland) highlight the necessity for uniform food safety guidelines within healthcare institutions to ensure that every patient receives sufficient and secure nutritional support. Improved communication by healthcare centre personnel regarding food policies, along with the provision of clear and accessible guidelines, could assist in addressing these challenges and enhancing the overall quality of care for patients/residents.

Theme 3: Awareness and effectiveness of food policy communication

The majority of focus group participants were either unaware of the existing food safety guidelines or found them insufficient and inadequately communicated. They had not received any specific guidance on food safety from the hospitals or care homes visited. This lack of communication leaves visitors unsure of the best practices for bringing in food. It also highlights the unstructured role of healthcare staff in informing and influencing visitors' adherence to food safety guidelines. One participant observed, *"Mum was in the hospital. Every food had to be pureed. But there was nothing to say what we could and couldn't bring in."* (FG2 Rural NI)

This lack in awareness frequently resulted in ambiguity and irregular procedures among both visitors and staff. The discussions explain a crucial gap in the awareness and accessibility of food safety policies in healthcare environments. The observations of the participants emphasise the necessity for enhanced communication methods (including leaflets, displays and specific instructions) to guarantee that both visitors and staff are adequately informed on food safety practices. Tackling this issue is imperative for enhancing the general safety and excellence of food offered to patients and residents in healthcare facilities and residential care accommodations.

The absence of clear food safety guidelines from healthcare facilities was widely discussed by participants from all the focus groups (FG1–FG7), both from the 2 locations (NI and Ireland) and different areas (urban and rural). This lack of communication often left visitors unsure about what food items were appropriate to bring or how to handle food safely within the healthcare setting. Some participants highlighted this issue succinctly:

> *"No, I never received advice on food safety guidance.''*
>
> *'' Nothing was conveyed to me in relation to food safety. Advice, no."*
> *(FG5 Urban Ireland and FG2 Rural Ireland)*

When advice was provided, it was often inconsistent and not always helpful. For instance, some participants mentioned seeing posters that were either outdated or not prominently displayed. One participant noted: *"There was a poster on the wall saying not to bring in food, but it looks like it has been there for some time"* (FG3 Rural Ireland). Other participants mentioned that there were instances where nurses said that bringing in food was at the visitors' own risk, but specific guidelines on safe food types were rarely communicated. *"No guidance given. No leaflets handed out. Our family would be very aware of these practices. Specific paperwork or leaflets would help on admission"* (FG2 Rural NI and FG1 Urban NI). These reflections illustrate a common concern of insufficient communication regarding food safety guidelines, leaving visitors to navigate these challenges on their own.

Theme 4: Drivers of bringing food into healthcare settings

Four motivating factors were identified by focus group participants for bringing food into the healthcare centre. The factors included:

a. Food preferences and increased appetite

b. Supplementing nutrition

c. Limited choice and quality of in-house catering

d. Connections and comfort

a. Food preference and increased appetite

Food preferences and the personal taste of patients or residents were significant drivers. A participant's narrative of bringing in Thai food for her mother illustrates how getting food from outside can help cater to personal tastes, providing satisfaction in a way that standard meals at the healthcare centre might not offer.

> *"The appetite increases and realises that she wasn't too happy with this food. So, we brought some takeaways in, Thai or something. I had to eat too. Whatever she wanted I got it for her. Something different from the hospital food. Whatever she felt like, I'd go and get it. It's like everything if you're getting the same thing every time. She was in for a shorter period, but I brought her in more food." (FG3 Rural Ireland)*

Another participant discussed how her father was in constant discomfort when eating and preferred softer more palatable foods. While these items may not have been deemed as nutritionally adequate as the food being offered via in-house catering, they offered him opportunity to eat.

> *"Dad could only eat 'mushed' food so we would bring in stewed apple and custard, homemade like trifle. His appetite was poor, and he wanted to eat it." (FG3 Rural Ireland)*

b. Supplementing nutrition

The findings also revealed that the participants frequently mentioned adapting to the specific dietary needs of patients/residents. One participant's example of bringing 'mushed' food such as stewed apple and custard for her father who had difficulty swallowing highlights how visitors often need to customise food choices to accommodate health issues.

> *"We did have a nutritionist; they were able to get drinks which staff kept in a fridge." (FG2 Rural NI)*

Participants also noted that the food that in some cases was not up to standard, and that the nutritional aspect was neglected: *"I was surprised there were no*

supplements offered or no dieticians around. The whole nutrition side was a very neglected side of the care" (FG1 Urban NI). Another participant also noted: *"There's lots of gaps in care now and I think nutrition is a big one",* suggesting improved nutrition, improved staffing (FG2 Rural NI).

c. Limited choice and quality of in-house catering

The majority of participants also emphasise their efforts to enhance the quality and variety of food available to patients/residents. One participant's effort to bring in food every day for her father illustrates how visitors often feel the need to supplement hospital meals with better-tasting and quality option from outside. This not only improves the mood of patients/residents but also ensures they are more likely to consume enough food.

> *"Dad has asked for salmon and potatoes, they said they forgotten or they had none. I walked to the canteen and bought a portion of salmon and mashed potatoes. There's something badly wrong with the food in our hospitals." (FG2 Rural NI)*

The majority of participants from FG1, FG2 and FG4 expressed their dissatisfaction about the quality of food served in the various healthcare settings they had visited. They highlighted issues relating to the quality, nutritional value and appeal of the food served to the patients and residents. The participants provided varied insights into their perception of the standard of food provided in healthcare settings.

A participant criticised the hospital food for being unappetising and cold:

> *"My uncle couldn't eat the food stuck to the plate cold. I would've had to bring in breakfast, lunch and dinner. I went to nearby deli, so I got stuff off the hot food counter, right beside hospital which was handy. I also cooked stuff at home and brought it in." (FG1 Urban NI)*

More focus group participants expressed strong dissatisfaction with the food their family members received in the hospital:

> *"It's grey and beige food. Honestly, I couldn't palate it myself. To try and get your loved one to eat that is soul-destroying. They're trying to get this person well. People are not going to get better unless they are fuelled with nutrition and energy." (FG2 Rural NI)*

Others noted the poor post-surgery food options and one described the impact on her mother's health:

> *"Post-surgery food options were poor. I would say that patients are not given tasty choices that they like – therefore, family need to bring food. She did lose a lot of weight (a stone and a half in 8 weeks). Again, it was the brown stews and the curry. After the bowel surgery she had colon cancer, and I don't think the curry was even suitable." (FG2 Rural NI)*

Another participant (FG4 Urban NI) also commented on the poor quality of food in the hospital where her brother was treated: *"Food in this hospital was not good."* However, one participant from FG2 Urban NI expressed satisfaction with the food quality and high standard of care at a particular nursing home.

> *'' I've had a really good experience. My mum is in a nursing home in Newry. I have to say the level of care she gets is great. She does have dementia, but she would be very vocal. They do have good choice, 2 options, if she didn't like either option staff will always accommodate for example, bringing soup or sandwiches. My mum is quite happy where she is."*

d. Connections and comfort

The participants emphasised the importance of bringing in food that offers connections, comfort and a taste of home (or familiarity), which is not usually provided within the healthcare settings. The importance of food for the emotional and physical wellbeing of patients/residents was reflected in the conversations among participants. The act of bringing in home-made food is not just about nutrition but also about bringing a sense of normality and comfort to a loved one's

routine in a healthcare setting. "*My dad would smile when he eats a bit of chocolate. He is more alert, maybe even saying one word. So, it really is so important"* (FG1 Urban NI).

> *"All of us seemed to have said that we wanted to take in food that suited our loved one, home-prepared food because that is what they miss. A little bit of home is what they miss." (FG2 Rural NI)*

These findings reflect a common perception among participants that the standard of food in healthcare setting is often inadequate, lacking in nutritional value and not appealing to patients/residents. This reason has led many visitors to bring in food from outside to ensure that their loved ones receive better nourishment and comfort.

Theme 5: Food safety practices and concerns

The final theme that emerged from focus group discussions related to food safety practices and concerns. These will be analysed under the following four headings:

a. Selection/choice of food

b. Consumption

c. Storage

d. Reheating and disposal

a. Selection/choice

Focus group participants shared various responses regarding the types of food they brought into healthcare settings. These included sweet treats, homemade meals and beverages, tailored to the specific preferences and dietary needs of their loved ones in hospitals and care homes. Table 7 summarises the commonly brought items. Some participants preferred bringing home-prepared foods, like dinners, scones and smoothies, to ensure familiarity and nutritional value.

Table 7: Summary of types of food brought in healthcare centres by visitors

Dry foods	Hot foods	Dairy	Others	Fruits	Beverages
Biscuits Sweets Mints Hard sweets Flaxseed Nuts/seeds Scones Buns Bread/rolls	Homemade soup Dinner Savoury dishes Cooked food (e.g. stew) Fast food (e.g. Thai takeaways, McDonald's, Lebanese street food) Sandwiches	Ice-cream Custard Pudding Yoghurts	Vegetables Nuts/seeds	Chopped fruit Berries Grapes Stewed apple Fruit salad	Fizzy drinks Alcohol

More commonly brought-in items included: ice cream, custard, chopped fruit, McDonald's meals, sandwiches, snacks and drinks from shops. Home-prepared foods such as dinners, scones and smoothies were also frequently mentioned.

The frequency of bringing food ranged from daily to occasionally, with many participants noting that they brought food multiple times a week or whenever requested by their loved ones. The quantity of food varied from single portions to multiple servings, depending on the patient's needs and the participant's ability to bring food regularly.

Participants sourced their food from various places, including vending machines, fast-food restaurants, home kitchens, and nearby delis and shops. The primary reasons for bringing in food included dissatisfaction with hospital or care home food, the desire to provide familiar and preferred foods, and the need to supplement the nutrition provided by healthcare facilities. Additionally, participants aimed to bring comfort and improve the mood of their family members by providing foods they enjoyed.

Most participants indicated that their knowledge of food safety or advice received from the healthcare facility influenced their decisions on what foods to bring. They were cautious about food safety, particularly with perishable items and items requiring refrigeration, ensuring that food was either consumed immediately or properly stored to prevent spoilage. A minority of participants had a background in food safety or healthcare and were especially vigilant in following safety protocols. Overall, the responses highlight the participants' commitment to ensuring their family members received enjoyable and nutritious food, reflecting a blend of personal preferences, practical considerations and food safety awareness.

b. Consumption

The participants' discussions centred around how food is either immediately consumed or preserved for future use, typically beside lockers, refrigeration units, or freezers, if available. Nevertheless, results show that the storage arrangements of food items differed according to the specific ward and hospital. Participants observed that visitors frequently assumed full responsibility for storing food items, often without clear guidance from healthcare staff.

One participant recounted his encounters where hospital wards preferred not to have food items in their refrigerators, leading him to transport the food elsewhere. This participant also highlighted the recurring issue of his food disappearing from the hospital fridge. *"Wards didn't want anything in their fridges, so I travelled a lot to deliver the food. Tried to use fridge in hospital. Every time I left, it was gone"* (FG1 Urban NI).

The availability of facilities such as refrigerators and microwaves depend upon the resources available within the ward, leaving the visitors to manage food storage themselves. *"I don't know if there are any storage facilities. And we would bring home any food that wasn't consumed"* (FG3 Rural Ireland). There is no standard practice for dealing with leftover food, with over one-third of the participants observing instances where it was not promptly discarded, consequently giving rise to concerns over food safety.

The summary of actions taken when food is brought into healthcare centre is illustrated in Table 8 below using the most pertinent quotes as examples.

Table 8: Summary of actions taken when food is brought into healthcare settings

Situations	Action

Q1 Consumption What typically happens when you bring food to a patient or resident? Is it eaten immediately or stored for later consumption?	*"Typically, the food isn't checked. I take in bakery foods. Nobody responsible. We weren't informed no heed passed. Ward was quite full. No storage facilities for example, fridge there could have been a fridge in a kitchen. Don't know what happens with the unused food." (FG3 Rural Ireland)* *"I just bring food into her room, I'm responsible for what I bring in. Not sure about storage facilities, I've noticed if anyone else has been in and if they've brought in traybakes or something, whatever hasn't been eaten has been left there. Staff don't dispose of that." (FG1 Urban NI)* *"I don't know if there are any storage facilities I would not want to ask and bother people. And we would bring home any food that wasn't consumed." (FG3 Rural Ireland)* *"They don't check the foods they bring in and said that the staff are just delighted someone else is feeding the patients. Nobody has every checked." (FG3 Rural Ireland)*
Q2. Storage Do you give the food directly to a healthcare professional or do you store it away yourself? Do you label the food?	*"I will go straight to her room, let her eat some of the food, and then bring the rest of it down and put it into the fridge. However, staff didn't really monitor what we brought in." (FG1 Urban NI)* *"I will inform the staff and say, 'I've brought in an apple pie; would it be okay if we had a cup of tea with it?' They're normally okay with it, they would bring us plates. We eat a lot and if there's a little bit left, we will ask if anyone else wants it. If not, sometimes the staff will say they can put it in the fridge and save it for my mum for tomorrow." (FG4 Urban NI)*

Situations	Action
Q3. Storage advice and facilities Has anyone provided guidance or support for food storage? If yes, what guidance or support is offered (for example, refrigerator, kitchen, microwave, bedside lockers)?	*"There's no storage. Not that I need it. It stays in the drawer; the girls will look at it too we have an understanding. Some people have a small fridge within the room. From what I see, the home doesn't mind taking it and storing it." (FG5 Urban Ireland)* *"I just bring food into her room, I'm responsible for what I bring in. Not sure about storage facilities, I've noticed if anyone else has been in and if they've brought in traybakes or something, whatever hasn't been eaten has been left there." (FG4 Urban Ireland)* *"Don't remember seeing any information, nobody mentioned food storage facilities. I always checked if there was anything sitting out. My brother had a fridge but think it was the staff fridge, they also said to him if he wanted a takeaway, they would help get that." (FG6 Rural NI)* *"No, I often would have thought it would be good to have a mini fridge in individual rooms and if you had that things would be stored but would that encourage people to bring in more stuff. Never been challenged about bringing stuff in apart from in the early days but it was our responsibility to look at that. No-one communicated it to us." (FG6 Rural NI).* *"I've never heard of storage facilities available to family members. Not discussed with my brother. There was never any wasted, it was more containers and in the care home was individual packages so were ate there or kept." (FG1 Urban NI).*

Situations	Action
Q4. Reheating Do you know if unused foods are thrown out, or have you noticed instances when food has been left there for a period of time?	*"For Mum I would ask them to put yoghurts in fridge, get them labelled, Mum would know that it's there, if she wanted it, she would ask for it. Mum would know it's there. Label it, I know to do this from my background. Unused foods, she would bring them home." (FG7 Urban Ireland)* *"It was if my grandmother didn't finish something she would tell them to leave it, and then it would be left there for a while. You could hope she wouldn't eat it." (FG3 Rural Ireland)*

c. Storage/reheating

One of the primary challenges highlighted by the focus group participants was the lack of adequate food storage facilities at the healthcare centres. This issue raised significant concerns about food safety and wastage, particularly for perishable food items. Without proper storage, food that was intended to provide comfort and nutrition to patients/residents often becomes a source of stress for both visitors and patients/residents.

One participant noted the inconvenience and risks involved, explaining that she had *"never seen storage facilities, never seen a fridge, nobody ever offered and I never asked, they're so busy"* (FG3 Rural Ireland).

Participants often mentioned the lack of adequate storage facilities for the food.

One participant simply added, *"Never a facility to reheat – he takes a long time to eat"* (FG4 Urban NI). Additionally, a participant from the same group explained the amount of time she had to wait to ensure that her father's food was safely stored.

> *"Bought a table-top fridge for his room, kept it supplied with drinks and yoghurts... I took responsibility to check dates and make sure everything was okay." (FG4 Urban NI)*

Participants frequently noted the absence of clear guidelines or information regarding what foods could be brought in and how they should be handled. The

majority of participants raised issues relating to the proper storage of food: "*There were no storage facilities provided, and food often stayed in drawers or was disposed of by visitors if not eaten immediately"* (FG5 Urban Ireland).

In summary, the relevance of proper storage facilities in hospitals and care homes is a significant challenge for visitors who wish to bring in food. Perishable food items can spoil very quickly in warm ward conditions. Without access to refrigeration or appropriate storage solutions, ensuring food safety become difficult for visitors bringing in food. Participants took extra measures – such as travelling frequently or buying personal fridges – to manage the food they brought in for their family member at healthcare centres. This highlights the crucial need for improved infrastructure and support in healthcare settings to ensure that food brought by visitors can safely be stored and consumed.

Overall, action taken is contingent upon the policies of the ward, the availability of facilities and the proactive approach adopted by visitors in overseeing and supervising food-related matters. Table 8 above captures the variety of situations, responses and experiences shared by focus group participants regarding the handling and storage of food brought into healthcare settings.

Participants' awareness of food guidelines and policies influenced by personal experience and observations was significant, with participants sharing detailed accounts of how their individual experiences shaped their food safety practices when bringing in food to patients/residents. This was discussed by majority of participants across the 7 focus groups, indicating its widespread relevance and impact. On personal responsibility and food safety concerns, participants expressed concern about food storage and safety. One participant stated: *"I have never asked if it's safe. I would be worried about things not being put in the fridge if it wasn't eaten there and then*" (FG1 Urban NI). This participant expressed their personal responsibility towards ensuring food was consumed during the visit and not stored afterward as it could not be guaranteed if it would be stored correctly, indicating a lack of knowledge on the food safety procedures within the facility for this type of situation.

d. Disposal

Focus group participants stressed the importance of immediately disposing of food to prevent spoilage, stating "*if something was half eaten, I would put it in the bin in the ward. If it was liquid, I would give it to staff as disposed of as it could be messy"* (FG7 Urban Ireland).

Inconsistency in documentation practices was highlighted. In some places, there was a food chart to document what the patient ate, but in many others, there was no such system in place.

"Just to add, some places do it better than others. In the care home at the minute, we are given a food chart when we're in to say what we have given her etc" (FG2 Rural NI).

One participant noted:

> *"Nurses mentioned about food at own risk. Posters on walls. We encouraged Mum to eat the food. We were informed by the nurses to take leftovers home. No monitoring of how much food or type of food was taken. This is the hospital setting. Posters were at the shops on site that sandwiches should not be bought for patients." (FG2 Rural NI)*

This behaviour relating to the disposal of food items demonstrates a proactive approach towards upholding cleanliness and preventing any possible contamination. Participants also highlight the importance of bringing in safe food and the responsibility of ensuring it does not overburden healthcare staff. This shows an understanding of food safety practices and a proactive effort to comply with guidelines, even in the absence of clear instructions.

Participants across the focus groups expressed significant concerns about the monitoring and documentation of food safety practices in healthcare settings. The lack of proper monitoring and documentation was highlighted as a major issue that could potentially compromise patient safety. One participant described how they would leave evidence of what was brought in (such as banana skins or candy

wrappers) so that staff would know what their family member had eaten, but that there was no formal monitoring of the food consumed by patients/residents:

While nurses mentioned that food brought in was at visitors' own risk, there was no systematic documentation of the type or amount of food brought in. "*Typically, the food isn't checked... We were clearing out and we noticed that some of the old stuff we brought in was still there. Nobody was monitoring. Was at our own discretion"* (FG1 Urban NI).

Also, the importance of monitoring – especially in cases involving dehydration – was discussed. Participants noted the need for closer monitoring of what patients/residents consume (including drinks) to prevent issues such as dehydration, which can be common in these settings.

These concerns illustrate the need for improved monitoring and documentation practices to ensure the safety and wellbeing of patients/residents in healthcare settings.

Summary

This chapter discusses results from focus group discussions with visitors of vulnerable patients/residents, under the following themes:

- Theme 1: Food safety knowledge and understanding
- Theme 2: Awareness and effectiveness of food policy guidance
- Theme 3: Awareness and effectiveness of food policy communication
- Theme 4: Drivers of bringing food into healthcare settings
- Theme 5: Food safety practices and concerns

Despite the majority of participants displaying a good general knowledge of food safety, several discussed bringing high-risk foods to patients/residents – for example, sandwiches, takeaways, soups and hot meals from deli counters. Results also revealed that the majority of visitors were unaware of any food safety

policy governing the facility and that communication of these policies or guidance needs to be more effectively communicated by healthcare staff. The focus group discussions revealed 4 factors that lead visitors to bring food in from external sources. These included:

a. Food preferences and increased appetite

b. Supplementing nutrition

c. Limited choice and quality of in-house catering

d. Connections and comfort

Participants expressed concerns relating to a lack of storage facilities for foods brought into healthcare settings and expressed significant concerns about the monitoring and documentation of food safety practices in healthcare settings relating to foods brought in from external sources.

5 Stage 3: Interviews with managers and healthcare professionals

Introduction

The aim of the interviews with healthcare managers and supervisors was to explore the policies in relation to food brought in, and how they are implemented, as well as exploring factors that may affect the implementation of a policy on the management of food brought into healthcare settings.

Methods

Recruitment of healthcare managers/supervisors

The following recruitment methods were undertaken:

- Direct emails via Carehomes Ireland
- Direct emails via the research teams contacts
- Direct emails via the hospital collaborator

All healthcare managers/supervisors from IOI were recruited by the research team and invited to participate in the project. At each healthcare facility, the person in charge of research projects/policy directed the team to the best point of contact via email. If they expressed interest, they were sent the participant information sheet (PIS) and asked to complete a digital consent form for participation. Once they

had given consent, a time was scheduled for an online interview. Interviews were conducted in a one-to-one setting.

Healthcare managers and supervisors were recruited according to the following criteria. They must:

- Be involved in food policy development and/or support policy implementation
- Have an understanding of vulnerable patient/resident needs in relation to food
- Possess knowledge or experience of working on wards/in care homes

Thirty-six healthcare managers and supervisors were recruited for this stage of the project (21 from Ireland and 15 from NI). Further details of the sample are discussed within the results section.

Procedure and measures

Each interview was conducted by the research associate (RA) and began with an ice-breaker activity where participants were requested to introduce themselves by stating their current role and relevant employment history. The interview protocol can be found in the Appendix. Key topics covered within the guide included:

- Food brought into healthcare settings by visitors
- Food safety practices and perceptions
- Awareness, understanding and implementation of food safety guidance/policies

Each interview lasted between 55 and 65 minutes, and was audio and video recorded using Microsoft Teams. At the end of each interview, participants were thanked and paid an honorarium (£25/€25) for their time.

Ethical approval

Ethical approval for this study was granted by Ulster University (Ref 23/0038) and trust/hospital approval was granted from the NI NHSCT (IRAS 326494, NT23-326494-09), NI WHSCT (IRAS 326494) and from each hospital in Ireland independently (Sligo University Hospital, Cork University Hospital, Roscommon University Hospital, Letterkenny University Hospital, Cavan General Hospital and Tallaght University Hospital). Approvals were granted between July 2023 and January 2024.

Analysis

As with the focus group discussions, all interviews with healthcare managers, and supervisors were digitally recorded, professionally transcribed and uploaded to NVivo 10 (QSR International Pty Ltd Victoria, Australia) software for analysis. All data were coded and grouped to establish themes relating to the overarching aim of the project. Verbatim quotes are displayed, followed in parentheses by participant number, role and location (Braun et al, 2016).

Results

Participant characteristics

There were 36 one-to-one interviews with healthcare managers/supervisors (21 participants from Ireland and 15 participants from Northern Ireland). Of the total sample, 42% of participants worked in urban Ireland, 19% in rural Ireland, 22% in urban Northern Ireland and 17% in rural Northern Ireland. Participant characteristics are presented in Table 9. Under healthcare settings, “other” refers to a dysphasia coordinator and project lead working across all hospital settings and non-trust settings (for example, care homes) within one catchment area.

Table 9: Demographics of one-to-one interview participants

Demographic	Participants % (n)
Total	100% (36)
Healthcare setting	
Hospital	63% (23)
Residential/Care home (private)	28% (10)
Residential/Care home (funded)	6% (2)
Other	3% (1)
Location	
Urban Ireland Rural Ireland Urban NI Rural NI	42% (15) 19% (7) 22% (8) 17% (6)
Gender	
Male	3% (1)
Female	97% (35)
Age (years)	
25–34	25% (9)
35–44	28% (10)
45–54	33% (12)
55–64 Prefer not to say	11% (4) 3% (1)
Education status	
Secondary	3% (1)
A Level/Leaving Cert	3% (1)
College	8% (3)
Professional qualification	6% (2)
University degree	41% (15)
Post-graduate education	33% (12)
Prefer not to say	6% (2)
Length of experience (years)	
<1	6% (2)
1–2	3% (1)

3–4	10% (4)
5–6	6% (2)
7–8	9% (3)
9–10	10% (4)
10+	56% (20)
Length in current post (years)	
<1	10% (4)
1–2	22% (8)
3–4	17% (6)
5–6	9% (3)
7–8	6% (2)
9–10	36% (13)
10+	
Employment status	90% (32)
Employed full time	10% (4)
Employed part time	
Received food safety and hygiene training	
Yes	42% (15)
No	58% (21)

Six main themes emerged:

- Theme 1: Food safety practices
- Theme 2: Determining the level of food safety risk
- Theme 3: Challenges of food safety
- Theme 4: Difficulty adhering to professional advice and guidance
- Theme 5: Food safety guidance and communication
- Theme 6: Suggestions to improve food safety

Theme 1: Food safety practices

From the interviews, it was identified that food is brought into healthcare settings due to 4 main reasons:

a. Lack of food choice

b. Food preferences

c. Restricted mealtimes

d. Food as connection

a. Lack of food choice

Lack of food choice was commonly reported as a reason for why food is brought in across various healthcare settings. Specifically, within hospitals, it was mentioned that meals do not always suit all age groups of the population. This was highlighted among elderly patients by Interviewee 4 Urban NI:

> *"Elderly age, you know, I find some of the things on the menu like chilli con carne and things they might not really have even heard of."*

Similarly, menus being too generic and not accommodating for a wide range of ages was mentioned in relation to younger patients by Interviewee 6 Rural Ireland:

> *"Generally, the feedback of the quality of meals here is very good, but it's more, I think it's more geared to the elderly people, the choices, if you know what I mean, just your chicken, veg. Only recently now you're starting to see maybe the introduction of different things, like chicken curry and different choices, Jambons and stuff like that, later on in the day, which would probably suit the younger cohort a little bit more."*

b. Food preferences

Within interviews it was also mentioned that visitors and relatives bring in food due to the food preferences of a patient/residents. Of the 36 interviews, this was mentioned by 8 interviewees.

Similarly, bringing external food into the care setting due to personal preferences was echoed by several participants. For example, Interviewee 7 Urban Ireland:

> *"Some visitors are adamant that they get exactly what it is that they're looking for, even if that means they have to go and get it themselves."*

In addition, a minority of healthcare managers within hospitals highlighted that there was a preference for foods that are culturally appropriate for all patients. This is evidenced by Interviewee 6 Rural Ireland:

> *"We've had a few patients that are from, they're originally from Eastern Europe, they will not eat the food in hospital. They'll always eat from home, what their family bring in, and I wouldn't even know what it is they're bringing in."*

c. Restricted mealtimes

Specifically within hospitals, limited mealtimes was another reason why food is brought into the care setting and was mentioned by a minority of participants. This sub-theme was expressed by Interviewee 11 Urban Ireland:

> *"Timing of the meals, patients will have, their breakfast is at 8, and they'll have soup at 11, and then they'll have their lunch at half 12, and then their dinner is at 5. So, everything is very close together. So, a lot of the times, their lunch is kind of their main meal, but they've only had soup an hour or an hour and a half before that, so they're not very hungry then, that they might not eat at all, and then the dinner comes. I think the spacing of the food isn't really ideal either. They're not having enough time to get hungry for their lunch, and then they're having too much time after their tea, I suppose, until the next morning."*

d. Food as connection

Food as connection was mentioned by a minority of healthcare managers and was commonly acknowledged in care homes and residential facilities. Food being brought in by visitors provided comfort and familiarity to the patient and gave the visitor a sense of ownership in contributing to their care. Specifically, within care homes this was mentioned by Interviewee 1 Rural Ireland:

> *"People always want to bring something whether it's a way to connect food and tea and biscuits and stuff, that, you know, if you don't go into an Irish house without offering somebody a cup of tea, you know, put the kettle on, sit down."*

Similarly, this sub-theme was common within residential facilities as mentioned by Interviewee 1 Rural NI:

> *"Yes, we do have family sometimes who bring food for the guys. So, when they come in and visit them, I'm just thinking of a particular guy, sometimes mummy and daddy will cook a steak and then bring it over to sit with him and give him his steak."*

Theme 2: Determining the level of food safety risk

Under the theme of determining the level of food safety risk, interviewees commented on the following:

a. The types and frequency of foods brought into healthcare settings

b. The traceability of food safety

c. Storage and disposal management of foods brought into healthcare settings

a. Types and frequency of foods

Findings from interviews indicated that there are numerous types of foods that are brought into healthcare settings have been summarised into 6 categories: hot foods, dry foods, dairy, fruit, beverages, or other. They can all be categorised in terms of high risk or low risk (Table 10). High-risk foods were identified as foods that pose a significant food safety risk to vulnerable patients/residents. These included hot foods, dairy products and sandwiches (particularly those made with cooked meats or eggs). Low-risk foods included dry foods, fruit, and beverages. Interestingly, over half of the interviewees identified dry and hot foods as most common types of foods brought into vulnerable patients/residents. A minority of

interviewees reported food brought in from the remaining categories – beverages, fruit, dairy and other.

The frequency of food brought into healthcare settings varied from daily to once per week. This depended on the frequency of visits to the patient/resident from friends and family members.

Table 10: Summary of types of foods brought into healthcare settings

High-risk foods		
Hot foods	**Dairy**	**Other**
Home-cooked meals (soup and stews) Takeaways (burgers, chips, Chinese or pizza)	Ice cream Yoghurt Milkshakes Rice pots Cheese	Sandwiches Salads Couscous
Low-risk foods		
Fruit	**Beverages**	**Dry foods**
Bananas Strawberries Oranges Grapes	Fizzy drinks Alcohol	Sweets Chocolate Buns Biscuits Crisps Scones Donuts Bread

b. Traceability of food safety

A minority of interviewees highlighted that the "journey of food" for hot foods/home-cooked meals was a concern. Specifically, it was highlighted that it was difficult to determine the traceability of food items. For example, it is particularly difficult to know how the food was prepared, stored and transported before being consumed by the patient/resident. Specifically, concerns about this issue were held by in-house catering staff as mentioned by Interviewee 1 Urban Ireland:

> *"Catering manager doesn't like to see people bringing in food. She feels, you know, in order to comply with HACCP she cannot stand over food being brought in and she would be concerned around that and all of the requirements that she has to adhere to in providing food in-house to residents."*

This was echoed by other interviewees:

> *"One of the difficulties I would have is when somebody wants to bring in something that is prepared at home because there's no guidelines there as in there's no packaging, there was no temperature monitoring done on it for its cooking and cooling period so really it's an open minefield." (Interviewee 7 Urban Ireland)*

c. Storage and disposal of food brought into healthcare settings

Across all healthcare facilities, those located in Ireland were more likely to store food in fridges than those located in Northern Ireland. Foods were mostly stored in communal fridges on hospital wards or in care homes. A minority of participants highlighted that within residential/care homes residents would have access to a personal fridge within their room. Across the interviews, one-third of healthcare professionals highlighted inappropriate storage and disposal of foods as a concern. In addition, interviewees discussed how foods were also stored in lockers, drawers or wardrobes, highlighting concern about spoilage and inappropriate storage of high-risk foods, summarised by interviewee 7 Rural Ireland:

> *"When the residents' relatives bring in food, they tend to go straight down to the bedroom with it, give it to some of them, there's always some leftover in the room, and there's half-eaten sandwiches left in rooms, and it's difficult. Food is often left in lockers, or put in with a chest of drawers where people's socks and things would be."*

A further challenge relating to food wastage noted by healthcare professionals was focused on visitors of patients/residents bringing in too much perishable food, such as fruit. This was mentioned by interviewee 10 Urban Ireland:

> *"I suppose the volume of food sometimes, and just to explain in a nice way to the relatives, like if they were bringing in a large amount, if they wanted to, bringing in food, their relative, that they could bring in a small amount each day"*

In addition, the responsibility of management for food disposal can be deemed a "grey area" between healthcare professionals and residents' family members as highlighted by interviewee 4 Rural Ireland:

> *"It might be one family member but they might bring in, and if it's a large family they mightn't communicate with who brought in what or what's… you know, or some people don't look at dates. You know that kind of way. So, it does fall on us really if you see things that are near expiry. Fruit that's gone off or if the person was able to agree to it we'd say, 'Is it okay that we get rid of it?' – you know, if it's not safe anymore. And then if not, then we'd kind of wait for the family to come in and we'd say 'Can we dispose of it?'"*

Furthermore, some interviewees noted that foods stored within the facility are often only half-eaten before being discarded. This suggests poor management and an increase in wastage and a need for correct methods of disposal of foods in healthcare facilities.

It was interesting to note that within residential/care homes, one interviewee mentioned that residents are very conscious about food wastage. This may contribute to an increased volume of food stored within rooms. This was highlighted by interviewee 1 Rural Ireland:

> *"This generation… they're massively conscientious about food wastage. They will hide food in their rooms even though they're not going to eat it, but because they would be so mortified or*

embarrassed. Or, you know, it's drilled into them, you don't waste food or you'd get a smack at the side of the head. So they're very reluctant to throw away food, very reluctant, yeah." (Interviewee 1 Rural Ireland)

This interviewee also mentioned the importance of appropriate portion control to reduce food storage, but also to prevent anxiety among residents that may arise due to a patient/resident not being able to eat the full portion of food served.

"You have to be very careful about portion control with the residents in the home because if you give them too much, they are tormented with not being able to finish it but not wanting to finish it and then they can't. It's a trigger for major anxiety attacks in some residents that have had, say, unfortunate experiences of abuse or with not having enough when they were younger. It can bring up a lot of past trauma for them." (Interviewee 1 Rural Ireland)

Theme 3: Challenges of food safety

This theme highlighted the challenges of food safety which included the following:

a. Uncertainty regarding who is responsible for the management of foods in healthcare settings

b. Making the appropriate call for patients/residents with individual needs which may deviate from food safety policy in particular circumstances

c. Safety of patients/residents

a. Who is responsible for the management of foods in healthcare settings?

A minority of interviewees indicated concern that healthcare professionals do not have the capacity to take on the responsibility of managing foods brought into healthcare settings. For example, interviewee 1 Urban Ireland commented:

"Who is responsible? Who takes it on? I don't think care staff on the ground are going to take that responsibility so they're going to go to

a nurse manager to take the responsibility. So yeah, and like a lot of things it does fall on the nurse manager."

Furthermore, some healthcare managers did not feel that it was their responsibility to monitor food safety but rather believed it was the patients/residents relatives' responsibility. Results indicated that the person who brought the food onto the premises should be held responsible for the safe management, consumption and disposal of the food items.

b. Making the appropriate call concerning individual needs

The results indicated that some patients/residents have specific dietary or health requirements that may require deviation from the food safety policy to aid their recovery. Therefore, there needs to be a balance between food safety and the need to eat something. Such conflict was reported by interviewee 3 Rural NI:

"We had one incident not that long ago. So, their daddy didn't really like the food here. So, his family were bringing in some food because they felt that their daddy was losing too much weight, even though we had put everything in the process we could possibly do to help with his nutrition, and with the dietician and everybody, but the family persisted in bringing food in. Now, at that point he was starting to eat for them better than he was eating for us, and he would only eat their food. I did explain if something happened him, and he took an infection, or he became sick due to the food, of a high risk of food poisoning as well, but they still were keen and they still brought the food in, even though I'd spoke to them at length."

However, it was noted by healthcare managers that deviation from such policies is rare, and food brought into care settings from outside sources is only encouraged in such exceptional circumstances. Interviewee 3 Urban Ireland commented:

"The patient can get so down or depressed, stressed that things aren't working the way he or she would like them to. For such patients the dietitian will end up maybe talking to the family to find out how

else can we support that patient. So, if it comes up then that family knows something that will work then we'd say it's worth a try."

c. Safety of patients/residents

Across all healthcare settings, managers described being extremely vigilant of patient/resident allergies and stressed that bringing in food from outside the care setting resulted in an increased challenge in the management of those with allergies. This was mentioned by one healthcare professional regarding a resident with a nut allergy:

"It's just hard because sometimes we have visitors will come in and say they have a box of chocolates but the chocolate could possibly have nuts in it, and we have a wee lady who is allergic to nuts and they're like 'Oh, who wants a chocolate?' and try to hand them out and we're like 'No, please, they can't be consumed here.' And it's trying to explain to them without breaking confidentiality of the other resident as to why it can't be given out." (Interviewee 8 Urban NI)

Similarly, a potential allergic reaction was noted by interviewee 7 Rural Ireland:

"There was one time that one of the residents was very itchy, he was full of rashes and his daughter was bringing to him a sweet from the supermarket and I noticed that this was making the resident more itchy. And I kindly notified her that you should not bring this kind of food to your dad because this makes him itchy."

In addition, concern about dementia patients/residents consuming food that may be high-risk or spoiled was also mentioned by interviewee 7 Rural Ireland:

"You have the worry of people with dementia who wander, that they will go in and take a bite out of it. That's another worry you'd have, and we'd have 5 or 6 people who constantly walk, you know, that's one of their symptoms of their dementia, and they go in and out. They're looking for something, or they think it's their own room, and

if they saw a nice cream-cake there, they would be very tempted to just bite into it."

Theme 4: Lack of adherence to professional advice and guidance

This theme centred around residents/patients and visitors disregarding professional advice for patients/residents with dietary requirements and the concern about foods brought into the healthcare setting from external sources. Interviewees commented on:

a. Specific dietary needs

b. Patients/residents taking eating into their own hands

a. Specific dietary needs

Within hospitals, a minority of healthcare managers mentioned that some patients/residents may have specific dietary needs (dysphagia or diabetes). Therefore, foods brought into the wards from relatives and visitors may be inappropriate for the patient. Many healthcare managers described that they have a duty of care to the keep patients/residents safe, which includes asking visitors and relatives not to provide food that may harm the patient.

Similarly, the consequences of patients/residents consuming foods that are inappropriate for their dietary needs was echoed by interviewee 4 Urban Ireland:

"'Ah sure, it's only one chocolate bar' – but you could have 5 or 6 visitors coming in with a chocolate bar and sending someone's sugars through the roof. 'Ah sure, it's only one bottle of coke' – you know this kind of thing."

The same healthcare manager highlighted the consequence of alcohol consumption by a patient recovering from surgery.

"Drink-wise I had a problem with somebody bringing in alcohol to a patient one time, he happened to be in hospital over Christmas and his friends felt sorry for him, smuggled in drink in a 7Up bottle. His family couldn't

understand why he was out of it and I said because he's on heavy painkillers and someone's given him drink. I suppose people don't realise the consequences of what they're doing." (Interviewee 4 Urban Ireland)

b. Patients/ residents taking eating into their own hands

A minority of healthcare managers and supervisors working in hospitals reported that patients or residents frequently take eating into their own hands by ordering takeaways or purchasing and/or consuming fast food offsite. Specifically, the use of ordering takeaways through apps was mentioned by interviewee 6 Urban NI:

"Apps like Just Eat and things like that is so readily accessible now they can just go on their phone and order something and get it delivered to the hospital. And the services will deliver to the front door, so as long as the patient is able to go to the front door they will just pick it up themselves."

In addition, consumption of food offsite is a challenge, as described by interviewee 3 Urban Ireland:

"One man finds it very difficult with his dietary restrictions but had his dialysis, was brought back to the ward and he looked around and thought, 'I'm heading down the town' – and he did. He was away for 3 or 4 hours and he walked back up to the ward himself. He just went out to get fish and chips. And the same man is not meant to eat chips because they're not good for his potassium."

Theme 5: Food safety guidance and communication

Findings from interviews with healthcare managers and supervisors demonstrated the following:

a. Lack of awareness and implementation of a food safety policy within their care setting

b. Communication of food safety guidance to visitors

a. Lack of awareness and lack of implementation of food safety policy

Results from the interviews showed that most managers had a lack of awareness of a food safety and hygiene policy within their care setting, and/or did not implement the policy. The majority (20 of the 36 participants) could not recall if their setting had a policy or what it stipulated. A further 5 participants stated that while they had a food policy, they do not refer directly to it. Results indicated that participants generally inferred what was appropriate food safety practice based on their own knowledge or experience.

This was mentioned by interviewee 3 Rural NI:

> *"Policy-wise, protocol-wise, to be honest, I don't think we look at them, not that we don't look at them too often… It's one of the things that we're not going towards straight away. Everybody just naturally knows without having to look at a policy, risk assess, ensure patients' safety and reduce the chance of food poisoning."*

On the other hand, one participant demonstrated awareness of the policy. This was mentioned by interviewee 4 Rural NI:

> *"We do have a policy for bringing in food to the patients. I remember one is if you bring a takeaway food and you should be aware of the patient's safety. You should be aware that you buy it from, you know, it's not bad food or something like that that will not cause the patient to have diarrhoea or vomiting or something like that, and if that happens it's not the responsibility of the home, it was you who agreed to bring that food to your patient."*

Additionally, one participant demonstrated good knowledge of a food management policy where foods brought in by visitors is not usually permitted. However, inconsistent implementation was mentioned by interviewee 5 Rural Ireland:

> *"The policy is that it's not encouraged, but if there's a specific request then they have to meet with the manager. It's ignored a lot of the times"*

Difficulty with policy implementation was further echoed by interviewee 2 Urban NI:

> *"Again, within the nursing staff, when I was trying implement Mealtime Matters, some staff, some wards were very good… and other staff were going, 'We don't have time to do this, we've enough going on, catering need to come up, give us the food, we give it out.' So, you've the mindset of staff I think is probably going to be the bigger issue, because are we asking staff now to challenge people that are bringing food in. That the mindset with the staff – don't want to do anything over and above what they're required to do within their job role. So, it's difficult. The timing for anything like this can be crucial as to how you get the messages across."*

b. Communication to visitors

Within Northern Ireland, the Public Health Agency developed a regionally agreed framework called Mealtimes Matter which was commonly mentioned by participants within the interviews (Public Health Agency, 2024). The purpose of this framework is "to maximise user safety and ensure a high-quality experience always occurs at every meal, drink and snack time" (Public Health Agency, 2024). Results indicated that this framework has raised awareness among staff and visitors about the types of foods brought in by external sources. Staff and visitors are reminded of the framework via a posters and pop-up stands across the wards

On the other hand, some healthcare managers reported that posters were not effective in communicating food safety messages and instead preferred using leaflets or booklets as a communication strategy. This was mentioned by interviewee 11 Urban Ireland:

> *"We do have some posters on the ward, but we found that the posters, a lot of the time, just got walked past, and people didn't really pay any mind to them… What we find in particular, like we find on our*

ward, that the little booklets do work, little leaflets, kind of little booklets with information. They do work."

It was interesting to note that within residential/care homes, managers reported that food safety practices are often communicated through the residents' contract or via email/newsletters. This was reported by interviewee 7 Rural Ireland:

"When they get the contract of care there's a lot of detail stated in there. The bringing in of food is just sort glossed over in the contract. It just says, you know, speak with a manager. That's how that's covered in the contract of care. There is an information leaflet as well, you know, telling them about the facilities within the home, and one of them is, you know, if you wish to have a fridge in your room, speak with a manager and it's all speak with a manager."

Overall, this highlights the need for good food safety practice for foods brought into healthcare settings from external sources. In addition, simple communication strategies should be recommended to ensure that visitors are aware of high-risk foods and the potential harm to patients/residents.

Theme 6: Suggestions to improve food safety

Interviews with healthcare managers and supervisors demonstrated various suggestions of how food safety could be improved within healthcare settings. The suggestions centred around 3 key areas, as illustrated in Table 11:

a. Communication channels

b. Staff training

c. Provision of physical resources

Table 11: Suggestions to improve food safety

Suggestion	Action
a. Communication channels	• Information provided in hospital admission pack or to next of kin for care home residents • Awareness campaign of high-risk foods such as TV advertisement or social media campaign • Posters/digital posters to educate visitors on high risks from foods brought into care settings • QR codes to scan which communicate messages in video format
b. Staff training	• General food safety policy to help staff challenge high-risk foods brought in by visitors/relatives • Food safety/hygiene training recommended for all staff members within residential/care homes • Training for nursing staff to educate them on what food is appropriate to be brought into the care setting
c. Provision of physical resources	• Patients/residents have their own designated fridges to store food appropriately • Communal area for families and relatives within hospitals to reheat food brought into care settings

a. Communication channels

Suggestions for communication channels included posters, information packs and public health awareness campaigns detailed by interviewee 1 Urban NI:

> *"I think that looks like a public health awareness campaign. You know how you've got the one, the ad at Christmas with the turkey and everybody knows that ad, I do think it's something on a scale like that. Short, sharp, you know, be safety aware with food and drinks across our care settings, here are the risks."*

Interviewee 3 Rural Ireland mentioned the use of videos accessed by QR codes:

> *"We just found giving out a load of leaflets people just become, they're busy new mums or whatever and they're not gonna look at them… whereas if it's something on a QR code, little videos and they seem to have responded well to the use of those."*

b. Staff training

Most healthcare managers and supervisors interviewed mentioned that additional staff training in relation to food safety would be beneficial. This is unsurprising as 58% of interviewees reported that they had not received any formal food safety and hygiene training (Table 9, demographics). Specifically, the need for food safety and hygiene training among nurses was voiced by interviewee 3 Rural Ireland:

> *"Well, I suppose even for the nurses as well it's a lack of knowledge about it to see what we can do and what is right to bring in. So, as I said, I know the catering staff are fully knowledgeable about it but that's because they're in their area. So, I suppose should it be a regular yearly up-to-scratch of 'These are the safety precautions on this type of food and that's why it should be looked at.'"*

c. Physical resources

A minority of healthcare managers suggested that physical resources such as individual fridges and cooking facilities would be useful to improve food safety, as this may give the responsibility back to the visitor. However, food safety risks including the cleanliness and hygiene of the communal space, food hygiene, patient safety and infection control are some factors that would require consideration if implemented. Importantly, this measure could increase burden on healthcare staff.

Summary

Results from interviews with managers and supervisors identified 6 themes in relation to foods brought into healthcare settings:

Theme 1: Food safety practices

Theme 2: Determining the level of food safety risk

Theme 3: Challenges of food safety

Theme 4: Difficulty adhering to professional advice and guidance

Theme 5: Food safety guidance and communication

Theme 6: Suggestions to improve food safety

Some healthcare managers and supervisors did not feel that it is their responsibility to monitor food safety but rather believed it is the responsibility of relatives of patients/residents. It was interesting to note that 58% of interviewees reported not having received any formal food safety and hygiene instruction. The majority (20 of the 36 interviewees) could not recall if their setting had a policy or what it stipulated. Furthermore, responsibility for the management of food disposal was considered by some to be a “grey area” between healthcare professionals and residents’ family members. Results demonstrated various suggestions of how food safety could be improved within care settings, including better communication channels, enhanced staff training and provision of physical resources.

6 Stage 4: Follow-up focus group discussion

Introduction

This chapter discusses the results of Stage 4 – the follow-up focus group with visitors (n=5). Within this focus group, discussion participants were provided with an overview of topline results from the previous stages of the study – Stage 2 (focus group findings) and Stage 3 (interviews with managers and healthcare professionals). Based on the data collected within this study, focus group participants were presented with some proposed recommendations to improve food safety of foods being brought in to vulnerable patients/residents in healthcare settings on the IOI.

Methods

Recruitment of visitors

The following recruitment methods were undertaken:

- Original cohort of visitors (Stage 2) re-contacted
- Direct emails via the research team's contacts

Five visitors were recruited for this stage of the project (4 from NI and 1 from Ireland). Further details of the sample are discussed in the results section.

Procedure and measures

The discussion was led by the research associate (ER) and began with an activity where participants were requested to introduce themselves by stating their name

and a brief comment about the person they visit/care for. Key topics covered within the guide included:

- Presentation of visitor focus group discussion findings (Stage 2)
- Presentation of results from interviews with managers and healthcare professionals (Stage 3)
- Recommendations to improve food safety within hospitals and residential/care homes

The discussion lasted 60 minutes and was audio and video recorded using Microsoft Teams. At the end of each discussion, participants were thanked and given a £25 Amazon voucher as an honorarium for their time.

Analysis

The discussions were digitally recorded, professionally transcribed and uploaded to NVivo 10 (QSR International Pty Ltd Victoria, Australia) software for analysis. All data were coded and grouped to establish themes relating to the overarching aim of the project. Verbatim quotes are displayed, followed in parentheses by participant number, role and location (Braun et al, 2016).

Results

Participant characteristics

In total there were 5 participants in the follow-up focus group, 4 participants from Northern Ireland and one participant from Ireland. Of the total sample, 60% of participants were urban NI, 20% rural NI and 20% rural Ireland. Participant characteristics are presented in Table 12

Table 12: Demographics of focus group participants

Demographic	Participants % (n)
Total	100% (5)
Location	
Urban Ireland	20% (1)
Rural Ireland	0% (0)
Urban Northern Ireland	60% (3)
Rural Northern Ireland	20% (1)
Gender	
Male	40% (2)
Female	60% (3)
Age (years)	
25–34	40% (2)
35–44	20% (1)
45–54	0% (0)
55–64	40% (2)
65 or older	0% (0)
Prefer not to say	0% (0)
Education status	
University degree	40% (2)
Post-graduate education	60% (3)
Employment status	
Employed full time	80% (4)
Employed part time	20% (1)
Relationship of patient/resident to you	
Family member	80% (4)
Friend	0% (0)
Other	20% (1)
Length of time patient/resident in healthcare setting (years)	
<1	80% (4)
1–2	20% (1)

Demographic	Participants % (n)
Frequency of visit to the patient/resident in healthcare setting?	
Daily	60% (3)
Weekly	0% (0)
Twice a month	20% (1)
Monthly	0% (0)
Prefer not to say	20% (1)

Recommendations to improve food safety in hospitals and residential/care homes

Recommendations to improve food safety within healthcare settings centred around 4 key themes:

- Theme 1: Raising awareness of high-risk foods
- Theme 2: Food safety policy
- Theme 3: Communication
- Theme 4: Staff training

Theme 1: Raising awareness of high-risk foods

All of the participants agreed that an advertising campaign would be useful to increase awareness of high-risk foods and the potential danger of consumption among vulnerable patients/residents. Participants agreed that this awareness campaign should show a thought process of “stop and think” about high-risk foods (particularly hot foods) prior to entering a hospital or residential/care home. In addition, participant 3 Urban NI, also mentioned that social media would be beneficial to advertise a campaign.

Theme 2: Food safety policy

All participants agreed that a clear food safety policy should be implemented by healthcare settings across the island of Ireland. However, it was evident that a

policy of “no external food” would not be achievable. One participant felt strongly that they needed to take their family members eating into their own hands because there was little support within the care setting. This is described by participant 2 Rural NI:

> *“When people are sick and in hospital, they should be provided with nutrition that will help them get better. We shouldn’t have to take stuff in.”*

Due to the increased risk of food poisoning associated with high-risk foods (such as hot foods), all participants agreed that a policy where no hot foods are permitted would be good when visiting vulnerable patients/residents. This was supported by participant 5 Urban NI:

> *“I completely agree that you don’t know how many miles away that person is from the hospital. So how long has it been in the open and not warm before it gets that fridge?”*

On the other hand, participants were supportive of a policy where prepackaged foods with a clear expiry date could be brought onsite and given to patients or residents within care settings. Furthermore, many participants agreed that a “dump as you leave” policy would be achievable to ensure that foods were not stored in lockers, wardrobes or drawers. However, some participants highlighted that older people may take a long time to eat or that the patients/residents may not be hungry and would like to store the food for later.

As a result of visitors not disposing of foods, it was acknowledged that responsibility for disposal may then fall on the healthcare staff. To help reduce the burden on healthcare staff, one participant suggested employing a “food supervisor”. This was mentioned by participant 2 Rural NI:

> *“Or you had someone who did food supervisor supervising, someone who ensured any food come in was handled properly. And I know that’s cost because that’s a body that has to be paid. But I think it is*

so important. I saw so many patients over the 15 weeks who did not eat because they were elderly."

Theme 3: Communication

All participants agreed that a clear process of communicating food safety policy to visitors is required pre-visit. Specifically, participants agreed that communication strategies such as emails and newsletters would work well. Although participants agreed that posters and leaflets were good communication strategies, they highlighted that appropriate location of such items was important, to have the greatest impact. For example, participant 2 Rural NI mentioned:

"In the ward, when it's on the walls, I only saw it because we were standing waiting quite often in the hallways… but if that had been outside the entrance door with a big sign… everybody would see."

Additionally, some participants suggested that a food safety policy could be communicated during a ward check-in. Interestingly, all participants agreed that a visual aid such as a decision tree showing foods commonly brought into care settings would be useful to classify high- and low-risk foods. It would be envisaged that this resource would improve food safety knowledge among visitors, while also reducing the number of inappropriate foods brought into vulnerable patients/residents. Furthermore, participants agreed that within care homes it would be helpful for visitors to sign in/out foods at the reception desk to ensure staff are aware of foods being brought onto the premises. Specifically, participant 1 Urban Ireland expressed that this would be beneficial:

"Yeah, I think it's great. You know, there's certain foods permitted, certain foods aren't brought here. And to get that into the mindset then people might be very happy to write it down. They might try and sneak it in… but you'd hope it might be a benefit."

Theme 4: Staff training

Most participants agreed that food safety and hygiene training for all staff members who handle food would be useful. Specifically, one participant mentioned a lack of knowledge of food safety and hygiene among staff within the care setting where their vulnerable relative lived. On the other hand, another participant believed that additional staff training would not be well-received and highlighted that it may put the responsibility of food safety onto staff rather than visitors. This was mentioned by participant 4 Urban NI:

> *"Staff do so much already, like, and I think if you start trying to load them up with all these extra procedures and this and that and the other. I don't know that a lot of people will be accepting of it, but that's just my view.".*

Within the findings all visitors felt that bringing food from external sources into care settings was their own responsibility rather than the responsibility of staff. Therefore, the provision of staff training of the food safety policy may be more achievable than providing all staff members with Level 2 Food Safety and Hygiene training.

Summary

In summary, the results from the focus group identified 4 themes in relation to recommendations to improve food safety within foods brought into healthcare settings:

- Theme 1: Raising awareness of high-risk foods
- Theme 2: Food safety policy
- Theme 3: Communication
- Theme 4: Staff training

7 Discussion

Introduction

The aim of this project is to investigate current perceptions and practices relating to the storage, handling and food safety of high-risk foods brought into vulnerable patients in healthcare settings on the island of Ireland. Results from this study will provide a better understanding of the management of food brought into healthcare settings in both Ireland and NI. They may help to inform efforts to improve awareness of food safety among visitors and education/training among healthcare professionals. In addition, results can contribute to the development of food management policies within various healthcare settings (residential/care homes and hospitals). This chapter will discuss the results of the key stage of the project under the following themes:

- Result 1: Food safety knowledge and practices
- Result 2: Current evidence on food safety policies and practice
- Result 3: Training and education
- Result 4: Management and policies
- Result 5: Hygiene practices and monitoring

Result 1: Food safety knowledge and practices

The focus group discussions revealed a good awareness of food safety principles among visitors to healthcare settings. Participants accurately identified high-risk food categories, including dairy products and meats, and understood the significance of appropriate storage and cooking temperatures. However, the

findings highlighted various concerns related to food safety practices such as the transport, storage and disposal of food within healthcare settings.

Although visitors predominantly chose food items that facilitated ease of transportation and storage, this meant that they were responsible for reheating, storing and disposing of food safely due to inadequate support and resources within healthcare environments. This situation contrasts with the recommendations presented in the literature, which advocate for better infrastructure, including refrigerators and microwaves, to promote the secure handling of food (Sivasankari et al, 2020). The absence of adequate storage facilities and clear guidelines often resulted in inappropriate storage of food (unrefrigerated), thereby increasing the risk of spoilage and contamination. This issue of inappropriate storage of foods was also highlighted by healthcare managers who reported that foods were stored in lockers, drawers or wardrobes.

To address these issues, both visitors and healthcare managers suggested practical solutions to improve food safety. This included establishing a clear food policy relating to the management of external food and more effective communication of the food management policy with visitors. In addition, improved storage facilities and targeted educational campaigns to raise awareness about food safety among visitors were suggested. Improved food safety training for staff was also suggested.

These recommendations are consistent with the literature's call for comprehensive food safety policies and the need for regular training and support to ensure these policies are effectively implemented. By aligning practice with the evidence-based recommendations found in studies like those by Vincenti et al (2018) and Bhattacharya et al (2019), healthcare settings can significantly improve the safety and quality of food provided to patients. Within follow-up focus groups, all participants agreed that an advertising campaign would be useful to increase awareness of high-risk foods and the potential danger of consumption among vulnerable patients/residents. Furthermore, all participants agreed that a clear process of communicating food safety policy to visitors is required pre-visit.

Communication strategies that participants thought would be effective included emails, newsletters and visual aids such as a decision trees to classify high- and low-risk foods.

Result 2: Current evidence on food safety policies and practice

The research revealed significant gaps in both policy and practice concerning food safety within healthcare settings which may pose a significant risk to vulnerable patients/residents, due to their increased likelihood of developing prolonged illness as a result of foodborne illness (Lund, 2015). The rapid evidence assessment highlighted a critical need for standardised food safety training and education across various healthcare environments.

Result 3: Training and education

The study revealed significant gaps in training and education concerning food safety practices in healthcare settings particularly in relation to high-risk foods brought in by visitors from external sources. Almost 60% of managers and healthcare professionals interviewed reported that that they had not received any formal food safety and hygiene training, which may account for a lack of knowledge of food safety among the participants. This contrasts with Mallah et al (2023) and Oludare et al (2016), which stressed the necessity of integrating HACCP-specific training and periodic refresher courses into the curriculum for healthcare professionals, especially nurses.

Additionally, innovative training methods, such as the “piggyback training approach” suggested by Bhattacharya et al (2019), which uses video-based interactive sessions, have proven effective in enhancing food handler hygiene and should be widely implemented. Such comprehensive training programmes are essential for ensuring that healthcare staff can maintain high standards of food safety, reducing the risk of foodborne illnesses among vulnerable patients. Although the majority of healthcare managers were interested in receiving food safety and hygiene training, some felt that taking on the responsibility of

monitoring food safety in addition to their current job would be beyond their capacity.

Result 4: Management and policies

Interviews with managers and healthcare professionals revealed deficiencies in the implementation and oversight of food safety policies, which are critical for preventing foodborne outbreaks. Specifically, in hospital settings, policies mentioned by healthcare staff referred to nutrition and safety for those with specific dietary needs such as dysphagia and diabetes. Therefore, it was unsurprising that participants across healthcare settings within the IOI reported a lack of a clear and consistent food safety policy addressing the management of food brought in from external sources.

Moreover, in settings which had a food management policy, many managers either lacked knowledge of the policy or were inconsistent with implementing the policy, which in turn may significantly heighten the risk of foodborne illness among patients/residents. The importance of management staff in ensuring food safety is echoed in studies like those by Al Banna et al (2022) and Sivasankari et al (2020), which emphasise that appointing trained personnel, such as food service supervisors and dietitians, is critical for improving food safety practices in healthcare settings.

In addition, focus group findings indicated significant gaps in the awareness and effectiveness of food policy guidance. Similarly, many participants were either unaware of existing food safety policies or had never received clear instructions regarding safe practices. This highlights the importance of awareness programmes targeting both visitors and staff and has been previously used to promote hygiene practices within hospital restaurants (Draeger et al, 2019). Therefore, effective management and policy enforcement are vital components of a comprehensive strategy to safeguard patients in healthcare settings.

Within follow-up focus groups, all participants agreed that a clear food safety policy should be implemented by healthcare settings across the IOI. However, it

was agreed that a policy of “no external food” would not be achievable as many of their relatives found mealtimes and food choices within hospitals to be limiting.

Result 5: Hygiene practices and monitoring

Hygiene practices and regular monitoring are crucial in maintaining food safety standards within healthcare settings, particularly when considering the behaviours of visitors bringing in food. The study’s focus group discussions with visitors revealed that while participants generally understood food safety principles, there were significant gaps in the practical application of these principles, particularly in the areas of food storage, reheating and disposal.

This aligns with findings from Vincenti et al (2018), which emphasised the importance of adhering to food safety practices in handling Ready-To-Eat (RTE) foods, as a failure to do so can lead to the contamination of food. Moreover, regular hygiene checks, as advocated by Rattanasena and Somboonwatthanakul (2010), and consistent inspections, highlighted by Dudeja and Singh (2017), are essential for ensuring that food safety standards are consistently met.

Additionally, Draeger et al (2019) highlighted the need for awareness programmes targeted at hospital visitors to reduce unhygienic practices, which could compromise the safety of food brought in for patients. These practices, combined with rigorous infection control policies and daily monitoring, as suggested by Sivasankari et al (2020), are critical to preventing foodborne illnesses in healthcare settings.

In summary, this study explored food safety practices in healthcare settings in Ireland and Northern Ireland. Key findings revealed an absence of clear policies regarding the management of external food and the failure to implement such policies where present, leading to an increased risks for patients. Furthermore, a lack of food safety knowledge and training among healthcare professionals was evident. Visitors understood basic safety principles but were unaware of specific policies within settings. Effective hygiene practices, supported by regular

monitoring and inspection, are necessary to protect vulnerable patients from the risks associated with improperly handled food brought in by visitors.

8 Conclusion

This study has provided insights into the awareness and implementation of food safety advice among visitors to vulnerable patients/residents and healthcare professionals on the IOI. In addition, it has identified current practices relating to foods brought into healthcare settings from external sources.

The **rapid review assessment** highlighted the lack of research addressing foods brought into healthcare settings and/or bought in healthcare settings. Also, the grey literature indicated a lack of general advice and guidance for visitors and healthcare staff when dealing with foods brought into healthcare settings by visitors. The policy review provided initial evidence on the inconsistencies of advice given to visitors and healthcare professionals across healthcare settings but did find that the majority of settings had some form of food policy/advice for visitors.

The **focus group discussions with visitors** allowed for an in-depth exploration of the awareness of food policy and advice, their understanding of food safety and the difference between high-risk and low-risk foods as well as evidence on their practices relating to food brought into healthcare settings from external sources.

The **interviews with managers and healthcare professionals** provided an insightful account of the current challenges faced by healthcare professionals in implementing food safety advice to visitors and to patients/residents. These interviews also revealed awareness and understanding of food safety advice among managers and healthcare professionals and presented some practical solutions for improving visitor and staff awareness of existing policies.

The **follow-up group discussion** with visitors provided further insight into how to best support healthcare professionals and visitors when advising them on foods brought into healthcare settings.

This study is unique in that it is the first of its kind, specifically in relation to its qualitative approach in understanding visitors' and healthcare professionals' experiences of bringing foods for vulnerable patients/residents from external sources into healthcare settings. This study has provided the baseline evidence to support visitors and healthcare professionals in raising their awareness of and encouraging the adoption of food policies that promote the safe identification, storage and disposal of high-risk foods from external sources in healthcare settings. The insights gained though this research have led to development of several recommendations which centre on raising awareness of this issue.

Added value and anticipated benefits of research

There has been no comprehensive study of food brought into healthcare setting from external sources on the IOI, highlighting the need for this research. Furthermore, the study highlighted a lack of research on this topic more generally across Europe and further afield. The significance and relevance of this research can be demonstrated in its impact on policy, attitudes, awareness and capacity.

Policy impacts

Project findings have indicated a lack of consistency in food safety advice, as well as in policies and their implementation across healthcare settings on the IOI. Visitors and healthcare professional were receptive to receiving more advice or guidance on this issue. An IOI-based set of guidelines from Safefood for visitors on the identification, storage and disposal of high-risk foods might encourage visitors to think before they bring or buy foods when they are visiting a patient. In addition, promotion of level 1 or 2 food hygiene training among healthcare professionals might also encourage staff to increase their knowledge and confidence, for explaining to visitors why only certain foods can be brought in to vulnerable patients/residents.

Attitudinal impacts

We found that while the care of the vulnerable patient was always prioritised by the visitor and the healthcare professional, tensions existed between them. While visitors discussed their desire to comfort patients/residents through the foods that they brought into the healthcare settings, this sometimes resulted in tensions with the healthcare staff who had a duty of care to keep the patient safe and free from risk of infection or illness. While both groups wanted the best outcome for the patient, relationships could be improved through food policies being more proactively communicated to highlight any food safety risks to the patient and an agreement to what foods are allowed and how they will be managed and disposed of while in their care.

Awareness raising

Project findings indicated a lack of general awareness of policies regarding food brought in among visitors and healthcare professionals. This project has provided baseline data in:

- Types of high-risk food brought into healthcare settings
- Awareness of any food policy or advice given by the healthcare setting or beyond
- Challenges around the safe storage and disposal of food items
- Key communication messages required to support the learning and implementation of food policy/advice on food brought in from external sources by visitors

More generally, this project has provided the opportunity to raise awareness of this issue among hospitals, care homes and visitors to vulnerable patients/residents. It is recommended that a multi-media consumer-directed campaign is developed to help visitors better understand this issue. For healthcare professionals, addressing how food safety advice is communicated to visitors pre-visit (for example, at

patient induction, at sign-in to the facility) is something that requires further consideration.

Limitations of the research

This study commenced in 2019 and was stalled due to the Covid-19 pandemic. This resulted in difficulties in accessing input from vulnerable patients/residents to understand their lived experience of foods being brought in to them by visitors.

However, this allowed us to conduct a deeper investigation with healthcare professionals using interviews to determine the challenges in implementing food policy within a healthcare setting. The rapid review focused on food brought into healthcare settings and may have led us to exclude more general studies on food safety and food allergens. However, we argue that to ensure rigour in addressing the overarching research question we applied the correct search to the rapid review. Had further time allowed, the study would have benefitted from a more recent update and detailed analysis to the policy scoping across the IOI.

We found it difficult to recruit visitors for the focus groups in Ireland. However, in agreement with Safefood, we changed one of the proposed focus groups to do a follow-up discussion on our proposed recommendations. Having reached data saturation at 5 we felt this change benefitted the study. The interviews with healthcare professionals provided many insights which have helped to frame our recommendations. Participants in the healthcare profession were generally under pressure, with many not wishing or being allowed to avail of the incentive offered. For this reason, we were concerned they would be too pressed for time to provide full reflective responses or might provide socially desirable answers for fear of being identified. However, all participants were fully engaged in this study, highlighting a genuine interest and/or concern about this issue.

On reflection, the greatest limitation with this research has been gaining ethical approval across the IOI healthcare settings. This process took a total of 16 months to finalise. (We originally anticipated a 6-month turnaround time.) The delay was due to the fact that each hospital or trust area had their own ethical review

committee and process. This was time-consuming and impacted on the remainder of the study in terms of time to analyse and draft the report.

Future research

This project provides a basis for further research in the following areas:

- The design, development and implementation of a consumer survey of visitors of vulnerable patients/residents to determine their knowledge of food safety, awareness of food policy and practices related to food from external sources brought into healthcare settings. This survey would provide a baseline which could be used to measure the effectiveness of any communications or campaigns relating to this issue in the future.
- The design, development and implementation of an intervention within healthcare professionals to improve their understanding of food safety and the associated risks of food brought in from external sources by visitors.
- An investigation into patients'/residents' lived experiences of food access within a healthcare setting and the associated food safety risks.

9 Recommendations

The project offered recommendations that address the critical gaps identified in current food safety advice for visitors and healthcare professionals across IOI. Recognising the significant role that proper food handling and storage play in safeguarding patients' health, the recommendations are structured around key interventions aimed at enhancing food safety through targeted awareness, education, improved facilities, policy development and consistent implementation.

Recommendation 1
Development of a food policy across all healthcare settings

Based on the results of this study, it must be noted that a no-food policy would not be accepted, which is why a clear approach is needed. Policies should consider:

- Clear simple information for visitors across all healthcare settings, through a co-design approach
- Clear descriptions of high-risk foods including perishable items, and temperature-controlled foods
- A visitor protocol for selecting and transporting foods into healthcare settings (for example, low-risk foods, cool bags for transport, sign-in of food)
- A visitor protocol for storage of foods within healthcare settings, where storage is available
- A visitor protocol for the safe disposal of food items upon exiting the premises

- A staff protocol for monitoring of food brought into healthcare settings (where feasible and when storage facilities are available)
- A member of staff assigned to the monitoring of food policy implementation

Recommendation 2

Development of a visitor awareness-raising campaign to support healthcare professionals

Key messages should emphasise the importance of choosing appropriate foods to bring vulnerable patients/residents when visiting. The messages should consider:

- Defining both high-risk foods and nutritious low-risk foods in clear and accessible language
- Encouraging visitors to choose wisely and store safely with easy-to-follow steps or a decision tree to guide their choices
- Information support on high-risk food and potential consequences for patients/residents if they consume these foods
- Identifying other ways to connect and show care for patients/residents beyond bringing gift foods (for example, puzzles, magazines, games, photographs)
- Encouraging visitors to consult directly with the appropriate staff if they are concerned about a patient's food intake

  Communication materials should use leaflets, posters (although effect may reduce over time) information packs and social media.

Recommendation 3

Development of support and training for healthcare professionals to improve their understanding of food safety and hygiene practices

Support and training should be based primarily on the policy in place in their setting:

- Ensure managers are aware of the food policy within their setting, are satisfied with its appropriateness and promote it among staff
- Establish regular annual food safety training for relevant staff to refresh their knowledge of safe food practices – tailored to foods brought in from external sources
- Make available online level 1 food hygiene training
- Promote level 2 food safety and hygiene courses among staff

Recommendation 4

Further research on food brought into healthcare settings from external sources

Proposed research should consider:

- The design, development and implementation of a baseline consumer survey of people visiting vulnerable patients/residents to determine their knowledge of food safety, awareness of food policy and practices related to food from external sources brought into healthcare settings
- An updated scoping review and full evaluation of food policies across healthcare settings post-Covid
- The design, development and implementation of a training intervention within healthcare professionals to improve their understanding of food

safety and the associated risks of food brought in from external sources by visitors

- An investigation into patients'/residents' lived experiences of food access within a healthcare setting and the associated food safety risks

Recommendation 5

Improve the choice of food provided in healthcare centres to reduce the need for outside food

Healthcare settings should consider:

- Appropriateness of in-patient catering services
- Increased communication between dietitians and nursing staff on the appropriateness of food brought into healthcare settings

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Appendix One

Overview of studies within the academic review

Authors and year	Aim of study	Methods	Key findings and future recommendations
Al Banna et al (2022)	To assess the food safety knowledge, attitudes and practices of food service staff in Bangladeshi hospitals.	A cross-sectional study was conducted among 191 food service staff from 7 different hospitals in Dhaka and Chattogram from October 2021 to March 2022 using pre-tested questionnaires.	Participants from private hospitals and participants working in a hospital that had a food service supervisor and dietitian in charge of food service operations had more positive attitudes and better practices regarding food safety. Hospital management should consider these factors for enhancing food handlers' knowledge and increase training and supervision on food safety practices to reduce foodborne diseases and outbreaks.

Authors and year	Aim of study	Methods	Key findings and future recommendations
Bhattacharya et al (2019)	To ascertain the impact of a video-based educational intervention programme and administrative measures on improvement in personal hygiene of food handlers in hospital.	Checklist-based scoring and physical examination were conducted with food handlers (n=103) working in a tertiary care hospital. Scores were collected at baseline, and after intervention 1 and intervention 2.	Personal hygiene among food handlers can be significantly improved using video-based interactive training methods and administrative measures with no extra or minimal cost. This approach is recommended in kitchens across the healthcare system, and it is also recommended that health checkups, supportive supervision and training be increased for food handlers generally to maintain optimal health.
Draeger et al (2019)	To evaluate health professionals' unhygienic practices and the stages of behaviour change in Brazilian public hospital restaurants.	Observations of hygiene equipment and supplies and of customer hygiene practices were conducted as well as a customer survey.	It is recommended that an awareness programme focused on customers of hospital restaurants should be developed to reduce unhygienic practices. New policies for proper hygiene practices in hospital restaurants should also be promoted.

Authors and year	Aim of study	Methods	Key findings and future recommendations
Dudeja and Singh (2017)	To assess the role of regular inspections on food safety in hospital premises.	Monthly inspections of eating establishments (n=36) inside hospitals were conducted over a year and corrective actions were suggested. Each eating establishment was given a score on conformance to Food Safety and Standards Regulations (in India) 2011. The study took the form of an intervention-based before-and-after study.	Regular inspections can improve the food safety standards in eating establishments in hospitals. Ownership by hospital authorities and employment of permanent trained government employees for management may be related to better scores/conformance to the Food Safety and Standards Regulations.
Dudeja et al (2017)	To ascertain the determinants of knowledge, attitude and practices of food handlers regarding food safety and to document the effectiveness of an intervention package on food safety.	Hospital food handlers (n=264) were involved in an intervention with baseline data collected and observations recorded 2 months after intervention. The intervention involved educational resources (manual, film, documentary) on food safety.	The intervention package was useful in improving knowledge, creating a positive attitude and enhancing the food safety practices of hospital food handlers.

Authors and year	Aim of study	Methods	Key findings and future recommendations
Feldman et al (2011)	To examine the potential risk of food contamination in selected skilled nursing and assisted living residences using bacteria indicator tests for Listeria spp., Salmonella spp. and E. coli.	Food samples were collected from 11 nursing and assisted-living facilities.	There is a need for further research on food safety practices in eldercare settings. A larger study is recommended and further research should test samples for contamination at different control points (receiving, before preparation and upon serving) to make definite connections between specific practices and food contamination.
Luu-Thi and Michiels (2021).	To analyse and document the microbiological safety and quality of ready-to-eat foods in hospital and university canteens in Hanoi, Vietnam.	420 ready-to-eat food products from 21 canteens were sampled in July 2018 and May 2019.	Findings indicate frequent problems with the microbiological quality and safety of these canteen foods in Hanoi and serve as guidance for policy makers, environmental health officers and food microbiologists to develop and implement better control measures to ensure food safety of canteen food in Vietnam.
Mallah et al (2023)	To assess the level of knowledge regarding food safety among oncology nurses, as well as their attitudes and practices in private hospitals in Lebanon.	A self-administered questionnaire was completed by oncology nurses (n=134) working in 18 private hospitals.	There is a need to develop standardised food safety curriculum and training necessary to allow oncology nurses to contribute to the education of cancer patients and decrease their risk of foodborne infection.

Authors and year	Aim of study	Methods	Key findings and future recommendations
Oludare et al (2016)	To assess the knowledge and food handling practices of nurses in the food chain to patients in the hospital wards.	A semi structured questionnaire was administered to respondents (n=340) in 26 wards.	Findings revealed a decline in knowledge and good food safety food handling practices over time. Therefore, it is recommended that regular training on safe food handling procedures is mainstreamed into the training curriculum of staff nurses in health care institutions.
Palupi et al (2020)	To describe knowledge, attitudes and practice of hygiene and sanitation and the contributing factors in food handlers of a psychiatric hospital.	Mixed-method study:: 1. A self-administered questionnaire distributed to food handlers (n=37) to measure knowledge and attitudes. 2. Observations of hygiene and sanitation practice conducted using a checklist. 3. In-depth interviews (n=11) carried out with food handlers as well as supervisors of food production and distribution at the Nutrition Unit.	Findings indicated that knowledge and attitudes on hygiene and sanitation were generally good but training programmes were recommended to further improve practice.

Authors and year	Aim of study	Methods	Key findings and future recommendations
Rattanasena and Somboonwatthanakul (2010)	To examine the pathogenic bacterial contamination in foods sold in hospital cafeterias.	Foods were evaluated for contamination with Escherichia coli, Staphylococcus, Salmonella typhimurium and Streptococcus faecalis. 33 different types of ready-to-eat foods and 7 types of freshly-made foods examined.	Need to increase awareness among healthcare authorities that ready-to-eat cafeteria foods that are heavily contaminated with pathogenic bacteria may be harmful to healthcare professionals and visitors and may result in nosocomial infections of the patients. The routine check of hygiene of foods sold in hospital cafeteria could help to reduce the possibility of patients being exposed to pathogenic bacteria and therefore the incidence of nosocomial infections.
Sivasankari et al (2020)	To investigate the incidence of entry of pathogenic bacterial infection in food service institution areas among food handlers.	Swabs from hands and stool samples were collected from 62 food handlers working indifferent food facilities (28 male, 34 female).	Stringent infection control policies, daily monitoring, proper personal hygiene and productive means of training all workers are important to control intestinal diseases.

Authors and year	Aim of study	Methods	Key findings and future recommendations
Vincenti et al (2018)	To compare the microbiological quality of ready-to-eat foods found in community canteens versus hospital canteens in Rome, Italy, focusing on detection and quantification of Enterobacteriaceae and the antibiotic resistance of these bacteria.	Ready-to-eat foods were collected from 2 hospital canteens and 4 community canteens in Rome from 2011 to 2016. Room temperature samples were collected from ready-to-eat foods that had not been cooked or reheated and from foods that had been cooked or reheated. Microbiological analysis and antimicrobial susceptibility testing conducted.	The prevalence of multi-drug-resistant strains was higher in the community canteen samples (50%) than in the hospital canteen samples (33.3%). Hygienic processing and handling of foods is important for both hospital and community canteens.

Appendix Two

Focus group protocol

Screening questions

1. Are you aged 18 or over? (Y/N)

2. Is the patient or resident you visit deemed vulnerable (such as an elderly person, person with cancer, pregnant woman, chemotherapy and transplant patient, person with an underlying medical condition or an autoimmune person)? (Y/N)

   If yes, please specify.

3. Where does the patient or resident you visit currently reside?
   - Residential/care home
   - Hospital
   - Other (please specify)

4. Address of hospital or care home you visit a patient or resident.

5. Relationship of patient or resident to you:
   - Family member
   - Friend
   - Other (please specify)

6. Frequency of visits:
   - Daily
   - Weekly
   - Monthly
   - Yearly

7. On your last visit to a patient or resident in a hospital or care home did you bring an item of food? (Y/N)

   If yes, please specify the item(s).

8. Does the patient/resident you visit follow a specialised diet (for example,

gluten-free, Halal, etc)? (Y/N)

If yes, please provide details.

9. Please add any additional information you feel may be relevant

Demographic variables

1. Email address
2. Mobile number
3. Date of Birth
4. Gender
    - Male
    - Female
    - Other, please specify
    - Prefer not to say
5. Ethnicity
    - American Indian or Alaska Native
    - Asian
    - Black or African American
    - Native Hawaiian/ other Pacific Islander
    - White
    - Multiple ethnicity/other (please specify)
6. Education level
    - No formal education
    - Bachelor's degree
    - Professional degree
    - Doctorate
    - Current student
    - Other (please specify)
7. Employment status

Retired

- Employee

- Self-employed

8. Religion
    - Christian (e.g. Catholic, Protestant or any other Christian denominations)
    - Buddhist
    - Hindu
    - Muslim
    - Jewish
    - Sikh
    - No religion
    - Any other religion (please specify)

Appendix three

Focus group protocol

Visitors/caregivers of patients/residents in care homes and hospitals in NI & IRELAND (F2F/online via MS teams).

Introduction

- Reconfirm oral consent and consent to digitally record the group discussion. Start recording.
- Brief introductions, provide background to the study and purpose of the focus group.
- Inform participants of focus group structure and length of time.
- Confidentiality: everything that you say is confidential. We ask that you do not share what others have discussed with people outside of this group.
- Any questions/queries?

Ground rules

- First, there are no right or wrong answers. We are interested in your experiences and perspectives.
- Second, you do not have to agree with everyone else in this group if that is not how you really feel. We expect people will have different views on these questions.
- Third, we want you to feel comfortable saying good things as well as critical things. We are not here to promote a particular way of thinking. We just want to understand your viewpoints.
- Fourth, we ask that you talk one at a time.

- Consider other ground rules (such as turning mobile phones off if possible).

Ice-breaker

- I would like to start by learning more about each other. Can you introduce yourself and provide name and location of the care home/hospital you visit; type of vulnerable patient/resident you visit (e.g. cancer/elderly); and the length of time you have been visiting the patient/resident.

Activity 1 aim: o build rapport within the group and gain insight into participants prior knowledge, understanding and perceptions of food safety.

Questions to prompt discussion:

- When I say the words ‘food safety’ what comes to mind?
- Why is food safety important?

Moderator adds participants responses to slide to create/display a visual representation (mind map/spider diagram) of their knowledge, understanding and perceptions of food safety.

Note. Firstly, explore visitors’/caregivers’ food safety practices/behaviours and perceptions, then assess their knowledge of food safety. This enables us to find out if their knowledge of food safety informs their decision-making/practices/behaviours in relation to food brought into healthcare settings for patient/resident consumption.

Topics to be covered (from the tender):

- Types of food and level of risk
- Storage facilities available
- Awareness and understanding of food safety policies

- Identification of any potential risks within the care home

Food safety practices

- **Permission** required/check with staff (e.g. nurses) before bringing food/drink in for patient/resident

- **Reasons** for bringing in food/drink (e.g. gift; nutritional/dietary needs and preferences; encourage eating via familiar foods/special diet for medical/cultural/religious reasons) or not bringing in food/drink (increases risk of food becoming contaminated/possibility of compromising patients/residents wellbeing)

- **Frequency** (how often e.g. daily/weekly/monthly), **type** (fruit/biscuits/meals; hot/cold; RTE/reheated) **amount** (e.g. . single/multiple portions) of food/drink brought in

Activity 2 (image based projective technique) aim: to assess participants' understanding of more/less harmful foods. A selection of high-risk and low-risk foods that visitors typically bring into patients/resident will be displayed in picture format (high-risk foods such as meat or fish sandwiches, stews, pies, eggs, ; low-risk foods such as crisps, crackers, chocolate) and participants will decide whether it is a 'high-risk' or 'low-risk' food, explaining their rationale. Participants will also identify, categorise and discuss other foods (not included in our list) that they bring into visitors/patients. The moderator will scribe these foods onto the diagram.

- **Sources** of food/drink – prepared and cooked at home/away from hospital premises or purchased in shop/canteen/vending machine

- **Time of consumption** – food brought in consumed immediately/without delay or require ward refrigeration/reheating/stored for consumption later

- Availability of and access to **food storage facilities** or space for**:**

    - Food to be refrigerated (e.g. ward refrigerator, kitchen)
    - Food to be reheated (e.g. microwave)
    - Other food (e.g. receptacles on/in bedside lockers)
- Management/handling/monitoring of food brought in:
    - **Who** is responsible for the management of food brought into hospital/care home by visitors (i.e. visitors/HCWs or both)?
    - **Labels** provided/used so that food brought in for refrigeration can be labelled with patient's name, date and time food brought in.
    - Refrigeration **temperatures checked**. Time-temperature data **logging** of refrigerator usage? Visitor might not know this, but the moderator can ask if they have seen any readily available documentation relating to this.
    - System in place to review refrigerator **content** (daily) and **dispose** of unused foods (after 24 hours)? Who disposes of the refrigerated goods?
- Adherence to use-by dates
- **Risk assessment** undertaken/completed if allowed to bring in food from home to be reheated (so that clear processes have been agreed to minimise risk and responsibilities for managing the process defined and documented).

Awareness and perceptions of food safety guidance/information/resources/ recommended practices to maintain patient/resident safety

- **Sources of information** about food safety? (e.g. media, TV, brochures, conferences, nursing staff, other)

- **Hospitals/care homes provide food safety guidance** (including food brought in from external sources)?
- **What advice/guidance** is provided in relation to food brought in? What are you encouraged/discouraged to do if you bring in food? What is/not acceptable? (e.g. not to bring in high-risk foods or foods that require reheating because of the risk to patient safety; ideally food should be in a single portion size that the patient/resident can eat without delay or without requiring storage; foods listed in the high-risks foods discouraged and the risks associated with such foods made explicit; food brought in should ideally be low-risk food products)?
- **Who** provides guidance/support to ensure foods brought in are safely managed (i.e. Nursing Team, Ward Team, Ward Sister, Senior Nurse Manager, Infection Prevention and Control Team)?
- **How** are food safety guidance/policies (i.e. Safe Management of Food Brought into Hospital Settings for Individual Patient Consumption Policy) **communicated** to visitors/caregivers in hospitals/care homes (e.g.. verbal or written/both; information leaflet, policy)? How often/ongoing?
- Is food safety a **concern** for patients/residents/staff?
- Do you **follow** the food safety guidelines? **Why/do you think** it is important to follow the recommended food safety practices (prevent disease transmission and protect patient/resident health)?
- What **role** do caregiver/visitor have in reducing the risk of foodborne infections on the ward or in the care home and among vulnerable patients/residents?

Food safety knowledge

Assess level of food safety knowledge via a quiz/poll:

- What temperature should foods be refrigerated at to ensure they are safe to consume (below 5°C, below 8°C, below 10°C)?
- The use-by date is the best indicator that food is safe to eat – – Y/N
- RTE food products should be consumed within two days of opening – Yes/No/How soon should RTE foods be eaten after purchase?
- Do you think elderly people/cancer patients are more vulnerable to foodborne illness?
- What types of food should be eaten or avoided by patients/residents vulnerable to foodborne illnesses?

A short validated food safety knowledge scale/quiz would be great here if one could be found in the literature or maybe Safefood might know. I think we need to ensure within this short quiz, we include questions on the 5 C's of food safety: cook, clean, cross-contaminate, chill and check.

Closing

- Thank participants for sharing their experiences and perspectives.
- End with an opportunity for participants to ask questions (time permitting).
- Direct/provide leaflets and resources on food safety from the Safefood website (https://orders.safefood.net/collections/protect-yourself-from-food-poisoning)

Appendix Four

Demographic questions

1. What gender do you identify as?
    - Male

- Female
- Other
- Prefer not to say If other, please specify.

2. What is your age?
    - 18-24
    - 25-34
    - 35-44
    - 45-54
    - 55-64
    - 65 or older
    - Prefer not to say
3. Which of the following best describes your level of education?
    - Primary
    - Secondary
    - GCSE/Junior Certificate
    - A Level/Leaving Certificate
    - College
    - Professional qualification of degree level
    - University degree (B.Sc., B.A., etc)
    - Post-Graduate education (M.A., Ph.D., etc)
    - Prefer not to say
4. Which of the following categories best describes your employment status?
    - Employed full time
    - Employed part time
    - Self-employed
    - Student/studying
    - Prefer not to say

Professional data

1. Which of the following best describes the location you work in?
    - Rural Ireland
    - Urban Ireland

- Rural Northern Ireland
- Urban Northern Ireland
- Not sure
- Prefer not to say

Please note that “urban” refers to cities or larger towns which are quite densely populated, (more than 10,000 residents), whereas “rural” areas are outside cities and towns, and are less populated (less than 10,000 residents) – for example, villages, smaller towns or fringes, hamlets or more isolated regions. We wish to ensure representation for all types of regions which is why we are asking this question.

2. Please state your job title.

3. What type of healthcare setting are you employed?
    - Residential/care home (private)
    - Residential/care home (state-funded)
    - Hospital
    - Other

If other, please specify.

4. Length of service in the hospital/care home sector across your career to date:
    - less than year
    - 1-2 years
    - 3-4 years
    - 5-6 years
    - 7-8 years
    - 9-10 years
    - 10+ years
    - Prefer not to say

5. Please state the length of experience in your current post:
    - less than year
    - 1-2 years
    - 3–4 years

- 5-6 years
- 7-8 years
- 9-10 years
- 10+ years
- Prefer not to say

6. Have you ever attended food safety and hygiene training at work? (Y/N)
   If yes, was this an unaccredited course developed by the hospital/care home provider? (Y/N)

   If yes, please state what level of qualification you have completed for food safety and hygiene training (e.g. level 2)?

   If yes, please state the year you last completed food safety and hygiene training.

   - 2023
   - 2022
   - 2021
   - 2020
   - Prior to 2020

   If no, have you ever been offered the opportunity to participate in food safety and hygiene training within your current role?

7. Please add any additional information you feel may be relevant

Please enter in your contact details below so that the researcher can follow up with you regarding any information relating to this study.

- First name:
- Surname:
- Email:
- Mobile number:

Please note that the main contact person who will be in touch with you regarding this study is Dr Stephanie Maguire who is the researcher associated with the

project. If you have any questions, please feel free to contact us at **s.maguire1@ulster.ac.uk**

Interview protocol for HCPs in hospitals and care homes (Draft)

HCP's food safety practices and perceptions in relation to the management of foods brought into hospitals/care homes from external sources (e.g. visitors/relatives) for patients/resident consumption.

Introduction

- Moderator and participant have cameras on unless they are uncomfortable doing so or there is an issue (e.g. poor internet connection meaning screen keeps freezing).
- Ensure participant can hear the moderator clearly and vice versa.
- Reconfirm oral consent and consent to digitally record the interview. Mention anonymity of reporting of findings. Start recording.
- Brief introductions, provide background to the study and purpose of the interview.
- Inform participant of interview structure and length of time (20-30 minutes).
- Confidentiality: everything that you say is confidential.
- Any questions/queries?

Ground rules

- First, there are no right or wrong answers. We are interested in your experiences and perspectives on food brought into healthcare settings from external sources (e.g. visitors/caregivers/relatives).
- Second, we want you to feel comfortable saying good things as well as critical things. We are not here to promote a particular way of thinking. We just want to understand your viewpoints.
- Consider other ground rules (such as turning mobile phones off if possible/or put on silent).

Ice-breaker

I would like to start by asking you to tell me about your role/caring responsibilities in the hospital/care home you currently work.

Now, I want to move on to discuss food brought into healthcare settings from visitors:

- Other than hospital/care home staff, **who else** brings/gives food/drinks to patients/residents?
- From your experience…
- How **often** do visitors bring in food?
- What **types** of foods do they bring? (Might need a prompt.)
- What **quantity** of food?
- Where are foods **sourced?** (Prompt – are they brought from home or from local shops/takeaways.)
- **Why** do you think relatives/visitors bring in food(s)?

Healthcare professionals' food safety practices and perceptions

- Do you have a **role/responsibility** in relation to foods brought into patients/residents from visitors?
- Does your organisation have any **food safety measures** in place on your ward (?) for foods brought in by relatives/visitors:
- Are **foods checked & certified as safe** before consumption by patient? If not, why not? Or is this not policy?
- Are there food **storage facilities** are available to patients and visitors? If yes, can you explain this process? Who has **access**?

- Is there a system in place to ensure foods brought in are **managed safely** (e.g. data logging/records/fridge checks/foods discarded)? (Question might not be needed dependant on previous answers.)
- Are there any food safety **policies/procedures/principles** you implement/follow (in relation to food brought in) (e.g. Safe Management of Food Brought into Hospital Settings for Individual Patient Consumption Policy/HACCP standards to manage food safety)?
- Do you think it is **important** to adhere to these guidelines. If so, why?
- Do you **experience any difficulties** implementing the policy (if one exists)?
- Have there been any **food safety incidents** within the hospital/care home in the past 12 months (related to foods brought by relatives/visitors)?

If yes, **can you explain the incident**.
Have there been any changes to policy/process as a result of this? Explain

- What **challenges/difficulties** (if any) do you think there are in relation foods brought in for patient/resident consumption?
- Do you think that any **improvements/changes are needed** (if any) in relation to management of food brought in (e.g. policy/practice level)? **Suggestions** How this could be done? Who would need to enact these changes?
- Have you ever undertaken **food safety/hygiene training** to support you to safely manage foods brought in? (Possibly touched upon in professional data collated prior to interview.) What is expected from you? Would you been keen to have more staff training in this area?

If interviewing person responsible directly for the **food safety** policy, ask:

- How was the policy developed?
- Where did they seek information to help inform the policy?
- When was it last updated/reviewed and by whom?
- What are the key principles within the policy (in regards to food storage)?
- Are there any challenges they are aware of with staff or visitors adhering to the policy? Is there anything they feel needs changed or updated to make a stronger policy? How is it communicated?
- Can you provide a copy of the policy post-interview?

*If they do not have a policy, do they feel a policy is needed?

Introduce sections. For example, in this section, I now want to explore visitors' **awareness, understanding and implementation of food safety guidance/policies**

- **How do visitors know if they are permitted/not permitted** to bring in food for patient/resident consumption?/What **food safety advice is communicated to visitors** in relation to bringing in food to hospital/ward/care home? Can you tell me where they access this information (example.g. website, discussion with nurse, posters,).
- In what way is food safety guidance communicated to visitors (posters/information leaflets/1-1)?
- Could food safety advice/guidance provided to visitors be **improved, and if so, how**? When communicating other types of information to visitors/patients (for example, updates, visiting hours) have there been any successful tools/platforms (for example, instant messaging/emails/posters, etc) **used which you feel have been successful in engaging with visitors/patients?**

- Who do you think should communicate this information (and why)?

Note. Safefood is keen to understand the best way to support staff in delivering food safety messages.

- Do you have any additional comments on this topic before we end the interview?

Closing

- Thank participant for sharing their experiences and perspectives.
- Inform participant how/when they will receive their £25/ Euro for taking part in the study.

End with an opportunity for participants to ask questions (time permitting).