A competency-based evaluation of a Postgraduate Certificate in Infection Prevention and Control (2020-2023)

October 2025

Leading Healthcare Providers

Skillnet

UCC

Coláiste na hOllscoile Corcaigh

University College Cork, Ireland

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Glossary of abbreviations

AMR	Antimicrobial Resistance
AMS	Antimicrobial Stewardship
ECDC	European Centre for Disease Prevention and Control
HSE	Health Service Executive
IPC	Infection Prevention and Control
PG	Postgraduate
TA	Thematic analysis
UCC	University College Cork
WHO	World Health Organization
LHP	Leading Healthcare Providers

Foreword

Infection prevention and control (IPC) is a cornerstone of safe healthcare delivery across all settings. Nowhere is this more essential than in long-term residential care facilities (LTCFs), where residents are particularly vulnerable to healthcare-associated infections. In Ireland, it is estimated that 4.4% of residents in these settings acquire infections during care (HPSC, 2017), many of which are preventable with appropriate IPC systems and training. The COVID-19 pandemic further exposed the fragility of IPC measures in LTCFs, where the impact was both devastating and disproportionate.
In response to the urgent need for specialised IPC training during the pandemic, Leading Healthcare Providers (LHP) Skillnet partnered with the School of Public Health at University College Cork (UCC) to develop a Postgraduate Certificate in IPC. The programme was designed specifically to support nurses working in LTCFs, a sector under immense pressure and at heightened risk during the early waves of COVID-19.

Crucially, LHP Skillnet secured funding from Skillnet Ireland, which responded rapidly and decisively, enabling the swift development and launch of the programme. This timely intervention meant that the first cohort commenced in September 2020, just six months after the pandemic reached Ireland. This initiative provided an essential support to the sector, ensuring that frontline staff could access high-quality, context-specific IPC training when it was most needed. It has also led to the development of a Master of Science programme in IPC within UCC, supported by LHP Skillnet. This provides an additional pathway for learners to further develop their expertise in IPC, whilst remaining in the long-term care sector.

This report, “A Competency-Based Evaluation of a Postgraduate Certificate in Infection Prevention and Control (2020–2023): A Mixed-Methods Study”, presents a comprehensive evaluation of the programme’s development, implementation, and impact. It reflects on how collaborative, needs-driven educational responses can support national IPC priorities, enhance the delivery of care, and contribute to a resilient, better-prepared healthcare workforce.

We extend our sincere thanks to the learners, educators, member companies, and sector partners whose commitment and collaboration have made this programme possible. We hope the insights shared in this report will contribute to continued improvements in IPC education and to the advancement of safe, evidence-based care in long-term residential settings.

Carmel Kelly RGN, MEd SE, FFNMRCSI

Network Director

Leading Healthcare Providers Skillnet

Executive Summary

Backround

Infection prevention and control (IPC) support is required in all healthcare settings to ensure compliance with relevant policies and procedures. It is estimated that 4.4% of residents in residential care facilities acquire an infection in care that they did not have before entering the institution. The COVID-19 pandemic disproportionately affected residents of residential care facilities and appointment of designated IPC professionals for each long-term care institution has been recommended to address this problem

In response to the COVID-19 pandemic and the need for IPC expertise in 2020 Leading Healthcare Providers Skillnet supported the development of a Postgraduate Certificate in IPC in the School of Public Health, University College Cork to support the training of IPC practitioners to support the long-term residential care setting.

Aim

The aim of this report was to evaluate and explore the impact of completion of a PG Cert in IPC on clinical practice in long-term residential care facilities (LTRCFs).

Methods

A mixed methods approach was used which incorporated both quantitative and qualitative data collection. Quantitative data included, student feedback, programme advisory panel feedback, external examiner feedback and an IPC competency-based questionnaire. Qualitative data were collected using an IPC competency-based semi-structured interview guide.

Findings were explored, compared and contrasted to provide an insight into the quality of the programme, student experiences and practical outcomes in the clinical setting.

Summary of Findings:

Student evaluations conducted during the programme indicated that the students felt their experience, assessment and potential for the programme to support career progression to be very good / good in the majority of cases. Programme Advisory Panel and External Examiner feedback was positive over the three years investigated. Questionnaire responses indicated that graduate experiences were positive with over 95% of participants rating their experience on the programme to be good or very good and over 90% of participants indicated that the support they received from the course team to be good or very good. Participants indicated they were satisfied they met the learning outcomes and competencies outlined in the programme in over 80% of cases. Post graduate experiences from the qualitative interviews were mapped to the competencies of Leadership, Education, Clinical Practice and Quality Improvement and Patient Safety. The competency of Microbiology and Surveillance did not emerge from the qualitative interviews but was evident in the quantitative data collection.

Conclusion

Participation in the PG Cert in IPC supported graduates in the practical application of competency-based IPC in their work settings. Feedback indicates that increased knowledge, competency, leadership skills and confidence have had a positive impact on IPC application in the residential care setting.

About Leading Healthcare Providers (LHP) Skillnet

LHP Skillnet was established in January 2008, it is a not-for-profit Business Network co-funded by Skillnet Ireland and network companies. Skillnet Ireland is funded from the National Training Fund through the Department of Further and Higher Education, Research, Innovation and Science. Of the 70 Skillnet Ireland Business Networks, LHP Skillnet are the only Network dedicated exclusively to supporting the private healthcare sector. They do this through the provision of high-quality, sector-led, subsidized training and education, research, and new programme development.

Fig 1: Elaine Molony

Elaine Molony

RGN, BSc. Nursing, Completed PG Cert IPC 2021-2022
MSc. IPC (2022-2025)

Driving IPC Excellence in Long-Term Care Through Postgraduate Education

Following completion of the Postgraduate Certificate in Infection Prevention and Control (IPC) at University College Cork, two colleagues and I were equipped with the skills and confidence to lead meaningful, evidence-based improvements in our nursing home. The programme provided a solid foundation in IPC principles, leadership, and quality improvement—empowering us to implement sustainable change.

Key Workplace Impacts

Improved Hand Hygiene and Personal Protective Equipment (PPE) Compliance

- Introduced a targeted education campaign with visual cues and regular audits.
- Achieved a 35% increase in hand hygiene adherence within six months.
- Appointed 12 Hand Hygiene Facilitators, trained and recognised during World Hand Hygiene Day.
- Designed a pull-up banner illustrating PPE donning/doffing steps, boosting staff compliance.

Enhanced Environmental and Equipment Protocols

- Collaborated with housekeeping to revise cleaning schedules.
- Developed a shared equipment cleaning algorithm based on best practice evidence.

Simulation Training and Communication

- Introduced monthly outbreak simulation drills, improving staff readiness for COVID-19, influenza, and norovirus scenarios.
- Launched a quarterly IPC newsletter to share audits, updates, seasonal alerts, and celebrate staff efforts.

Scaling Best Practice Across Evergreen Care Group

Upon becoming General Manager in 2024, I made extended IPC improvements across multiple sites:

- Provided training in hand hygiene, AMR, outbreak management, and cleaning protocols.
- Led IPC audits and supported action planning.
- Established an IPC Special Interest Group (SIG) across homes to share learning and coordinate responses.
- Community and Professional Engagement
- Integrated IPC awareness into Sunhill's Dementia Café, promoting hand hygiene to families and visitors.
- Joined IPC Ireland and the Infection Prevention Society (IPS).
- Attended national and international IPC conferences and joined a Care Home SIG for peer learning.

Outcomes

- Reduced Healthcare Acquired Infections and no significant outbreaks at Sunhill in the past year.
- Increased staff engagement and confidence in IPC practices.
- Consistent IPC standards and collaboration across Evergreen Care facilities.

Concluding Remarks

The PG Cert IPC has had a lasting, organisation-wide impact—enhancing safety, building leadership capacity, and embedding a culture of high-quality infection prevention. It has also ignited a personal passion for IPC that continues to shape my professional growth and the care we deliver.

Fig 2: Pull up banners designed to improve awareness regarding appropriate use of Personal Protective Equipment

Fig 3: Staff tuning blue and educating residents on AMR Led by Sarah Beth Fay, Graduate PG Cert IPC, UCC

Fig 4: Richard Bryne

Richard Byrne

RGN, BSc. Nursing, Completed PG Cert IPC 2021-2022
MSc. Gerontological Nursing, MSc. IPC (2024), FFNMRCSI

Advancing IPC Leadership and Innovation Through Postgraduate Study

After completing the Postgraduate Certificate in Infection Prevention and Control (IPC) at University College Cork (UCC) in 2022, I was invited by the programme co-ordinator to progress to the newly approved MSc IPC. I completed the MSc in the first year it was running (2022–2023), which deepened my understanding of evidence-based IPC practice and empowered me to lead improvements within residential care.

Key Workplace Impacts

Implementation of Evidence-Based IPC Systems

- Introduced new IPC routines, committees, and procedures within our nursing home, even in the absence of formal national guidance.
- Developed systems tailored to older adult care that were positively received by regulators and contributed to regulatory compliance under Regulation 27.
- Research-Informed Practice
- My MSc research explored the value of IPC champions from the perspective of frontline staff.
- Findings confirmed that staff highly valued these roles—reinforcing their inclusion in our IPC strategy and validating peer-led models of support.

Staff Education and Sector-Wide Knowledge Sharing

- Began delivering IPC Masterclasses through LHP Skillnet, simplifying regulatory language and helping residential care staff translate IPC guidance into practice.
- Masterclasses focus on demystifying IPC compliance, increasing confidence among care home staff in achieving and sustaining high standards.

Outcomes

- Improved staff engagement in IPC practices.
- Strengthened internal systems and frontline leadership in infection prevention.
- Enhanced capacity for rapid, informed decision-making in response to IPC challenges.
- Recognition by external regulators of the home's proactive and innovative IPC approach.

Conclusion

The MSc IPC provided me with the knowledge, leadership skills, and confidence to drive sustainable change in residential care. It shifted my view of IPC from a compliance task to a dynamic, resident-focused quality improvement process. I would strongly recommend this programme to anyone in healthcare who wants to build expertise, lead innovation, and make a meaningful impact in infection prevention and control.

Introduction

Background

Healthcare-associated infections (HCAI) in the long-term and residential care setting were estimated at 4.4% by the national HALT report carried out in 2016 (HPSC 2017). This was part of a wider European point prevalence survey in association with the European Centre for Disease Prevention and Control (ECDC), implemented in May 2016. 10,044 residents in 224 Irish long-term care facilities were included in the survey. Of the 224 LTCF, the majority were owned by the Health Service Executive (HSE) [n=136; 61%], followed by private [n=54; 24%] and voluntary services [n=34; 15%] (HPSC page 4, 2017). The report provides a snapshot view and an indication of the burden of HCAI in these settings and recommended the development of IPC link nurse/practitioner roles within each long-term care facility (LTCF) in each Community Healthcare Organisation. Older people have a higher risk of acquiring a HCAI due to pre-existing conditions, medications, increased dependence due to frailty and living in proximity in a residential environment (Haenen et al. 2019).

As of the end of 2022, Ireland's nursing home sector comprised 557 registered centres, offering a total of 31,674 beds. The distribution of these facilities was as follows: Health Information and Quality Authority Private providers: 429 centres (77%) with 25,662 beds (81%) Health Service Executive (HSE): 111 centres (20%) with 5,067 beds (16%) HSE-funded bodies under Sections 38 and 39 of the Health Act 2004: 17 centres (3%) with 921 beds (3%) (Mason Hayes Curran, 2023).

The last number of years during the SARS-CoV-2 pandemic witnessed an unprecedented increase in the burden on residents in long term care settings from a morbidity, mortality of the disease, and the impact of restrictions (HIQA / HPSC 2022). Between March 2020 and February 2022, 29% of COVID deaths occurred in nursing homes (CSO, 2022). In addition, due to the burden of the SARS-CoV-2 virus and other infections on residents there was a consequent negative impact on healthcare staff (Ní Léime & O'Neill, 2021). Provision of educated infection prevention and control personnel supported implementation in LTCFs with a consequent benefit to both residents and staff.

The postgraduate (PG) certificate (Cert) in IPC was developed in 2020 with supportive development funding from Leading Healthcare Providers Skillnet. The course was developed in response to the need for personnel trained in IPC to support implementation in the long-term residential care setting. The Health Service Executive (HSE) Antimicrobial Resistance Infection Control (AMRIC) Competency Framework for Infection Prevention and Control Practitioners in Ireland (HSE 2022), the Infection Prevention Society Competencies Framework for Infection Prevention & Control Practitioners (IPS 2021), and the World Health Organization Core Competencies for Infection Prevention and Control Professionals (WHO 2020), were utilised as competency frameworks to support content development and assessment for the PG Cert in IPC. These documents will continue to be used to inform this research to ensuring the evaluation incorporates the elements of IPC competency.

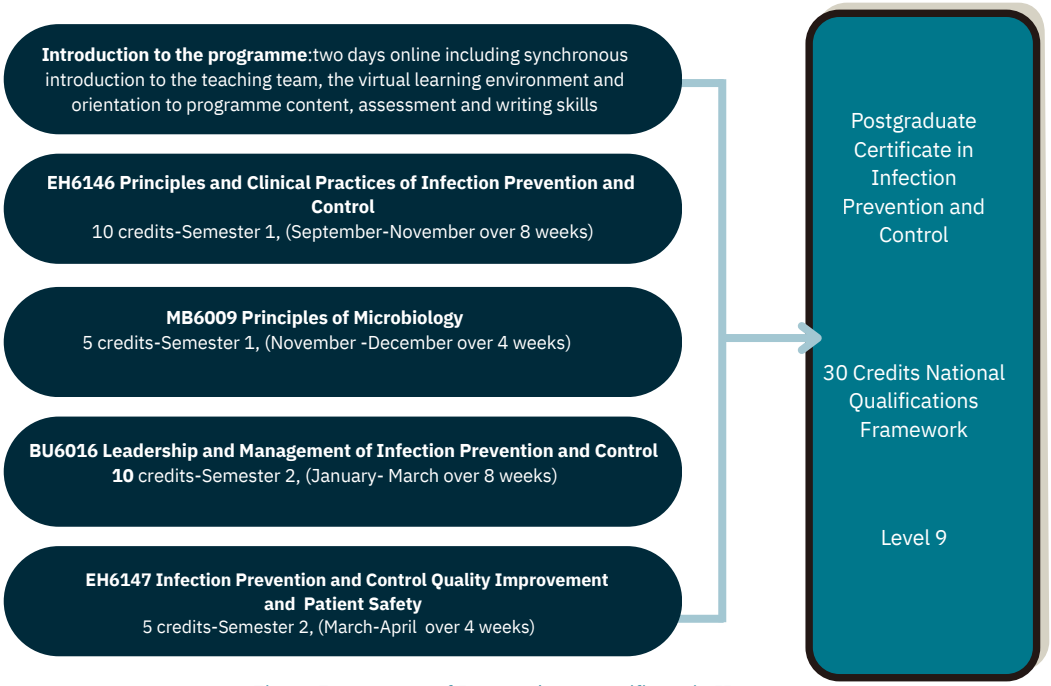


Figure 5: Structure of Postgraduate Certificate in IPC

The PG Cert in IPC runs from September to April each academic year in the School of Public Health, University College Cork. The programme comprises of four modules which equate to 30 taught European Credit Transfers (ECTS) at Level 9 of the National Framework of Qualifications (NFQ), Figure 5. There are 15 credits taught in each Semester balancing the workload for students, Figure 5.

IPC support is required by the Health Information and Quality Authority (HIQA) National Standards for IPC in community services (Standard 6.2, Service providers ensure their workforce has the competencies, training, and support to enable safe and effective infection prevention and control and antimicrobial stewardship practices, HIQA page 22, 2017). In addition, the presence of designated infection prevention and control professionals is proven to reduce risks to and improve patient safety (Raschka et al. 2013, Dick et al. 2015).

This report is a critical competency-based programme evaluation with the aim of continuously improving the delivery of specialised postgraduate education facilitated within University College Cork in association with Leading Healthcare Providers Skillnet. The specialised PG Cert in IPC addresses national IPC priorities in terms of the provision of an appropriately trained workforce to meet the IPC needs to support safe care in the residential care setting, informing the understanding of the efficacy of current training methodologies, identifying areas for improvement and integrating the development of training and education with those who are providing and leading patient care in LTCFs.

This evaluation includes engagement with Leading Healthcare Providers Skillnet funded graduates (N=91) from the first three academic years of the course (2020 – 2021; 2021 – 2022; 2022 - 2023). Practical issues have been investigated focussing on the applied output from engagement and completion of the course. The graduates' perspectives on changes in the application of infection prevention in their organisations after completing the PG Cert in IPC and their perceptions of the training received are presented.

Methods

Study Design

A mixed-methods prospective parallel convergent study based on quantitative and qualitative research (Cresswell and Plano Clarke, 2011) was used to investigate graduate perceptions and practical clinical outcomes. The research design is informed by the seven-step framework for evaluation of health professionals education outlined by Haji et al. (2013), Appendix 1. In-course student evaluations and programme advisory panel feedback and actions are presented in addition to quantitative and qualitative findings to provide a holistic overview of the participants experiences

Protocol and ethical approval

The study protocol was developed, and ethical approval was obtained from the University College Cork Social Research Ethics Committee (Log 2023-322A1).

Part A: Quantitative Data Collection

Student Feedback, Programme Advisory Panel Feedback and External Examiner Feedback

Feedback from students, the programme external advisory panel and the external examiner was examined and reported on to inform this evaluation.

Some student feedback included may be from non-Skillnet funded students as feedback is anonymous and there was no way for the researchers to identify the participants.

The Advisory Panel comprises of academic teaching staff, LHP Skillnet members, a student representative, a senior member of staff from the School of Nursing and Midwifery – UCC, a clinically based consultant microbiologist and a community-based infection prevention and control nurse (IPCN). It was deemed unnecessary to have an IPCN representing the acute healthcare sector as academic team members are clinically experienced in this area.

·An external examiner is an expert in the subject area who is external to the facilitating institution who assures academic standards and advises on the quality of teaching, learning and assessment.

Survey: Participants and Recruitment

A quantitative survey with LHP Skillnet funded PG Cert in IPC graduates from 2020 - 2023 working in the LTCF setting was conducted. All Leading Healthcare Providers (LHP) Skillnet funded graduates of the programme (N=87) were invited to participate. Recruitment was supported by Leading Healthcare Providers Skillnet (LHP Skillnet), the community partner in this research. The survey was based on the following competencies identified for specialist IPC practitioners; Health Service Executive (HSE) Antimicrobial Resistance Infection Control (AMRIC) Competency Framework for IPC Practitioners in Ireland (HSE 2022), The Infection Prevention Society Competencies Framework for IPC Practitioners (IPS EPDC 2021), and the World Health Organization Core Competencies for IPC Professionals (WHO 2020), (Figure 6). All data collected were anonymous with no personal identifiers.

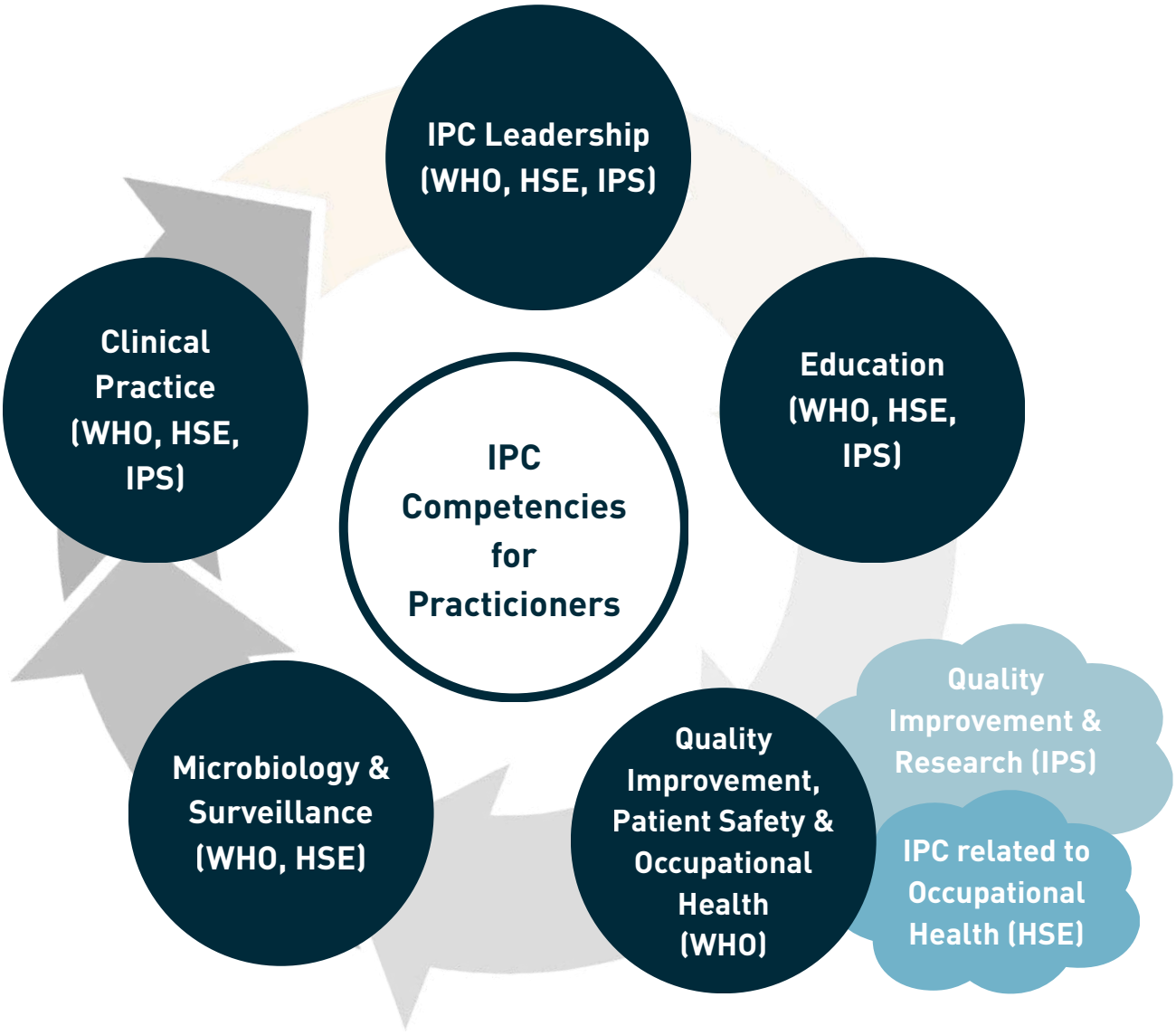


Figure 6: IPC Competencies for IPC Practitioners

Data Analysis

Independent analysis of quantitative and qualitative data was implemented separately. The data were mapped to the following domains, student experience and perceptions, leadership, education, clinical practice, quality improvement and patient safety and microbiology and surveillance.

Triangulation of Findings

Triangulation of the results using a convergent design (Cresswell and Plano Clarke, 2011), was implemented based on the domains detailed above based on student experiences and perceptions and the IPC competencies.

Research Findings

Part A: In-course student evaluation and feedback from advisory panel

Student Evaluations

The student feedback evaluations were anonymous and therefore it was not possible to determine which LHP Skillnet funded students answered which questions.

2020 - 2021 Student evaluation (this includes all student responses)

- 47 students registered for the PG Cert and 41 completed (41 were funded)
- 20/41 students responded = 49% response rate overall

2021 - 2022 Student evaluation - (this includes all student responses)

- 41 students registered for the PG Cert and 39 completed (30 were funded)
- 8/39 students responded = 21% response rate overall

2022 - 2023 Student evaluation (this includes all student responses)

- 32 students registered for the PG Cert and 30 completed (10 were funded)
- 2/30 students responded = 7% response rate overall

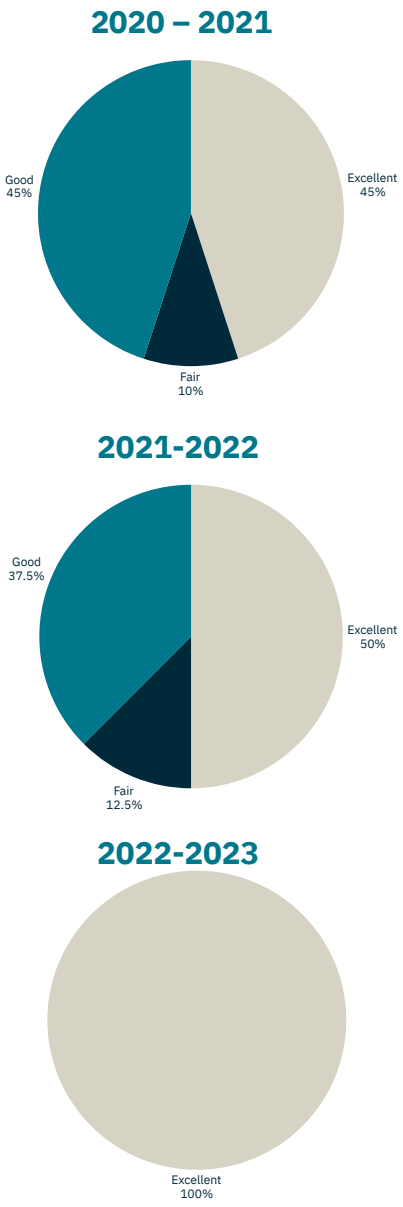


Figure 7: Overall student feedback related to their experience of the PG Cert in IPC

Students reported overall experience of the programme

Students reported overall experiences of the programme over three academic years are presented in Figure 7 & 8.

- I would have preferred more online tutorial.
- I wish it was more interactive, would prefer more online classes during the week.
- I found the whole course interesting and relatable to practice.

2020 – 2021 Student Comments

- It was a difficult one navigating between study and work as well. The COVID outbreak in the acute setting and the nursing homes made it more difficult to give our 100% to the program.
- Not enough interactions with other students. Discussion board remained too formal to really share experiences. Excellent programme, content and very relevant to the residential setting for older people. I was able to implement a lot of learning form the course into the centre.
- Most of the topics related to infection control, leadership and management, IPC quality improvement and patient safety were brought into the modules which helped us to get a good learning experience.

2021 – 2022 Student Comments

Outstanding

2022 – 2023 Student Comments

Figure 8: Students reported feedback

Student Perceptions of Achievement of Programme Learning Outcomes

Student perceptions of learning outcome achievement from end of programme evaluations are presented in Table 1.

TABLE 1 Did the content of the programme meet the overall learning outcomes of the programme?

1 = Yes, all the Learning Outcomes were met to 5 = None of the Learning Outcomes were met

	2020 – 2021	2021– 2022	2022 – 2023
1	9 (45%)	4 (50%)	2 (100%)
2	4 (20%)	1 (12.5%)	
3	4 (20%)	2 (25%)	
4	2 (10%)	1 (12.5%)	
5	1 (5%)	0 (0%)	

- I do not feel I gained enough knowledge in infectious diseases and their management.
- Learning outcomes achieved but missing link between knowledge and practice.

2020 – 2021 Student Comments

- There was way more covered than I expected.
- I learnt more and was able to put all this into practice than I anticipated at the beginning.
- Yes, all the Learning Outcomes were met.

2021 – 2022 Student Comments

No comments

2022 – 2023 Student Comments

Figure 9: Students comments on programme learning outcomes

Student perceptions related to Continuous Assessment

Student Evaluations

- It was very manageable, and lecturers ensured that deadlines were suitable for students which was amazing.
- Motivated me to study and read more articles.
- Some of the timeframes were unachievable.

2020 – 2021 Student Comments

- Only point of note I have is that for the graded discussion boards, I was frustrating at times that students did not submit any discussion until last day or two, or hours before submission deadline, perhaps have a separate deadline for main part and then replies. Perhaps mix up the groups for each module.
- Too much volume of work at given times, felt it could have been spread a little better.

2021 – 2022 Student Comments

No comments

2022 – 2023 Student Comments

Figure 10: Students comments on programme learning outcomes

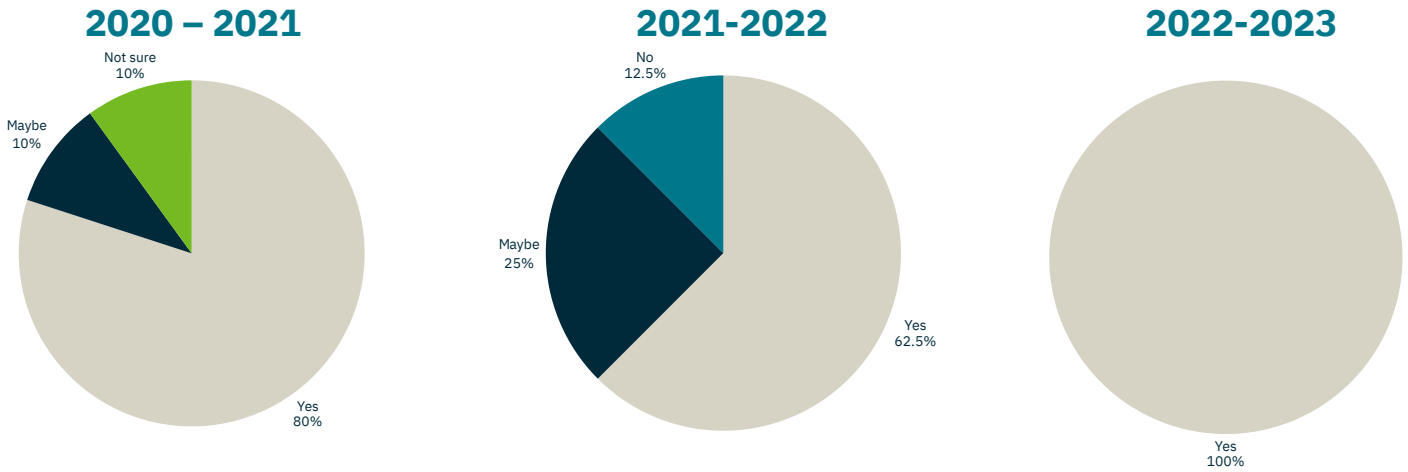


Figure 11: Student feedback related to Continuous Assessments meeting expectations

Student perceptions related to the value of completion of the programme supporting their career development.

- Yes, it has increased my awareness of IPC, the importance of auditing. Having dedicated resources for IPC, the value of auditing practices.

2020 – 2021 Student Comments

- I hope to progress to work with the community IPC team in the near future.
- I have already made changes based on the content of the course.
- Overall, my knowledge base has increased.
- It was an amazing learning experience so many years after college.

2021 – 2022 Student Comments

No comments

2022 – 2023 Student Comments

Figure 12: Students comments on the value of completion on the

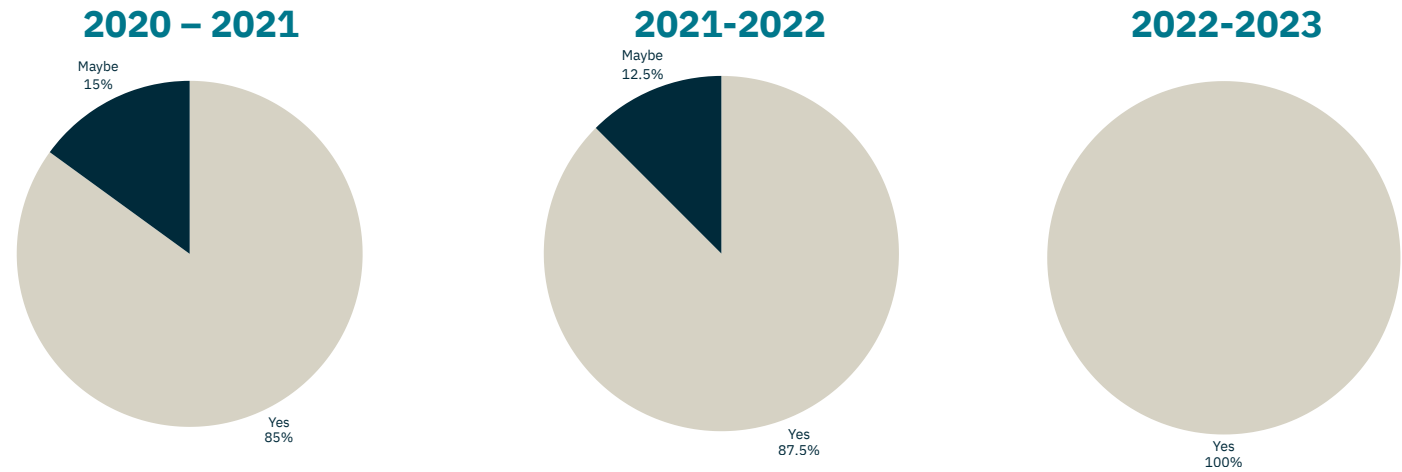


Figure 13: Student perception of the support of completion of the programme on their role and career development

PG Cert in IPC Advisory Panel

The panel comprises of academic teaching staff, LHP Skillnet members, a student representative, a senior member of staff from the School of Nursing and Midwifery – UCC, a consultant microbiologist and a community-based infection prevention and control nurse (IPCN). It was deemed unnecessary to have an IPCN representing the acute healthcare sector as academic team members are clinically experienced in this area.

Advisory Panel Feedback 2020-2021

A brief overview of the programme and plans for progression was facilitated by the academic team. Almost 50% (n=20) of the completing students provided written feedback with 90% rating the programme as good / excellent with the remaining 10% rating the programme as fair.
Feedback from the student representative was very positive overall. Some challenges were experienced in year one of the programme, such as difficulty in navigating content on Canvas, the online classroom. There were issues with student engagement for some assessments such as group work. Students also expressed that additional focus on the most common infectious diseases / infections would improve the programme. The academic team were reported to be very supportive.

Advisory Panel Recommendations:

- Use of clinical case studies to support learning.
- Alternative forms of graded assessment to help reduce the burden on student learning. (e.g., use of Padlet and Answer Garden and awarding marks for participation).
- Sequencing of how modules flow of modules was suggested to support student learning relation to Microbiology and IPC.
- Establishing academic progression to a Diploma and Masters in IPC was considered a high priority.

Academic Team Actions:

Planned changes for the next academic year included:

- Reconfiguration of the sequencing of modules over the two semesters, a
- Adaptation of assessments,
- Splitting the class into smaller groups for assessments (e.g. online discussions and group presentations). Students would remain in their groups for the duration of the course to enable peer-to-peer support and collegiality, learning and assessment. Further links between theory and practice were also to be explored.

Figure 14 a: Advisory Panel Recommendations / Academic Team Actions 2020-2021

Advisory Panel Feedback 2021-2022

A brief overview of the programme and plans for progression was facilitated by the academic team. Almost 21% (n=8) of the completing students provided written feedback with almost 88% rating the programme as good / excellent with the remaining 12.5% rating the programme as fair.
Feedback from the student representative was very positive overall again this year. Students suggested the inclusion of clinical IPC-related scenarios, examples, and case studies to enhance the links between clinical practice and academic learning content.

Advisory Panel Recommendations:

• LHP Skillnet panel member and IPC lecturers to explore an impact study / self-evaluation after year one and two.

• It was also announced that funding was secured to support a new MSc programme in IPC.

• LHP Skillnet reiterated that Skillnet funding is an option for any private healthcare organisations outside of the HSE.

• The importance of evidence of Nursing and Midwifery Board of Ireland accreditation was also mentioned by the advisory panel.

• Suggested addition of assessments which would allow students to develop presentation skills and increase confidence in presenting and further recommended more live sessions to engage students further. The academic team responded in relation to attendance at live sessions (also recorded) which was as low as 10-20%.

Academic Team Actions:

Planned changes for the next academic year included:

- Updated module handbook.
- Updated and varied assessments.
- Additional live online session although this can be challenging due to student jurisdiction and various time zones.
- Updated 2-hour programme induction for next semester.
- Awaiting the publication of the draft national IPC guidance document.

Figure 14 b: Advisory Panel Recommendations/ Academic Team Actions 2021-2022

Advisory Panel Feedback 2022-2023

A brief overview of the programme and plans for progression was facilitated by the academic team. Only 7% (n=2) of the completing students provided written feedback with almost 100% rating the programme as good / excellent.

The PG Cert academic programme director updated the course handbook and the module handbooks for EH6146 and EH6147 this academic year. Assessments were being updated in line with the new national AMRIC / HSE IPC guidelines issued in May 2022. These will also be mapped to the curriculum. There was an increase in international students in attendance which contributed to richer and more diverse online discussion. IPC Quality Improvement & Patient Safety (EH6147) module assessments were being restructured for the next academic year, based on student evaluations. Concerns were raised by the academic team regarding Generative Artificial Intelligence (AI), assessments and plagiarism and University guidance was awaited.

Student representative thought EH6147 was an achievable module and that the weekly meetings helped student engagement and accountability. Weekly recorded meetings were well received by students who could not attend, to access later. The academic coordinator was reported to have given all the support that could possibly be expected for an online programme. Student representatives also reported the course to be of a very high standard even though it was delivered online (e.g., brilliant tutors, content, materials and assessment), and that organisation of workload was key.

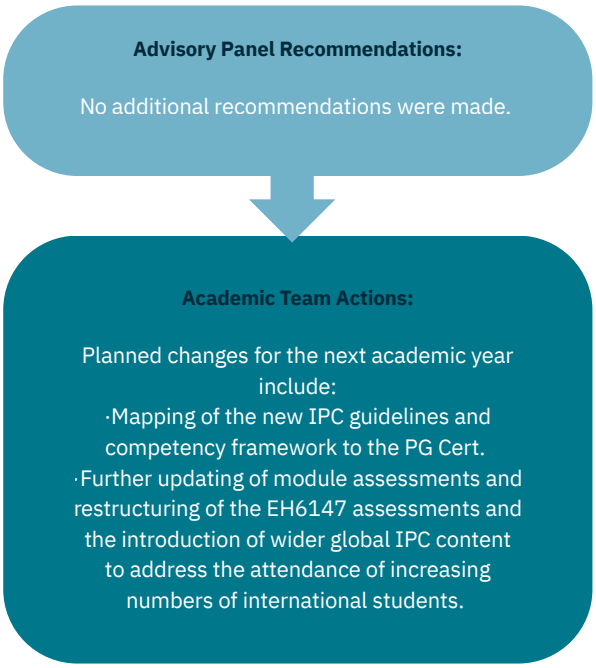


Figure 14C: Advisory Panel Recommendations 2022-2023

External Examiner Feedback

External Examiner
Dr Emma Burnett, Head of Campus, Fatima College of Health Sciences, Ajman, United Arab Emirates, was appointed the External Examiner to the programme in 2020 and provided support and feedback in her capacity until 2023.

External Examiner Feedback Comments 2020-2021:
Overall, I very much enjoyed reading through each of the four modules. Learning outcomes were all clear and very relevant to the topics. Varied and interesting assessment strategies for each, which aligned with all the learning objectives. All grades appropriate and excellent feedback provided by each module team. Excellent pass rates which demonstrate the level of support students were provided. Student evaluations overall, were also extremely positive.

I was very impressed with the quality of the student's work. It was clear that the students enjoyed their modules due to the level of engagement in discussions and the quality of their written work. Despite being challenged at times, they produced very good work.

It was really helpful to meet with tutors following my external examination for a fuller discussion. Student feedback is clearly taken very seriously, and the team have identified some key revisions to further enhance the programme based on feedback provided. All of these revisions planned will enhance the student experience. Some further discussion took place about potential teaching ideas for the future.

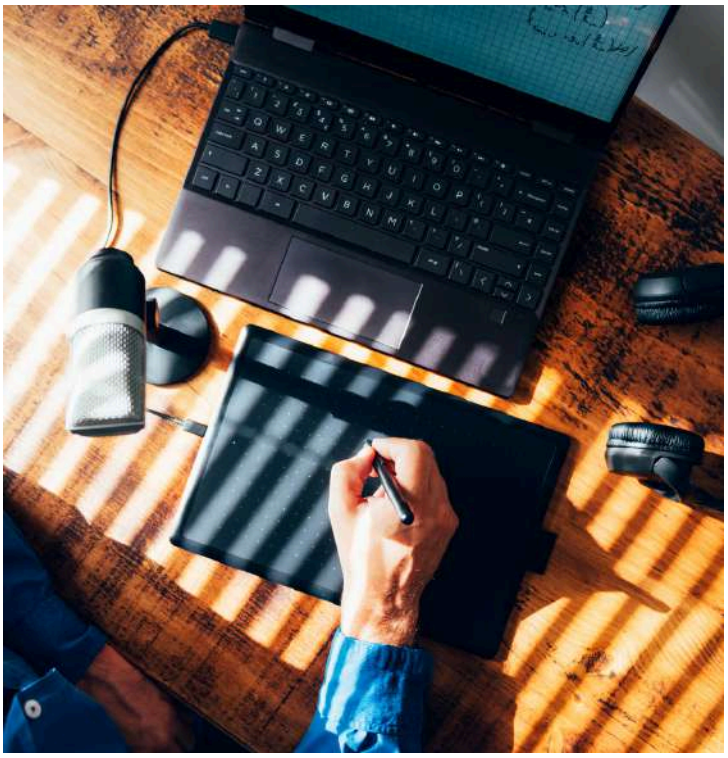
External Examiner Feedback Comments 2021-2022:

Overall, I very much enjoyed reading through the content and student assessments for these two programs. The learning outcomes were all clear and very relevant to the topics. I noted a wide variety of relevant content delivered in various ways.

The assessment methods were varied and interesting, which aligned with the learning objectives for each of the modules. I very much enjoyed reading the assessment online discussions which encouraged student interaction.

All grades were appropriate and excellent feedback provided by most of the module team. There was a slight disparity between some markers where some provided detailed feedback in comments sections and assessment papers, but one or two provided only limited feedback in the general comments sections. Very high pass rates throughout all modules in both programs. Student evaluations overall, were also very positive.

The online meeting was very helpful and informative. I was impressed with the enthusiasm and dedication of the whole team and some excellent suggestions for making improvements in the next academic year.



External Examiner Feedback Comments 2022-2023:

The learning outcomes are well-defined and reflect the desired knowledge, skills, and competencies expected from students upon completion of each module. These learning outcomes are consistently and effectively linked to the grading criteria, ensuring that the assessment methods and criteria directly measure the achievement of the intended learning outcomes. Overall, the programme demonstrates a commendable integration of learning outcomes and grading outcomes, enhancing the educational experience for the students. No modules required adjustment. The low failure rate observed in all the modules is indicative of the rigorous academic standards maintained throughout the program. However, it is noted that the pass mark is only 40%.

All modules exhibit commendable assessment and grading practices that are both robust and diverse. The program employs a range of assessment methods, including written assignments, case studies, MCQs and presentations, providing students with opportunities to demonstrate their knowledge and skills in different contexts. The use of varied assessment practices ensures a comprehensive evaluation of students' abilities and promotes a holistic understanding of the subject matter. Furthermore, the grading criteria are consistently applied, offering clear and transparent guidelines for students to gauge their performance and progress throughout the program.

Further feedback related to programme structure, assessment, student work and student feedback is presented in Table 2.

Table 3- External Examiner feedback on Programme structure, assessment, student work and student feedback

Programme Structure

I commend the whole team for their exemplary work in designing and delivering the programme structure and content for all the above courses.

The programmes demonstrate a well-thought-out and comprehensive curriculum that encompasses a wide range of essential topics in infection prevention and control.

The modules are logically sequenced, building upon foundational knowledge and progressively delving into more advanced concepts.

Assessment

I commend the team for the implementation of excellent and varied assessment throughout the programme.

The team has demonstrated a remarkable understanding of the importance of assessing students' knowledge and skills through a diverse range of assessment methods.

This variety of assessment strategies not only engages students actively in the learning process but also provides them with opportunities to showcase their abilities in different contexts.

The team's commitment to employing such diverse assessment strategies is highly commendable and greatly contributes to the overall quality and effectiveness of the program.

Student Work

The general quality of the students' work was very good. As one would expect, some consistently achieved higher scores compared to others.

Overall, pass rate is very high which aside from the 40% pass mark serves as a testament to the enjoyment and satisfaction experienced by the students.

The team's dedication to creating a positive and engaging learning environment has evidently resulted in students' active participation and enthusiasm during their programme.

Student Feedback

I am delighted to acknowledge the consistently positive feedback received from students.

The student feedback serves as a strong testament to the programme's excellence and the dedication of the team.

Students have expressed their satisfaction with the program's curriculum, teaching methodologies, and the overall learning experience.

They have highlighted the program's relevance, practicality, and the valuable skills and knowledge gained throughout their studies.

Part B - Quantitative Results

Participant Characteristics

Overall, 87 graduates were invited to participate in the survey, 25 surveys were included in the analysis with a response rate of 29%. Only 20 responses were completed fully, therefore response numbers vary due to missing data.

Recent graduates were more likely to participate; 64% of students from 2022/2023 participated compared to 19.5% of students from 2020/2021 (Table 1). Participant characteristics are presented in Table 2 and perceptions of the programme are further explored in Table 3.

Table 2: Survey response rate

	Survey response rate		
Academic year	**Respondents**	**Population**	**Respondents/ Population**
2020/2021	9	46	19.5.%
2021/2022	7	27	26%
2022/2023	9	14	64%
Total	25	87	29%

Table 3. Participant Characteristics

Participant Characteristics	Number (est. %)
Sex	
Female	21 (84%)
Male	4 (16%)
Current role	
DON	7 (29%)
ADON	3 (12.5%)
CNM IPC	4 (16%)
CNM1 / CNM2	3 (12.5%)
Staff Nurse	2 (8%)
Other	5 (21%)
Work Region	
Leinster	14 (58%)
Munster	5 (21%)
Connacht	4 (16%)
Not specified	2

Section 1. Graduate Experiences and Perceptions

Graduate experience and perceptions of the PG Cert in IPC are presented in Table 3. Over 95% of participants rated their experience on the programme to be good or very good and over 90% of participants indicated that the support they received from the course team to be good or very good, (Table 4).

Table 4. Graduate Experiences and Perceptions of the PG Cert in IPC

	Very poor	Poor	Neither good nor bad	Good	Very good	Total	% Good or Very Good
How would you rate your experience of the PgCert in IPC?	0	0	1	10	13	24	95.8%
How was the support, communication, and guidance from the course team?	0	1	1	6	15	23	91.3%

Graduate perceptions were explored by participant characteristics and are presented in Table 5 below.

Table 5. Graduate Perceptions of the Programme by Characteristics

	Very poor/ poor (n=0)	Average (n=1)	Good/ V. good (n=23)	Total (N=24)	% Good or Very Good Total
Sex*					
Female				20	100.0%
Male				4	75.0%
Education level					
Certificate				4	100.0%
Diploma				3	66.7%
Masters				6	100.0%
PG Diploma				11	100.0%
Experience post registration				5	
<1 - 5 years				5	100.0%
6 - 10 years				13	80.0%
>10 years					100.0%
Other postgrad?				8	
N/A				3	87.5%
Critical/advanced care				2	100.0%
Dementia				6	100.0%
Gerontology					83.3%
IPC				2	100.0%
No				2	100.0%
Other				2	100.0%

- 62.5% (n=15) of participants received some protected study time with the remaining 37.5% (n=9) not receiving study time.
- 79% (n=19) of participants felt the content was clinically applicable and 21% (n=5) of participants felt the content was partially clinically relevant.
- 58% (n=14) of participants had a role change since they completed the PG Cert in IPC.

Section 2. Programme Learning Outcomes

Graduate perceptions were explored related to the programme learning outcomes. Perceived achievement of learning outcomes was greater than 85% for all learning outcomes except for learning outcome two which scored 79.2% and learning outcome five which scored 83.3%, Table 6.

Table 6. Graduate Perceptions of Learning Outcome Achievement

Programme Learning Outcomes	Learning Outcomes achieved				% Achieved
	Yes	Partially	No	Total	Total
Demonstrate an understanding of the principles and practice of infection prevention and control. [Relevant Competency (RC): Education; Clinical Practice]	21	3	0	24	87.5%
Demonstrate an understanding of the appropriate management of infections caused by different pathogenic microorganisms. [RC: Microbiology and Surveillance; Clinical Practice]	19	5	0	24	79.2%
Describe the transmission of endemic and epidemic infections from sufficient knowledge of the characteristics and transmission of causative organisms. [RC: Education; Clinical Practice; Microbiology and Surveillance]	21	3	0	24	87.5%
Describe appropriate methods for control of hospital and community acquired infectious diseases and infections. [RC: Education; Clinical Practice; Microbiology and Surveillance; Leadership]	22	1	1	24	91.7%
Discuss the principles of microbiology in the prevention and control of infection. [RC: Microbiology and Surveillance; Clinical Practice]	20	4	0	24	83.3%
Design, implement and evaluate co-ordinated control methods utilising tools such as audit and surveillance. [RC: Education; Clinical Practice; Quality Improvement and Patient Safety].	22	2	0	24	91.7%
Discuss and apply effective quality improvement and patient safety strategies. [RC: Clinical Practice; Quality Improvement and Patient Safety].	21	3	0	24	87.5%
Discuss and implement management and leadership theories and practices applicable to infection prevention and control. [RC: Clinical Practice; Education; Leadership].	21	3	0	24	87.5%

Section 3. Assessment

Graduates were asked their thoughts about assessments on the programme, Table 6. They indicated satisfaction with the appropriateness of the assessments, supportive learning experience, variety in assessment, choice related to clinical experience and timeliness in over 85% of cases in categories, Table 7.

Table 7. Graduate Perceptions of assessments on the programme

Assessment Question	Yes	Partially	No	Total	% Achieved Total
Did assessments support your learning and develop your understanding of the material?	23	5	0	24	79.2%
Did you feel there was enough variety offered in the assessment type during the programme?	22	3	0	24	87.5%
Did you feel you had enough choice of assessments to support use of your personal clinical experiences?	21	1	1	24	91.7%
Did you feel you had adequate time to complete assessments?	20	4	0	24	83.3%

Section 4. Infection Prevention and Control Competency Achievement

Achievement of IPC Competency was assessed using the competencies outlined in the methodology section which included, Leadership, Education, Clinical Practice, Microbiology and Surveillance and Quality Improvement and Patient Safety.

- Graduates rated their achievement in the Quality Improvement and Patient Safety Competency highest with over 95% of participants stating that they achieved this competency overall.
- Overall, 80% of graduates felt they achieved the Leadership, Education and Microbiology and Surveillance competencies in all categories examined.
- The least number of graduates indicated they were confident in relation to the Clinical Practice with 70% of participants indicating they felt they achieved this competency.

Section 5. Perceptions of PG Cert in IPC Programme Impact

Graduates were asked to evaluate how they felt that completion of the programme impacted on their ability to do their job, Figure 15.

"Improved my knowledge of IPC thus the care I give my patients"

"I have been the IPC lead in our residential care facility, having completed the PG Cert in IPC enabled me to identify gaps in IPC practices and implement necessary steps to overcome the shortfalls"

"Gave me the confidence to act as a good IPC Lead"

Figure 15:. Perceived practical impact of completion of the PG Cert in IPC

Graduates were asked to evaluate how they felt that completion of the programme impacted on their professional development, Figure 16.

"It gave me the confidence to do more and go for a promotion"

"Completion of the PG Cert in IPC motivated me to gain more knowledge in IPC and I am currently doing my Masters in IPC."

"I was able to help my organisation support IPC"

Figure 16: Perceived professional impact of completion of the PG Cert in IPC

Part C: Qualitative Results

Participant Characteristics

Participant characteristics are presented in Table 8. There were six participants that took part in the qualitative interviews, five female and one male. Participants were in all provinces except for Ulster, Table 8. All participants were working in nursing homes and five out of six had completed the PG Cert in IPC, Table 8.One participant was a manager where a member of staff had completed the PG Cert in IPC.

Codes Subthemes and Themes

Table 8. Qualitative Study Participant Demographics

Participant	Role	Province	Nature of Organisation	Single Facility or Group	Completion PG Cert in IPC
P1 (F)	Senior Administrative	Nationwide	Nursing Homes	Group	Yes
P2 (F)	Senior Administrative	Munster	Nursing Home	Single	Yes
P3 (F)	Senior Staff Nurse	Munster	Nursing Home	Single	Yes
P4 (M)	Senior Administrative	Leinster – Group	Nursing Homes	Group	Yes
P5 (F)	Senior Administrative	Munster	Nursing Home	Single	No

Codes, subthemes (Figure 9), identified by researchers (MS / SC) were mapped to the themes of Graduate Experience and Perceptions, Leadership, Education, Clinical Practice and Quality Improvement and Patient Safety in line with the competencies identified in Figure 2. The competency of Microbiology and Surveillance did not emerge from the qualitative interviews.

The themes to which the codes were mapped to, and a sample of the supportive participant quotations for themes are presented in Figure 17 and Figure 18.

PG Cert in IPC Graduate Experiences and Perceptions

Qualitative interview participant perceptions and experiences of the programme are presented in Figure 9. Perceptions were both positive and negative with more supportive evidence for participants positive experiences, Figure 9.

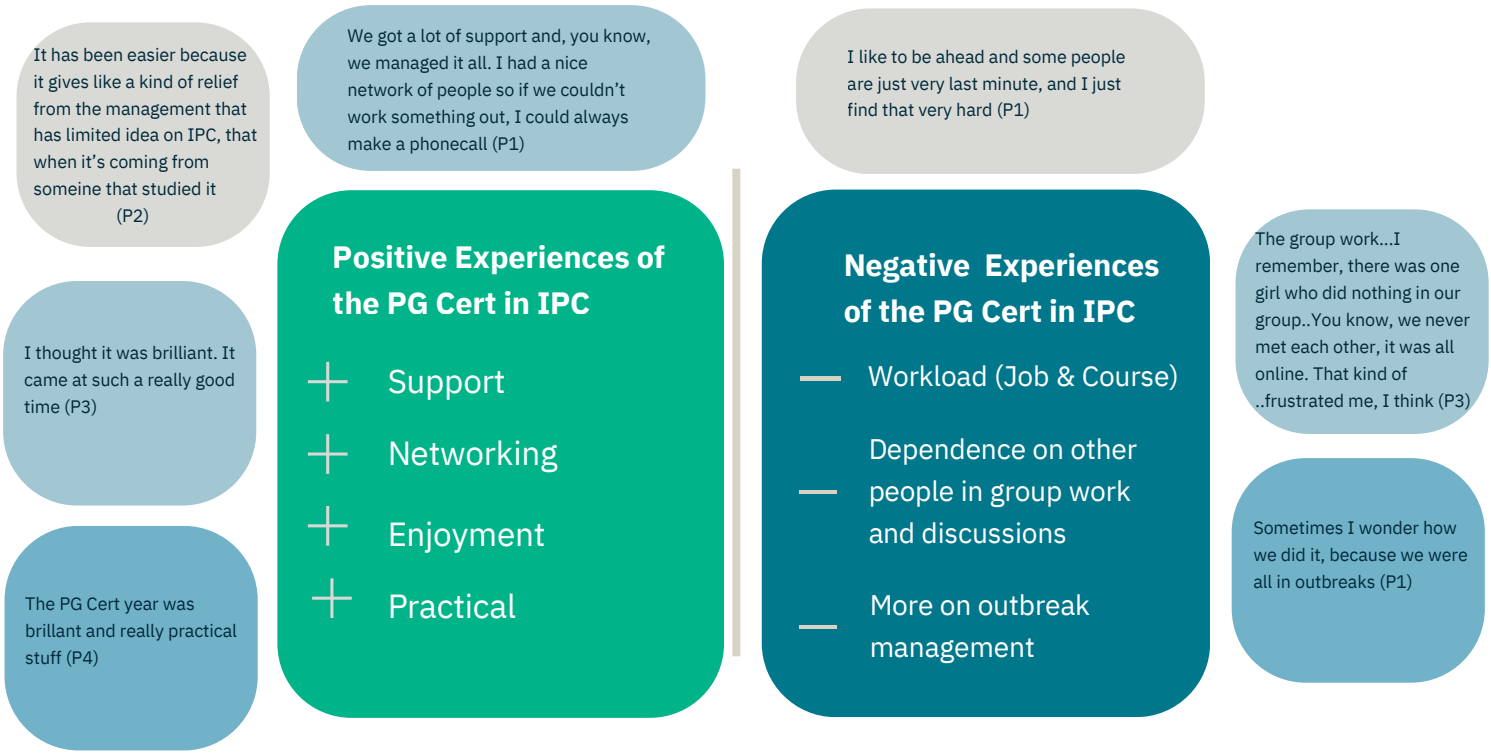


Figure 17: PG Cert in IPC Graduate Experiences and Perceptions

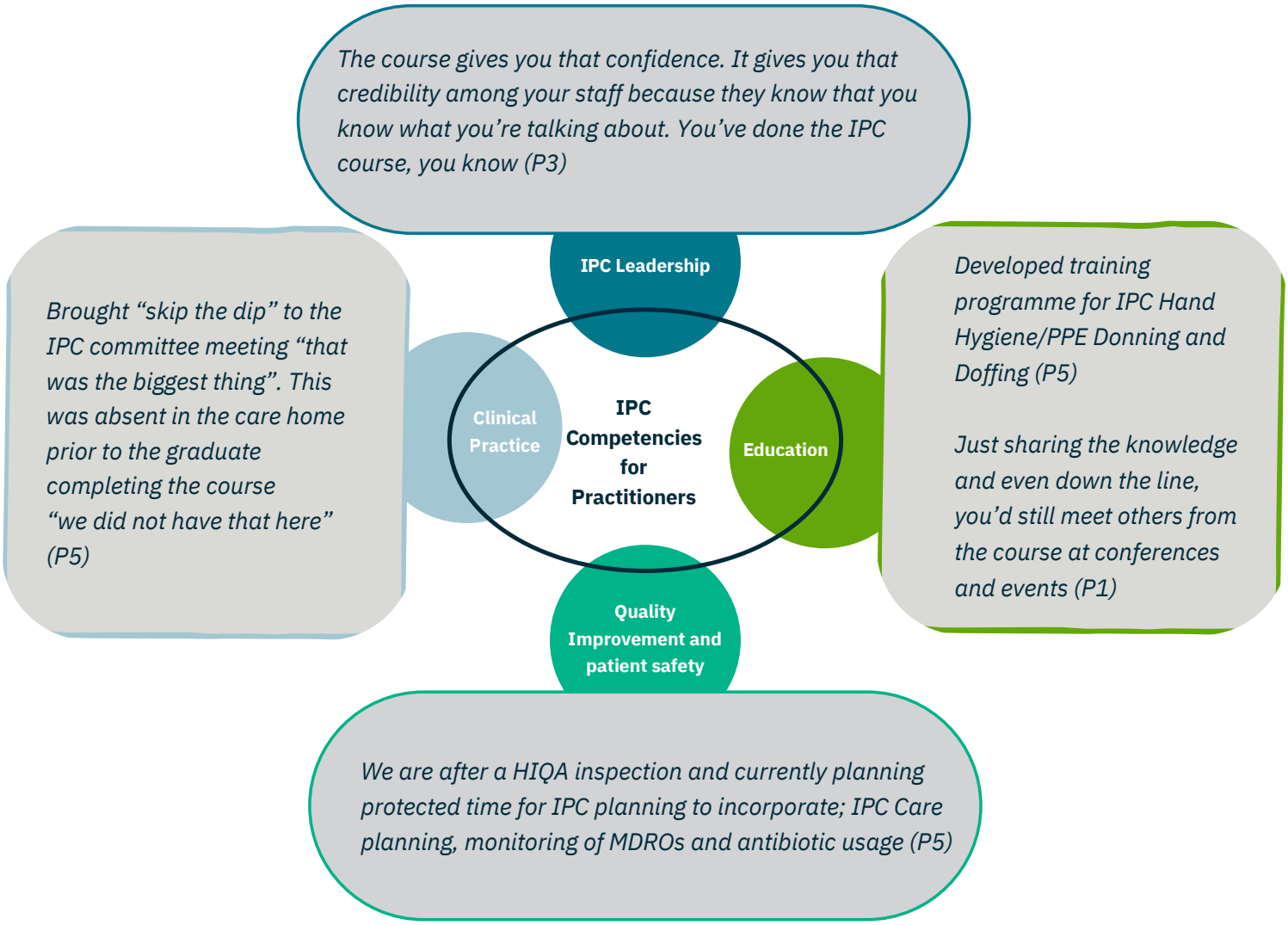
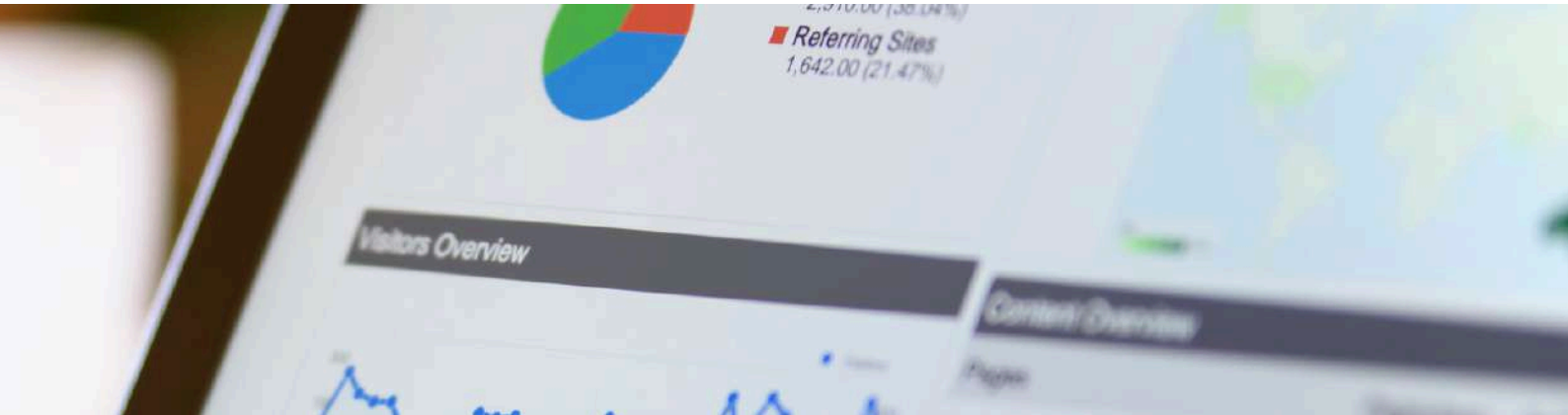


Figure 18.:Sample Quotations for Themes

Triangulation of the Results

Triangulation of the findings was carried out by comparing and contrasting the results and then mapping the findings to the themes of student experiences and perceptions and, the IPC competencies, (Cresswell and Plano Clarke, 2011).



Participant Experiences of the PG Cert in IPC

Overall, graduates were very positive in relation to the programme with high levels of student satisfaction related to experience, engagement, content, assessment and practical learning.
However, challenges were associated with workload, online learning and the need to collaborate with other students

Leadership

Participants indicated they achieved practical applicable leadership skills from engagement with, and completion of the PG Cert in IPC

Education

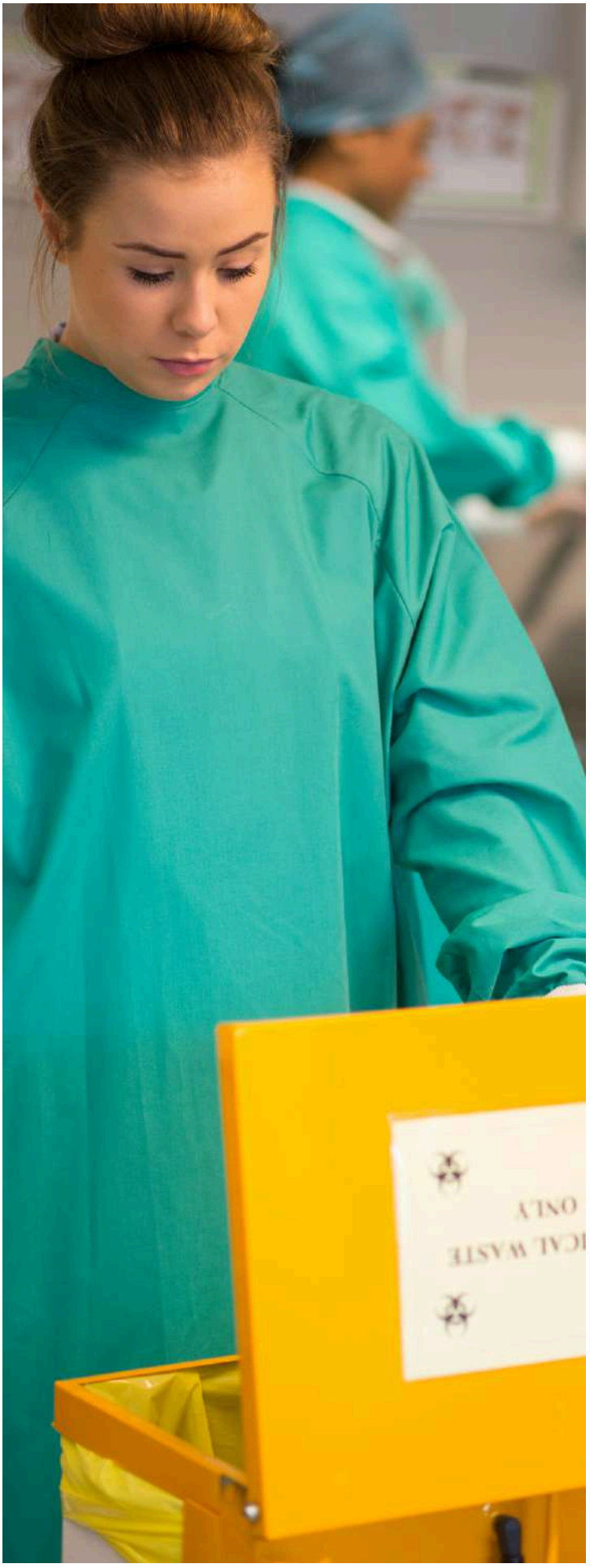
Participants acknowledged the value of peer, management and academic support during their education and learning experience on the PG Cert in IPC. The practical application of the skills participants acquired through education and learning was clearly evident in the workplace.

Clinical Practice

Participants reported their improved skills and the application of those skills in clinical practice. However, they noted that their efforts were hindered by some challenging behaviours of colleagues in the clinical setting.

Quality Improvement and Patient Safety

Participants indicated their capability to plan and implement quality improvement strategies and acknowledged the value of these in relation to regulatory inspections.



Discussion

This report provides an in-depth analysis and presentation of the experiences and views of graduates from the first three years of the PG Cert in IPC. The steps in the development of the PG Cert IPC and the cycles of teaching and learning quality improvement are illustrated in Figure 19.

Overall graduates indicated they had a positive experience on the course including, teaching content, assessment and their learning. However, challenges were experienced related to balancing the workload, the online nature of the course and depending on other students during group activities. Consistent with the health professional programme evaluation framework (Haji 2013), student experiences and outcomes were investigated in this study to inform future teaching. The competency-based findings are presented below.

1. Leadership

The Postgraduate Certificate in Infection Prevention and Control (IPC) demonstrated significant impact in developing leadership competencies among participants. A total of 87% of graduates felt they had achieved the leadership competency, with all graduates indicating the use of leadership and communication skills in their roles. Specifically, 90.5% felt confident in leading IPC-related training, while 85.7% were able to set IPC objectives and 81% led monitoring and feedback on compliance with IPC standards. Graduates reported increased confidence in leading change, and their enhanced professional credibility was reflected in statements such as, “people listened to things that needed to improve.” Positive self-leadership is associated with improved implementation of IPC (Wang et al. 2024). Inclusion of a specialist leadership module specific to IPC strengthened the leadership emphasis and learning within the programme. The programme also supported the implementation of new IPC approaches, demonstrating the practical relevance of leadership skills developed through the course.

2. Education

The programme also made a strong positive impact on graduates' educational competencies. A total of 87% of participants indicated they had achieved the education competency with 100% reporting they were able to influence colleagues to recognise IPC as an essential learning need. Additionally, 95% of graduates felt capable of providing IPC support and using appropriate training methods, while 85% felt prepared to deliver IPC training within their organisations. Support from peers and management during the programme was crucial, with allocated time for engagement being viewed as essential. The practical application of these educational skills in the clinical setting was evident, as graduates reported increased IPC knowledge, confidence, and the ability to implement evidence-based training programmes. Provision of specialised IPC competent practitioners in the residential care sector reduced the risk of SARS-CoV-2 transmission during the pandemic (Sandhu et al. 2023). One participant noted the programme gave her the “confidence to do more and go for promotion.” Enhanced competency in IPC practices has been shown to improves performance, knowledge, confidence and safety culture (Lee and Yang, 2024; Kakkar et al. 2021).

3. Quality Improvement and Patient Safety Competency

The programme also demonstrated strong outcomes in the Quality Improvement (QI) and Patient Safety competency, with 96% of graduates feeling they had achieved this competency. All graduates (100%) reported they were able to identify QI and patient safety opportunities, and 95% felt capable of implementing QI initiatives, including data collection to inform practice. Moreover, 90% indicated they were prepared to implement HIQA IPC standards within their settings. Graduates cited the programme as invaluable in preparing for regulatory inspections, implementing risk assessments, and fostering safer environments. These findings reflect the alignment of the programme with national quality and regulatory priorities, particularly regarding IPC standards in LTCFs. The value of education, increased competence and certification in IPC has been associated with improved regulatory compliance and practices leading to improved patient safety (Marx et al. 2019).

4. Microbiology and Surveillance Competency

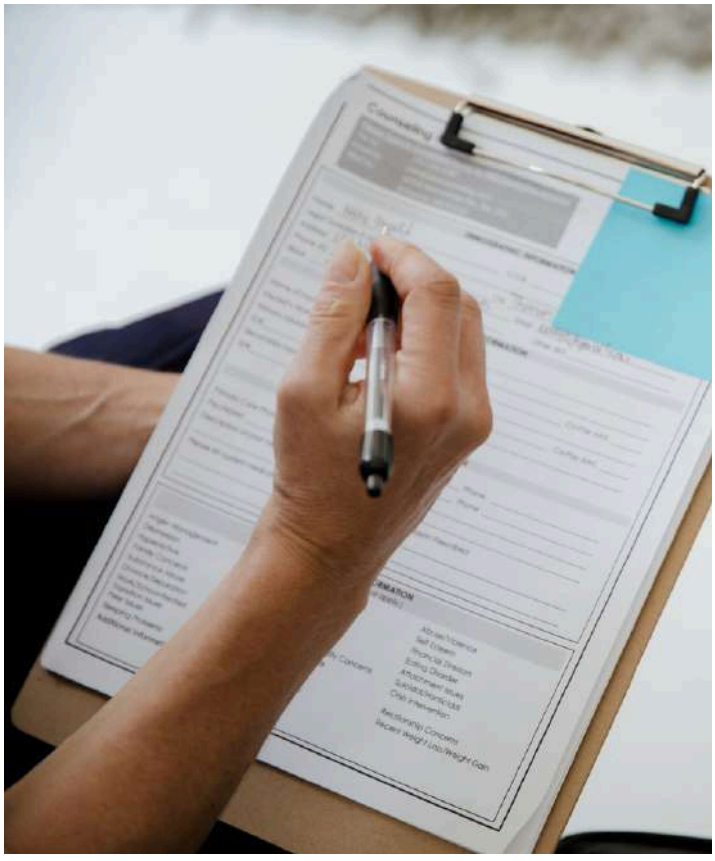
The Microbiology and Surveillance Competency was less prominently achieved compared to other competencies, with 83% of graduates indicating they had achieved this competency. This may reflect the traditionally lower emphasis on microbiological surveillance within LTCFs. Microbiological surveillance practices in LTCFs are often underdeveloped or inconsistently applied, potentially due to resource constraints or competing priorities (Morgan et al. 2021; ECDC 2021). However, the programme's focus on microbiology and surveillance remains crucial in addressing gaps in infection prevention. For instance, 100% of graduates reported competence in understanding the mode and transmission of common microorganisms, and 90% demonstrated knowledge of outbreak management. The importance of effective surveillance in preventing healthcare-associated infections (HAIs) is well-documented, particularly in vulnerable populations such as those in LTCFs, (The Lancet Healthy Longevity, 2022).

5. Clinical Practice Competency

The Clinical Practice Competency showed mixed results, with 70% of graduates feeling they had fully achieved this competency and 25% reporting partial achievement. Nevertheless, all graduates (100%) felt confident in conducting risk assessments and applying standard precautions, with 90% reporting competence in applying transmission-based precautions and assessing IPC risks in the built environment. Graduates also cited improvements in their skills supporting the implementation of IPC practices, including policy development, review, and monitoring. These findings reflect a broader body of research indicating that practical IPC implementation is a critical component of healthcare education, especially in clinical settings. Despite these successes, challenges in implementing IPC were noted, particularly regarding behaviour change and accountability. Non-compliant behaviours were identified as significant barriers to effective IPC implementation, a challenge highlighted in previous studies that emphasise the need for the use of behavioural theory (Greene and Wilson 2022), strong leadership (Capelli et al. 2024) and institutional support to address these barriers (Arvidsson et al. 2025).

Strengths and Limitations

Strengths include the comprehensive investigation into student experiences, perceptions and evidence-based internationally recognised competencies. The methodological approach is strong using the programme evaluation process framework (Haji, 2013). Quantitative responses were gathered online in an anonymous manner so should reduce the risk of response bias. Qualitative engagement was voluntary and conducted via MS Teams to support engagement with as little intrusion on work as possible. Limitations included the small sample size and the limited number of participant interviews. Recruitment for the qualitative research was challenging with just four graduates and one non-graduate manager participating.



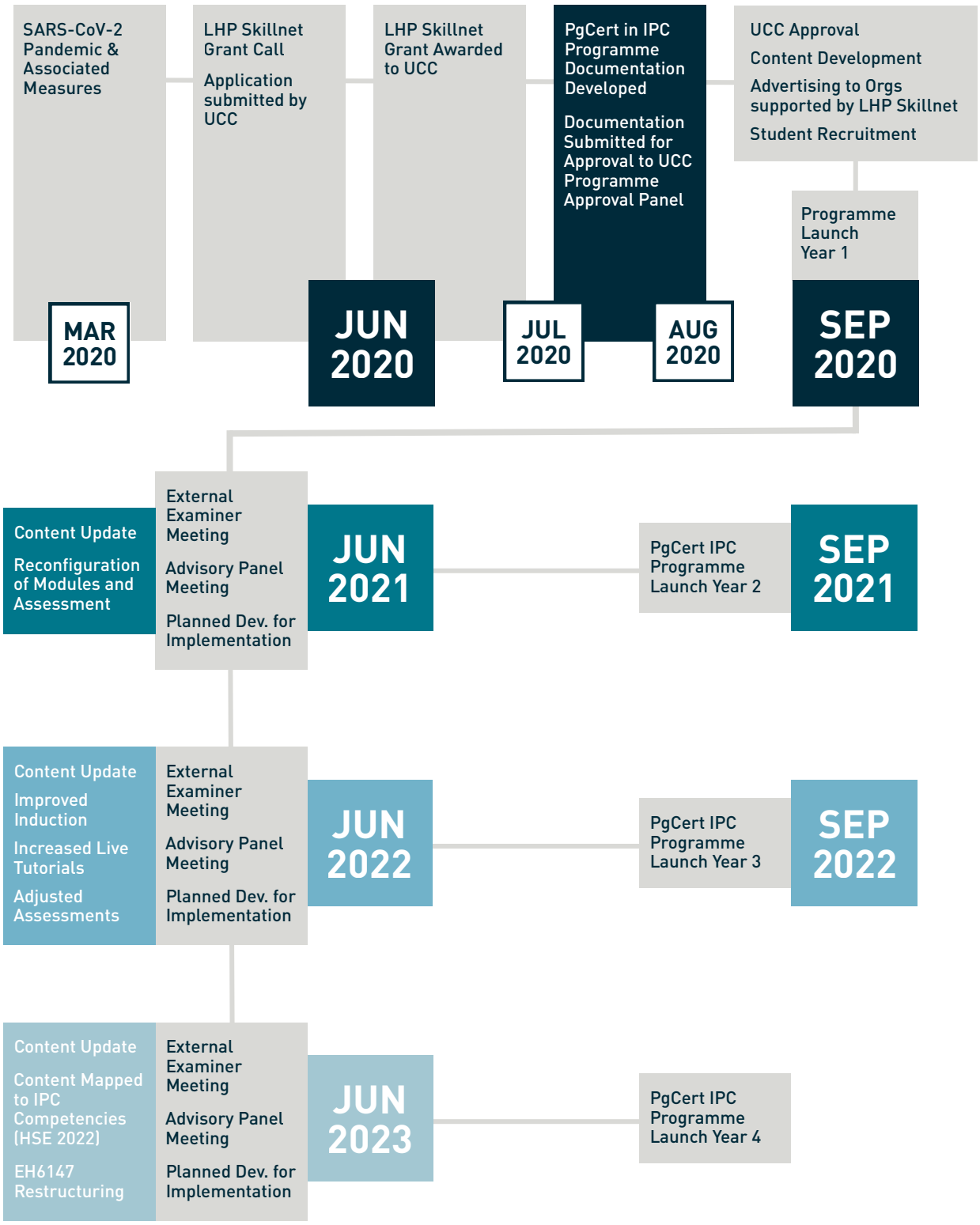


Figure 19. Development, approval, implementation and modification of the PG Cert IPC 2023

Recommendations

TABLE 5 Key Findings and Recommendations

Evaluation of all clinical programmes to ensure they are “fit for purpose”. This should ideally be framed using discipline relevant competencies to establish application to clinical practice.

Engage in formal methods of seeking graduate feedback in relation to programmes to fully assess the clinical impact of engagement and completion.

Utilise the findings to support development of changes to the practical facilitation and management of the programme.

Shared methodological approach so it can be adapted for other programme evaluations.

Shared findings to highlight the strengths and weaknesses and how these may be harnessed to improve the student learning experience and clinical value of programmes to support shared learning and enhance teaching and learning.

Continued engagement with graduates to support programme review and development into the future e.g. advisory panel, other professional activities, research, teaching.

Follow up actions by LHP Skillnet

01 **Facilitate a structured IPC education pathway for nurses, starting with accessible CPD and leading to the Postgrad Cert and Master of Science programmes, using targeted outreach, peer ambassadors, and partnership with employers.**

02 **Undertake case studies by interviewing graduates about their education experiences and professional outcomes. These studies can be used to showcase the real life impact of upskilling and specialist training . This will also provide valuable insights into progression. to encourage new enrolments to support ongoing programme recruitment.**

03 **Dissemination of the research findings with a focus on highlighting the need for a competency-based evaluation approach, through presentations, publications, and stakeholder engagement events.**

Conclusions

Future Research

While not included in this study we recommend that future research should include further exploration of the following elements,

- Engagement in relation to graduate career progression and new opportunities that were open to them.
- Data collection in relation to changes in IPC organisational practice.
- Increased engagement with graduate managers to establish their perceptions of the value and impact of the programme.
- Evaluation of quality improvement in organisations attributable to completion of postgraduate specialist education.

Closing Comments

The data and feedback used in this evaluation spans three years during which iterative changes were made to the programme based on annual student evaluation, feedback, and on the feedback from the Advisory Panel and the External Examiner. Changes include the development and implementation of a MSc in IPC in 2022 and accreditation of the PG Cert and MSc in IPC with the Nursing and Midwifery Board of Ireland.

This research focuses on improving the educational experience and impact, with the end goal of improving efficacy of implementation of IPC and patient safety. This evaluation produces measurable actionable research to support graduates and organisations in the implementation of IPC. The research findings will be immediately and directly applicable to LTRCFs, their staff and the residents who live in them.

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Appendices

Appendix 1:Programme evaluation process framework (Haji et al. 2013)

Framework Element	Teaching and Learning Application	Outcome Evaluated
Planned theory at programme conception ***(planned processes)*** Why will it work?	Programme developed and Learning Outcomes were based on the WHO (Year), IPS (year) and ECDC (Year) infection prevention and control competencies and the HSE (2022) competencies were included in programme planning and development in 2022.	Graduate questionnaire - competency questions, free text Semi-structured Interviews will explore Learning Outcomes based on competencies
Context	In what context was the programme facilitated and managed? What influenced this. Did the programme change during the three years and why?	Historical teaching and management information.
Planned Processes	Did the facilitation, teaching and management of the programme function the way it was intended? What were student experiences related to engagement with the Virtual Learning Environment, accessibility of content, accessibility of supports and course team, accessibility of information about assessment, accessibility to feedback.	Student satisfaction as per module and programme evaluation forms Graduate questionnaire - competency questions, free text
What else happened for students related to Planned Processes?	What were students' experiences of the processes they engaged with?	Student satisfaction as per module and programme evaluation forms Graduate questionnaire - competency questions, free text
Planned Outcomes	**Learning Outcomes:** • Demonstrate an understanding of the principles and practice of infection prevention and control. • Demonstrate an understanding of the appropriate management of infections caused by different pathogenic microorganisms. • Describe the transmission of endemic and epidemic infections from sufficient knowledge of the characteristics and transmission of causative organisms. • Describe appropriate methods for control of hospital and community acquired infectious diseases and infections. • Discuss the principles of microbiology in the prevention and control of infection. • Design, implement and evaluate co-ordinated control methods utilising tools such as audit and surveillance. • Discuss and apply effective quality improvement and patient safety strategies. • Discuss and implement management and leadership theories and practices applicable to infection prevention and control.	Student satisfaction as per module and programme evaluation forms Graduate questionnaire - competency questions, free text Semi-structured Interviews will explore Learning Outcomes based on competencies

Appendix 1:Programme evaluation process framework (Haji et al. 2013)

Framework Element	Teaching and Learning Application	Outcome Evaluated
What else happened for students related to Planned Outcomes?	What were students' experiences of meeting learning outcomes and completing assessments.	Student satisfaction as per module and programme evaluation forms Graduate questionnaire - competency questions, free text
Emergent Theory	What are the outcomes of successful completion of this programme? How will these findings be used to inform future programme iterations?	Graduate questionnaire - competency questions, free text Semi-structured Interviews will explore Learning Outcomes based on competencies

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