Journal of Hospital Infection 171 (2026) 53—59

Available online at www.sciencedirect.com

Journal of Hospital Infection

journal homepage: www.elsevier.com/locate/jhin

Is there consensus for the aims of aseptic technique undertaken by nurses outside operating theatres? Delphi survey with follow-up study day

C. Hawker [a], D. Gould [b], E. Purssell [c,d,*], N. Drey [b], R. Gallagher [e], G. Oxley-Smith [f], C. Fellows [f], K. Ormandy [f], J. Hines [f]

[a] School of Healthcare Sciences, Cardiff University, Cardiff, UK
[b] City St George's School of Medical Sciences, London, UK
[c] Anglia Ruskin University, Chelmsford, UK
[d] Little Havens Children's Hospice, Benfleet, UK
[e] Royal College of Nursing, London, UK
[f] SC Johnson Professional Ltd, Denby, UK

ARTICLE INFO

Article history:
Received 11 December 2025
Accepted 31 January 2026
Available online 16 February 2026

Keywords:
Asepsis
Aseptic technique
Clean technique
Invasive devices
Wounds

SUMMARY

Background: Aseptic technique is integral to infection prevention, but is not defined clearly in international guidelines. Recommendations for practice lack concordance.
Aim: To establish whether there is consensus for the aims of aseptic technique, and how it should be undertaken by nurses outside operating theatres.
Methods: Online modified Delphi survey in two rounds with a follow-up study day.
Results: According to the study participants, aseptic technique is necessary to prevent transmission of potential pathogens, is undertaken primarily to protect the patient undergoing the procedure, should be preceded by risk assessment, and only sterile items should enter the sterile field or contact the vulnerable site. In order to undertake risk assessment, information about the patient and venue are considered necessary. There is no consensus regarding whether the aim is to protect other patients and healthcare workers, whether aseptic technique is possible in all settings, and the appropriateness of personal protective equipment. Findings from the follow-up study day suggest that participants can undertake risk assessment when supplied with basic information related to patients and environment. The outcome of risk assessment is influenced by the venue where the procedure is undertaken, previous experience, and perceptions about the invasiveness of the procedure. Distinction is made between procedures considered highly invasive and those perceived to carry less risk.
Conclusion: Nurses agree on some, but not all, key issues related to aseptic technique. The decision to undertake aseptic technique appears to depend on the venue, experience, and perceptions of the invasiveness of the procedure. More focus on education, delivery, and audit of aseptic procedures is needed to improve consistency of understanding and practice.

* Corresponding author. Address: Bishop Hall Lane, Chelmsford, Essex, CM1 1SQ, UK
E-mail address: edward.purssell@aru.ac.uk (E. Purssell).

https://doi.org/10.1016/j.jhin.2026.01.023

Introduction

Although aseptic technique is integral to infection prevention, it is not defined clearly in international guidelines, and recommendations for practice lack concordance [1]. Numerous terms have been used to describe asepsis in practice manuals, textbooks and websites, including 'aseptic technique', 'non-touch technique', 'aseptic non-touch technique', 'standard aseptic non-touch technique', 'surgical aseptic non-touch technique', 'sterile technique' and 'medical asepsis'. The authors of a recent scoping review [2] concluded that research is required to elucidate the aims of aseptic technique as it is undertaken by nurses outside operating theatres, and reach consensus over definitions and terminology.

Methods

Study design

An online modified Delphi survey was conducted to establish whether there is consensus for the aims of aseptic technique, and how it should be undertaken by nurses in critical care units, wards and community settings (e.g. home care, primary care, nursing homes). The initial findings indicated that access to contextual information is required to facilitate clinical decision-making to aid risk assessment before deciding whether aseptic technique should be adopted. The process of this risk assessment related to aseptic technique was further explored in a follow-up study day.

Delphi procedure

Modified Delphi surveys are commonly undertaken to establish convergence and divergence of opinions about clinical practice [3]. In the present study, the Delphi procedure took place in two rounds with a 4-week interval to allow dispatch of the invitation, with weekly reminders and analysis between rounds (Figure 1). Panellists completing the first round were invited to take part in the second round. Delphi statements were presented on a five-point Likert scale with a free-text box for comments. Participants were asked to rate each statement on a five-point Likert scale (strongly agree=5, strongly disagree=1). The mid-point (score 3) was taken as uncertain. Statements (see Table I) were compiled from microbiological theory, nursing manuals and practice recommendations [4–8]. A statement about aseptic non-touch technique (ANTT) [9] was included because this framework is widely used in the UK where the study was conducted.

Obtaining a representative sample of experts for Delphi surveys and maintaining an acceptable response rate

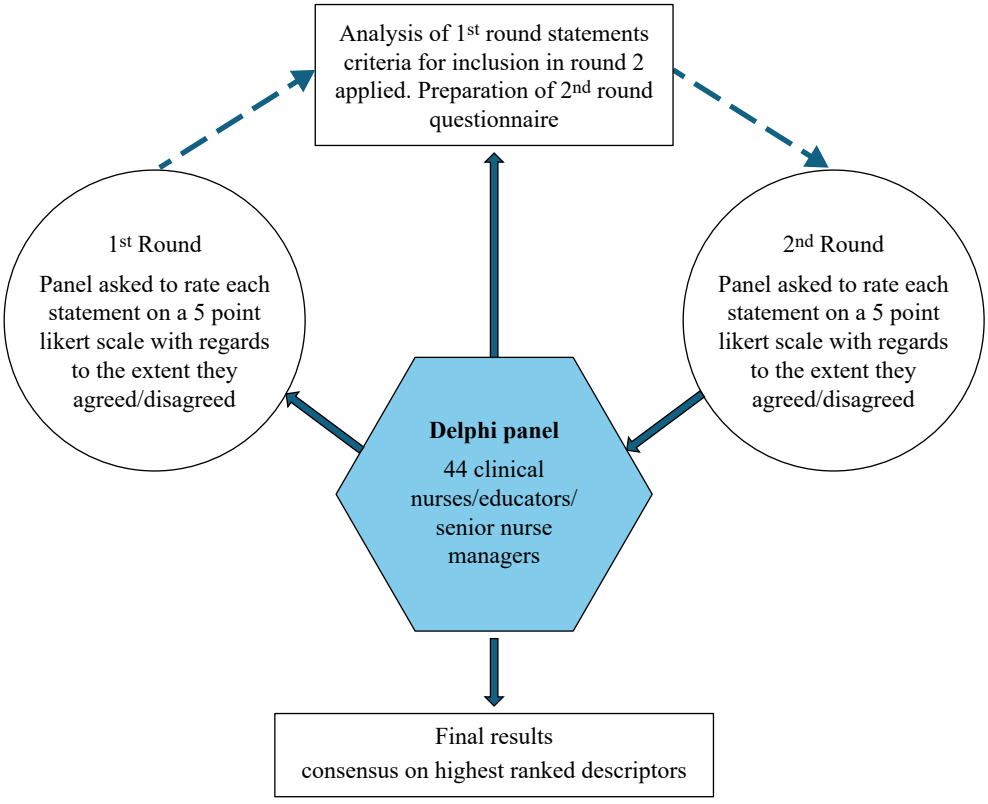

Figure 1. Delphi survey process.

Table I
Results of the Delphi survey

First round	Median	IQR	Second round	Median	IQR
1. The aim of aseptic technique is to avoid the transmission of potentially pathogenic organisms	1	0		NA	NA
2. Aseptic technique is primarily intended to protect the individual patient undergoing the procedure	1	1.25		NA	NA
3. Aseptic technique is intended to protect other patients who are at risk through cross-infection	2	3		3	3
4. Aseptic technique is intended to protect the health worker undertaking the procedure	2	4		2.5	3
5. Aseptic technique can be fully undertaken only under controlled conditions (e.g. operating theatre, beneath laminar flow)	4	4		4	2
6. Aseptic technique can be undertaken in any setting where patients receive care	2	2.25		1	1
7. Aseptic technique is necessary whenever undertaking invasive procedures (e.g. cannulation, inserting a urinary catheter)	1	1		NA	NA
8. Aseptic technique is necessary whenever manipulating an indwelling invasive device (e.g. intravenous line, urinary catheter)	1	1		NA	NA
9. Risk assessment should always be undertaken before deciding to conduct aseptic technique	1	1.25		NA	NA
10. Hand hygiene is essential before undertaking and completing an aseptic procedure	1	0		1	1
11. Aseptic technique is undertaken with a non-touch technique	1	2		1	1
12. Aseptic technique means ensuring that only sterile items enter the sterile field	1	0.25		NA	NA
13. Aseptic technique means that only sterile fluids and equipment contact the vulnerable site	1	1		NA	NA
14. Some vulnerable sites (e.g. wounds) may be contaminated. Here, the aim of aseptic technique is to	1	1		NA	NA
avoid introducing additional contamination					
15. To undertake aseptic technique, it is necessary to wear sterile gloves	2	2		2.5	3
16. To undertake aseptic technique, it is necessary to wear a gown or apron	3	1.25		2	3
17. To undertake aseptic technique, it is necessary to wear face protection (mask, goggles)	3	2		2	3
18. Aseptic technique can be undertaken by incorporating a framework such as ANTT or another named approach	1	1		NA	NA
19. ANTT terminology (e.g. 'key part', 'key site') is valuable when understanding the principles underpinning aseptic technique	1	1.25		NA	NA

ANTT, aseptic non-touch technique; IQR, interquartile range.

Unshaded statements indicate that a high level of agreement was reached concerning importance.

Shaded statements indicate that consensus was not reached concerning importance/lack of importance.

throughout sequential rounds and for other consensus activities is an acknowledged challenge [3]. Consequently, no potential participants were involved in the design or pilot testing of the Delphi statements. Instead, this study drew on the expertise of the project team, which included: infection prevention and control, medical microbiology, nursing, epidemiology, education, statistics, and research methodology.

Participants

Purposive sampling was undertaken to obtain opinions from nurses at different levels of seniority in critical care units, wards and community settings: intensive care; surgery; primary care; home care; tissue viability; infection prevention; accident department; vascular access; children's nursing; and social care (e.g. long-term care facilities). Panellists were identified via professional bodies (Royal College of Nursing, Nursing Infection Control Network, specialist nursing forums), and invited to take part by e-mail. Those who expressed an interest were sent an electronic link directing them to an information sheet, consent form and Delphi questionnaire. The link could only be used once and could not be redirected.

Follow-up study day

The aim of the moderated follow-up study day was to explore how nurses conduct risk assessment and identify factors influencing the decision to undertake aseptic technique. Opinions were obtained with vignettes. These are short, hypothetical accounts depicting real-world situations that can be used to explore clinical decision-making [10]. Two researchers selected typical procedures from those listed in standard practice manuals and textbooks, and used them to develop prototype vignettes. These were reviewed by the full research team to ensure they included a comprehensive range of clinical procedures and were written clearly [11]. Each vignette contained a brief description of the procedure, patient and clinical setting. Additional material was developed to provide further information that could be used to inform risk assessment, to be given to participants on request during the data collection exercise. Twenty-one vignettes explored risk assessment in acute settings (e.g. hospital wards, critical care units), and 14 vignettes explored risk assessment in non-acute settings (e.g. primary care, nursing homes, home care).

Participants worked in small groups to assess whether aseptic technique would be appropriate in the situation depicted in each vignette, and made notes on a template developed for the study. Verbal feedback from each group was recorded digitally with permission. Verbatim notes were taken. Participants were advised that they could request more detailed information from the moderator at any point during the exercise to facilitate risk assessment.

Analysis

For the Delphi survey, the median score and interquartile range (IQR) were calculated for each response to identify the response category above and below which 50% of the responses fell. Responses where the median was $\leq$2 (high level of agreement of importance) with a small IQR ($\leq$1.5) were taken as statements for which consensus had been achieved. Responses with a median score $\geq$3.5, with a small IQR ($\leq$1.5), were taken as statements where there was consensus on lack of importance [12]. For the follow-up study day, frequency counts of the number of recommendations for aseptic technique were calculated from the data collection templates. Qualitative data from the transcribed feedback were subjected to inductive content analysis [13], conducted independently by two researchers. Third-party arbitration was available but was not required.

Ethical approval

Ethical approvals for the Delphi survey and follow-up study day were obtained from the research ethics committee of the

university leading the research (ETH2425-1806 and ETH 2425-2320, respectively). Two submissions were necessary as the follow-up study day had not been planned in the original submission. Written informed consent was obtained from participants.

Results

Delphi participants

Fifty-two panellists were invited to participate in the Delphi survey. The sample for the first round consisted of 24 front-line nurses working in different settings who undertook aseptic technique as part of their everyday work, four nurse managers responsible for ensuring standards of clinical excellence, and four educators responsible for teaching the theory and skills of aseptic technique. There were two refusals on health grounds and six refusals because panellists no longer felt conversant with contemporary nursing practice. The remainder of those approached did not reply.

Delphi survey

Forty-four panellists responded to the first round of the Delphi survey. Consensus was achieved for 11 of 19 statements. In the second round, consensus was reached for two further statements (see Table I). Free-text data indicated that statements were difficult to answer in the absence of contextual data describing the patient and environment in which the procedure took place, and that this information would be necessary to conduct risk assessment. Inspection of the data failed to identify any patterns related to professional group or role. The first round commenced on 23rd February 2025, and the second round commenced on 7th May 2025.

Follow-up study day

Twenty-five nurses volunteered to take part in the follow-up study day via an advertisement placed on the website of their professional body. They were divided evenly between nurses in senior and junior positions, and were from a range of acute and non-acute settings. Ten had participated previously in the Delphi survey. The event took place on 11th July 2025.

No difficulties were reported in undertaking risk assessment using the brief information provided in the vignettes. Decisions were reached quickly without requests for additional contextual information from the moderator. No divergence of opinion or disagreements during feedback and discussion were noted. Participants suggested that management of wounds and indwelling urinary catheters would be undertaken aseptically in acute care settings, but clean technique would be adopted in non-acute settings (Table II). Qualitative analysis of the transcribed feedback indicated that decisions were based on the rationale that, in home care environments, patients 'were used to their own germs' and that aseptic technique would be reserved for procedures considered highly invasive (Box 1). Aseptic technique was recommended for inserting and handling intravenous lines in acute and non-acute settings, and for inserting urinary catheters because these procedures were considered to be very highly invasive. Participants drew on previous experience to undertake risk assessment, describing wounds they had dressed previously, or the typical appearance they would expect of a urinary drainage system for a long-term indwelling catheter. The challenge of undertaking clinical procedures in non-acute settings attracted lively discussion. Participants had witnessed poor standards of cleanliness in some homes, difficulties controlling the environment (e.g. interference from carers, incidents involving pets), and eccentricities of patients affecting ability to conduct procedures (e.g. not wanting furnishings or other items moved to allow positioning of clinical equipment). Comments revealed wasteful use of expensive consumables. Participants reported creating work surfaces to position equipment, and avoid spillages and other hazards irrespective of whether a sterile or non-sterile field was considered necessary. They described opening procedure packs and discarding all the remaining contents to use the sterile inner wrapping as a work surface.

Discussion

To the authors' knowledge, this is the first empirical study to investigate nurses' convergence and divergence of opinion for the aims and conduct of aseptic technique outside operating theatres. The findings corroborate existing literature [2,14]; there is confusion about the aims of aseptic technique, equipment necessary, and challenges of undertaking procedures aseptically in non-acute settings, especially home care [15—18].

In the Delphi survey, consensus was achieved for key issues relating to aseptic technique. It was considered necessary to prevent transmission of potential pathogens, protect the patient undergoing the procedure, and insert and manipulate invasive devices. Risk assessment was considered necessary before deciding to undertake aseptic technique, and the need for contextual information was expressed to aid risk assessment related to the patient and environment in which the procedure would be conducted. There was agreement that sterile items alone should enter the sterile field or contact the site vulnerable to infection. ANTT was considered a useful framework to guide aseptic technique. There was a lack of consensus concerning whether aseptic technique was intended to protect other patients and healthcare workers from cross-infection; whether it was possible only under controlled conditions, whether aseptic technique is possible in all settings where care is delivered, involves non-touch technique, and when personal protective equipment (PPE) would be appropriate. Findings from the follow-up study day suggested that participants could undertake risk assessment readily when supplied with basic information related to the patient and environment. Clinical decision-making was based largely on the venue in which the procedure would be undertaken and the practitioners' previous experience. Distinction was made between procedures that were considered very highly invasive (e.g. inserting devices, manipulating intravascular lines) and procedures which, although still invasive, were perceived to carry less risk (e.g. manipulating urinary catheters, dressing chronic wounds). Lack of consensus regarding PPE may have been related to heterogeneity in the Delphi sample; nurses employed in acute settings may use PPE routinely, while it may not be readily available in community settings. Lack of consensus concerning non-touch technique is difficult to explain as

Table II
Procedures requiring aseptic or clean technique recommended by participants in the consensus exercise

Asepsis recommended by participants
ACUTE CARE SETTINGS
Dressing a newly created surgical wound (surgery <3 days ago)
Dressing a chronic wound (e.g. pressure ulcer, venous ulcer) in hospital
Changing the dressing of a central venous catheter
Obtaining a urine specimen from catheterized patient in hospital
Administering an IV injection in hospital (peripheral line)
Dressing a surgical wound for immunocompromised patient, surgery 7 days ago
Inserting a central intravenous catheter in ITU
Inserting a urinary catheter in hospital
Undertaking a catheter washout in hospital
Obtaining a blood specimen from a CVC
Inserting an IV cannula (peripheral line)
Administering IV medication
Packing a deep wound surgical scalp wound; healing by secondary intention in hospital
Inserting an IV cannula for patient on a ward (peripheral line)
Measuring central venous pressure for patient in ITU
Inserting an IV cannula, difficult venous access
NON-ACUTE CARE SETTINGS
Dressing a chronic wound (e.g. pressure ulcer, venous ulcer)
Packing a deep surgical scalp wound for patient at home
Dressing a surgical wound that dehisced 7 days ago
Changing the dressing of a Hickman line for cancer patient at home
Asepsis not recommended by participants
ACUTE CARE SETTING
Replacing an endotracheal tube for ITU patient
Emptying a urinary catheter drainage bag
Reconnecting the catheter and drainage bag tubing following accidental disconnection
Undertaking routine eyecare for ITU patient
NON-ACUTE CARE SETTING
Emptying a urinary catheter drainage bag (long-term urinary catheter)
Reconnecting catheter tubing and drainage bag tubing after accidental disconnection
Dressing an exudating wound for patient who had surgery 7 days ago
Attaching an overnight drainage bag for a resident catheterized long term
Dressing a chronic wound (e.g. pressure ulcer, venous ulcer)
Obtaining a urine specimen from catheterized patient
Undertaking catheter washout
Dressing a surgical wound for immunocompromised patient, surgery 7 days ago
Self-catheterization; patient unable to empty their bladder
Emptying a urinary drainage bag, long-term urinary catheter
Attaching an overnight bag for patient catheterized long term

IV, intravenous; ITU, intensive therapy unit; CVC, central venous catheter.

it is the rationale underpinning ANTT, which was agreed to be a useful framework for aseptic technique.

These findings suggest that there is no single method for conducting procedures aseptically. It is likely that nurses adjust their practice to meet the needs of specific patients, procedures, and the setting in which aseptic technique is conducted. The speed of clinical decision-making witnessed in the follow-up study day and nurses' reliance on previous experience may reflect the reality of contemporary health care and rapid patient throughput, in which nurses are obliged to conduct risk assessment swiftly without access to detailed information about individual patients. Periodically, there are calls to audit aseptic technique to ensure practitioners' competency and compliance with guidelines, and avoid unwarranted variations in practice [4]. However, based on the study findings, audit would not be straightforward. Assessors would need to consider risk, feasibility and practicality which, in turn, would depend on the setting in which the procedure was undertaken, the patient's condition, and the specific procedure [19]. It would also be necessary to explore practitioners' rationale for their actions, as this would influence actions witnessed during practical assessment. Further research is needed to replicate or refute the findings of this study with a larger sample. Research is also needed to explore how risk assessment is undertaken by individual practitioners directly responsible for patient care, and the most effective approaches to education. This is an important issue. The UK COVID Inquiry established a record of poor risk assessment and decision-making at senior level by the public health authorities during the 2020 pandemic [20], and there is a dearth of research exploring how it is undertaken at the level of the individual practitioner. This is despite recommendations to

Box 1
Factors influencing risk assessment: participants' comments (qualitative analysis)

Clinical setting

'Clean technique because it's a chronic wound and the patient is in their own home.'

'Aseptic technique because the patient is in hospital.'

'Clean technique. In the community, in people's own homes, to a certain degree, they're used to their own germs.'

'So, in hospital, we tend to be a lot more clinical because we're frightened of introducing bacteria that the person wouldn't be normally exposed to.'

'A clean technique because it's a patient in their own home and you could do it (change urinary catheter bag) using a non-touch technique.'

'Undertaking a bladder washout for a patient at home whose catheter has blocked – it could be a clean technique, and you would be protecting yourself with non-sterile gloves.'

'Dressing a chronic wound in the patient's own home – it is a clean technique.'

'To dress a surgical wound for a patient at home who is immunocompromised and whose surgery was 7 days ago, we thought a clean technique, even though they were immunocompromised, because they're at home and they're exposed to their own microbiome.'

'Aseptic technique. The patient is in intensive care, and ITU [intensive therapy unit] patients are generally compromised to begin with. They've usually got something.'

Invasiveness of the procedure

'Undertaking a bladder washout for a patient in the accident department whose urinary catheter is blocked – it's an invasive technique.'

'A central venous intravenous catheter in the intensive care unit. Definitely an aseptic technique because you're going into a major vessel.'

'You're not actually breaking the seal (of the catheter drainage system), so you're not introducing outside organisms.'

'As long as you've got a closed (urinary catheter system), it's a non-touch technique.'

'This is a scalp wound surgically created, healing by secondary intention. So, we said aseptic technique and the rationale was that there's a risk of microbial introduction to the tissue.'

Condition of the site vulnerable to infection

'To remove the dressings from the leg (venous ulcer), we would use clean technique. They're usually contaminated with exudate and they're a bit mucky.'

'They (urinary catheters) get a bit discoloured.'

'Yeah, the whole set (urinary catheter and drainage system) can look very nasty. Some nasty community ones.'

'Aseptic technique because it's a fragile wound following recent surgery.'

'Healing is, by secondary intention, granulation. It should be aseptic because it's recent surgery. We reasoned that granulation healing wouldn't have started.'

conduct risk assessment in national guidelines for infection prevention [21]. The present study has implications for nurse education and the evolution of clinical practice where 'clean' technique may be sufficient, and offer a safe, cheaper alternative. Nurses should be aware that the process of sterilization carries a heavy carbon footprint, has financial implications for cash-strapped healthcare services, and how to use resources wisely to improve sustainability and planetary health [22].

Study strengths and limitations

Delphi surveys have been criticized because reliance is placed on non-randomly-obtained samples, and findings reflect opinion, not fact [3,23,24]. Many Delphi surveys are conducted with 'expert' panellists. The present survey recruited panellists with expertise in clinical nursing practice and infection prevention, as well as those who conduct aseptic technique every day, with a mixture of senior and junior practitioners. However, there is no guarantee that panellists had insight into their own knowledge or ability to practice [25]. The same criticism can also be applied to those taking part in the follow-up study day. Vignettes may not reflect real-world situations, affecting the validity of findings [9]. This drawback can be overcome if, as in this study, care is taken to ensure that information is presented clearly and reflects existing practice [26]. Failure to undertake more extensive preparatory work to design and pilot the Delphi statements and vignettes is a limitation which should be addressed in future studies. Group pressure may influence the findings of face-to-face data collection events, jeopardizing validity [27], but can be avoided or reduced if, as in the present study, the encounter is moderated carefully, setting clear ground rules at the outset [28]. Finally, the present findings reflect the opinions of a non-randomly-obtained, relatively small sample of nurses. However, maximum variability sampling ensured that the findings reflected the opinions of nurses employed in a wide range of clinical settings and with different experiences.

In conclusion, this study established agreement for some, but not all, key issues related to aseptic technique among nurses practising in a range of acute and non-acute settings. The decision to undertake procedures aseptically appears to depend on venue, practitioners' experience, and perceptions of the invasiveness of the procedure. These findings indicate that more focus is needed on education, delivery, and audit of aseptic procedures to improve consistency of understanding and practice.

CRediT authorship contribution statement

C. Hawker: Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **D. Gould:** Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **E. Purssell:** Writing – review & editing, Writing – original draft, Software, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **N. Drey:** Writing – review & editing, Writing – original draft, Methodology, Formal analysis,

Conceptualization. **R. Gallagher:** Writing — review & editing, Methodology, Investigation, Funding acquisition, Formal analysis, Conceptualization. **G. Oxley-Smith:** Writing — review & editing, Resources, Investigation, Conceptualization. **C. Fellows:** Writing — review & editing, Resources, Investigation, Conceptualization. **K. Ormandy:** Writing — review & editing, Resources, Investigation, Conceptualization. **J. Hines:** Writing — review & editing, Resources, Investigation, Conceptualization.

Funding sources

This work was part of a research study funded by SC Johnson.

Conflicts of interest

Georgia Oxley-Smith, Caroline Fellows, John Hines and Kevin Ormandy are employed by SC Johnson Professional Ltd. Dinah Gould has given evidence at the UK COVID Inquiry. The other authors declare no conflicts of interest.

Acknowledgements

The authors wish to thank all participants who took part in the data collection event.

References

[1] Purssell E, Hawker C, Gallagher R, Gould DJ. What techniques are recommended to undertake procedures that require asepsis? Content and cluster analysis of information supplied in international guidance. J Hosp Infect 2023;139:201—6.
[2] Kent HM, Dawson SA, Lewis JM, Mitchell BG. Aseptic technique in clinical nursing settings: a scoping review. J Hosp Infect 2025;165:171—80.
[3] Gattrell WT, Logullo P, van Zuuren EJ, Price A, Hughes EL, Blazey P, et al. ACCORD (ACcurate COnsensus Reporting Document): a reporting guideline for consensus methods in biomedicine developed via a modified Delphi. PLoS Med 2024;21:e1004326.
[4] Denton A, Hallam C. Principles of asepsis 1: the rationale for using aseptic technique. Nurs Times 2020;116:38—41.
[5] Lister S, Hofland J, Grafton H, editors. The Royal Marsden manual of clinical nursing procedures. 10th edition. Hoboken, NJ: Wiley Blackwell; 2020. p. 28.
[6] Preston RM. Aseptic technique: evidence-based approach for patient safety. Br J Nurs 2005;14:540—6.
[7] Storer A, Cali S, Denson K, Kulik L, McCord J, Paoline D. Clean versus sterile: management of chronic wounds. J Wound Ostomy Continence Nurs 2025;52:101—3.
[8] Wound, Ostomy and Continence Nurses Society (WOCN) Wound Committee; Association for Professionals in Infection Control and Epidemiology, Inc. (APIC) 2000 Guidelines Committee. Clean vs. sterile dressing techniques for management of chronic wounds: a fact sheet. J Wound Ostomy Continence Nurs 2012;39(Suppl):S30—4.
[9] Rowley S, Clare S. ANTT: a standard approach to aseptic technique. Nurs Times 2011;107:12—4.
[10] Tremblay D, Turcotte A, Touati N, Poder TG, Kilpatrick K, Bilodeau K, et al. Development and use of research vignettes to collect qualitative data from healthcare professionals: a scoping review. BMJ Open 2022;12:e057095.
[11] Hughes R, Huby M. The construction and interpretation of vignettes in social research. Soc Work Soc Sci Rev 2012;11:36—51.
[12] Shepherd V, Wood F, Hood K. Establishing a set of research priorities in care homes for older people in the UK: a modified Delphi consensus study with care home staff. Age Ageing 2017;46:284—90.
[13] Hsieh HF, Shannon SE. Three approaches to qualitative content analysis. Qual Health Res 2005;15:1277—88.
[14] Haesler E, Thomas L, Morey P, Barker J. A systematic review of the literature addressing asepsis in wound management. Wound Pract Res 2016;24:208—16.
[15] Brockhaus L, Sass N, Labhardt ND. Barriers and facilitators to infection prevention practices in home healthcare: a scoping review and proposed implementation framework. Infect Prev Pract 2024;6:100342.
[16] Gould DJ, Chudleigh J, Purssell E, Hawker C, Gaze S, James D, et al. Survey to explore understanding of the principles of aseptic technique: qualitative content analysis with descriptive analysis of confidence and training. Am J Infect Control 2018;46:393—6.
[17] Grant S, Booth M, Khodyakov D. Lack of preregistered analysis plans allows unacceptable data mining for and selective reporting of consensus in Delphi studies. J Clin Epidemiol 2018;99:96—105.
[18] Wendt B, Huisman-de Waal G, Bakker-Jacobs A, Hautvast JLA, Huis A. Exploring infection prevention practices in home-based nursing care: a qualitative observational study. Int J Nurs Stud 2022;125:104130.
[19] Wennberg JE. Time to tackle unwarranted variations in practice. BMJ 2011;342:d1513.
[20] Cabinet Office. UK Government response to the COVID-19 Inquiry Module 1 Report. London: UK Government; 2025. Available at: https://www.gov.uk/government/publications/uk-government-response-to-the-covid-19-inquiry-module-1-report/uk-government-response-to-the-covid-19-inquiry-module-1-report-html [last accessed October 2025].
[21] NHS England. National infection prevention and control manual (NIPCM) for England. London: NHS England; 2025. Available at: https://www.england.nhs.uk/national-infection-prevention-and-control-manual-nipcm-for-england/ [last accessed October 2025].
[22] Meherali S, Nisa S, Aynalem YA, Lassi ZS. Nursing and planetary health: a discussion article. Womens Health 2025;21:17455057241311955.
[23] Boulkedid R, Abdoul H, Loustau M, Sibony O, Alberti C. Using and reporting the Delphi method for selecting healthcare quality indicators: a systematic review. PLoS One 2011;6:e20476.
[24] Diamond IR, Grant RC, Feldman BM, Pencharz PB, Ling SC, Moore AM, et al. Defining consensus: a systematic review recommends methodologic criteria for reporting of Delphi studies. J Clin Epidemiol 2014;67:401—9.
[25] Knof H, Berndt M, Shiozawa T. Prevalence of Dunning-Kruger effect in first semester medical students: a correlational study of self-assessment and actual academic performance. BMC Med Educ 2024;24:1210.
[26] Van Liew C, Leon GA, Grimm KJ, Cronan TA. Vignette responses and future intentions in a health decision-making context: how well do they correlate? Fam Syst Health J Collab Fam Healthc 2020;38:26—37.
[27] Brown BB. Delphi process: a methodology used for the elicitation of opinions of experts. Santa Monica, CA: RAND Corporation; 1968.
[28] Kahan JP, Morton SC, Farris HH, Kominski GF, Donovan AJ. Panel processes for revising relative values of physician work. A pilot study. Med Care 1994;32:1069—85.