Royal College of Nursing

Understanding Aseptic Technique

A summary of RCN evidence generation in 2022 using qualitative interviews with nurses

REPORT

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Acknowledgements

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1. Introduction

The Royal College of Nursing (RCN) has undertaken a programme of work in response to members' concerns about the conduct of aseptic technique. These relate to reports of wide and unwarranted variation in clinical practice and education. The findings from this work support the RCN's vision to lead and influence clinical nursing practice through health education, learning and development.

This report adds to the profession's education journey to enhance nursing practice founded on enquiry and the generation of evidence to inform practice. The update builds on an RCN report titled Understanding aseptic technique (RCN, 2020) that described the outcomes of an RCN investigation exploring:

- *how the term 'aseptic technique' is defined in clinical guidelines.*
- *practising nurses' opinions concerning asepsis and aseptic technique.*
- *findings of a Delphi study looking at directions for future policy, research and*
- *education to guide future nursing practice.*

Collectively this body of work indicated the need for further research to explore the challenges encountered when undertaking aseptic technique through in-depth qualitative enquiry to suggest possible solutions to improve practice and education.

This report will be of interest to nursing staff or midwives involved in aseptic technique guideline development or education of this core practical skill.

2. The study

Research design and methods

Qualitative telephone interviews were undertaken with 20 nurses working in health and social care between September 2021-January 2022. A grounded theory approach to sampling and analysis was adopted (Strauss et al., 1997). Participants were recruited from across the UK and were considered eligible to take part if they were registered nurses who regularly undertake aseptic technique as part of clinical practice or supervise other staff undertaking aseptic technique (eg clinical managers, educators). Each interview was recorded, transcribed and analysed immediately. Further details of the methodology can be found in Gould et al., 2022.

Ethical approval

Ethical approval to undertake the study was granted by Cardiff University. Those taking part received verbal and written information about the research and assurance that their identity and the identity of their employing organisation would not be disclosed in the project report or any publications arising from it.

Summary of findings

Interviews were conducted with qualified nurses in a range of acute and non-acute care settings throughout the UK. Participants worked in the NHS and private sector. Data collection was drawn to a close after 20 interviews had been conducted because no new information was emerging ('saturation').

Key findings

Four themes emerged in analysis:

- *understandings and beliefs about aseptic technique*
- *the importance of understanding the principles of asepsis*
- *deficiencies in teaching and updating*
- *the need for improved guidelines.*

Each theme will be discussed briefly in turn.

Understandings and beliefs about aseptic technique

Participants described aseptic technique as a way of avoiding contamination to sites that are vulnerable to infection, primarily to protect the individual patient undergoing the procedure. They suggested that beyond the highly controlled conditions possible in operating theatres, ability to undertake procedures aseptically would always be compromised but that much could and should be done to reduce the risk of contaminating vulnerable sites regardless of the clinical setting. Non-acute settings were perceived to present the greatest challenge, especially domiciliary care. There was considerable debate about how and on what occasions procedures should be attempted aseptically. These were mainly in conjunction with the management of chronic wounds (for example, pressure ulcers, leg ulcers) likely to be heavily contaminated and indwelling lines used long-term outside hospital. Clinical nurse managers

reported that maintaining high standards was an important part of their role and often very difficult to achieve, especially during episodes of care delivered by junior nurses and junior doctors.

The importance of understanding the principles of asepsis

Being able to undertake aseptic technique in different circumstances and in different clinical settings was believed to depend on understanding the principles underpinning asepsis and adapting the specific procedure according to the environment in which it was being undertaken. Failure to understand the principles of asepsis was reported to endanger patient safety. It was also reported to promote the inappropriate use of consumables and inability to adjust when new equipment was introduced.

Deficiencies in teaching and updating

Carelessness and failure to grasp the principles of asepsis were attributed to shortcomings in pre-registration nursing education and the reported inability of many nurses to access continuing professional development (CPD) once qualified. Participants thought that aseptic technique was introduced too early in undergraduate courses, was demonstrated in relation to straightforward procedures (eg removing sutures, administering injections) rather than reflecting the types of situations likely to be encountered during real clinical practice and that opportunities for assessment were limited. Much seemed to depend on the type of clinical placements provided for individual student nurses, the enthusiasm of qualified staff offering mentorship and how busy they were. Participants who had been qualified since the 1980s described the old competency assessment previously undertaken by all student nurses and suggested that it had been valuable as a means of upholding standards. Universal competency assessment for aseptic technique was phased out in the mid-1990s when nursing entered mainstream university education and each organisation was permitted to make its own arrangements. Opportunities for CPD were reported to vary. In intensive therapy units, (ITUs) provision was consistently reported as good. In community settings, provision was patchy despite caseloads that included acutely sick patients who had invasive, indwelling devices. In primary care, non-clinical practice managers were in charge of training budgets, constraining opportunities for CPD.

The need for improved guidelines

Participants were keen to remain abreast of changes in clinical practice and wanted to feel confident of their ability to adapt aseptic technique safely when new equipment and procedures were introduced. They wanted greater clarification concerning 'clean' technique and when it could safely replace aseptic technique, how frequently dressings needed to be changed, the use of sterile gloves and the management of indwelling lines (eg how to disinfect hubs and bungs). All participants suggested that there was a need for new and better clinical guidelines. Senior staff responsible for service management suggested that the same guidelines should meet all circumstances, but frontline nurses favoured the creation of guidelines that could be adapted to meet specific need.

3. Discussion

Infection prevention remains a priority patient safety issue. Aseptic technique is central to any strategy intended to prevent infection and reduce the risks of antimicrobial resistance (DOH, 2018).

The research reported in this update is the latest in a series of studies that have indicated variations in practice, uncertainty concerning what constitutes best practice when undertaking aseptic technique (Aziz, 2009), especially in relation to the management of chronic wounds (Unsworth et al., 2011; Preston, 2005) and lack of opportunity to update clinical skills, particularly in domiciliary and primary care (Gould et al., 2021).

Numerous guidelines describe the process of undertaking aseptic technique and provide recommendations for when and how it should be conducted (eg National Institute for Health and Care Excellence (2012) epic3 (2014)), but none appear to have been developed using contemporary evidence-to-decision frameworks such as the Grading of Recommendations, Assessment, Development and Evaluations (GRADE) (RCN, 2020).

GRADE is a useful tool because it separates judgements about quality of the evidence from the strength of the recommendations that can be based on it, taking into account a range of parameters including: the balance between desirable and undesirable outcomes; assessment of values and preferences and their variability; resources required; cost-effectiveness; equity; acceptability; feasibility; as well as judgement about overall quality of the evidence (Schünemann et al., 2013).

Contemporary nursing practice also requires consideration of sustainability and the contribution of consumables driven by clinical guidelines if the NHS is to meet its net zero ambitions. If, as suggested by participants in this study, new guidance to support aseptic technique are developed, they will need to meet contemporary standards for guideline development adopting evidence-to-decision methodology to ensure transparency with a defined schedule for updating.

Participation from a wide range of stakeholders will be necessary as it is essential that guidelines for aseptic technique reflect the views of those responsible for undertaking it. Opinion should therefore be sought from nurses and midwives, including support workers in all care settings, as they are more likely to identify inconsistencies in practice than senior staff removed from direct care. As it is unlikely that a single approach to aseptic technique will be appropriate in all situations, recommendations will need to be accompanied by a range of implementation tools to support uptake in diverse clinical settings and situations.

Before the development of new guidelines can commence, questions need to be asked regarding the degree of standardisation required to support aseptic technique, how much variation can be considered 'safe' under different circumstances and whether there should be different guidelines for hospital and community settings and for different procedures.

4. Conclusion and recommendations

Findings from this latest RCN update and previous research reinforce the need for better preparation of nurses and midwives who undertake aseptic technique. The development of new clinical guidelines alone is unlikely to influence improvements in clinical practice. Where guidelines are available these should be reviewed regularly to ensure contemporary evidence is included and meet relevant quality assurance requirements.

The need for supportive educational standards that enable the application of clinical guidance, including infection prevention, is also essential. Both educational standards and clinical guidelines must be developed in partnership with relevant stakeholders, not driven in isolation by infection prevention specialists. The delivery of aseptic technique education and skills development must be embraced as a core clinical proficiency and delivered as such at local level.

Recommendations

Based on the findings of this study and work the RCN has previously commissioned in relation to aseptic technique, we recommend that:

- *the development of educational standards supporting aseptic technique should be explored. This exercise should include multi-stakeholder engagement and reflect findings from RCN-generated evidence*
- *any new national clinical guidelines should be developed in partnership with all relevant stakeholders and not developed in isolation*
- *the Grading of Recommendations, Assessment, Development and Evaluations (GRADE) methodology should be used to develop new guidelines*
- *all new guidelines on aseptic technique should include an impact assessment and plan for implementation*
- *all guidelines should be quality-assured by relevant professional bodies to support implementation and uptake*
- *the benefits of introducing a standardised competency/capability assessment for aseptic technique should be explored including pre- and post-registration assessment to support ongoing development and capability as a core skill supporting patient/person care in all settings*
- *nursing educators should consider novel approaches such as those adopted in medical schools for example, small group work with simulated practice and feedback before contact with patients is allowed.*

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